



December 2017
Harbor Toxics TMDL Coordinated Compliance Monitoring and Reporting



2016/17 Annual Report Greater Los Angeles and Long Beach Harbor Waters

Prepared for:

California Department of Transportation

Cities of Bellflower, Lakewood, Long Beach, Los Angeles, Paramount, Rancho Palos Verdes,
Rolling Hills, Rolling Hills Estates, and Signal Hill

Los Angeles County

Los Angeles County Flood Control District

Ports of Long Beach and Los Angeles

Kinder Morgan Liquid Terminals, LLC*

Metropolitan Stevedore Company*

Petro-Diamond Inc.*

Tesoro Refining & Marketing Company LLC*

NRG Energy, Inc.*

* The Industrial Individual Permit Holders listed are not a part of the Greater Harbor Waters Regional Monitoring Coalition; however, they contribute to the monitoring and reporting activities documented herein to comply with applicable elements of their permit requirements.

December 2017

Harbor Toxics TMDL Coordinated Compliance Monitoring and Reporting

2016/17 Annual Report Greater Los Angeles and Long Beach Harbor Waters

Prepared for

California Department of Transportation; Cities of Bellflower, Lakewood, Long Beach, Los Angeles, Paramount, Rancho Palos Verdes, Rolling Hills, Rolling Hills Estates, and Signal Hill; Los Angeles County; Los Angeles County Flood Control District; Ports of Long Beach and Los Angeles; Kinder Morgan Liquid Terminals, LLC*; Metropolitan Stevedore Company*; Petro-Diamond Inc.*; Tesoro Refining & Marketing Company LLC*; and NRG Energy, Inc.*

Prepared by

Anchor QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, California 92691

* The Industrial Individual Permit Holders listed are not a part of the Greater Harbor Waters Regional Monitoring Coalition; however, they contribute to the monitoring and reporting activities documented herein to comply with applicable elements of their permit requirements.

TABLE OF CONTENTS

1	Introduction	1
1.1	Background.....	1
1.2	Harbor Toxics Total Maximum Daily Load.....	1
1.2.1	Numeric Targets.....	1
1.2.2	Interim and Final Waste Load Allocations and Load Allocations.....	2
1.3	Compliance Measures	3
1.4	Coordinated Compliance and Monitoring Reporting Plan.....	3
1.5	Programmatic Quality Assurance Project Plan	4
2	Methods	5
2.1	Station Locations.....	5
2.2	Water.....	5
2.2.1	Field and Analytical Methods	6
2.2.2	Sampling Equipment.....	6
2.2.3	Sample Identification	6
2.2.4	Decontamination Procedures	7
2.3	Sediment.....	7
2.3.1	Field Methods and Sampling Equipment.....	7
2.3.2	Sample Identification	8
2.3.3	Sediment Quality Objectives Direct Effects Assessment.....	8
2.3.4	Integrated Assessment by Station	11
2.4	Tissue	11
2.4.1	Field Methods.....	11
2.4.2	Sampling Equipment.....	12
2.4.3	Sample Identification	12
2.4.4	Sample Shipment Procedures	12
2.5	Sediment Quality Objectives Indirect Effects Assessment	13
3	Results.....	14
3.1	Water.....	14
3.1.1	Summer 2016.....	14
3.1.2	Fall 2016.....	15
3.1.3	Winter 2017	15
3.2	Sediment.....	16
3.2.1	Field Data.....	16

3.2.2	Lab Data	16
3.2.3	Sediment Quality Objectives.....	17
3.3	Tissue	18
3.3.1	Field Data.....	18
3.3.2	Laboratory Data	18
3.4	Deviations from the Sampling and Analysis Plan	19
3.4.1	Water Quality – Summer 2016	19
3.4.2	Water Quality – Fall 2016	19
3.4.3	Water Quality – Winter 2017.....	19
3.4.4	Sediment Sampling – 2016.....	19
3.4.5	Fish Tissue Sampling – 2016	19
4	Data Quality Assessment	20
4.1	Field Data Quality.....	20
4.2	Analytical Data Quality.....	20
4.3	Data Completeness	21
5	Summary	22
5.1	Water Quality.....	22
5.2	Sediment Quality.....	22
5.3	Tissue Quality.....	22
6	References	23

TABLES

Table 1	Sediment Quality 303(d) Listings for Harbor Waters
Table 2	Sediment Chemistry Guideline Categorization
Table 3	Sediment Toxicity Categorization Values for <i>Eohaustorius estuarius</i>
Table 4	Sediment Toxicity Categorization Values for <i>Mytilus galloprovincialis</i>
Table 5	Benthic Index Categorization Values for Southern California Marine Bays
Table 6	Reference Ranges for IBI Metrics in Southern California Marine Bays
Table 7	Station Level Assessment Matrix
Table 8	Summary of Water Quality Exceedances per Event
Table 9	Summer 2016 Water Quality Field Data
Table 10	Summer 2016 Water Quality Chemistry Results
Table 11	Fall 2016 Water Quality Field Data
Table 12	Fall 2016 Water Quality Chemistry Results

Table 13	Winter 2017 Water Quality Field Data
Table 14	Winter 2017 Water Quality Chemistry Results
Table 15	Sediment Field Data (August 2016)
Table 16	2016 Sediment Chemistry Results
Table 17	Toxicity Raw Results (August 2016)
Table 18	Benthic Taxa Summary (August 2016)
Table 19	2016 Sediment Quality Objective – Sediment Chemistry Line of Evidence Evaluation
Table 20	2016 Sediment Quality Objective – Toxicity Line of Evidence Evaluation
Table 21	2016 Sediment Quality Objective – Benthic Community Line of Evidence Evaluation
Table 22	2016 Sediment Quality Objective – Integrated Station Assessment Results
Table 23	Summer 2016 Fish Sampling Field Data
Table 24	2016 Fish Tissue Chemistry Results
Table 25	Summary of Tissue Exceedances per Event

FIGURES

Figure 1	Water/Sediment Sample Nomenclature
Figure 2	Field Duplicate Sample Nomenclature
Figure 3	Field Blank/Equipment Blank Sample Nomenclature
Figure 4	Tissue Sample Nomenclature
Figure 5	TMDL Compliance Monitoring Receiving Water Locations – Summer 2016
Figure 6	TMDL Compliance Monitoring Receiving Water Locations – Fall 2016
Figure 7	TMDL Compliance Monitoring Receiving Water Locations – Winter 2017
Figure 8	TMDL Compliance Monitoring Sediment Locations – Summer 2016
Figure 9	TMDL Compliance Monitoring Benthic Diversity Map – Summer 2016
Figure 10	2016 Sediment Quality Objective Integrated Assessment Scores
Figure 11	TMDL Compliance Fish Tissue Monitoring Trawl Locations – Summer 2016

APPENDICES

Appendix A	Correspondence
Appendix B	National Weather Service Observation Reports
Appendix C-1	Water Sampling Field Forms
Appendix C-2	Sediment Sampling Field Forms
Appendix C-3	Fish Sampling Field Forms
Appendix D-1	Water Sample Chemistry Reports

Appendix D-2	Sediment Sample Chemistry Reports
Appendix D-3	Fish Sample Chemistry Reports
Appendix E	Toxicity Data Report
Appendix F	Benthic Community Data Summaries
Appendix G	Data Validation Reports

ABBREVIATIONS

µg/L	microgram per liter
Basin Plan	Water Quality Control Plan Los Angeles Region
Bight '13	Southern California Bight Regional Monitoring Program (2013)
BRI	Benthic Response Index
CA LRM	California Logistic Regression Model
CCMRP	Coordinated Compliance Monitoring and Reporting Plan
cm	centimeter
CSI	Chemical Score Index
CTR	California Toxics Rule
CTR criteria (aquatic life)	CTR Criteria for the Protection of Aquatic Life – Saltwater Chronic
CTR criteria (human health)	CTR Criteria for the Protection of Human Health for consumption of organisms only
DO	dissolved oxygen
DQO	data quality objective
EDD	electronic data deliverable
ERL	effects range low
FCG	fish contamination goal
Harbor Toxics TMDL	Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters
IBI	Index of Biotic Integrity
LA	load allocation
LARE	Los Angeles River Estuary
LOE	line of evidence
m	meter
MDL	method detection limit
mg/L	milligram per liter
MLOE	multiple lines of evidence
mm	millimeter
MRL	method reporting limit
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
pH	hydrogen ion potential
PMAX	maximum probability model
ppt	parts per thousand

PQAPP	Programmatic Quality Assurance Project Plan
QA	quality assurance
QC	quality control
RBI	Relative Benthic Index
RIVPACS	River Invertebrate Prediction and Classification System
RPD	relative percent difference
RWQCB	Los Angeles Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SCCWRP	Southern California Coastal Water Research Project
SQO	Sediment Quality Objective
SWAMP	California State Surface Water Ambient Monitoring Program
TMDL	total maximum daily load
TSS	total suspended solids
WGS84	World Geodetic System 1984
WLA	waste load allocation

1 Introduction

The *Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters* (Harbor Toxics TMDL) became effective on March 23, 2012. The requirements of the Harbor Toxics TMDL are specified in Attachment A to Resolution No. R11-008, Amendment to the Water Quality Control Plan – Los Angeles Region (Regional Water Quality Control Board [RWQCB] 2011). The Harbor Toxics TMDL was promulgated to protect and restore fish tissue, water, and sediment quality in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters (including Consolidated Slip; Greater Harbor Waters).

1.1 Background

Section 303 (d)(1)(A) of the Clean Water Act requires states to identify waterbodies within its boundaries for which effluent limitations are not stringent enough to implement water quality standards applicable to those waters. This list of impaired waterbodies is commonly referred to as the Section 303(d) list. Subsequently, in accordance with Section 303 (d)(1)(C), states are required to develop a total maximum daily load (TMDL) for pollutants not meeting the effluent limitations and at a level necessary to implement the established water quality standards. A TMDL represents the maximum amount of a pollutant a waterbody can receive and still meet water quality standards.

The 2010 California 303 (d) List of Water Quality Limited Segments identified Los Angeles and Long Beach Inner and Outer Harbors, Inner Cabrillo Beach, Cabrillo Marina, Consolidated Slip, Fish Harbor, Eastern San Pedro Bay, and Los Angeles River Estuary (LARE) as water segments where standards are not met and a TMDL is required. One or more pollutants or endpoints for each waterbody were listed as the cause of impairment for these waterbodies that comprise the Greater Harbor Waters (Table 1).

1.2 Harbor Toxics Total Maximum Daily Load

To protect marine life and minimize human health risks due to the consumption of fish, the Harbor Toxics TMDL includes annual contaminant limits in surface sediment, stormwater effluent, and fish tissues in the Greater Harbor Waters. These limits are defined as target loads or concentrations for compliance with the Harbor Toxics TMDL. The intent of a TMDL is to: 1) determine the quantity of contaminants a system can assimilate while protecting water quality; 2) determine all inputs of contaminants to the system and linkages of inputs to impairments; and 3) allocate reductions to each source to bring the waterbody into compliance with established criteria for the protection of beneficial uses related to water quality.

1.2.1 Numeric Targets

Applicable water quality objectives for the Harbor Toxics TMDL are narrative objectives for chemical constituents, bioaccumulation, and toxicity in the Water Quality Control Plan Los Angeles Region (Basin Plan; RWQCB 1994) and the numeric water quality criteria promulgated in 40 Code of Federal

Regulations section 131.38 (the California Toxics Rule [CTR]). In addition, sediment condition objectives were determined using sediment quality guidelines and the State Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality (Sediment Quality Objectives [SQOs] Part 1; SWRCB-Cal EPA 2009).

Water targets were determined by the Basin Plan and the CTR.

Sediment targets were determined by the narrative standards of the Basin Plan, fish-associated sediment targets as defined by the Harbor Toxics TMDL, and sediment quality guidelines (e.g., effects range low [ERL]) recommended by Long et al. (1998) and MacDonald et al. (2000). The Harbor Toxics TMDL anticipates that revisions to specific sediment quality targets may be determined by development of site-specific sediment quality values.

Fish tissue targets were determined from Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: chlordane, DDTs, dieldrin, methylmercury, polychlorinated biphenyls (PCBs), selenium, and toxaphene, developed by the Office of Environmental Health Hazard Assessment (OEHHA 2008) to assist agencies in developing fish tissue-based criteria for pollution mitigation or elimination and to protect humans from consumption of contaminated fish.

1.2.2 Interim and Final Waste Load Allocations and Load Allocations

Final waste load allocations (WLAs) are assigned to stormwater dischargers (i.e., Municipal Separate Stormwater Sewer System, California Department of Transportation, general construction, and general industrial dischargers) and other National Pollutant Discharge Elimination System dischargers. Final load allocations (LAs) are assigned to direct atmospheric deposition and bedded sediments in both wet and dry weather. Mass-based allocations have been set where sufficient data were available to calculate mass-based allocations; otherwise, concentration-based allocations have been set.

The following interim and final allocations are listed in Attachment A to Resolution No. R11-008, Amendment to the Water Quality Control Plan – Los Angeles Region (RWQCB 2011):

- Interim concentration-based allocation for sediment in Dominguez Channel Estuary and Greater Harbor Waters
- Final concentration-based WLAs for receiving water in Dominguez Channel Estuary and Greater Harbor Waters
- Final mass-based WLAs and LAs for Dominguez Channel Estuary and Greater Harbor Waters
- Final concentration-based sediment WLAs for metals in Dominguez Channel Estuary, Consolidated Slip, and Fish Harbor
- Final mass-based WLAs and LAs for bioaccumulative compounds in fish tissue for Dominguez Channel Estuary and Greater Harbor Waters

1.3 Compliance Measures

The Harbor Toxics TMDL set WLAs in the Greater Harbor waterbodies to limit sediment-bound pollutant loadings from upstream and on-land sources. In addition, the Harbor Toxics TMDL set LAs in the Greater Harbor waterbodies to limit concentrations in bedded sediments believed to impact marine benthos (direct effects) and fish tissue (indirect effects).

Water quality currently meets water quality objectives for beneficial use. However, monitoring is required to confirm no degradation is occurring. Water column concentrations will be compared to CTR criteria for both the Protection of Aquatic Life – Saltwater Chronic and the Protection of Human Health for consumption of organisms only.

Ultimately, compliance with sediments may be demonstrated via any of the following three means:

- Final sediment allocations, as presented in the Basin Plan Amendment (RWQCB 2011), are met.
- The qualitative sediment condition of unimpacted or likely unimpacted, via the interpretation and integration of multiple lines of evidence (MLOE) as defined in the SQO Part 1, is met—except for chromium, which is not included in the SQO Part 1.
- Sediment numeric targets are met in bedded sediments over a 3-year averaging period.

Ultimately, compliance with fish tissues may be demonstrated via any of the following four means:

- Fish tissue targets are met in species resident to the Harbor Toxics TMDL waterbodies.
- Final sediment allocations, as presented in the Basin Plan Amendment (RWQCB 2011), are met.
- Sediment numeric targets to protect fish tissue are met in bed sediment over a 3-year averaging period.
- The sediment quality condition protective of fish tissue is achieved per the Statewide Enclosed Bays and Estuaries Plan, as amended to address contaminants in resident finfish and wildlife.

1.4 Coordinated Compliance and Monitoring Reporting Plan

The Harbor Toxics TMDL requires monitoring activities by the responsible parties in the following three waterbody areas:

- Dominguez Channel, Torrance Lateral, and Dominguez Channel Estuary
- Greater Los Angeles and Long Beach Harbor Waters (including Consolidated Slip)
- Los Angeles River and San Gabriel River

The Coordinated Compliance Monitoring and Reporting Plan (CCMRP) outlines the monitoring activities to be conducted by the cooperating parties for the Greater Harbor Waters. To be consistent with and potentially collaborate with other regional monitoring programs, the sample collection methods prescribed within this CCMRP are to be conducted in accordance with methods established for use during the Southern California Coastal Water Research Project's (SCCWRP's) Southern California

Bight Regional Monitoring Program or the California State Surface Water Ambient Monitoring Program (SWAMP). Compliance monitoring and reporting activities must also be conducted in accordance with the Programmatic Quality Assurance Project Plan (PQAPP) developed for the Harbor Waters Toxics TMDL to ensure usability and provide benefit to other Harbor Waters Toxics TMDL-related programs and studies. The Final CCMRP was approved on June 6, 2014 (Unger 2014).

1.5 Programmatic Quality Assurance Project Plan

The PQAPP (Anchor QEA 2013) was developed to guide the collection of high-quality data as part of compliance monitoring and special studies required by and in support of the Harbor Toxics TMDL. The PQAPP includes the following key elements that focus on analytical methods and data generated under this program:

- **Program Management.** This section identifies the specific roles and responsibilities of data collectors and data managers and describes the process through which field and analytical data will be processed, reduced, and stored in an EQuIS database by the managing consultant.
- **Field Sampling Data Quality Objectives (DQOs).** This section includes detailed information on field collection requirements including sample processing, sample handling, sample identification, sample custody and shipping requirements, field quality control (QC) sample requirements with associated performance criteria, field records, and field electronic data deliverable (EDD) requirements.
- **Laboratory DQOs.** This section includes detailed information on analytical methods, analyte lists and reporting limits, laboratory QC sample requirements with associated performance criteria and corrective actions, laboratory record requirements, and laboratory EDD requirements.
- **Data Review, Verification, and Validation.** This section outlines the procedures used to meet the project DQOs.

The PQAPP was designed to be programmatic in nature to address data quality needs for both compliance monitoring and other Harbor Toxics TMDL-related sampling and analysis activities over the next 5 years. The benefit of the programmatic approach outlined in the PQAPP is that there will be a uniform data collection and management program for all Harbor Toxics TMDL-related studies that provides high-quality data and efficiencies due to standardization of sample collection, nomenclature, analysis, data review/validation, processing, storage, management, and seamless data export to the Regional Monitoring Coalition and State databases, regardless of study type or contractors performing the work.

This CCMRP has been designed accordingly to incorporate relevant PQAPP elements in addition to supplemental information specific to the compliance monitoring program in order to develop a single, all-inclusive, monitoring plan compatible with SWAMP Quality Assurance Project Plan requirements.

2 Methods

Methods were conducted in accordance with the CCMRP and accompanying matrix-specific Sampling and Analysis Plans (SAPs). Event-specific methods not incorporated into the CCMRP or SAPs are presented below. Deviations from the CCMRP and the SAP are presented in Section 3.4.

2.1 Station Locations

Station locations for both water quality and fish tissue were predetermined.

Sediment station locations were determined by random selection similar to methods used by SCCWRP for Bight Program stations. A detailed description of this random selection approach was provided in correspondence to the RWQCB on June 29, 2016 (Appendix A). Briefly, using a random number generator function in Microsoft Excel, one grid cell was randomly selected from each of the 22 Harbor Toxics TMDL-specified areas and a GIS-based tool was used to randomly place a station within each grid cell (see figures in Appendix A). Approval for this approach was received from the RWQCB on August 16, 2016 (Appendix A).

Vessel positioning was accomplished to achieve the target locations using an on-vessel differential GPS with an accuracy of plus or minus 10 feet (3 meters [m]). The coordinates of the actual sampling locations were reported in latitude and longitude in decimal degrees on the field sample forms and were within 15 m of the proposed sampling station. Positions were relative to the World Geodetic System 1984 (WGS84). Samples were labeled accordingly and as detailed in the CCMRP (Anchor QEA 2014a). The station identification codes were consistent with the station numbers listed in the Sediment Chemistry Monitoring Requirements table of the Harbor Toxics TMDL Basin Plan Amendment (RWQCB 2011).

2.2 Water

Water quality monitoring consisted of in situ measurements and collection of water samples for chemical analyses. Water samples were collected the following three times, representing two wet weather events and one dry weather event:

- Summer 2016: This dry weather sampling event occurred on September 27, 2016. It was conducted after a minimum 72-hour antecedent period of dry weather, as required.
- Fall 2016: This wet weather sampling event occurred on November 22, 2016. It was initiated within 24 hours after the storm event to constitute the first of two wet weather sampling events. The qualifying storm occurred on November 20 to 21 and was based on forecasting from National Oceanic and Atmospheric Administration's (NOAA's) National Weather Service (NWS). Total rainfall ranged from 0.8 inch recorded at Long Beach Airport to 0.75 inch recorded at Downtown Los Angeles for a 24-hour period ending at 10 a.m., November 21.
- Winter 2017: This wet weather sampling event occurred on February 18, 2017. It was initiated within 24 hours after the storm event began to constitute the second of two wet weather

sampling events. The majority of the rainfall occurred February 17 (2.77 inches at Long Beach Airport and 2.01 inches at Downtown Los Angeles), and only light rain (0.1 inch or less) was documented on each of the next three days. Total rainfall for the 4-day event ranged from 2.90 inches recorded at Long Beach Airport to 2.13 inches recorded at Downtown Los Angeles. These totals were documented by the NWS as of February 21.

National Weather Service reports showing observed rainfall are available in Appendix B.

2.2.1 Field and Analytical Methods

Per the CCMRP, analytes and analytical processes were provided to the contracted laboratory. Sampling was conducted three times annually at 22 stations: two during wet weather events and one during a dry weather event. Water quality measurements and samples were collected at three depths (surface, mid-water column, and bottom). In situ measurements included temperature, dissolved oxygen (DO), hydrogen ion potential (pH), and salinity. Water samples were collected and submitted to the contracted laboratory for total suspended solids (TSS), total and dissolved metals, organochlorine pesticides, and PCB congeners.

2.2.2 Sampling Equipment

In situ water quality parameters were measured using a multi-parameter water quality instrument, equipped with sensors to measure temperature, DO, pH, and salinity. A lead line was attached to the instrument to estimate water depth at the time the measurements were taken. Once the instrument was lowered to the appropriate depth, it was allowed to equilibrate for at least 1 minute at the targeted depth. Water samples were collected using a Van Dorn style water sampler that was decontaminated prior to sample collection at each station.

2.2.3 Sample Identification

The sample nomenclature included the identifiers listed below, with examples in Figures 1, 2, and 3:

- Waterbody or site
- Media or sampling method code
- Station number
- Depth interval (in metric units), if applicable
- Date of collection
- Indication of field duplicate (i.e., add 1000 to station number) if applicable

For equipment rinsate blank or field blank samples, "EB" or "FB" was used, respectively, in place of the waterbody or site and station number. The date of sample collection was added to the end in YYYYMMDD format.

Sample nomenclature for water samples is shown in Figure 1 using the following example: a surface water sample grab, station number 09 from Outer Harbor – Los Angeles on July 31, 2016, is written as:

OA-RW-09-S-20160731

Sample nomenclature for field duplicates is shown in Figure 2, using the following example: a water sample collected at the surface, station number 09 from Outer Harbor – Los Angeles on July 31, 2016, that is a field duplicate is written as:

OA-RW-1009-S-20160731

Sample nomenclature for equipment blanks is shown in Figure 3, using the following example: an equipment blank of the decontaminated sample processing equipment after sample collection on July 31, 2016, is written as:

EB-20160731

2.2.4 Decontamination Procedures

All sample containers were pre-cleaned by laboratory standard procedures. All water quality equipment (e.g., Van Dorn sampler) in contact with the sample material was decontaminated using the following procedure:

1. Pre-rinse with tap or site water
2. Wash with solution of distilled water and Alconox™ soap
3. Rinse with site water
4. At the conclusion of the sampling event, rinse well with distilled water
5. Store in a clean closed container

New disposable gloves were used at each site to prevent cross-contamination.

2.3 Sediment

2.3.1 Field Methods and Sampling Equipment

The field and laboratory methods described below are consistent with those described in the CCMRP and implemented as part of Bight '13 (Southern California Bight Regional Monitoring Program [2013]). Surface sediment grabs were submitted for chemistry, toxicity, and benthic community analyses in accordance with the SQO Part I sediment triad assessment. Sediment samples were collected using a double 0.1-m modified Van Veen grab sampler. Van Veen operation and sampling procedures are available in the Bight '13 Contaminant Impact Assessment Field Operations Manual (Bight '13 Field Sampling & Logistics Committee 2013). All equipment was rinsed and decontaminated between each site.

The field and laboratory methods were as follows:

- Sediment chemistry – Samples were collected directly from an opening at the top of the sediment grab while the jaws of the Van Veen grab sampler were closed. The top 5 centimeters (cm) were collected using a decontaminated stainless-steel scoop.
- Sediment toxicity – Samples were collected directly from an opening at the top of the sediment grab while the jaws of the Van Veen grab sampler were closed. The top 5 cm were collected using a decontaminated stainless-steel scoop; all containers were homogenized at the testing laboratory before being redistributed for toxicity testing.
- Benthic community – Sediment was released from the Van Veen grab sampler into a plastic bin. The sediment was sieved through a 1.0-millimeter (mm) stainless-steel mesh and rinsed with filtered seawater to wash sediment through the mesh, leaving benthic macroinfauna and larger debris for sorting and identification.

2.3.2 *Sample Identification*

The sample nomenclature included the identifiers listed below:

- Waterbody or site
- Media or sampling method code
- Station number
- Depth interval (in metric units), if applicable
- Date of collection
- Indication of field duplicate (i.e., add 1000 to station number) if applicable

For equipment rinsate blank or field blank samples, “EB” or “FB” was used, respectively, in place of the waterbody or site and station number. The date of sample collection was added to the end in YYYYMMDD format. Examples of sample nomenclature are shown in Figures 1, 2, and 3.

2.3.3 *Sediment Quality Objectives Direct Effects Assessment*

Sediment quality from samples collected in the Greater Harbor Waters was assessed using California’s direct effects SQOs as described in the *Final Staff Report, Water Quality Control Plan for Enclosed Bays and Estuaries, Part 1 – Sediment Quality* (SWRCB-Cal EPA 2008), and in Bay et al. 2014. The SQOs are based on an MLOE approach and include sediment chemistry, sediment toxicity, and benthic community condition. The MLOE results were integrated through the evaluation of the severity of biological effects and the potential for chemically mediated effects to provide a final station level assessment. The specific methods associated with each line of evidence (LOE) and the integrated assessment are described below.

2.3.3.1 Sediment Chemistry

2.3.3.1.1 California Logistic Regression Model

Results of chemicals detected in project sediment were compared to the California Logistic Regression Model (CA LRM) and the Chemical Score Index (CSI). The CA LRM is based on the maximum probability model (PMAx) developed by Field et al. (2002). Each regression model estimates the probability of observing toxicity at the concentration of a contaminant of concern (or a class of contaminants of concern) in field-collected sediments. The CA LRM follows Equation 1:

Equation 1

$$p = \frac{e^{B0+B1(x)}}{(1 + e^{B0+B1(x)})}$$

where:

p	=	probability of toxicity for target constituent
$B0$	=	the intercept parameter
$B1$	=	the slope parameter
e	=	natural log
x	=	the log of the concentration of the analyte of interest

To calculate the CA LRM, concentrations of each contaminant are entered into the corresponding logistic regression model and the probability for causing toxicity is determined for each contaminant. The individual contaminant with the highest probability for causing toxicity is the PMAx value. The PMAx value determined for each project area is compared to the values in Table 2 and categorized according to the associated exposures (minimal, low, moderate, or high). For example, if the PMAx is determined to be 0.64, then the sample is categorized as "moderate exposure."

2.3.3.1.2 Chemical Score Index

The CSI was developed by Ritter et al. (2007) for the SQO assessment and is based on the relationship between sediment chemical concentration and the degree of benthic community disturbance to Southern California benthic macrofauna. The CSI is the weighted mean of benthic community category scores based on guidelines developed for 13 contaminants with weighting factors for each contaminant as specified in Table 6 of Appendix A of the Final Staff Report (SWRCB-Cal EPA 2008). The CSI value determined for each project area is compared to the values in Table 2 and categorized according to the associated exposures (minimal, low, moderate, or high). For example, if the CSI is calculated to be 2.25, then the sample is categorized as "low exposure."

2.3.3.1.3 *Integration of Sediment Chemistry Categories*

The final sediment LOE category is the average of the two chemistry exposure categories. If the average falls midway in between the two categories, it is rounded up to the higher (more impacted) of the two. For example, if the CA LRM is low exposure and the CSI is moderate exposure, then the final sediment LOE category is moderate exposure.

2.3.3.2 **Sediment Toxicity**

The *E. estuarius* and *M. galloprovincialis* sediment toxicity test results from each station were statistically compared to control test results, normalized to the control survival, and categorized according to Tables 3 and 4. The categories shown are established from thresholds using test-specific characteristics as described in detail by Bay et al. (2007) and depend on whether or not the survival of *E. estuarius* and *M. galloprovincialis* from a station is statistically significant from the survival of organisms in the control. For example, if survival of *E. estuarius* test sediment was 81% (of control survival) and was significantly different from the control survival using the statistical tests described above, then this sample would be categorized as “moderate toxicity.”

2.3.3.3 **Benthic Community Condition**

Benthic community condition was assessed using a combination of four benthic indices: Benthic Response Index (BRI), Relative Benthic Index (RBI), Index of Biotic Integrity (IBI), and a predictive model based on the River Invertebrate Prediction and Classification System (RIVPACS). The BRI is the “abundance-weighted pollution tolerance score” of infaunal species, with scores increasing from 0 to 100 with greater levels of disturbance (Smith et al. 2001, 2003). The BRI scores were calculated using the abundances of species and their respective pollution-tolerance values. The RBI was calculated as the weighted sum of: a) four community parameters (total number of taxa, number of crustacean taxa, number of molluscan taxa, and number of crustacean individuals); b) three positive indicator organisms; and c) two negative indicator taxa. The RBI values were scaled from 0 to 1.0, with lower values indicative of higher levels of disturbance. Scores then were compared to categorization values to determine the community condition category of the sample (Table 5). Determination of the IBI involved comparisons of four community measures (total number of taxa, number of molluscan taxa, abundance of *Notomastus sp.*, and percentage of sensitive taxa) to reference conditions for Southern California bays and estuaries (Table 6). For every metric that exceeded a reference condition, the IBI value was increased by a score of one; therefore, IBI values potentially range from 0 to 4, with lower values indicative of lower levels of disturbance (Table 5). The RIVPACS index was used to compare the sample benthic community assemblages (Observed) to reference species compositions (Expected) within the same habitat. Calculation of the RIVPACS score involved the following calculations:

- The probability of the test sample belonging to the 12 Southern California reference sample groups
- The expected number of reference species based on probability of group membership

- The Observed/Expected RIVPACS score for comparisons to benthic community categorization values (Table 5)

The four indices were calculated according to guidance developed by Bay et al. (2014). Each benthic index result was categorized according to the following four levels of disturbance, with conditions ranging from a reference condition to high disturbance:

- Reference: Equivalent to a least affected or unaffected site
- Low Disturbance: Some indication of stress is present but is within measurement error of unaffected condition
- Moderate Disturbance: Clear evidence of physical, chemical, natural, or anthropogenic stress
- High Disturbance: High magnitude of stress

The final benthic community condition was determined by averaging the four indices into a single category. If the median fell between two categories, the value was rounded to the next higher category to provide the most conservative estimate of benthic community condition.

2.3.4 Integrated Assessment by Station

The SQO direct effects assessment was evaluated at the station level. In accordance with the technical guidance (Bay et al. 2014), the station level assessment can be determined by combining the severity of biological effects category as shown in Table 7 with the potential for chemically mediated effect category, which results in one of six possible station level assessments, including unimpacted, likely unimpacted, possibly impacted, likely impacted, clearly impacted, and inconclusive.

2.4 Tissue

Fish tissue sampling consists of collection of targeted fish species for chemical analyses. Per the CCMRP, fish tissue samples are collected once every 2 years. Fish sampling was conducted on August 20 and 21, 2016.

2.4.1 Field Methods

Sampling was conducted within four waterbodies: Consolidated Slip, Los Angeles Outer Harbor (near Cabrillo Pier), Long Beach Outer Harbor, and (eastern) Eastern San Pedro Bay (near Pier J). Targeted species that were caught and used for tissue analysis included white croaker (*Genyonemus lineatus*) and the sport fish California halibut (*Paralichthys californicus*). Shiner surfperch (*Cymatogaster aggregata*) and northern anchovy (*Engraulis mordax*) were caught as prey fish species. Whole fish were collected and filleted (when applicable) and composited at the contracted laboratory. Fish tissues were analyzed for percent lipids, percent moisture, organochlorine pesticides, and PCB congeners.

2.4.2 *Sampling Equipment*

Fish were collected using a semi-balloon 7.6-m headrope otter trawl from the vessel R/V *Early Bird II*. Trawls were deployed and towed for 10 minutes each. Upon trawl retrieval, fish were identified and sorted, and species of interest were measured (total length, fork length [when applicable], and weight) prior to being packaged and preserved on ice.

2.4.3 *Sample Identification*

Each sample had an adhesive plastic label affixed to the plastic bag and was labeled at the time of collection, as specified in the fish tissue sampling and analysis plan (2014c). The sample nomenclature included the identifiers listed below. The following identification codes were used when applicable:

- Waterbody or site
- Media or sampling method code
- Organism common name, if applicable
- Composite code
- Date of collection
- Indication of field duplicate (i.e., add 1000 to station number)

For equipment rinsate blank or field blank samples, "EB" or "FB" was used, respectively, in place of the waterbody or site and station number. The date of sample collection was added to the end in YYYYMMDD format.

For fish tissue samples, no station number was used. Because one station was selected in each of the four required waterbodies, the waterbody code is sufficient to identify fish tissue samples. "CP" was added as a designation of Cabrillo Pier used for an Outer Los Angeles Harbor sample to represent a popular fishing area.

Sample nomenclature for tissue samples is shown in Figure 4, using the following example: a white croaker, fish fillet skin off, composite one, from Outer Harbor – Long Beach on July 31, 2016, would be written as:

OB-FF-WC-C1-20160731

2.4.4 *Sample Shipment Procedures*

Fish samples were sacrificed and blotted dry prior to being packaged in aluminum foil (shiny side out). Each fish was individually labeled and packed in a resealable plastic bag and stored on ice. Samples were delivered to the analytical laboratory the same day they were collected.

2.5 Sediment Quality Objectives Indirect Effects Assessment

Although the State of California's Water Quality Control Plan Part II (Indirect Effects) has not yet been finalized, the TMDL and Basin Plan reference the assessment process for measuring indirect effects or human health risks associated with sediment contamination. As specified in the draft technical guidance (Bay et al. 2014), the purpose of an indirect effects assessment is to determine if sediments meet the State's narrative SQO for human health, or "Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health." The indirect effects assessment evaluates whether sediment contamination at a site accumulates in seafood to levels that cause an unacceptable human health risk due to seafood consumption.

The guidance for demonstrating compliance through the SQO indirect effects plan is currently under development. Once the SQO indirect effects plan is finalized, it will be used to assess compliance within the TMDL.

3 Results

Analytical chemistry results for water, sediment, and fish tissue are presented in the following sections. Field sampling forms for water, sediment, and fish sampling can be found in Appendices C-1, C-2, and C-3, respectively. Laboratory chemistry reports for water, sediment, and fish samples are available in Appendices D-1, D-2, and D-3, respectively. The toxicity data report is in Appendix E, and the benthic community data summaries are in Appendix F.

3.1 Water

Water quality monitoring was conducted during three separate events: Summer 2016, Fall 2016 (coinciding with the first flush of the 2016/17 wet weather season), and Winter 2017. Analytical results were compared to CTR Criteria for the Protection of Aquatic Life – Saltwater Chronic (CTR criteria [aquatic life]) and CTR Criteria for the Protection of Human Health for consumption of organisms only (CTR criteria [human health]). In general, analytical results showed concentrations at non-detectable levels or below applicable water quality criteria, except for dissolved copper at three locations in Winter 2017 and dissolved lead at one location in Winter 2017. Toxaphene, total chlordane, dieldrin, and Total PCB Congeners were not detected in any water samples above the method detection limit (MDL); however, the MDLs for these compounds were elevated above their respective TMDL targets, which indicates that there is some uncertainty in the determination of exceedances for these analytes. Water sample chemistry reports are available in Appendix D-1. The number of samples with measurable concentrations greater than corresponding CTR criteria (aquatic life) for all events per waterbody is shown in Table 8.

A detailed discussion of water quality results for each sampling event is provided in the following sections.

3.1.1 *Summer 2016*

3.1.1.1 **Field Data**

On September 27, 2016, water samples and water quality measurements were collected at 22 predetermined locations through the Port of Los Angeles, Port of Long Beach, and Eastern San Pedro Bay (Figure 5). Each station's coordinates and water depth were recorded. Measurements of DO, pH, salinity, and temperature were collected using a multi-parameter water quality instrument. Results were within expected ranges: DO ranged from 5.4 to 10.1 milligrams (mg)/L, pH ranged from 7.3 to 8.2 units, salinity ranged from 33.1 to 37.6 parts per thousand (ppt), and temperature ranged from 16.1 to 20.7 °C (Table 9). Field forms are provided in Appendix C-1.

3.1.1.2 **Laboratory Data**

Water samples were analyzed for several conventional parameters, total and dissolved metals, organochlorine pesticides, and PCB congeners. Analytical results are presented in Table 10. No

exceedances relative to the CTR criteria resulted during the Summer 2016 sampling event. The number and percentage of exceedances relative to CTR criteria for all samples collected within the Greater Harbor Waters is also shown in Table 10.

3.1.2 Fall 2016

3.1.2.1 Field Data

On November 22, 2016, water samples and water quality measurements were collected at 22 predetermined locations through the Port of Los Angeles, Port of Long Beach, and Eastern San Pedro Bay (Figure 6). Each station's coordinates and water depth were recorded. Measurements of DO, pH, salinity, and temperature were collected using a multi-parameter water quality instrument. Results were within expected ranges: DO ranged from 5.1 to 8.5 mg/L, pH ranged from 7.4 to 8.3 units, salinity ranged from 24.2 to 34.0 ppt, and temperature ranged from 17.0 to 18.7 °C (Table 11). Field forms are provided in Appendix C-1.

3.1.2.2 Laboratory Data

Water samples were analyzed for several conventional parameters, total and dissolved metals, organochlorine pesticides, and PCB congeners. Analytical results are presented in Table 12. The number and percentage of exceedances relative to CTR criteria for all samples collected within the Greater Harbor Waters is also shown in Table 12. Preliminary data suggest dissolved copper exceeded CTR criteria (aquatic life) of 3.1 µg/L at five locations (representing 23% of all samples collected); however, during data validation, all dissolved copper results were qualified as non-detect due to laboratory contamination (Appendix A of the Winter 2016 data validation report [Appendix G]).

3.1.3 Winter 2017

3.1.3.1 Field Data

On February 18, 2017, water samples and water quality measurements were collected at 22 predetermined locations through the Port of Los Angeles, Port of Long Beach, and Eastern San Pedro Bay (Figure 7). Each station's coordinates and water depth were recorded. Measurements of DO, pH, salinity, and temperature were collected using a multi-parameter water quality instrument. Results were within expected ranges, except for salinity. DO ranged from 6.9 to 10.2 mg/L, pH ranged from 6.3 to 8.6 units, and temperature ranged from 12.6 to 15.3 °C (Table 13). Salinity ranged from 0.4 to 33.2 ppt. This range in salinity is evidence that the monitoring event successfully sampled the receiving water while it was being influenced by freshwater discharges associated with a large rain event. Field forms are provided in Appendix C-1.

3.1.3.2 Laboratory Data

Water samples were analyzed for several conventional parameters, total and dissolved metals, organochlorine pesticides, and PCB congeners. Analytical results are presented in Table 14. The number and percentage of exceedances relative to CTR criteria for all samples collected within the Greater Harbor Waters is also shown in Table 14. Dissolved copper exceeded CTR criteria (aquatic life) of 3.1 µg/L at three locations (representing 13% of all samples collected): Station 1 in Consolidated Slip had a concentration of 5.19 µg/L, Station 10 in Cabrillo Marina had a concentration of 5.54 µg/L, and Station 22 in the LARE had a concentration of 3.67 µg/L. Dissolved lead exceeded CTR criteria (aquatic life) of 0.94 µg/L at one location (representing 5% of all samples collected); Station 17 in Outer Long Beach Harbor had an estimated concentration of 10.0 µg/L. Water sample chemistry reports are available in Appendix D-1.

3.2 Sediment

3.2.1 Field Data

Chemistry, benthic infauna, and sediment toxicity were collected at 22 stations in the Greater Harbor Waters. Station names, waterbodies, and station coordinates are available in Table 15 and illustrated in Figure 8. Sediment field forms are available in Appendix C-2.

3.2.2 Lab Data

3.2.2.1 Chemistry

Sediment chemistry results were compared to ERL sediment targets and the fish-associated sediment targets. The number and percentage of exceedances relative to the sediment targets for all samples collected within the Greater Harbor Waters are provided and totaled in Table 16. All metals tested (cadmium, chromium, copper, lead, mercury, and zinc) had at least one exceedance relative to ERL targets. Two out of 22 cadmium samples exceeded an ERL target of 1.2 µg/kg, 1 out of 22 chromium samples exceeded an ERL target of 81 µg/kg, 18 out of 22 copper samples exceeded an ERL target of 34 µg/kg, 6 out of 22 lead samples exceeded an ERL target of 46.7 µg/kg, 11 out of 22 mercury samples exceeded an ERL target of 0.15 µg/kg, and 7 out of 22 zinc samples exceeded an ERL target of 150 µg/kg. Multiple individual polycyclic aromatic hydrocarbons (PAHs) exceeded their respective ERL targets; acenaphthene has an ERL target of 16 µg/kg, anthracene has an ERL target of 85.3 µg/kg, benzo(a)anthracene has an ERL target of 261 µg/kg, benzo(a)pyrene has an ERL target of 430 µg/kg, chrysene has an ERL target of 384 µg/kg, dibenzo(a,h)anthracene has an ERL target of 63.4 µg/kg, fluoranthene has an ERL target of 600 µg/kg, fluorene has an ERL target of 19 µg/kg, phenanthrene has an ERL target of 240 µg/kg, and pyrene has an ERL target of 665 µg/kg. Total PAHs exceeded its ERL target of 4,022 µg/kg at three stations. For pesticides, 4,4'-DDD exceeded the ERL target of 2.0 µg/kg at Inner Harbor Los Angeles and 4,4'-DDE exceeded the ERL target of 2.2 µg/kg at all stations except station 19 in Eastern San Pedro Bay. Total chlordane and total DDTs exceeded both the ERL targets of

0.5 and 1.58 µg/kg, respectively, and fish-associated sediment targets of 1.3 and 1.9 µg/kg, respectively, at various stations. Total PCBs exceeded the ERL target of 22.7 µg/kg at 19 stations and exceeded the fish-associated sediment target of 3.2 µg/kg at 21 stations. Sediment sample chemistry reports are available in Appendix D-2.

3.2.2.2 Toxicity

Survival in the *M. galloprovincialis* sediment-water interface test ranged from 65.0 to 98.0%. Survival in the *E. estuarius* test ranged from 42.0 to 99.0%. Sediment toxicity test results are presented in Table 17, and a full toxicity report is in Appendix E.

3.2.2.3 Benthic

The total number of taxa per station ranged from 46 to 464 species. The number of mollusk taxa ranged from 2 to 12 species, while the number of crustacean taxa ranged from 1 to 10 species. Cabrillo Marina contained the fewest number of taxa (46 species), LARE contained the fewest mollusk taxa (12 species), and Inner Los Angeles Harbor contained the fewest crustacean taxa (1 species). Consolidated Slip had the most overall taxa identified (464 species), Eastern San Pedro Bay had the most mollusk taxa (12 species), and Cabrillo Marina and Cabrillo Beach shared the most crustacean taxa (10 species). Station composition of sensitive taxa ranged from 2.9 to 23.8%. Inner Long Beach Harbor had the lowest percent of sensitive taxa (2.9%), whereas Eastern San Pedro Bay had the highest percent of sensitive taxa (23.8%). Results by station and waterbody are provided in Table 18 (Figure 9). A full list of benthic species identified by station are provided in Appendix F.

3.2.3 Sediment Quality Objectives

3.2.3.1 Direct Effects LOE Assessments

Sediment quality from Port of Los Angeles, Port of Long Beach, and Eastern San Pedro Bay was assessed using California's SQOs as described in the Final Staff Report (SWRCB-Cal EPA 2008). These SQOs are based on an MLOE approach in which the LOE are sediment chemistry (Table 19), sediment toxicity (Table 20), and benthic community condition (Table 21). The sediment chemistry LOE showed minimal disturbance at four stations, low disturbance at 10 stations, moderate disturbance at four stations, and high disturbance at four stations. The toxicity LOE showed samples to be nontoxic at 17 stations, low toxicity at four stations, and moderate toxicity at one station. The benthic community LOE showed low disturbance at 15 stations, moderate disturbance at six stations, and high disturbance at one station (LARE). The toxicity LOE ranged from nontoxic to moderate toxicity for all stations within the harbor.

3.2.3.2 Direct Effects Integrated Station Assessment

The severity of biological effects (i.e., integration of toxicity LOE and benthic condition LOE categories) and the potential for chemically mediated effects (i.e., the integration of the toxicity LOE and chemistry LOE categories) were used to determine the station level assessment, which is

available in Table 22 and Figure 10. Nine stations were found to be unimpacted. Eight stations were found to be likely unimpacted, one station possibly impacted, and four stations likely impacted. No stations were found to be clearly impacted.

3.3 Tissue

Fish tissue samples were collected on August 20 and 21, 2016, from four waterbodies (Consolidated Slip, Outer Los Angeles Harbor, Outer Long Beach Harbor, and Eastern San Pedro Bay; Figure 11). Fish were composited at Eurofins Calscience, Inc., on September 1.

3.3.1 *Field Data*

Lists of the composite sample IDs and sample locations, and a summary of the field data (on a composite-sample basis), for fish collected are presented in Table 23. Average lengths presented are the sum of all total lengths of fish divided by number of fish in that respective composite. Average weights presented are the sum of the individual weights of all fish in a single composite divided by the number of fish in that respective composite.

White croaker average lengths ranged from 15.2 to 25.4 cm, and average weight ranged from 42.1 to 196.3 g. California halibut average lengths ranged from 21.3 to 31.1 cm, and average weights ranged from 91.8 to 7,200.0 g. Northern anchovy lengths were not measured due to small size, and only composite weights were recorded, where the average weight ranged from 79.0 to 304.0 g. Shiner surfperch average lengths ranged from 8.8 to 9.7 cm, and average weight ranged from 10.2 to 15.8 g. Average lengths and weights of fish per composite and total weight of each composite are provided in Table 23. Fish tissue sampling field forms are available in Appendix C-3.

3.3.2 *Laboratory Data*

Tissue chemistry results, including a summary of the number and percentage of samples that exceed fish contamination goal (FCG) values per analyte, are presented in Table 24. FCGs, as specified in the TMDL, have numeric criteria for five parameters: dieldrin, toxaphene, total chlordane, total DDTs, and total PCBs. A summary of the number of samples that exceed FCG values per waterbody is presented in Table 25. Fish tissue sample chemistry reports are available in Appendix D-3.

For dieldrin and total chlordane, all composites had non-detects. All 12 white croaker composites exceeded the target of 6.1 µg/kg for toxaphene, 21 µg/kg for total DDTs, and 3.6 µg/kg for total PCBs. California halibut exceeded the toxaphene target of 6.1 µg/kg in three of nine composites, the total DDTs target of 21 µg/kg in two of nine composites, and the total PCBs target of 3.6 µg/kg in nine of nine composites. Shiner surfperch were not successfully captured from all waterbodies as a prey species; therefore, northern anchovy were collected as an acceptable alternative in Outer Long Beach and Eastern San Pedro Bay (Anchor QEA 2014c). Prey species exceeded the toxaphene target

of 6.1 µg/kg for nine of nine composites, the total DDTs target of 21 µg/kg in seven of nine composites, and the total PCBs target of 3.6 µg/kg in nine of nine composites.

3.4 Deviations from the Sampling and Analysis Plan

3.4.1 Water Quality – Summer 2016

No deviations from the proposed SAP occurred.

3.4.2 Water Quality – Fall 2016

Station 21 was too shallow for measurements to be collected at mid and bottom depths.

3.4.3 Water Quality – Winter 2017

Station 21 was too shallow for measurements to be collected at mid and bottom depths.

3.4.4 Sediment Sampling – 2016

No deviations from the proposed SAP occurred.

3.4.5 Fish Tissue Sampling – 2016

No deviations from the proposed SAP occurred.

4 Data Quality Assessment

4.1 Field Data Quality

Most field data quality assurance (QA) measures outlined in the PQAPP were followed. Field duplicate samples were collected at a 5% frequency, as proposed by the PQAPP, with one exception. Three water quality field duplicate samples were collected with 66 normal samples, at a frequency of one per sampling event. This resulted in a 4.5% frequency for metals, pesticides, and PCBs, which is slightly less than the PQAPP requirement. The field duplicate frequency for TSS was slightly above the goal, at 5.2%. Results of the field replicates are included in the data validation reports in Appendix G. Most results were within the project-required control limit of less than or equal to 25% relative percent difference (RPD). In cases where one of the samples or duplicate results fell below five times the method reporting limit (MRL), the RPD DQO did not apply. In these cases, the difference between the two results needed to be less than two times the MRL in order to meet project DQOs. Field and rinsate blanks were collected with each water quality sampling event. No PCB congeners or pesticides were detected in the field and rinsate blanks. Some total and dissolved metals were detected in the blanks. Significant copper detections in the blanks resulted in qualification of some sample results as non-detects. Prior to the Winter 2017 wet weather sampling event, the laboratory identified and corrected the source of contamination. Field and equipment blank detections are summarized in the data validation reports in Appendix G.

4.2 Analytical Data Quality

DQOs and QA procedures are provided in the PQAPP (Anchor QEA 2014b) and in the individual SAPs for each matrix (Anchor QEA 2014c, 2014d, 2014e). All data were validated according to Stage 2A guidelines (USEPA 2009). All data qualifiers applied to the data during final validation have been incorporated into the database for this project. Data were considered useable as reported or as qualified. Data qualifiers assigned during data validation include the following:

- "J" indicates that the associated numerical value is an estimated concentration.
- "U" indicates a reporting limit below which the analyte was not detected.
- "UJ" indicates an approximate reporting limit below which the analyte was not detected.
- "R" indicates data are rejected and unusable.

Four results were rejected as a result of the validation process. Dieldrin and 4,4'-DDT results for two samples were rejected due to no recovery in the matrix spike or the sample. Certain data were qualified as estimated values for a particular analysis based on a specified protocol or technical advisory, as stated in the data validation reports (Appendix G).

Most reporting limits were deemed acceptable to meet project objectives. Reporting limits for undetected results usually met or were below the target reporting limits specified in the SAPs. Some results were qualified as non-detect at raised reporting limits due to field or method blank contamination.

4.3 Data Completeness

Data completeness includes collection of required samples in the field and laboratory analysis for target chemicals as outlined in the project SAPs (Anchor QEA 2014c, 2014d, 2014e). All target samples were collected and submitted for the analyses specified in the SAPs.

Laboratory data completeness was measured by percentage of results reported by the analytical laboratory. Data completeness levels were set at 95% for all parameters, according to DQOs specified in the PQAPP (Anchor QEA 2013). No data were rejected after data validation. DQOs were met with 99.9% completeness.

5 Summary

This annual report presents results from water quality, sediment quality, and fish tissue quality monitoring activities required as part of the Harbor Toxics TMDL compliance monitoring and reporting program. Key results and conclusions from these activities include the following:

5.1 Water Quality

In general, water quality continued to meet water quality objectives. In situ and physical parameters were all within expected ranges. Chemical results were all below applicable water quality criteria, except for dissolved copper and dissolved lead. Dissolved copper and dissolved lead exceeded CTR criteria (aquatic life) in one or more samples collected from Consolidated Slip, Cabrillo Marina, Inner Long Beach Harbor, Outer Long Beach Harbor, and LARE.

5.2 Sediment Quality

Sediment results for the individual LOEs from the Los Angeles and Long Beach Harbors and Eastern San Pedro Bay showed the following:

- Chemistry
 - All metals were measured at concentrations greater than ERL values.
 - Organics, including total PCBs and total DDXs, were occasionally measured at concentrations greater than ERL values.
 - Total chlordane, total DDTs, and total PCBs exceeded the fish-associated sediment targets.
- Integrated SQO assessment
 - Using the sediment results from the individual LOEs, the SQO assessment for the Los Angeles and Long Beach Harbor stations determined nine stations to be unimpacted, eight likely unimpacted, one possibly impacted, and four likely impacted. No stations were found to be clearly impacted.

5.3 Tissue Quality

Total PCBs were measured at concentrations greater than the FCG in all fish from all stations. Total DDXs were measured at concentrations greater than the FCG in all white croaker, some halibut, all shiner surfperch, and all but two northern anchovy. Total chlordane was measured at concentrations greater than the FCG in all white croaker, shiner surfperch, and northern anchovy, but only four California halibut.

6 References

- Anchor QEA, L.P., 2013. *Draft Programmatic Quality Assurance Project Plan Supporting Compliance Monitoring and Special Studies Related to the Harbor Toxics Total Maximum Daily Load*. Prepared for the Port of Long Beach and Port of Los Angeles. April 2013.
- Anchor QEA (Anchor QEA, LLC), 2014a. *Coordinated Compliance Monitoring and Reporting Plan Incorporating Quality Assurance Project Plan Components. Greater Los Angeles and Long Beach Harbor Waters*. January 2014.
- Anchor QEA, 2014b. *Programmatic Quality Assurance Project Plan Supporting Compliance Monitoring and Special Studies Related to the Harbor Toxics Total Maximum Daily Load*. August 2014.
- Anchor QEA, 2014c. *Fish Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.
- Anchor QEA, 2014d. *Sediment Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.
- Anchor QEA, 2014e. *Water Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.
- Bay, S.M., D.J. Greenstein, J.A. Ranasinghe, D.W. Diehl, and A.E. Fetscher, 2014. *Sediment Quality Assessment Technical Support Manual*. Technical Report 777. Southern California Coastal Water Research Project. January 2014.
- Bay, S.M., K.J. Ritter, D.E. Vidal-Dorsch, and L.J. Field, 2007. *Draft Final Report, Comparison of National and Regional Sediment Quality Guidelines for Predicting Sediment Toxicity in California*. Technical Report 543. Southern California Coastal Water Research Project. October 24, 2007.
- Bight '13 Field Sampling & Logistics Committee, 2013. *Contaminant Impact Assessment Field Operations Manual. Southern California Bight 2013 Regional Marine Monitoring Survey (Bight '13)*. Prepared for Commission of Southern California Coastal Water Research Project. July 2013.
- Field, L.J., D.D. MacDonald, S.B. Norton, C.G. Ingersoll, C.G. Severn, D. Smorong, and R. Lindscoog, 2002. Predicting amphipod toxicity from sediment chemistry using logistic regression models. *Environmental Toxicology and Chemistry* 21:1993-2005.
- Long, E.R., L.J. Field, and D.D. MacDonald, 1998. Predicting toxicology in marine sediments with numerical sediment quality guidelines. *Environmental Toxicology and Chemistry* 17:714-727.
- MacDonald, D.D., L.M. Di Pinto, L.J. Field, C.G. Ingersoll, E.R. Long, and R.C. Swartz, 2000. Development and evaluation of consensus-based sediment effect concentrations for polychlorinated biphenyls. *Environmental Toxicology and Chemistry* 19:1403-1413.

- OEHHA (Office of Environmental Health Hazard Assessment, California Environmental Protection Agency [Cal EPA]), 2008. *Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene*. Pesticide and Environmental Toxicology Branch. June 2008.
- Ritter, K.J., S.M. Bay, R.W. Smith, D.E. Vidal-Dorsch, and L.J. Field, 2007. Development and evaluation of sediment quality guidelines based on benthic macrofauna responses. Southern California Coastal Water Research Project, Costa Mesa, California.
- RWQCB (Los Angeles Regional Water Quality Control Board), 1994. *Water Quality Control Plan, Los Angeles Region – Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Available from:
http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.shtml.
- RWQCB, 2011. Final Basin Plan Amendment. *Attachment A to Resolution No. R11-008. Amendment to the Water Quality Control Plan – Los Angeles Region to Incorporate the Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters*. Adopted by the California Regional Water Quality Control Board, Los Angeles Region on May 5, 2011. Available from:
http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/66_New/11_0630/02%20Final%20BPA%2005%2005%2011.pdf.
- Smith, R.W., J.A. Ranasinghe, S.B. Weisberg, D.E. Montagne, D.B. Cadien, T.K. Mikel, R.G. Velarde, and A. Dalkey, 2003. *Extending the Southern California Benthic Response Index to Assess Benthic Condition in Bays*. Technical Report 410. Southern California Coastal Water Research Program, Westminster, California.
- Smith, R.W., M. Bergen, S.B. Weisberg, D.B. Cadien, A. Dalkey, D.E. Montagne, J.K. Stull, and R.G. Velarde, 2001. Benthic response index for assessing infaunal communities on the southern California mainland shelf. *Ecological Applications* 11:1073-1087.
- SWRCB-Cal EPA (State Water Resources Control Board), 2008. *Final Staff Report, Water Quality Control Plan for Enclosed Bays and Estuaries, Part 1 – Sediment Quality*. September 16, 2008.
- SWRCB-Cal EPA, 2009. *Water Quality Control Plan for Enclosed Bay and Estuaries- Part 1 Sediment Quality*. August 25, 2009.
- Unger, S., 2014. Letter to: Christopher Cannon (Port of Los Angeles) and Heather Tomley (Port of Long Beach). Regarding: Greater Harbor Waters Regional Monitoring Coalition's Coordinated Compliance, Monitoring, and Reporting Plan. June 6, 2014.
- USEPA (U.S. Environmental Protection Agency), 2009. *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*. USEPA, Office of Solid Waste and Emergency Response. OSWER No. 9200.1-85. January 2009.

Tables

Table 1
Sediment Quality 303(d) Listings for Harbor Waters

Waterbody	Pollutants Requiring TMDL (Sediment and/or Tissue)	Other Requirements
Los Angeles/Long Beach Inner Harbor	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: Metals (Copper, Zinc), Benzo(a)pyrene, Chrysene	Toxicity, benthic community effects
Los Angeles/Long Beach Outer Harbor	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: None	Toxicity
Los Angeles Harbor – Inner Cabrillo Beach	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: Metals	None
Los Angeles Harbor – Cabrillo Marina	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: Benzo(a)pyrene, Pyrene	None
Los Angeles Harbor – Fish Harbor	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: Metals (Copper, Lead, Mercury, Zinc), Chlordane, DDT, PCBs, PAHs (Benzo[a]pyrene, Phenanthrene, Benzo[a]anthracene, Chrysene, Pyrene, Dibenzo[a,h]anthracene)	Toxicity
Consolidated Slip	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: Metals (Cadmium, Copper, Chromium, Lead, Zinc, Mercury), Chlordane, DDT, PCBs, PAHs (Benzo[a]pyrene, 2-methyl-naphthalene, Phenanthrene, Benzo[a]anthracene, Chrysene, Pyrene)	Toxicity, benthic community effects
San Pedro Bay	Tissue: Chlordane, Dieldrin, DDT, PCBs, Toxaphene Sediment: Metals, Chlordane, PAHs, DDT	Toxicity
Los Angeles River Estuary	Tissue: None Sediment: Metals, Chlordane, DDT, PCBs	Toxicity

Note:

Bold pollutants are listed in the Harbor Toxics TMDL.

PAH: polycyclic aromatic hydrocarbon

PCB: polychlorinated biphenyl

TMDL: total maximum daily load

Table 2
Sediment Chemistry Guideline Categorization

Sediment Chemistry Guideline		Category
CA LRM	CSI	
<0.33	<1.69	Minimal Exposure
0.33 – 0.49	1.69 – 2.33	Low Exposure
0.50 – 0.66	2.34 – 2.99	Moderate Exposure
>0.66	>2.99	High Exposure

Notes:

CA LRM: California Logistic Regression Model

CSI: Chemical Score Index

Source: Bay et al. 2014

Table 3
Sediment Toxicity Categorization Values for *Eohaustorius estuarius*

% Survival of <i>E. estuarius</i> in Project Sediment		Category
If Significantly Different than Control Survival	If Not Significantly Different from Control	
90 – 100	82 – 100	Nontoxic
82 – 89 ¹	59 – 81 ¹	Low Toxicity
59 – 81 ¹	NA	Moderate Toxicity
< 59 ¹	< 59 ¹	High Toxicity

Notes:

1. These values are the percentage of control survival

NA: not applicable

Source: Bay et al. 2014

Table 4
Sediment Toxicity Categorization Values for *Mytilus galloprovincialis*

% Survival of <i>Mytilus</i> in Project Sediment		Category
If Significantly Different than Control Survival	If Not Significantly Different from Control	
80 – 100	79 – 100	Nontoxic
77 – 79 ¹	42 – 76 ¹	Low Toxicity
42 – 76 ¹	NA	Moderate Toxicity
<42 ¹	<42 ¹	High Toxicity

Notes:

1. These values are the percentage of control survival

NA: not applicable

Source: Bay et al. 2014

Table 5
Benthic Index Categorization Values for Southern California Marine Bays

Benthic Community Guideline				Index
BRI	IBI	RBI	RIVPACS	
< 39.96	0	> 0.27	> 0.90 – < 1.10	Reference
39.96 – 49.14	1	0.17 – 0.27	0.75 – 0.90 or 1.10 – 1.25	Low Disturbance
49.15 – 73.26	2	0.09 – 0.16	0.33 – 0.74 or > 1.25	Moderate Disturbance
> 73.26	3 or 4	< 0.09	< 0.33	High Disturbance

Notes:

BRI: Benthic Response Index

IBI: Index of Biotic Integrity

RBI: Relative Benthic Index

RIVPACS: River Invertebrate Prediction and Classification System

Source: Bay et al. 2014

Table 6
Reference Ranges for IBI Metrics in Southern California Marine Bays

Metric	Reference
Total number of Taxa	13 – 99
Number of Mollusc Taxa	2 – 25
Abundance of <i>Notomastus sp.</i>	0 – 59
Percentage of sensitive species	19 – 47.1

Notes:

IBI: Index of Biotic Integrity

Source: Bay et al. 2014

Table 7
Station Level Assessment Matrix

Severity of Biological Effects Category	Potential for Chemically Mediated Effects Category	Station Level Assessment
Unaffected	Minimal Potential	Unimpacted
Unaffected	Low Potential	Unimpacted
Unaffected	Moderate Potential	Likely Unimpacted
Unaffected	High Potential	Inconclusive
Low Effect	Minimal Potential	Likely Unimpacted
Low Effect	Low Potential	Likely Unimpacted
Low Effect	Moderate Potential	Possibly Impacted or Inconclusive
Low Effect	High Potential	Likely Impacted
Moderate Effect	Minimal Potential	Likely Unimpacted
Moderate Effect	Low Potential	Possibly Impacted
Moderate Effect	Moderate Potential	Likely Impacted
Moderate Effect	High Potential	Clearly Impacted
High Effect	Minimal Potential	Inconclusive
High Effect	Low Potential	Possibly Impacted
High Effect	Moderate Potential	Likely Impacted
High Effect	High Potential	Clearly Impacted

Source: Bay et al. 2014

Table 8
Summary of Water Quality Exceedances per Event

	Consolidated Slip				Inner Harbor - LA				Fish Harbor				Outer Harbor - LA				Cabrillo Marina				Cabrillo Beach				Inner Harbor - LB				Outer Harbor - LB				Eastern San Pedro Bay				Los Angeles River Estuary							
	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=3)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=15)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=3)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=6)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=1)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=1)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=16)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=12)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=12)	Summer 2016	Fall 2016	Winter 2017	Total No. Exceeded for the Year (n=6)				
Dissolved Metals																																												
Cadmium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Copper	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Organic Compounds																																												
Chlordane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PCBs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dieldrin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Toxaphene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:
PCB = polychlorinated biphenyl

Table 9
Summer 2016 Water Quality Field Data

Station ID	Sample ID	Latitude	Longitude	Date	Time	Depth (m)	DO	pH	Salinity (ppt)	Temperature (°C)	Sample Collected (Y/N)	Description of Sample			
												Floating Material	Odor	Sheen	Color
CS-RW-01	CS-RW-01-G-S-20160927	33.77472	-118.24551	9/27/2016	12:43	1.0	8.6	8.0	34.0	18.7	Y	None	None	None	None
	CS-RW-01-G-M-20160927				12:53	2.5	8.8	8.0	34.0	18.4	Y	None	None	None	None
	CS-RW-01-G-B-20160927				12:55	5.0	8.7	8.0	34.0	18.0	Y	None	None	None	None
IA-RW-02	IA-RW-02-G-S-20160927	33.76292	-118.22515	9/27/2016	12:10	1.0	9.2	8.0	34.1	18.7	Y	None	None	None	None
	IA-RW-02-G-M-20160927				12:15	8.5	8.4	7.9	34.1	17.5	Y	None	None	None	None
	IA-RW-02-G-B-20160927				12:18	17.0	7.1	7.9	34.2	16.9	Y	None	None	None	None
IA-RW-03	IA-RW-03-G-S-20160927	33.76250	-118.27410	9/27/2016	11:32	1.0	9.0	8.0	34.1	18.4	Y	None	None	None	None
	IA-RW-03-G-M-20160927				11:36	8.0	8.6	7.9	34.2	17.6	Y	None	None	None	None
	IA-RW-03-G-B-20160927				11:40	16.5	8.5	8.0	34.2	17.4	Y	None	None	None	None
IA-RW-04	IA-RW-04-G-S-20160927	33.75178	-118.27092	9/27/2016	11:07	1.0	8.8	8.0	34.2	18.4	Y	None	None	None	None
	IA-RW-04-G-M-20160927				11:15	9.5	8.5	8.0	34.2	17.7	Y	None	None	None	None
	IA-RW-04-G-B-20160927				11:17	19.0	8.1	7.9	34.2	17.3	Y	None	None	None	None
IA-RW-05	IA-RW-05-G-S-20160927	33.73246	-118.25060	9/27/2016	9:25	1.0	8.6	8.0	34.2	18.7	Y	None	None	None	None
	IA-RW-05-G-M-20160927				9:30	9.0	8.1	8.0	34.2	17.6	Y	None	None	None	None
	IA-RW-05-G-B-20160927				9:32	18.0	7.6	7.9	34.2	16.4	Y	None	None	None	None
IA-RW-06	IA-RW-06-G-S-20160927	33.72504	-118.27160	9/27/2016	10:20	1.0	8.7	8.0	34.2	18.3	Y	None	None	None	None
	IA-RW-06-G-M-20160927				10:25	8.5	8.3	8.0	34.0	17.7	Y	None	None	None	None
	IA-RW-06-G-B-20160927				10:35	17.0	7.9	8.0	34.2	16.6	Y	None	None	None	None
FH-RW-07	FH-RW-07-G-S-20160927	33.73565	-118.26741	9/27/2016	9:58	1.0	8.6	8.0	34.3	20.0	Y	None	None	None	None
	FH-RW-07-G-M-20160927				10:00	3.0	8.6	8.0	34.2	19.0	Y	None	None	None	None
	FH-RW-07-G-B-20160927				10:05	6.0	7.5	7.9	34.2	18.1	Y	None	None	None	None
OA-RW-08	OA-RW-08-G-S-20160927	33.71456	-118.24257	9/27/2016	13:00	1.0	8.6	8.1	35.4	19.0	Y	None	None	None	None
	OA-RW-08-G-M-20160927				13:05	41.0	8.2	8.1	36.4	17.8	Y	None	None	None	None
	OA-RW-08-G-B-20160927				13:10	83.0	7.5	8.0	37.6	16.1	Y	None	None	None	None
OA-RW-09	OA-RW-09-G-S-20160927	33.71208	-118.26329	9/27/2016	13:45	1.0	8.4	8.2	35.5	18.9	Y	None	None	None	None
	OA-RW-09-G-M-20160927				13:50	3.5	8.8	8.1	36.1	18.1	Y	None	None	None	None
	OA-RW-09-G-B-20160927				13:53	6.0	8.7	8.1	36.2	18.0	Y	None	None	None	None
CM-RW-10	CM-RW-10-G-S-20160927	33.71967	-118.27907	9/27/2016	14:45	1.0	10.0	8.1	35.1	19.3	Y	None	None	None	None
	CM-RW-10-G-M-20160927				14:50	6.0	8.9	8.1	36.1	18.2	Y	None	None	None	None
	CM-RW-10-G-B-20160927				14:55	11.0	8.0	8.1	36.6	17.6	Y	None	None	None	None
CB-RW-11	CB-RW-11-G-S-20160927	33.71194	-118.28079	9/27/2016	14:15	0.5	8.7	8.1	35.5	18.8	Y	None	None	None	None
	CB-RW-11-G-M-20160927				14:20	1.5	8.8	8.1	35.8	18.5	Y	None	None	None	None
	CB-RW-11-G-B-20160927				14:25	3.0	7.8	8.1	36.0	18.3	Y	None	None	None	None
IB-RW-12	IB-RW-12-G-S-20160927	33.76833	-118.22836	9/27/2016	13:28	1.0	8.5	8.0	34.2	19.1	Y	None	None	None	None
	IB-RW-12-G-M-20160927				13:35	7.5	8.8	7.9	34.2	18.0	Y	None	None	None	None
	IB-RW-12-G-B-20160927				13:38	15.5	8.2	7.9	34.1	17.6	Y	None	None	None	None
IB-RW-13	IB-RW-13-G-S-20160927	33.75382	-118.21629	9/27/2016	14:00	1.0	9.1	8.0	34.2	19.2	Y	None	None	None	None
	IB-RW-13-G-M-20160927				14:08	11.5	8.1	8.0	34.2	17.8	Y	None	None	None	None
	IB-RW-13-G-B-20160927				14:10	23.0	6.8	7.9	34.2	16.5	Y	None	None	None	None
IB-RW-14	IB-RW-14-G-S-20160927	33.74883	-118.23109	9/27/2016	14:30	1.0	9.6	8.1	34.2	19.7	Y	None	None	None	None
	IB-RW-14-G-M-20160927				14:35	6.5	10.1	8.1	34.2	18.1	Y	None	None	None	None
	IB-RW-14-G-B-20160927				14:40	13.0	8.4	8.0	34.1	18.9	Y	None	None	None	None

Table 9
Summer 2016 Water Quality Field Data

Station ID	Sample ID	Latitude	Longitude	Date	Time	Depth (m)	DO	pH	Salinity (ppt)	Temperature (°C)	Sample Collected (Y/N)	Description of Sample			
												Floating Material	Odor	Sheen	Color
IB-RW-15	IB-RW-15-G-S-20160927	33.74214	-118.19949	9/27/2016	7:20	1.0	9.1	7.4	34.4	19.2	Y	None	None	None	None
	IB-RW-15-G-M-20160927				7:21	30.0	8.1	7.4	34.4	17.7	Y	None	None	None	None
	IB-RW-15-G-B-20160927				7:22	58.0	7.3	7.3	34.5	16.6	Y	None	None	None	None
OB-RW-16	OB-RW-16-G-S-20160927	33.73145	-118.22101	9/27/2016	8:15	1.0	9.1	7.5	34.5	18.7	Y	Trace particulates	None	None	None
	OB-RW-16-G-M-20160927				8:15	9.0	8.2	7.5	34.5	17.9	Y	Trace particulates	None	None	None
	OB-RW-16-G-B-20160927				8:15	18.0	7.5	7.5	34.4	16.9	Y	Trace particulates	None	None	None
OB-RW-17	OB-RW-17-G-S-20160927	33.72159	-118.18606	9/27/2016	9:00	1.0	8.9	7.5	34.4	18.9	Y	None	None	None	None
	OB-RW-17-G-M-20160927				9:00	11.0	8.5	7.5	34.5	17.8	Y	None	None	None	None
	OB-RW-17-G-B-20160927				9:00	29.0	8.2	7.5	34.4	16.1	Y	None	None	None	None
SP-RW-18	SP-RW-18-G-S-20160927	33.75383	-118.18133	9/27/2016	11:17	1.0	9.7	7.6	33.7	17.6	Y	None	None	None	None
	SP-RW-18-G-M-20160927				11:17	6.0	6.6	7.5	34.3	18.6	Y	None	None	None	None
	SP-RW-18-G-B-20160927				11:17	12.0	5.9	7.4	34.3	19.9	Y	None	None	None	None
SP-RW-19	SP-RW-19-G-S-20160927	33.73667	-118.13131	9/27/2016	12:09	0.5	9.0	7.6	34.3	20.7	Y	None	None	None	None
	SP-RW-19-G-M-20160927				12:10	3.5	8.8	7.5	34.4	19.4	Y	None	None	None	None
	SP-RW-19-G-B-20160927				12:11	7.0	7.9	7.5	34.4	18.7	Y	None	None	None	None
SP-RW-20	SP-RW-20-G-S-20160927	33.72548	-118.15733	9/27/2016	9:32	1.0	8.6	7.5	34.4	19.1	Y	None	None	None	None
	SP-RW-20-G-M-20160927				9:33	8.0	8.2	7.5	34.4	18.6	Y	None	None	None	None
	SP-RW-20-G-B-20160927				9:34	16.0	6.3	7.4	34.5	16.6	Y	None	None	None	None
LE-RW-21	LE-RW-21-G-S-20160927	33.75684	-118.19339	9/27/2016	10:33	0.1	7.0	7.5	33.4	19.7	Y	Trace particulates	None	None	None
	LE-RW-21-G-M-20160927				10:34	0.8	7.0	7.5	33.4	19.6	Y	Trace particulates	None	None	None
	LE-RW-21-G-B-20160927				10:35	1.5	6.4	7.5	34.1	19.5	Y	Trace particulates	None	None	None
LE-RW-22	LE-RW-22-G-S-20160927	33.76101	-118.20211	9/27/2016	10:26	0.0	8.4	7.5	33.1	20.0	Y	Trace particulates	None	None	Cloudy
	LE-RW-22-G-M-20160927				10:27	1.0	5.5	7.4	34.1	19.4	Y	Trace particulates	None	None	Cloudy
	LE-RW-22-G-B-20160927				10:28	2.0	5.4	7.4	34.1	19.4	Y	Trace particulates	None	None	Cloudy

Notes:

- DO: dissolved oxygen
- m: meter
- ppt: parts per thousand

Table 10
Summer 2016 Water Quality Chemistry Results

Area Location ID		Consolidated Slip	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Fish Harbor	
Sample ID		CS-RW-01_201609	IA-RW-02_201609	IA-RW-03_201609	IA-RW-04_201609	IA-RW-05_201609	IA-RW-06_201609	IA-RW-07_201609	FH-RW-07_201609	
Sample Date		CS-RW-01-G-S-20160927	IA-RW-02-G-S-20160927	IA-RW-03-G-S-20160927	IA-RW-04-G-S-20160927	IA-RW-05-G-S-20160927	IA-RW-06-G-S-20160927	IA-RW-07-G-S-20160927	FH-RW-07-G-S-20160927	
Depth		9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	
Sample Type		1 m	1 m	1 m	1 m	1 m	1 m	1 m	1 m	
Matrix		N	N	N	N	N	N	N	N	
X		WO	WO	WO	WO	WO	WO	WO	WO	
Y		-118.24551	-118.22515	-118.27410	-118.27092	-118.25060	-118.27160	-118.26741	-118.26741	
Criteria for Protection of Human Health		33.77472	33.76292	33.76250	33.75178	33.73246	33.72504	33.73565	33.73565	
California Toxics Rule Saltwater Continuous Concentration										
Method										
Conventional Parameters (mg/L)										
Total suspended solids (surface)	SM2540D	--	--	1.4	0.83 U	1.3	0.83 U	1.1	0.83 U	0.83 U
Total suspended solids (middle)*	SM2540D	--	--	2.3	1.0	2.0	1.0	2.6	1.0	1.1
Total suspended solids (bottom)*	SM2540D	--	--	2.7	5.1	1.2	9.5	2.2	0.83 U	1.3
Metals (µg/L)										
Cadmium	E1640	--	--	0.0770	0.0567	0.0476	0.0520	0.0429	0.0426	0.0599
Chromium	E1640	--	--	0.164 U	0.164 U	0.164 U	0.164 U	0.326 J	0.164 U	0.254 J
Copper	E1640	--	--	3.08 U	2.22 U	2.12 U	7.82 U	1.56 U	1.32 U	4.25 U
Lead	E1640	--	--	0.486 J	0.113 J	0.0897 J	0.0972 J	0.132 J	0.0769 J	0.170 J
Mercury	E1631E	--	--	0.00244	0.00169	0.00194	0.00215	0.00296	0.00198	0.00331
Zinc	E1640	--	--	9.68 J	6.66 J	4.25 J	5.83 J	4.54 J	2.55 J	11.4 J
Metals, Dissolved (µg/L)										
Cadmium	E1640	--	9.3	0.0785	0.0547	0.0466	0.0464	0.0444	0.0456	0.0644
Chromium	E1640	--	50	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U
Copper	E1640	--	3.1	2.20 U	2.06 U	1.66 U	1.53 U	1.53 U	0.643 U	4.05 U
Lead	E1640	--	8.1	0.215 J	0.110 J	0.0763 J	0.0797 J	0.155 J	0.0787 J	0.149 J
Mercury	E1631E	0.051	0.94	0.000473 J	0.00156	0.000943	0.000209 J	0.000944	0.000828	0.00257
Zinc	E1640	--	81	8.33 J	7.16 J	4.42 J	4.66 J	5.26 J	2.50 J	11.4 J
Pesticides (µg/L)										
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
Total DDX (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
PCB Congeners - Low resolution (µg/L)										
PCB-018	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U
PCB-028	SW8270CSIM	--	--	0.00064 U	0.00064 U	0.00064 U	0.00064 U	0.00064 U	0.00064 U	0.00064 U
PCB-037	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U
PCB-044	SW8270CSIM	--	--	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U
PCB-049	SW8270CSIM	--	--	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U
PCB-052	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
PCB-066	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
PCB-070	SW8270CSIM	--	--	0.00037 U	0.00037 U	0.00037 U	0.00037 U	0.00037 U	0.00037 U	0.00037 U
PCB-074	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00041 U
PCB-077	SW8270CSIM	--	--	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U

Table 10
Summer 2016 Water Quality Chemistry Results

		Area Location ID	Consolidated Slip CS-RW-01_201609	Inner Harbor - LA IA-RW-02_201609	Inner Harbor - LA IA-RW-03_201609	Inner Harbor - LA IA-RW-04_201609	Inner Harbor - LA IA-RW-05_201609	Inner Harbor - LA IA-RW-06_201609	Fish Harbor FH-RW-07_201609
		Sample ID	CS-RW-01-G-S-20160927	IA-RW-02-G-S-20160927	IA-RW-03-G-S-20160927	IA-RW-04-G-S-20160927	IA-RW-05-G-S-20160927	IA-RW-06-G-S-20160927	FH-RW-07-G-S-20160927
		Sample Date	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016
		Depth	1 m	1 m	1 m	1 m	1 m	1 m	1 m
		Sample Type	N	N	N	N	N	N	N
		Matrix	WO	WO	WO	WO	WO	WO	WO
		X	-118.24551	-118.22515	-118.27410	-118.27092	-118.25060	-118.27160	-118.26741
		Y	33.77472	33.76292	33.76250	33.75178	33.73246	33.72504	33.73565
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration						
PCB-081	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U
PCB-087	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U
PCB-099	SW8270CSIM	--	--	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U
PCB-101	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U
PCB-105	SW8270CSIM	--	--	0.00036 U	0.00036 U	0.00036 U	0.00036 U	0.00036 U	0.00036 U
PCB-110	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U
PCB-114	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U
PCB-118	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U
PCB-119	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00041 U
PCB-123	SW8270CSIM	--	--	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U
PCB-126	SW8270CSIM	--	--	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U
PCB-128	SW8270CSIM	--	--	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00068 U
PCB-132/153	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
PCB-149	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
PCB-151	SW8270CSIM	--	--	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U
PCB-156	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
PCB-157	SW8270CSIM	--	--	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U
PCB-167	SW8270CSIM	--	--	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U
PCB-168	SW8270CSIM	--	--	0.00032 U	0.00032 U	0.00032 U	0.00032 U	0.00032 U	0.00032 U
PCB-169	SW8270CSIM	--	--	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U
PCB-170	SW8270CSIM	--	--	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U
PCB-177	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
PCB-180	SW8270CSIM	--	--	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.00069 U
PCB-183	SW8270CSIM	--	--	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U
PCB-187	SW8270CSIM	--	--	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U
PCB-189	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00038 U
PCB-194	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U
PCB-201	SW8270CSIM	--	--	0.00070 U	0.00070 U	0.00070 U	0.00070 U	0.00070 U	0.00070 U
PCB-206	SW8270CSIM	--	--	0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00025 U
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U

Table 10
Summer 2016 Water Quality Chemistry Results

		Area Location ID	Outer Harbor - LA OA-RW-08_201609	Outer Harbor - LA OA-RW-09_201609	Outer Harbor - LA OA-RW-09_201609	Cabrillo Marina CM-RW-10_201609	Cabrillo Marina CM-RW-10_201609	Cabrillo Beach CB-RW-11_201609	Inner Harbor - LB IB-RW-12_201609	
		Sample ID	OA-RW-08-G-S-20160927	OA-RW-09-G-S-20160927	OA-RW-1009-G-M-20160927	CM-RW-10-G-S-20160927	CM-RW-1010-G-B-20160927	CB-RW-11-G-S-20160927	IB-RW-12-G-S-20160927	
		Sample Date	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	
		Depth	1 m	1 m	3.5 m	1 m	11 m	0.5 m	1 m	
		Sample Type	N	N	FD	N	FD	N	N	
		Matrix	WO	WO	WO	WO	WO	WO	WO	
		X	-118.04257	-118.26329	-118.26329	-118.27907	-118.27907	-118.28079	-118.22836	
		Y	33.71456	33.71208	33.71208	33.71967	33.71967	33.71194	33.76833	
		Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration						
Conventional Parameters (mg/L)										
Total suspended solids (surface)	SM2540D	--	--	0.83 U	0.83 U	--	0.83 U	--	1.5	0.83 U
Total suspended solids (middle)*	SM2540D	--	--	0.83 U	0.83 U	0.83 U	1.2	--	1.8	1.1
Total suspended solids (bottom)*	SM2540D	--	--	1.7	2.2	--	0.83 U	0.83 U	4.3	1.9
Metals (µg/L)										
Cadmium	E1640	--	--	0.0326	0.0395	--	0.0667	--	0.0536	0.0449
Chromium	E1640	--	--	0.239 J	0.164 U	--	0.164 U	--	0.164 U	0.233 J
Copper	E1640	--	--	1.33 U	1.56 U	--	9.88 U	--	2.52 U	1.19 U
Lead	E1640	--	--	0.146 J	0.105 J	--	0.0884 J	--	0.0836 J	0.101 J
Mercury	E1631E	--	--	0.000942	0.000879	--	0.000803	--	0.00200	0.00130
Zinc	E1640	--	--	4.58 J	3.54 J	--	34.2 J	--	7.25 J	3.80 J
Metals, Dissolved (µg/L)										
Cadmium	E1640	--	9.3	0.0324	0.0440	--	0.0674	--	0.0540	0.0455
Chromium	E1640	--	50	0.164 U	0.164 U	--	0.164 U	--	0.164 U	0.164 U
Copper	E1640	--	3.1	0.865 U	1.02 U	--	9.79 U	--	2.39 U	1.10 U
Lead	E1640	--	8.1	0.0944 J	0.0773 J	--	0.0769 J	--	0.0756 J	0.0921 J
Mercury	E1631E	0.051	0.94	0.000422 J	0.000287 J	--	0.000320 J	--	0.000408 J	0.000495 J
Zinc	E1640	--	81	3.87 J	2.95 J	--	35.2 J	--	8.42 J	4.26 J
Pesticides (µg/L)										
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	--	0.0010 U	--	0.0010 U	0.0010 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U	0.0017 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U	0.0017 U
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U	0.0017 U
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U	0.0017 U
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U	0.0017 U
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	--	0.025 U	--	0.025 U	0.025 U
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	--	0.00085 U	--	0.00085 U	0.00085 U
Total DDX (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00050 U
PCB Congeners - Low resolution (µg/L)										
PCB-018	SW8270CSIM	--	--	0.00041 U	0.00041 U	--	0.00040 U	--	0.00041 U	0.00040 U
PCB-028	SW8270CSIM	--	--	0.00065 U	0.00065 U	--	0.00064 U	--	0.00065 U	0.00064 U
PCB-037	SW8270CSIM	--	--	0.00047 U	0.00047 U	--	0.00046 U	--	0.00047 U	0.00046 U
PCB-044	SW8270CSIM	--	--	0.00077 U	0.00076 U	--	0.00076 U	--	0.00076 U	0.00075 U
PCB-049	SW8270CSIM	--	--	0.00077 U	0.00077 U	--	0.00076 U	--	0.00077 U	0.00075 U
PCB-052	SW8270CSIM	--	--	0.00051 U	0.00050 U	--	0.00050 U	--	0.00050 U	0.00049 U
PCB-066	SW8270CSIM	--	--	0.00057 U	0.00056 U	--	0.00056 U	--	0.00056 U	0.00055 U
PCB-070	SW8270CSIM	--	--	0.00038 U	0.00037 U	--	0.00037 U	--	0.00037 U	0.00037 U
PCB-074	SW8270CSIM	--	--	0.00042 U	0.00042 U	--	0.00042 U	--	0.00042 U	0.00041 U
PCB-077	SW8270CSIM	--	--	0.00065 U	0.00064 U	--	0.00063 U	--	0.00064 U	0.00063 U

Table 10
Summer 2016 Water Quality Chemistry Results

Area Location ID Sample ID Sample Date Depth Sample Type Matrix X Y	Outer Harbor - LA OA-RW-08_201609 OA-RW-08-G-S-20160927 9/27/2016 1 m N WO -118.04257 33.71456		Outer Harbor - LA OA-RW-09_201609 OA-RW-09-G-S-20160927 9/27/2016 1 m N WO -118.26329 33.71208		Outer Harbor - LA OA-RW-09_201609 OA-RW-1009-G-M-20160927 9/27/2016 3.5 m FD WO -118.26329 33.71208		Cabrillo Marina CM-RW-10_201609 CM-RW-10-G-S-20160927 9/27/2016 1 m N WO -118.27907 33.71967		Cabrillo Marina CM-RW-10_201609 CM-RW-1010-G-B-20160927 9/27/2016 11 m FD WO -118.27907 33.71967		Cabrillo Beach CB-RW-11_201609 CB-RW-11-G-S-20160927 9/27/2016 0.5 m N WO -118.28079 33.71194		Inner Harbor - LB IB-RW-12_201609 IB-RW-12-G-S-20160927 9/27/2016 1 m N WO -118.22836 33.76833	
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration											
PCB-081	SW8270CSIM	--	--	0.00048 U	0.00047 U	--	0.00047 U	--	0.00047 U	--	0.00047 U	0.00047 U	0.00047 U	
PCB-087	SW8270CSIM	--	--	0.00049 U	0.00049 U	--	0.00048 U	--	0.00048 U	--	0.00049 U	0.00048 U	0.00048 U	
PCB-099	SW8270CSIM	--	--	0.00060 U	0.00059 U	--	0.00059 U	--	0.00059 U	--	0.00059 U	0.00058 U	0.00058 U	
PCB-101	SW8270CSIM	--	--	0.00057 U	0.00057 U	--	0.00056 U	--	0.00056 U	--	0.00057 U	0.00056 U	0.00056 U	
PCB-105	SW8270CSIM	--	--	0.00037 U	0.00037 U	--	0.00037 U	--	0.00037 U	--	0.00037 U	0.00036 U	0.00036 U	
PCB-110	SW8270CSIM	--	--	0.00050 U	0.00049 U	--	0.00049 U	--	0.00049 U	--	0.00049 U	0.00048 U	0.00048 U	
PCB-114	SW8270CSIM	--	--	0.00044 U	0.00043 U	--	0.00043 U	--	0.00043 U	--	0.00043 U	0.00042 U	0.00042 U	
PCB-118	SW8270CSIM	--	--	0.00049 U	0.00048 U	--	0.00048 U	--	0.00048 U	--	0.00048 U	0.00047 U	0.00047 U	
PCB-119	SW8270CSIM	--	--	0.00043 U	0.00042 U	--	0.00042 U	--	0.00042 U	--	0.00042 U	0.00041 U	0.00041 U	
PCB-123	SW8270CSIM	--	--	0.00076 U	0.00075 U	--	0.00074 U	--	0.00074 U	--	0.00075 U	0.00074 U	0.00074 U	
PCB-126	SW8270CSIM	--	--	0.00054 U	0.00053 U	--	0.00053 U	--	0.00053 U	--	0.00053 U	0.00052 U	0.00052 U	
PCB-128	SW8270CSIM	--	--	0.00070 U	0.00069 U	--	0.00068 U	--	0.00068 U	--	0.00069 U	0.00068 U	0.00068 U	
PCB-132/153	SW8270CSIM	--	--	0.0012 U	0.0012 U	--	0.0011 U	--	0.0011 U	--	0.0012 U	0.0011 U	0.0011 U	
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	--	0.0011 U	--	0.0011 U	--	0.0011 U	0.0011 U	0.0011 U	
PCB-149	SW8270CSIM	--	--	0.00050 U	0.00050 U	--	0.00049 U	--	0.00049 U	--	0.00050 U	0.00049 U	0.00049 U	
PCB-151	SW8270CSIM	--	--	0.00061 U	0.00060 U	--	0.00059 U	--	0.00059 U	--	0.00060 U	0.00059 U	0.00059 U	
PCB-156	SW8270CSIM	--	--	0.00051 U	0.00050 U	--	0.00050 U	--	0.00050 U	--	0.00050 U	0.00049 U	0.00049 U	
PCB-157	SW8270CSIM	--	--	0.00074 U	0.00074 U	--	0.00073 U	--	0.00073 U	--	0.00074 U	0.00072 U	0.00072 U	
PCB-167	SW8270CSIM	--	--	0.00086 U	0.00085 U	--	0.00084 U	--	0.00084 U	--	0.00085 U	0.00083 U	0.00083 U	
PCB-168	SW8270CSIM	--	--	0.00032 U	0.00032 U	--	0.00032 U	--	0.00032 U	--	0.00032 U	0.00032 U	0.00032 U	
PCB-169	SW8270CSIM	--	--	0.00056 U	0.00055 U	--	0.00055 U	--	0.00055 U	--	0.00055 U	0.00054 U	0.00054 U	
PCB-170	SW8270CSIM	--	--	0.00056 U	0.00055 U	--	0.00055 U	--	0.00055 U	--	0.00055 U	0.00054 U	0.00054 U	
PCB-177	SW8270CSIM	--	--	0.00057 U	0.00056 U	--	0.00055 U	--	0.00055 U	--	0.00056 U	0.00055 U	0.00055 U	
PCB-180	SW8270CSIM	--	--	0.00071 U	0.00070 U	--	0.00070 U	--	0.00070 U	--	0.00070 U	0.00069 U	0.00069 U	
PCB-183	SW8270CSIM	--	--	0.00053 U	0.00052 U	--	0.00052 U	--	0.00052 U	--	0.00052 U	0.00051 U	0.00051 U	
PCB-187	SW8270CSIM	--	--	0.00055 U	0.00055 U	--	0.00054 U	--	0.00054 U	--	0.00055 U	0.00054 U	0.00054 U	
PCB-189	SW8270CSIM	--	--	0.00040 U	0.00039 U	--	0.00039 U	--	0.00039 U	--	0.00039 U	0.00038 U	0.00038 U	
PCB-194	SW8270CSIM	--	--	0.00042 U	0.00041 U	--	0.00041 U	--	0.00041 U	--	0.00041 U	0.00040 U	0.00040 U	
PCB-201	SW8270CSIM	--	--	0.00072 U	0.00071 U	--	0.00070 U	--	0.00070 U	--	0.00071 U	0.00070 U	0.00070 U	
PCB-206	SW8270CSIM	--	--	0.00025 U	0.00025 U	--	0.00025 U	--	0.00025 U	--	0.00025 U	0.00025 U	0.00025 U	
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00060 U	0.00060 U	--	0.00055 U	--	0.00055 U	--	0.00060 U	0.00055 U	0.00055 U	

Table 10
Summer 2016 Water Quality Chemistry Results

Area		Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Outer Harbor - LB	Outer Harbor - LB	San Pedro Bay		
Location ID		IB-RW-13_201609	IB-RW-14_201609	IB-RW-14_201609	IB-RW-15_201609	OB-RW-16_201609	OB-RW-17_201609	SP-RW-18_201609		
Sample ID		IB-RW-13-G-S-20160927	IB-RW-14-G-S-20160927	IB-RW-1014-G-S-20160927	IB-RW-15-G-S-20160927	OB-RW-16-G-S-20160927	OB-RW-17-G-S-20160927	SP-RW-18-G-S-20160927		
Sample Date		9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016	9/27/2016		
Depth		1 m	1 m	1 m	1 m	1 m	1 m	1 m		
Sample Type		N	N	FD	N	N	N	N		
Matrix		WO	WO	WO	WO	WO	WO	WO		
X		-118.21629	-118.23109	-118.23109	-118.19949	-118.22101	-118.18606	-118.18133		
Y		33.75382	33.74883	33.74883	33.74214	33.73145	33.72159	33.75383		
Method		Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration							
Conventional Parameters (mg/L)										
Total suspended solids (surface)	SM2540D	--	--	1.0	0.83 U	0.83 U	0.83 U	1.0	1.1	2.3
Total suspended solids (middle)*	SM2540D	--	--	1.4	0.83 U	--	0.83 U	0.83 U	1.0	1.4
Total suspended solids (bottom)*	SM2540D	--	--	5.4	0.83 U	--	4.2	3.4	28	5.5
Metals (µg/L)										
Cadmium	E1640	--	--	0.0392	0.0382	0.0368	0.0452	0.0319	0.0339	0.0451
Chromium	E1640	--	--	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U
Copper	E1640	--	--	0.857 U	0.796 U	0.682 U	1.26 U	0.868 U	0.562 U	1.82 U
Lead	E1640	--	--	0.0815 J	0.0777 J	0.0783 J	0.0851	0.0711	0.0722	0.361
Mercury	E1631E	--	--	0.00208	0.00434	0.00229	0.000810	0.000870	0.000879	0.00159
Zinc	E1640	--	--	2.09 J	2.09 J	1.81 J	5.89 J	6.34 J	4.25 J	5.67 J
Metals, Dissolved (µg/L)										
Cadmium	E1640	--	9.3	0.0390	0.0373	0.0376	0.0383	0.0340	0.0271 J	0.0456
Chromium	E1640	--	50	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U	0.164 U
Copper	E1640	--	3.1	0.789 U	0.680 U	0.669 U	1.21 U	0.771 U	0.654 U	1.21 U
Lead	E1640	--	8.1	0.0755 J	0.0708 J	0.0688 J	0.0954	0.0909	0.0897	0.194
Mercury	E1631E	0.051	0.94	0.000605	0.000477 J	0.00170	0.000546	0.000519	0.000235 J	0.000616
Zinc	E1640	--	81	1.99 J	1.91 J	2.08 J	6.10 J	5.45 J	3.44 J	5.17 J
Pesticides (µg/L)										
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
Total DDx (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
PCB Congeners - Low resolution (µg/L)										
PCB-018	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00041 U	0.00041 U	0.00042 U	0.00040 U
PCB-028	SW8270CSIM	--	--	0.00064 U	0.00064 U	0.00064 U	0.00065 U	0.00065 U	0.00066 U	0.00064 U
PCB-037	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00046 U	0.00047 U	0.00047 U	0.00048 U	0.00046 U
PCB-044	SW8270CSIM	--	--	0.00076 U	0.00075 U	0.00075 U	0.00077 U	0.00076 U	0.00078 U	0.00076 U
PCB-049	SW8270CSIM	--	--	0.00076 U	0.00075 U	0.00075 U	0.00077 U	0.00077 U	0.00078 U	0.00076 U
PCB-052	SW8270CSIM	--	--	0.00050 U	0.00049 U	0.00049 U	0.00051 U	0.00050 U	0.00051 U	0.00050 U
PCB-066	SW8270CSIM	--	--	0.00056 U	0.00055 U	0.00055 U	0.00057 U	0.00056 U	0.00057 U	0.00056 U
PCB-070	SW8270CSIM	--	--	0.00037 U	0.00037 U	0.00037 U	0.00038 U	0.00037 U	0.00038 U	0.00037 U
PCB-074	SW8270CSIM	--	--	0.00042 U	0.00041 U	0.00041 U	0.00042 U	0.00042 U	0.00043 U	0.00042 U
PCB-077	SW8270CSIM	--	--	0.00063 U	0.00063 U	0.00063 U	0.00065 U	0.00064 U	0.00065 U	0.00063 U

Table 10
Summer 2016 Water Quality Chemistry Results

Area Location ID Sample ID Sample Date Depth Sample Type Matrix	Inner Harbor - LB IB-RW-13_201609 IB-RW-13-G-S-20160927 9/27/2016 1 m N WO	Inner Harbor - LB IB-RW-14_201609 IB-RW-14-G-S-20160927 9/27/2016 1 m N WO	Inner Harbor - LB IB-RW-14_201609 IB-RW-1014-G-S-20160927 9/27/2016 1 m FD WO	Inner Harbor - LB IB-RW-15_201609 IB-RW-15-G-S-20160927 9/27/2016 1 m N WO	Outer Harbor - LB OB-RW-16_201609 OB-RW-16-G-S-20160927 9/27/2016 1 m N WO	Outer Harbor - LB OB-RW-17_201609 OB-RW-17-G-S-20160927 9/27/2016 1 m N WO	San Pedro Bay SP-RW-18_201609 SP-RW-18-G-S-20160927 9/27/2016 1 m N WO	X -118.21629 33.75382	Y -118.23109 33.74883	-118.23109 33.74883	-118.19949 33.74214	-118.22101 33.73145	-118.18606 33.72159	-118.18133 33.75383
PCB-081	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00047 U	0.00048 U	0.00047 U	0.00048 U	0.00047 U				
PCB-087	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00049 U	0.00049 U	0.00050 U	0.00048 U				
PCB-099	SW8270CSIM	--	--	0.00059 U	0.00058 U	0.00058 U	0.00060 U	0.00059 U	0.00060 U	0.00059 U				
PCB-101	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	0.00057 U	0.00057 U	0.00058 U	0.00056 U				
PCB-105	SW8270CSIM	--	--	0.00037 U	0.00036 U	0.00036 U	0.00037 U	0.00037 U	0.00038 U	0.00037 U				
PCB-110	SW8270CSIM	--	--	0.00049 U	0.00048 U	0.00048 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U				
PCB-114	SW8270CSIM	--	--	0.00043 U	0.00042 U	0.00042 U	0.00044 U	0.00043 U	0.00044 U	0.00043 U				
PCB-118	SW8270CSIM	--	--	0.00048 U	0.00047 U	0.00047 U	0.00049 U	0.00048 U	0.00049 U	0.00048 U				
PCB-119	SW8270CSIM	--	--	0.00042 U	0.00041 U	0.00041 U	0.00043 U	0.00042 U	0.00043 U	0.00042 U				
PCB-123	SW8270CSIM	--	--	0.00074 U	0.00074 U	0.00074 U	0.00076 U	0.00075 U	0.00077 U	0.00074 U				
PCB-126	SW8270CSIM	--	--	0.00053 U	0.00052 U	0.00052 U	0.00054 U	0.00053 U	0.00055 U	0.00053 U				
PCB-128	SW8270CSIM	--	--	0.00068 U	0.00068 U	0.00068 U	0.00070 U	0.00069 U	0.00070 U	0.00068 U				
PCB-132/153	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U				
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U				
PCB-149	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00050 U	0.00050 U	0.00050 U	0.00049 U				
PCB-151	SW8270CSIM	--	--	0.00059 U	0.00059 U	0.00059 U	0.00061 U	0.00060 U	0.00061 U	0.00059 U				
PCB-156	SW8270CSIM	--	--	0.00050 U	0.00049 U	0.00049 U	0.00051 U	0.00050 U	0.00051 U	0.00050 U				
PCB-157	SW8270CSIM	--	--	0.00073 U	0.00072 U	0.00072 U	0.00074 U	0.00074 U	0.00075 U	0.00073 U				
PCB-167	SW8270CSIM	--	--	0.00084 U	0.00083 U	0.00083 U	0.00086 U	0.00085 U	0.00087 U	0.00084 U				
PCB-168	SW8270CSIM	--	--	0.00032 U	0.00032 U	0.00032 U	0.00032 U	0.00032 U	0.00033 U	0.00032 U				
PCB-169	SW8270CSIM	--	--	0.00055 U	0.00054 U	0.00054 U	0.00056 U	0.00055 U	0.00056 U	0.00055 U				
PCB-170	SW8270CSIM	--	--	0.00055 U	0.00054 U	0.00054 U	0.00056 U	0.00055 U	0.00056 U	0.00055 U				
PCB-177	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	0.00057 U	0.00056 U	0.00057 U	0.00055 U				
PCB-180	SW8270CSIM	--	--	0.00070 U	0.00069 U	0.00069 U	0.00071 U	0.00070 U	0.00072 U	0.00070 U				
PCB-183	SW8270CSIM	--	--	0.00052 U	0.00051 U	0.00051 U	0.00053 U	0.00052 U	0.00053 U	0.00052 U				
PCB-187	SW8270CSIM	--	--	0.00054 U	0.00054 U	0.00054 U	0.00055 U	0.00055 U	0.00056 U	0.00054 U				
PCB-189	SW8270CSIM	--	--	0.00039 U	0.00038 U	0.00038 U	0.00040 U	0.00039 U	0.00040 U	0.00039 U				
PCB-194	SW8270CSIM	--	--	0.00041 U	0.00040 U	0.00040 U	0.00042 U	0.00041 U	0.00042 U	0.00041 U				
PCB-201	SW8270CSIM	--	--	0.00070 U	0.00070 U	0.00070 U	0.00072 U	0.00071 U	0.00072 U	0.00070 U				
PCB-206	SW8270CSIM	--	--	0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00026 U	0.00025 U				
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00055 U	0.00055 U	0.00055 U	0.00060 U	0.00060 U	0.00060 U	0.00055 U				

Table 10
Summer 2016 Water Quality Chemistry Results

	Area Location ID	Sample ID	Sample Date	Depth	Sample Type	Matrix	San Pedro Bay	San Pedro Bay	Los Angeles River Estuary	Los Angeles River Estuary	Los Angeles River Estuary	Number Analyzed ¹	WQ Exceedances ¹	Percentage of Exceedance ¹
							SP-RW-19-201609	SP-RW-20-201609	LE-RW-21-201609	LE-RW-21-201609	LE-RW-22-201609			
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration											
Conventional Parameters (mg/L)														
Total suspended solids (surface)	SM2540D	--	--	0.83 U	0.83 U	0.83 U	--	3.6	22	--	--			
Total suspended solids (middle)*	SM2540D	--	--	0.83 U	0.83 U	4.0	--	6.2	22	--	--			
Total suspended solids (bottom)*	SM2540D	--	--	3.3	29	8.4	8.8	9.9	22	--	--			
Metals (µg/L)														
Cadmium	E1640	--	--	0.0334	0.0322	0.0523	--	0.0521	22	--	--			
Chromium	E1640	--	--	0.164 U	0.164 U	0.164 U	--	0.164 U	22	--	--			
Copper	E1640	--	--	0.806 U	0.621 U	1.74 U	--	1.81 U	22	--	--			
Lead	E1640	--	--	0.0811	0.0727	0.428	--	0.404	22	--	--			
Mercury	E1631E	--	--	0.00126	0.00138	0.00149	--	0.00181	22	--	--			
Zinc	E1640	--	--	3.79 J	3.61 J	8.51 J	--	11.6 J	22	--	--			
Metals, Dissolved (µg/L)														
Cadmium	E1640	--	9.3	0.0298 J	0.0319	0.0559	--	0.0540	22	0	0%			
Chromium	E1640	--	50	0.164 U	0.164 U	0.164 U	--	0.164 U	22	0	0%			
Copper	E1640	--	3.1	0.880 U	0.623 U	1.42 U	--	1.35 U	22	0	0%			
Lead	E1640	--	8.1	0.102	0.0908	0.211	--	0.166	22	0	0%			
Mercury	E1631E	0.051	0.94	0.000851	0.000615	0.000480 J	--	0.000393 J	22	0	0%			
Zinc	E1640	--	81	3.55 J	3.21 J	7.07 J	--	8.44 J	22	0	0%			
Pesticides (µg/L)														
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	--	--			
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	--	--			
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	--	0.0010 U	22	--	--			
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	--	--			
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	--	--			
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	--	--			
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	22	--	--			
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	22	--	--			
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	--	--			
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	22	--	--			
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	22	--	--			
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	22	--	--			
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	--	0.025 U	22	--	--			
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	--	0.00085 U	22	0	0%			
Total DDx (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	22	0	0%			
PCB Congeners - Low resolution (µg/L)														
PCB-018	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	--	0.00040 U	22	--	--			
PCB-028	SW8270CSIM	--	--	0.00065 U	0.00065 U	0.00065 U	--	0.00064 U	22	--	--			
PCB-037	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00047 U	--	0.00046 U	22	--	--			
PCB-044	SW8270CSIM	--	--	0.00076 U	0.00076 U	0.00076 U	--	0.00075 U	22	--	--			
PCB-049	SW8270CSIM	--	--	0.00077 U	0.00077 U	0.00077 U	--	0.00075 U	22	--	--			
PCB-052	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00049 U	22	--	--			
PCB-066	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	--	0.00055 U	22	--	--			
PCB-070	SW8270CSIM	--	--	0.00037 U	0.00037 U	0.00037 U	--	0.00037 U	22	--	--			
PCB-074	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	--	0.00041 U	22	--	--			
PCB-077	SW8270CSIM	--	--	0.00064 U	0.00064 U	0.00064 U	--	0.00063 U	22	--	--			

Table 10
Summer 2016 Water Quality Chemistry Results

	Area Location ID Sample ID Sample Date Depth Sample Type Matrix X Y	San Pedro Bay SP-RW-19_201609 SP-RW-19-G-S-20160927		San Pedro Bay SP-RW-20_201609 SP-RW-20-G-S-20160927		Los Angeles River Estuary LE-RW-21_201609 LE-RW-21-G-S-20160927		Los Angeles River Estuary LE-RW-21_201609 LE-RW-1021-G-B-20160927		Los Angeles River Estuary LE-RW-22_201609 LE-RW-22-G-S-20160927		Number Analyzed ¹	WQ Exceedances ¹	Percentage of Exceedance ¹
		9/27/2016 0.5 m N WO -118.13131 33.73667	9/27/2016 1 m N WO -118.15733 33.72548	9/27/2016 0.1 m N WO -118.19339 33.75684	9/27/2016 1.5 m FD WO -118.19339 33.75684	9/27/2016 0 m N WO -118.20211 33.76101								
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration											
PCB-081	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00047 U	--	0.00047 U	22	--	--			
PCB-087	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	--	0.00048 U	22	--	--			
PCB-099	SW8270CSIM	--	--	0.00059 U	0.00059 U	0.00059 U	--	0.00058 U	22	--	--			
PCB-101	SW8270CSIM	--	--	0.00057 U	0.00057 U	0.00057 U	--	0.00056 U	22	--	--			
PCB-105	SW8270CSIM	--	--	0.00037 U	0.00037 U	0.00037 U	--	0.00036 U	22	--	--			
PCB-110	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	--	0.00048 U	22	--	--			
PCB-114	SW8270CSIM	--	--	0.00043 U	0.00043 U	0.00043 U	--	0.00042 U	22	--	--			
PCB-118	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	--	0.00047 U	22	--	--			
PCB-119	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	--	0.00041 U	22	--	--			
PCB-123	SW8270CSIM	--	--	0.00075 U	0.00075 U	0.00075 U	--	0.00074 U	22	--	--			
PCB-126	SW8270CSIM	--	--	0.00053 U	0.00053 U	0.00053 U	--	0.00052 U	22	--	--			
PCB-128	SW8270CSIM	--	--	0.00069 U	0.00069 U	0.00069 U	--	0.00068 U	22	--	--			
PCB-132/153	SW8270CSIM	--	--	0.0012 U	0.0012 U	0.0012 U	--	0.0011 U	22	--	--			
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	--	0.0011 U	22	--	--			
PCB-149	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00049 U	22	--	--			
PCB-151	SW8270CSIM	--	--	0.00060 U	0.00060 U	0.00060 U	--	0.00059 U	22	--	--			
PCB-156	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00049 U	22	--	--			
PCB-157	SW8270CSIM	--	--	0.00074 U	0.00074 U	0.00074 U	--	0.00072 U	22	--	--			
PCB-167	SW8270CSIM	--	--	0.00085 U	0.00085 U	0.00085 U	--	0.00083 U	22	--	--			
PCB-168	SW8270CSIM	--	--	0.00032 U	0.00032 U	0.00032 U	--	0.00032 U	22	--	--			
PCB-169	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	--	0.00054 U	22	--	--			
PCB-170	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	--	0.00054 U	22	--	--			
PCB-177	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	--	0.00055 U	22	--	--			
PCB-180	SW8270CSIM	--	--	0.00070 U	0.00070 U	0.00070 U	--	0.00069 U	22	--	--			
PCB-183	SW8270CSIM	--	--	0.00052 U	0.00052 U	0.00052 U	--	0.00051 U	22	--	--			
PCB-187	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	--	0.00054 U	22	--	--			
PCB-189	SW8270CSIM	--	--	0.00039 U	0.00039 U	0.00039 U	--	0.00038 U	22	--	--			
PCB-194	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	--	0.00040 U	22	--	--			
PCB-201	SW8270CSIM	--	--	0.00071 U	0.00071 U	0.00071 U	--	0.00070 U	22	--	--			
PCB-206	SW8270CSIM	--	--	0.00025 U	0.00025 U	0.00025 U	--	0.00025 U	22	--	--			
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00060 U	0.00060 U	0.00060 U	--	0.00055 U	22	0	0%			

Table 10
Summer 2016 Water Quality Chemistry Results

Notes:

*The total suspended solid results for samples collected from mid-depth and bottom depth are respectively labeled as "-M-" and "-B-" preceding the sample ID date. They are not direct results of the surface sample IDs indicated in the column headers in this spreadsheet.

1. Number analyzed and WQ exceedance counts do not include samples that were analyzed for field or laboratory quality control purposes (e.g., field duplicates). WQ exceedance counts do not include non-detect results above the screening levels.

Horizontal coordinate datum is GCS North American Datum 1983 latitude/longitude.

All undetect results are reported at the method detection limit.

Totals (U=0) are calculated as the sum of all detected results. If all results are not detected, half of the highest reporting limit value is reported as the sum.

Total chlordane is the sum of alpha-chlordane, beta-chlordane, gamma-chlordane, cis-nonachlor, trans-nonachlor, and oxychlordane.

Total DDx is the sum of 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT, if measured.

Total PCB congeners is the sum of all PCB congeners listed in this table.

USEPA Stage 2A data validation was completed by Anchor QEA.

Detected concentration is greater than the Criteria for Protection of Human Health

Detected concentration is greater than California Toxics Rule Saltwater Continuous Concentration screening level

Italics: Non-detected concentration is above one or more identified screening levels

Bold: detected result

--: results not reported or not applicable

µg/L: microgram per liter

FD: field duplicate

J: estimated value

m: meter

mg/L: milligram per liter

N: normal environmental sample

NAD: North American Datum

PCB: polychlorinated biphenyl

U: compound analyzed but not detected above detection limit

USEPA: U.S. Environmental Protection Agency

WO: ocean water matrix

WQ: water quality

Table 11
Fall 2016 Water Quality Field Data

Station ID	Sample ID	Latitude	Longitude	Date	Time	Depth (m)	DO	pH	Salinity (ppt)	Temperature (°C)	Sample Collected (Y/N)	Description of Sample			
												Floating Material	Odor	Sheen	Color
CS-RW-01	CS-RW-01-G-S-20161122	33.774783	-118.245533	11/22/2016	10:06	1.0	5.4	7.8	N/A	18.7	Y	None	None	None	None
	CS-RW-01-G-M-20161122				10:16	3.0	5.6	7.9	N/A	18.4	y	None	None	None	None
	CS-RW-01-G-B-20161122				10:18	5.0	5.7	7.9	N/A	18.0	Y	None	None	None	None
IA-RW-02	IA-RW-02-G-S-20161122	33.76298	-118.25475	11/22/2016	10:42	1.0	6.0	7.9	N/A	17.3	Y	None	None	None	None
	IA-RW-02-G-M-20161122				10:45	8.0	6.0	7.9	N/A	17.3	Y	None	None	None	None
	IA-RW-02-G-B-20161122				10:48	16.0	6.0	7.9	N/A	17.3	Y	None	None	None	None
IA-RW-03	IA-RW-03-G-S-20161122	33.76225	-118.27403	11/22/2016	11:20	1.0	6.5	7.9	N/A	17.1	Y	Floating particulates	None	None	None
	IA-RW-03-G-M-20161122				11:25	8.5	6.2	7.9	N/A	17.3	Y	Floating particulates	None	None	None
	IA-RW-03-G-B-20161122				11:29	16.0	6.1	7.9	N/A	17.3	Y	Floating particulates	None	None	None
IA-RW-04	IA-RW-04-G-S-20161122	33.75157	-118.27100	11/22/2016	11:53	1.0	6.3	7.9	N/A	17.2	Y	None	None	None	None
	IA-RW-04-G-M-20161122				11:56	9.5	6.2	7.9	N/A	17.2	Y	None	None	None	None
	IA-RW-04-G-B-20161122				11:58	18.0	6.2	7.9	N/A	17.2	Y	None	None	None	None
IA-RW-05	IA-RW-05-G-S-20161122	33.73247	-118.25143	11/22/2016	2:40	1.0	7.5	8.1	N/A	17.5	Y	Floating particulates	None	None	None
	IA-RW-05-G-M-20161122				2:43	9.0	6.9	8.1	N/A	17.1	Y	Floating particulates	None	None	None
	IA-RW-05-G-B-20161122				2:46	17.0	6.6	8.1	N/A	17.0	Y	Floating particulates	None	None	None
IA-RW-06	IA-RW-06-G-S-20161122	33.72885	-118.27052	11/22/2016	13:36	1.0	6.5	8.0	N/A	17.5	Y	None	None	None	None
	IA-RW-06-G-M-20161122				13:41	9.0	6.5	8.0	N/A	17.2	Y	Floating particulates	None	None	None
	IA-RW-06-G-B-20161122				13:46	17.0	6.5	8.0	N/A	17.1	Y	None	None	None	None
FH-RW-07	FH-RW-07-G-S-20161122	33.73578	-118.26725	11/22/2016	14:20	1.0	6.8	8.0	N/A	17.5	Y	Floating particulates	None	None	None
	FH-RW-07-G-M-20161122				14:23	3.5	6.7	8.0	N/A	17.2	Y	Floating particulates	None	None	None
	FH-RW-07-G-B-20161122				14:25	6.0	6.2	8.0	N/A	17.2	Y	Floating particulates	None	None	None
OA-RW-08	OA-RW-08-G-S-20161122	33.71467	-118.24238	11/22/2016	14:30	1.0	8.1	8.2	33.3	17.6	Y	None	None	None	None
	OA-RW-08-G-M-20161122				14:35	12.5	7.9	8.1	33.6	17.3	Y	None	None	None	None
	OA-RW-08-G-B-20161122				14:40	22.3	7.4	8.1	33.8	17.0	Y	None	None	None	None
OA-RW-09	OA-RW-09-G-S-20161122	33.71210	-118.26325	11/22/2016	14:10	1.0	7.9	8.1	32.9	17.7	Y	None	None	None	None
	OA-RW-09-G-M-20161122				14:15	3.0	8.1	8.1	33.3	17.4	Y	None	None	None	None
	OA-RW-09-G-B-20161122				14:20	5.5	8.0	8.1	33.6	17.2	Y	None	None	None	None
CM-RW-10	CM-RW-10-G-S-20161122	33.71941	-118.27902	11/22/2016	13:05	1.0	7.7	7.7	33.4	17.5	Y	None	None	None	None
	CM-RW-10-G-M-20161122				13:10	5.5	7.6	7.8	33.7	17.1	Y	None	None	None	None
	CM-RW-10-G-B-20161122				13:15	10.5	7.5	8.0	33.9	17.2	Y	None	None	None	None
CB-RW-11	CB-RW-11-G-S-20161122	33.71170	-118.28090	11/22/2016	14:15	1.0	7.8	8.1	33.0	17.4	Y	None	None	None	None
	CB-RW-11-G-M-20161122				14:20	1.5	7.8	8.1	33.1	17.2	Y	None	None	None	None
	CB-RW-11-G-B-20161122				14:25	2.5	7.8	8.1	33.2	17.1	Y	None	None	None	None
IB-RW-12	IB-RW-12-G-S-20161122	33.76867	-118.22827	11/22/2016	7:16	1.0	6.1	7.9	N/A	17.3	Y	Floating particulates	None	None	None
	IB-RW-12-G-M-20161122				7:20	8.5	6.0	8.0	N/A	17.4	Y	Floating particulates	None	None	None
	IB-RW-12-G-B-20161122				7:22	16.0	6.0	8.0	N/A	17.4	Y	Floating particulates	None	None	None
IB-RW-13	IB-RW-13-G-S-20161122	33.75380	-118.21642	11/22/2016	8:33	1.0	7.1	7.5	33.8	17.3	Y	None	None	None	None
	IB-RW-13-G-M-20161122				8:32	11.3	7.1	7.5	33.9	17.3	Y	None	None	None	None
	IB-RW-13-G-B-20161122				8:30	22.6	7.0	7.4	34.0	17.3	Y	None	None	None	None
IB-RW-14	IB-RW-14-G-S-20161122	33.74895	-118.23082	11/22/2016	9:05	1.0	7.7	8.0	33.7	17.0	Y	None	None	None	Brown
	IB-RW-14-G-M-20161122				9:04	7.1	7.4	8.0	33.8	17.4	Y	None	None	None	Brown
	IB-RW-14-G-B-20161122				9:03	14.3	6.8	8.0	34.0	17.4	Y	None	None	None	Brown
IB-RW-15	IB-RW-15-G-S-20161122	33.74208	-118.19958	11/22/2016	9:50	1.0	7.7	8.1	33.5	17.1	Y	None	None	None	None
	IB-RW-15-G-M-20161122				9:47	8.4	7.4	8.1	33.8	17.4	Y	None	None	None	None
	IB-RW-15-G-B-20161122				9:45	16.8	7.5	8.1	33.9	17.3	Y	None	None	None	None

Table 11
Fall 2016 Water Quality Field Data

Station ID	Sample ID	Latitude	Longitude	Date	Time	Depth (m)	DO	pH	Salinity (ppt)	Temperature (°C)	Sample Collected (Y/N)	Description of Sample			
												Floating Material	Odor	Sheen	Color
OB-RW-16	OB-RW-16-G-S-20161122	33.73762	-118.22105	11/22/2016	13:02	1.0	8.4	8.2	32.8	17.6	Y	None	None	None	None
	OB-RW-16-G-M-20161122				12:58	8.6	7.7	8.2	33.6	17.4	Y	None	None	None	None
	OB-RW-16-G-B-20161122				12:56	17.3	7.3	8.2	33.9	17.3	Y	None	None	None	None
OB-RW-17	OB-RW-17-G-S-20161122	33.73142	-118.18608	11/22/2016	10:10	1.0	8.1	8.2	31.6	17.0	Y	None	None	None	None
	OB-RW-17-G-M-20161122				10:12	7.2	7.8	8.2	33.7	17.5	Y	None	None	None	None
	OB-RW-17-G-B-20161122				10:10	14.5	7.5	8.2	33.9	17.3	Y	None	None	None	None
SP-RW-18	SP-RW-18-G-S-20161122	33.75383	-118.18132	11/22/2016	14:56	1.0	8.1	8.3	28.2	18.0	Y	None	None	None	None
	SP-RW-18-G-M-20161122				14:52	6.0	7.2	8.2	33.7	17.6	Y	None	None	None	None
	SP-RW-18-G-B-20161122				14:50	12.0	5.3	8.1	33.9	17.5	Y	None	None	None	None
SP-RW-19	SP-RW-19-G-S-20161122	33.73672	-118.13165	11/22/2016	13:05	1.0	8.5	8.3	33.3	17.7	Y	None	None	None	None
	SP-RW-19-G-M-20161122				13:04	4.1	8.0	8.2	33.8	17.7	Y	None	None	None	None
	SP-RW-19-G-B-20161122				13:03	7.2	8.0	8.2	34.0	17.8	Y	None	None	None	None
SP-RW-20	SP-RW-20-G-S-20161122	33.72540	-118.16565	11/22/2016	10:43	1.0	7.8	8.2	34.0	17.5	Y	None	None	None	None
	SP-RW-20-G-M-20161122				10:42	7.2	7.7	8.2	33.8	17.6	Y	None	None	None	None
	SP-RW-20-G-B-20161122				10:40	14.5	7.1	8.2	33.9	17.3	Y	None	None	None	None
LE-RW-21	LE-RW-21-G-S-20161122	33.75645	-118.19345	11/22/2016	16:19	1.0	7.3	8.2	31.1	17.4	Y	None	None	None	None
	LE-RW-21-G-M-20161122				Too shallow; no sample collected										
	LE-RW-21-G-B-20161122				Too shallow; no sample collected										
LE-RW-22	LE-RW-22-G-S-20161122	33.76103	-118.20205	11/22/2016	11:42	0.8	5.1	8.2	24.2	17.6	Y	Trace particulates	None	None	Brown
	LE-RW-22-G-M-20161122				Too shallow; no sample collected										
	LE-RW-22-G-B-20161122				Too shallow; no sample collected										

Notes:

- DO: dissolved oxygen
- m: meter
- N/A: not applicable
- ppt: parts per thousand

Table 12
Fall 2016 Water Quality Chemistry Results

Area Location ID	Sample ID	Sample Date	Depth	Sample Type	Matrix	X	Y	Consolidated Slip	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	
								CS-RW-01_201611	IA-RW-02_201611	IA-RW-03_201611	IA-RW-04_201611	IA-RW-05_201611	IA-RW-06_201611	IA-RW-1006-G-S-20161122	
Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration													
Conventional Parameters (mg/L)															
Total suspended solids (surface)	SM2540D	--	--	4.4	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	--				
Total suspended solids (middle)*	SM2540D	--	--	1.8	0.83 U	0.83 U	0.83 U	2.2	1.1	--					
Total suspended solids (bottom)*	SM2540D	--	--	1.5	0.83 U	0.83 U	0.83 U	2.3	1.2	--					
Metals (µg/L)															
Cadmium	E1640	--	--	0.0868	0.0797	0.0682	0.0660	0.0375	0.0537	0.0554					
Chromium	E1640	--	--	0.889 J	0.538 J	0.451 J	0.351 J	0.334 J	0.317 J	0.393 J					
Copper	E1640	--	--	6.75 U	5.36 U	3.92 U	3.78 U	1.42 U	2.81 U	3.17 U					
Lead	E1640	--	--	0.765	0.218	0.134	0.177	0.0848	0.112	0.135					
Mercury	E1631E	--	--	0.00349	0.00122	0.000801	0.00267	0.00217	0.00223	0.00200					
Zinc	E1640	--	--	40.1	24.5	17.6	17.3	3.57	9.75	13.0					
Metals, Dissolved (µg/L)															
Cadmium	E1640	--	9.3	0.0930	0.0804	0.0669	0.0710	0.0367	0.0563	0.0524					
Chromium	E1640	--	50	0.452 J	0.357 J	0.340 J	0.348 J	0.262 J	0.279 J	0.311 J					
Copper	E1640	--	3.1	5.70U	5.10U	3.71U	4.41U	1.36U	2.88U	2.75U					
Lead	E1640	--	8.1	0.173	0.128	0.0883	0.110	0.0387	0.0761	0.0656					
Mercury	E1631E	0.051	0.94	0.000665	0.000447 J	0.000593	0.000658	0.000113 U	0.000122 J	0.000115					
Zinc	E1640	--	81	42.7	24.7	16.9	19.4	3.96	9.76	10.1					
Pesticides (µg/L)															
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U					
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U					
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U					
Total DDT (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
PCB Congeners - Low resolution (µg/L)															
PCB-018	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00042 U	0.00041 U	0.00040 U					
PCB-028	SW8270CSIM	--	--	0.00064 U	0.00063 U	0.00063 U	0.00063 U	0.00066 U	0.00065 U	0.00063 U					
PCB-037	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00048 U	0.00047 U	0.00046 U					
PCB-044	SW8270CSIM	--	--	0.00075 U	0.00074 U	0.00074 U	0.00074 U	0.00078 U	0.00077 U	0.00074 U					
PCB-049	SW8270CSIM	--	--	0.00075 U	0.00074 U	0.00074 U	0.00074 U	0.00078 U	0.00077 U	0.00074 U					
PCB-052	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00051 U	0.00051 U	0.00049 U					
PCB-066	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00057 U	0.00057 U	0.00055 U					
PCB-070	SW8270CSIM	--	--	0.00037 U	0.00036 U	0.00036 U	0.00036 U	0.00038 U	0.00038 U	0.00036 U					
PCB-074	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00043 U	0.00042 U	0.00041 U					
PCB-077	SW8270CSIM	--	--	0.00063 U	0.00062 U	0.00062 U	0.00062 U	0.00065 U	0.00065 U	0.00062 U					
PCB-081	SW8270CSIM	--	--	0.00047 U	0.00046 U	0.00046 U	0.00046 U	0.00048 U	0.00048 U	0.00046 U					

Table 12
Fall 2016 Water Quality Chemistry Results

Area Location ID	Sample ID	Sample Date	Depth	Sample Type	Matrix	X	Y	Consolidated Slip	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA	Inner Harbor - LA
								CS-RW-01_201611	IA-RW-02_201611	IA-RW-03_201611	IA-RW-04_201611	IA-RW-05_201611	IA-RW-06_201611	IA-RW-1006-G-S-20161122
CS-RW-01-G-S-20161122	IA-RW-02-G-S-20161122	IA-RW-03-G-S-20161122	IA-RW-04-G-S-20161122	IA-RW-05-G-S-20161122	IA-RW-06-G-S-20161122	IA-RW-1006-G-S-20161122								
11/22/2016	11/22/2016	11/22/2016	11/22/2016	11/22/2016	11/22/2016	11/22/2016								
1 m	1 m	1 m	1 m	1 m	1 m	1 m								
N	N	N	N	N	N	N								
WO	WO	WO	WO	WO	WO	WO								
-118.245533	-118.5475	-118.27403	-118.271	-118.25143	-118.27052	-118.27052								
33.774783	33.76298	33.76225	33.75157	33.73247	33.72885	33.72885								
Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration												
PCB-087	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00050 U	0.00049 U	0.00048 U				
PCB-099	SW8270CSIM	--	--	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00060 U	0.00060 U	0.00058 U				
PCB-101	SW8270CSIM	--	--	0.00056 U	0.00055 U	0.00055 U	0.00055 U	0.00058 U	0.00057 U	0.00055 U				
PCB-105	SW8270CSIM	--	--	0.00036 U	0.00036 U	0.00036 U	0.00036 U	0.00038 U	0.00037 U	0.00036 U				
PCB-110	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00050 U	0.00050 U	0.00048 U				
PCB-114	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00044 U	0.00044 U	0.00042 U				
PCB-118	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00049 U	0.00049 U	0.00047 U				
PCB-119	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00043 U	0.00043 U	0.00041 U				
PCB-123	SW8270CSIM	--	--	0.00074 U	0.00073 U	0.00073 U	0.00073 U	0.00077 U	0.00076 U	0.00073 U				
PCB-126	SW8270CSIM	--	--	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00055 U	0.00054 U	0.00052 U				
PCB-128	SW8270CSIM	--	--	0.00068 U	0.00067 U	0.00067 U	0.00067 U	0.00070 U	0.00070 U	0.00067 U				
PCB-132/153	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U				
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U				
PCB-149	SW8270CSIM	--	--	0.00049 U	0.00048 U	0.00048 U	0.00048 U	0.00050 U	0.00050 U	0.00048 U				
PCB-151	SW8270CSIM	--	--	0.00059 U	0.00058 U	0.00058 U	0.00058 U	0.00061 U	0.00061 U	0.00058 U				
PCB-156	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00051 U	0.00051 U	0.00049 U				
PCB-157	SW8270CSIM	--	--	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00075 U	0.00074 U	0.00072 U				
PCB-167	SW8270CSIM	--	--	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00087 U	0.00086 U	0.00083 U				
PCB-168	SW8270CSIM	--	--	0.00032 U	0.00031 U	0.00031 U	0.00031 U	0.00033 U	0.00032 U	0.00031 U				
PCB-169	SW8270CSIM	--	--	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00056 U	0.00056 U	0.00054 U				
PCB-170	SW8270CSIM	--	--	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00056 U	0.00056 U	0.00054 U				
PCB-177	SW8270CSIM	--	--	0.00055 U	0.00054 U	0.00054 U	0.00054 U	0.00057 U	0.00057 U	0.00054 U				
PCB-180	SW8270CSIM	--	--	0.00069 U	0.00068 U	0.00068 U	0.00068 U	0.00072 U	0.00071 U	0.00068 U				
PCB-183	SW8270CSIM	--	--	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00053 U	0.00053 U	0.00051 U				
PCB-187	SW8270CSIM	--	--	0.00054 U	0.00053 U	0.00053 U	0.00053 U	0.00056 U	0.00055 U	0.00053 U				
PCB-189	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00040 U	0.00040 U	0.00038 U				
PCB-194	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00042 U	0.00042 U	0.00040 U				
PCB-201	SW8270CSIM	--	--	0.00070 U	0.00069 U	0.00069 U	0.00069 U	0.00072 U	0.00072 U	0.00069 U				
PCB-206	SW8270CSIM	--	--	0.00025 U	0.00024 U	0.00024 U	0.00024 U	0.00026 U	0.00025 U	0.00024 U				
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00060 U	0.00060 U	0.00055 U				

Table 12
Fall 2016 Water Quality Chemistry Results

Area	Location ID	Sample ID	Sample Date	Depth	Sample Type	Matrix	X	Y	Fish Harbor	Outer Harbor - LA	Outer Harbor - LA	Outer Harbor - LA	Cabrillo Marina	Cabrillo Marina	Cabrillo Beach
									FH-RW-07_201611	OA-RW-08_201611	OA-RW-09_201611	OA-RW-09-G-S-20161122	CM-RW-10_201611	CM-RW-10_201611	CB-RW-11_201611
Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration													
Conventional Parameters (mg/L)															
Total suspended solids (surface)	SM2540D	--	--	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	--	0.83 U					
Total suspended solids (middle)*	SM2540D	--	--	1.6	0.83 U	0.83 U	--	0.83 U	--	0.83 U					
Total suspended solids (bottom)*	SM2540D	--	--	3.9	0.83 U	1.0	--	0.83 U	0.83 U	0.83 U					
Metals (µg/L)															
Cadmium	E1640	--	--	0.0560	0.0316	0.0478	--	0.0507	--	0.0510					
Chromium	E1640	--	--	0.327 J	0.258 J	0.365 J	--	0.337 J	--	0.306 J					
Copper	E1640	--	--	4.20 U	1.19 U	2.24 U	--	3.16 U	--	2.63 U					
Lead	E1640	--	--	0.181	0.0810	0.128	--	0.0987	--	0.116					
Mercury	E1631E	--	--	0.00391	0.00168	0.00123	--	0.00165	--	0.00160					
Zinc	E1640	--	--	16.2	3.86	8.39	--	11.3	--	10.2					
Metals, Dissolved (µg/L)															
Cadmium	E1640	--	9.3	0.0586	0.0325	0.0476	--	0.0490	--	0.0509					
Chromium	E1640	--	50	0.239 J	0.245 J	0.288 J	--	0.247 J	--	0.268 J					
Copper	E1640	--	3.1	4.07 U	1.07 U	2.16 U	--	3.01 U	--	2.57 U					
Lead	E1640	--	8.1	0.107	0.0512	0.0613	--	0.0614	--	0.0736					
Mercury	E1631E	0.051	0.94	0.000595	0.000176 J	0.000113 J	--	0.000292 J	--	0.000392 J					
Zinc	E1640	--	81	15.5	2.21	8.33	--	10.8	--	9.73					
Pesticides (µg/L)															
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	--	0.0010 U	--	0.0010 U					
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U					
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U					
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U					
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U					
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	--	0.0017 U	--	0.0017 U					
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	--	0.025 U	--	0.025 U					
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	--	0.00085 U	--	0.00085 U					
Total DDx (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U					
PCB Congeners - Low resolution (µg/L)															
PCB-018	SW8270CSIM	--	--	0.00040 U	0.00042 U	0.00042 U	--	0.00042 U	--	0.00042 U					
PCB-028	SW8270CSIM	--	--	0.00064 U	0.00066 U	0.00066 U	--	0.00066 U	--	0.00066 U					
PCB-037	SW8270CSIM	--	--	0.00046 U	0.00048 U	0.00048 U	--	0.00048 U	--	0.00048 U					
PCB-044	SW8270CSIM	--	--	0.00076 U	0.00078 U	0.00078 U	--	0.00078 U	--	0.00078 U					
PCB-049	SW8270CSIM	--	--	0.00076 U	0.00078 U	0.00078 U	--	0.00078 U	--	0.00078 U					
PCB-052	SW8270CSIM	--	--	0.00050 U	0.00051 U	0.00051 U	--	0.00051 U	--	0.00051 U					
PCB-066	SW8270CSIM	--	--	0.00056 U	0.00057 U	0.00057 U	--	0.00057 U	--	0.00057 U					
PCB-070	SW8270CSIM	--	--	0.00037 U	0.00038 U	0.00038 U	--	0.00038 U	--	0.00038 U					
PCB-074	SW8270CSIM	--	--	0.00042 U	0.00043 U	0.00043 U	--	0.00043 U	--	0.00043 U					
PCB-077	SW8270CSIM	--	--	0.00063 U	0.00065 U	0.00065 U	--	0.00065 U	--	0.00065 U					
PCB-081	SW8270CSIM	--	--	0.00047 U	0.00048 U	0.00048 U	--	0.00048 U	--	0.00048 U					

Table 12
Fall 2016 Water Quality Chemistry Results

		Area Location ID Sample ID Sample Date Depth Sample Type Matrix X Y	Fish Harbor FH-RW-07_201611 FH-RW-07-G-S-20161122 11/22/2016 1 m N WO -118.26725 33.73578	Outer Harbor - LA OA-RW-08_201611 OA-RW-08-G-S-20161122 11/22/2016 1 m N WO -118.24238 33.71467	Outer Harbor - LA OA-RW-09_201611 OA-RW-09-G-S-20161122 11/22/2016 1 m N WO -118.26325 33.71210	Outer Harbor - LA OA-RW-09_201611 OA-RW-1009-G-S-20161122 11/22/2016 1 m FD WO -118.26325 33.71210	Cabrillo Marina CM-RW-10_201611 CM-RW-10-G-S-20161122 11/22/2016 1 m N WO -118.27902 33.71941	Cabrillo Marina CM-RW-10_201611 CM-RW-1010-G-B-20161122 11/22/2016 10.5 m FD WO -118.27902 33.71941	Cabrillo Beach CB-RW-11_201611 CB-RW-11-G-S-20161122 11/22/2016 1 m N WO -118.28090 33.71170	
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration							
PCB-087	SW8270CSIM	--	--	0.00048 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U
PCB-099	SW8270CSIM	--	--	0.00059 U	0.00060 U	0.00060 U	--	0.00060 U	--	0.00060 U
PCB-101	SW8270CSIM	--	--	0.00056 U	0.00058 U	0.00058 U	--	0.00058 U	--	0.00058 U
PCB-105	SW8270CSIM	--	--	0.00037 U	0.00038 U	0.00038 U	--	0.00038 U	--	0.00038 U
PCB-110	SW8270CSIM	--	--	0.00049 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U
PCB-114	SW8270CSIM	--	--	0.00043 U	0.00044 U	0.00044 U	--	0.00044 U	--	0.00044 U
PCB-118	SW8270CSIM	--	--	0.00048 U	0.00049 U	0.00049 U	--	0.00049 U	--	0.00049 U
PCB-119	SW8270CSIM	--	--	0.00042 U	0.00043 U	0.00043 U	--	0.00043 U	--	0.00043 U
PCB-123	SW8270CSIM	--	--	0.00074 U	0.00077 U	0.00077 U	--	0.00077 U	--	0.00077 U
PCB-126	SW8270CSIM	--	--	0.00053 U	0.00055 U	0.00055 U	--	0.00055 U	--	0.00055 U
PCB-128	SW8270CSIM	--	--	0.00068 U	0.00070 U	0.00070 U	--	0.00070 U	--	0.00070 U
PCB-132/153	SW8270CSIM	--	--	0.0011 U	0.0012 U	0.0012 U	--	0.0012 U	--	0.0012 U
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	--	0.0011 U	--	0.0011 U
PCB-149	SW8270CSIM	--	--	0.00049 U	0.00050 U	0.00050 U	--	0.00050 U	--	0.00050 U
PCB-151	SW8270CSIM	--	--	0.00059 U	0.00061 U	0.00061 U	--	0.00061 U	--	0.00061 U
PCB-156	SW8270CSIM	--	--	0.00050 U	0.00051 U	0.00051 U	--	0.00051 U	--	0.00051 U
PCB-157	SW8270CSIM	--	--	0.00073 U	0.00075 U	0.00075 U	--	0.00075 U	--	0.00075 U
PCB-167	SW8270CSIM	--	--	0.00084 U	0.00087 U	0.00087 U	--	0.00087 U	--	0.00087 U
PCB-168	SW8270CSIM	--	--	0.00032 U	0.00033 U	0.00033 U	--	0.00033 U	--	0.00033 U
PCB-169	SW8270CSIM	--	--	0.00055 U	0.00056 U	0.00056 U	--	0.00056 U	--	0.00056 U
PCB-170	SW8270CSIM	--	--	0.00055 U	0.00056 U	0.00056 U	--	0.00056 U	--	0.00056 U
PCB-177	SW8270CSIM	--	--	0.00055 U	0.00057 U	0.00057 U	--	0.00057 U	--	0.00057 U
PCB-180	SW8270CSIM	--	--	0.00070 U	0.00072 U	0.00072 U	--	0.00072 U	--	0.00072 U
PCB-183	SW8270CSIM	--	--	0.00052 U	0.00053 U	0.00053 U	--	0.00053 U	--	0.00053 U
PCB-187	SW8270CSIM	--	--	0.00054 U	0.00056 U	0.00056 U	--	0.00056 U	--	0.00056 U
PCB-189	SW8270CSIM	--	--	0.00039 U	0.00040 U	0.00040 U	--	0.00040 U	--	0.00040 U
PCB-194	SW8270CSIM	--	--	0.00041 U	0.00042 U	0.00042 U	--	0.00042 U	--	0.00042 U
PCB-201	SW8270CSIM	--	--	0.00070 U	0.00072 U	0.00072 U	--	0.00072 U	--	0.00072 U
PCB-206	SW8270CSIM	--	--	0.00025 U	0.00026 U	0.00026 U	--	0.00026 U	--	0.00026 U
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00055 U	0.00060 U	0.00060 U	--	0.00060 U	--	0.00060 U

Table 12
Fall 2016 Water Quality Chemistry Results

Area	Location ID	Sample ID	Sample Date	Depth	Sample Type	Matrix	X	Y	Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Outer Harbor - LB	Outer Harbor - LB
									IB-RW-12_201611	IB-RW-13_201611	IB-RW-13_201611	IB-RW-14_201611	IB-RW-15_201611	OB-RW-16_201611	OB-RW-17_201611
Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration														
Conventional Parameters (mg/L)															
Total suspended solids (surface)	SM2540D	--	--	3.4	16	--	3.1	1.6	0.83 U	1.5					
Total suspended solids (middle)*	SM2540D	--	--	7.7	10	--	3.2	1.1	0.83 U	0.83 U					
Total suspended solids (bottom)*	SM2540D	--	--	8.3	212	195	3.4	10	2.3	0.83 U					
Metals (µg/L)															
Cadmium	E1640	--	--	0.0543	0.0466	--	0.0415	0.0381	0.0377	0.0472					
Chromium	E1640	--	--	0.350 J	1.23 J	--	0.462 J	0.392 J	0.394 J	0.479 J					
Copper	E1640	--	--	2.88 U	5.43 U	--	1.52 U	1.40 U	0.949 U	1.54 U					
Lead	E1640	--	--	0.333	0.796 J	--	0.184 J	0.111 J	0.132 J	0.319 J					
Mercury	E1631E	--	--	0.00326	0.0144	--	0.00222	0.00116	0.00100	0.00771					
Zinc	E1640	--	--	12.1	9.69 J	--	8.38 J	6.97 J	3.73 J	6.49 J					
Metals, Dissolved (µg/L)															
Cadmium	E1640	--	9.3	0.0545	0.0436	--	0.0447	0.0399	0.0354	0.0482					
Chromium	E1640	--	50	0.232 J	0.331 J	--	0.381 J	0.376 J	0.293 J	0.368 J					
Copper	E1640	--	3.1	2.32 U	1.54 U	--	1.29 U	1.36 U	0.952 U	1.33 U					
Lead	E1640	--	8.1	0.0930	0.125 J	--	0.103 J	0.0696 J	0.0585 J	0.0984 J					
Mercury	E1631E	0.051	0.94	0.00100	0.000820	--	0.000349 J	0.000696	0.000559	0.000158 J					
Zinc	E1640	--	81	10.9	6.06 J	--	9.43 J	6.25 J	3.81 J	6.37 J					
Pesticides (µg/L)															
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U					
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U					
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	--	0.025 U	0.025 U	0.025 U	0.025 U					
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	--	0.00085 U	0.00085 U	0.00085 U	0.00085 U					
Total DDx (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U					
PCB Congeners - Low resolution (µg/L)															
PCB-018	SW8270CSIM	--	--	0.00042 U	0.00042 U	--	0.00040 U	0.00042 U	0.00042 U	0.00040 U					
PCB-028	SW8270CSIM	--	--	0.00066 U	0.00066 U	--	0.00064 U	0.00066 U	0.00066 U	0.00063 U					
PCB-037	SW8270CSIM	--	--	0.00048 U	0.00048 U	--	0.00046 U	0.00048 U	0.00048 U	0.00046 U					
PCB-044	SW8270CSIM	--	--	0.00078 U	0.00078 U	--	0.00076 U	0.00078 U	0.00078 U	0.00074 U					
PCB-049	SW8270CSIM	--	--	0.00078 U	0.00078 U	--	0.00076 U	0.00078 U	0.00078 U	0.00074 U					
PCB-052	SW8270CSIM	--	--	0.00051 U	0.00051 U	--	0.00050 U	0.00051 U	0.00051 U	0.00049 U					
PCB-066	SW8270CSIM	--	--	0.00057 U	0.00057 U	--	0.00056 U	0.00057 U	0.00057 U	0.00055 U					
PCB-070	SW8270CSIM	--	--	0.00038 U	0.00038 U	--	0.00037 U	0.00038 U	0.00038 U	0.00036 U					
PCB-074	SW8270CSIM	--	--	0.00043 U	0.00043 U	--	0.00042 U	0.00043 U	0.00043 U	0.00041 U					
PCB-077	SW8270CSIM	--	--	0.00065 U	0.00065 U	--	0.00063 U	0.00065 U	0.00065 U	0.00062 U					
PCB-081	SW8270CSIM	--	--	0.00048 U	0.00048 U	--	0.00047 U	0.00048 U	0.00048 U	0.00046 U					

Table 12
Fall 2016 Water Quality Chemistry Results

Area Location ID Sample ID Sample Date Depth Sample Type Matrix X Y	Inner Harbor - LB IB-RW-12_201611 IB-RW-12-G-S-20161122		Inner Harbor - LB IB-RW-13_201611 IB-RW-13-G-S-20161122		Inner Harbor - LB IB-RW-13_201611 IB-RW-1013-G-B-20161122		Inner Harbor - LB IB-RW-14_201611 IB-RW-14-G-S-20161122		Inner Harbor - LB IB-RW-15_201611 IB-RW-15-G-S-20161122		Outer Harbor - LB OB-RW-16_201611 OB-RW-16-G-S-20161122		Outer Harbor - LB OB-RW-17_201611 OB-RW-17-G-S-20161122	
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration	0.00050 U	0.00050 U	--	0.00048 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00048 U	
PCB-087	SW8270CSIM	--	--	0.00050 U	0.00050 U	--	0.00048 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00048 U		
PCB-099	SW8270CSIM	--	--	0.00060 U	0.00060 U	--	0.00059 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00058 U		
PCB-101	SW8270CSIM	--	--	0.00058 U	0.00058 U	--	0.00056 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00055 U		
PCB-105	SW8270CSIM	--	--	0.00038 U	0.00038 U	--	0.00037 U	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00036 U		
PCB-110	SW8270CSIM	--	--	0.00050 U	0.00050 U	--	0.00049 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00048 U		
PCB-114	SW8270CSIM	--	--	0.00044 U	0.00044 U	--	0.00043 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00042 U		
PCB-118	SW8270CSIM	--	--	0.00049 U	0.00049 U	--	0.00048 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00047 U		
PCB-119	SW8270CSIM	--	--	0.00043 U	0.00043 U	--	0.00042 U	0.00043 U	0.00043 U	0.00043 U	0.00043 U	0.00041 U		
PCB-123	SW8270CSIM	--	--	0.00077 U	0.00077 U	--	0.00074 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00073 U		
PCB-126	SW8270CSIM	--	--	0.00055 U	0.00055 U	--	0.00053 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00052 U		
PCB-128	SW8270CSIM	--	--	0.00070 U	0.00070 U	--	0.00068 U	0.00070 U	0.00070 U	0.00070 U	0.00070 U	0.00067 U		
PCB-132/153	SW8270CSIM	--	--	0.0012 U	0.0012 U	--	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U		
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U		
PCB-149	SW8270CSIM	--	--	0.00050 U	0.00050 U	--	0.00049 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00048 U		
PCB-151	SW8270CSIM	--	--	0.00061 U	0.00061 U	--	0.00059 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00058 U		
PCB-156	SW8270CSIM	--	--	0.00051 U	0.00051 U	--	0.00050 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00049 U		
PCB-157	SW8270CSIM	--	--	0.00075 U	0.00075 U	--	0.00073 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00072 U		
PCB-167	SW8270CSIM	--	--	0.00087 U	0.00087 U	--	0.00084 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00083 U		
PCB-168	SW8270CSIM	--	--	0.00033 U	0.00033 U	--	0.00032 U	0.00033 U	0.00033 U	0.00033 U	0.00033 U	0.00031 U		
PCB-169	SW8270CSIM	--	--	0.00056 U	0.00056 U	--	0.00055 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00054 U		
PCB-170	SW8270CSIM	--	--	0.00056 U	0.00056 U	--	0.00055 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00054 U		
PCB-177	SW8270CSIM	--	--	0.00057 U	0.00057 U	--	0.00055 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00054 U		
PCB-180	SW8270CSIM	--	--	0.00072 U	0.00072 U	--	0.00070 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00068 U		
PCB-183	SW8270CSIM	--	--	0.00053 U	0.00053 U	--	0.00052 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00051 U		
PCB-187	SW8270CSIM	--	--	0.00056 U	0.00056 U	--	0.00054 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00053 U		
PCB-189	SW8270CSIM	--	--	0.00040 U	0.00040 U	--	0.00039 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00038 U		
PCB-194	SW8270CSIM	--	--	0.00042 U	0.00042 U	--	0.00041 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00040 U		
PCB-201	SW8270CSIM	--	--	0.00072 U	0.00072 U	--	0.00070 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00069 U		
PCB-206	SW8270CSIM	--	--	0.00026 U	0.00026 U	--	0.00025 U	0.00026 U	0.00026 U	0.00026 U	0.00026 U	0.00024 U		
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00060 U	0.00060 U	--	0.00055 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00055 U		

Table 12
Fall 2016 Water Quality Chemistry Results

Area	Location ID	Sample ID	Sample Date	Depth	Sample Type	Matrix	San Pedro Bay	San Pedro Bay	San Pedro Bay	Los Angeles River Estuary	Los Angeles River Estuary	Number Analyzed ¹	WQ Exceedances ¹	Percentage of Exceedance ¹
							SP-RW-18_201611	SP-RW-19_201611	SP-RW-20_201611	LE-RW-21_201611	LE-RW-22_201611			
X	Y	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration											
Conventional Parameters (mg/L)														
Total suspended solids (surface)	SM2540D	--	--	3.2	1.5	0.83 U	4.2	9.9	22	--	--			
Total suspended solids (middle)*	SM2540D	--	--	1.2	1.2	0.83 U	--	--	20	--	--			
Total suspended solids (bottom)*	SM2540D	--	--	6.3	1.4	0.83 U	--	--	20	--	--			
Metals (µg/L)														
Cadmium	E1640	--	--	0.0549	0.0372	0.0344	0.0651	0.0707	22	--	--			
Chromium	E1640	--	--	0.409 J	0.395 J	0.400 J	0.531 J	0.618 J	22	--	--			
Copper	E1640	--	--	2.02 U	0.834 U	0.763 U	3.41 U	4.18 U	22	--	--			
Lead	E1640	--	--	0.390 J	0.106 J	0.0890 J	0.478 J	0.882 J	22	--	--			
Mercury	E1631E	--	--	0.00159	0.00148	0.000648	0.00359	0.00369	22	--	--			
Zinc	E1640	--	--	7.24 J	6.93 J	2.97 J	11.6 J	14.6 J	22	--	--			
Metals, Dissolved (µg/L)														
Cadmium	E1640	--	9.3	0.0531	0.0309	0.0354	0.0555	0.0634	22	0	0%			
Chromium	E1640	--	50	0.280 J	0.299 J	0.445 J	0.301 J	0.292 J	22	0	0%			
Copper	E1640	--	3.1	1.75 U	0.826 U	0.765 U	2.55 U	2.74 U	22	0	0%			
Lead	E1640	--	8.1	0.0788 J	0.0589 J	0.0732 J	0.0779 J	0.108 J	22	0	0%			
Mercury	E1631E	0.051	0.94	0.000817	0.000251 J	0.000252 J	0.000508	0.000996	22	0	0%			
Zinc	E1640	--	81	6.63 J	4.13 J	2.85 J	8.83 J	12.5 J	22	0	0%			
Pesticides (µg/L)														
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	--	--			
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	--	--			
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	22	--	--			
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	--	--			
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	--	--			
4,4'-DDT (p,p'-DDT)	SW8081A	--	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	0	0%			
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	22	--	--			
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	22	--	--			
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	0	0%			
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	22	--	--			
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	22	--	--			
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	22	--	--			
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	22	--	--			
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	22	0	0%			
Total DDx (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	22	0	0%			
PCB Congeners - Low resolution (µg/L)														
PCB-018	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	0.00040 U	0.00042 U	22	--	--			
PCB-028	SW8270CSIM	--	--	0.00066 U	0.00066 U	0.00066 U	0.00064 U	0.00066 U	22	--	--			
PCB-037	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00046 U	0.00048 U	22	--	--			
PCB-044	SW8270CSIM	--	--	0.00078 U	0.00078 U	0.00078 U	0.00076 U	0.00078 U	22	--	--			
PCB-049	SW8270CSIM	--	--	0.00078 U	0.00078 U	0.00078 U	0.00076 U	0.00078 U	22	--	--			
PCB-052	SW8270CSIM	--	--	0.00051 U	0.00051 U	0.00051 U	0.00050 U	0.00051 U	22	--	--			
PCB-066	SW8270CSIM	--	--	0.00057 U	0.00057 U	0.00057 U	0.00056 U	0.00057 U	22	--	--			
PCB-070	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00038 U	0.00037 U	0.00038 U	22	--	--			
PCB-074	SW8270CSIM	--	--	0.00043 U	0.00043 U	0.00043 U	0.00042 U	0.00043 U	22	--	--			
PCB-077	SW8270CSIM	--	--	0.00065 U	0.00065 U	0.00065 U	0.00063 U	0.00065 U	22	--	--			
PCB-081	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00047 U	0.00048 U	22	--	--			

Table 12
Fall 2016 Water Quality Chemistry Results

	Area Location ID Sample ID Sample Date Depth Sample Type Matrix X Y	San Pedro Bay SP-RW-18_201611 SP-RW-18-G-S-20161122		San Pedro Bay SP-RW-19_201611 SP-RW-19-G-S-20161122		San Pedro Bay SP-RW-20_201611 SP-RW-20-G-S-20161122		Los Angeles River Estuary LE-RW-21_201611 LE-RW-21-G-S-20161122		Los Angeles River Estuary LE-RW-22_201611 LE-RW-22-G-S-20161122		Number Analyzed ¹	WQ Exceedances ¹	Percentage of Exceedance ¹
		11/22/2016 1 m N WO -118.18132 33.75383	11/22/2016 1 m N WO -118.13165 33.73672	11/22/2016 1 m N WO -118.16565 33.7254	11/22/2016 1 m N WO -118.19345 33.75645	11/22/2016 0.8 m N WO -118.20205 33.76103								
	Method	Criteria for Protection of Human Health	California Toxics Rule Saltwater Continuous Concentration											
PCB-087	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00050 U	0.00048 U	0.00050 U	22	--	--			
PCB-099	SW8270CSIM	--	--	0.00060 U	0.00060 U	0.00060 U	0.00059 U	0.00060 U	22	--	--			
PCB-101	SW8270CSIM	--	--	0.00058 U	0.00058 U	0.00058 U	0.00056 U	0.00058 U	22	--	--			
PCB-105	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00038 U	0.00037 U	0.00038 U	22	--	--			
PCB-110	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00050 U	0.00049 U	0.00050 U	22	--	--			
PCB-114	SW8270CSIM	--	--	0.00044 U	0.00044 U	0.00044 U	0.00043 U	0.00044 U	22	--	--			
PCB-118	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00049 U	0.00048 U	0.00049 U	22	--	--			
PCB-119	SW8270CSIM	--	--	0.00043 U	0.00043 U	0.00043 U	0.00042 U	0.00043 U	22	--	--			
PCB-123	SW8270CSIM	--	--	0.00077 U	0.00077 U	0.00077 U	0.00074 U	0.00077 U	22	--	--			
PCB-126	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00055 U	0.00053 U	0.00055 U	22	--	--			
PCB-128	SW8270CSIM	--	--	0.00070 U	0.00070 U	0.00070 U	0.00068 U	0.00070 U	22	--	--			
PCB-132/153	SW8270CSIM	--	--	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	22	--	--			
PCB-138/158	SW8270CSIM	--	--	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	22	--	--			
PCB-149	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00050 U	0.00049 U	0.00050 U	22	--	--			
PCB-151	SW8270CSIM	--	--	0.00061 U	0.00061 U	0.00061 U	0.00059 U	0.00061 U	22	--	--			
PCB-156	SW8270CSIM	--	--	0.00051 U	0.00051 U	0.00051 U	0.00050 U	0.00051 U	22	--	--			
PCB-157	SW8270CSIM	--	--	0.00075 U	0.00075 U	0.00075 U	0.00073 U	0.00075 U	22	--	--			
PCB-167	SW8270CSIM	--	--	0.00087 U	0.00087 U	0.00087 U	0.00084 U	0.00087 U	22	--	--			
PCB-168	SW8270CSIM	--	--	0.00033 U	0.00033 U	0.00033 U	0.00032 U	0.00033 U	22	--	--			
PCB-169	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	0.00055 U	0.00056 U	22	--	--			
PCB-170	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	0.00055 U	0.00056 U	22	--	--			
PCB-177	SW8270CSIM	--	--	0.00057 U	0.00057 U	0.00057 U	0.00055 U	0.00057 U	22	--	--			
PCB-180	SW8270CSIM	--	--	0.00072 U	0.00072 U	0.00072 U	0.00070 U	0.00072 U	22	--	--			
PCB-183	SW8270CSIM	--	--	0.00053 U	0.00053 U	0.00053 U	0.00052 U	0.00053 U	22	--	--			
PCB-187	SW8270CSIM	--	--	0.00056 U	0.00056 U	0.00056 U	0.00054 U	0.00056 U	22	--	--			
PCB-189	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00039 U	0.00040 U	22	--	--			
PCB-194	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	0.00041 U	0.00042 U	22	--	--			
PCB-201	SW8270CSIM	--	--	0.00072 U	0.00072 U	0.00072 U	0.00070 U	0.00072 U	22	--	--			
PCB-206	SW8270CSIM	--	--	0.00026 U	0.00026 U	0.00026 U	0.00025 U	0.00026 U	22	--	--			
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00060 U	0.00060 U	0.00060 U	0.00055 U	0.00060 U	22	0	0%			

Table 12
Fall 2016 Water Quality Chemistry Results

Notes:

*The total suspended solid results for samples collected from mid-depth and bottom depth are respectively labeled as "-M-" and "-B-" preceding the sample ID date. They are not direct results of the surface sample IDs indicated in the column headers in this spreadsheet.

1. Number analyzed and WQ exceedance counts do not include samples that were analyzed for field or laboratory quality control purposes (e.g., field duplicates). WQ exceedance counts do not include non-detect results above the screening levels.

Horizontal coordinate datum is GCS North American Datum 1983 latitude/longitude.

All undetect results are reported at the method detection limit.

Totals (U=0) are calculated as the sum of all detected results. If all results are not detected, half of the highest reporting limit value is reported as the sum.

Total chlordane is the sum of alpha-chlordane, beta-chlordane, gamma-chlordane, cis-nonachlor, trans-nonachlor, and oxychlordane.

Total DDx is the sum of 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT, if measured.

Total PCB congeners is the sum of all PCB congeners listed in this table.

USEPA Stage 2A data validation was completed by Anchor QEA.

Detected concentration is greater than the Criteria for Protection of Human Health

Detected concentration is greater than California Toxics Rule Saltwater Continuous Concentration screening level

Italics: Non-detected concentration is above one or more identified screening levels

Bold: detected result

--: results not reported or not applicable

µg/L: microgram per liter

FD: field duplicate

J: estimated value

m: meter

mg/L: milligram per liter

N: normal environmental sample

PCB: polychlorinated biphenyl

U: compound analyzed but not detected above detection limit

USEPA: U.S. Environmental Protection Agency

WO: ocean water matrix

Table 13
Winter 2017 Water Quality Field Data

Station ID	Sample ID	Latitude	Longitude	Date	Time	Depth (m)	DO	pH	Salinity (ppt)	Temperature (°C)	Sample Collected (Y/N)	Description of Sample			
												Floating Material	Odor	Sheen	Color
CS-RW-01	CS-RW-01-G-S-20170218	33.77473	-118.24549	2/18/2017	9:25	1.0	8.9	8.5	16.7	13.9	Y	None	None	None	Brown
	CS-RW-01-G-M-20170218				9:28	2.5	7.2	7.8	16.1	14.8	y	None	None	None	Brown
	CS-RW-01-G-B-20170218				9:30	5.0	7.1	7.8	31.7	15.0	Y	None	None	None	Brown
IA-RW-02	IA-RW-02-G-S-20170218	33.76255	-118.25408	2/18/2017	9:55	1.0	8.1	8.1	13.5	14.5	Y	None	None	None	Brown
	IA-RW-02-G-M-20170218				9:57	8.5	7.2	7.9	32.7	15.0	Y	None	None	None	Brown
	IA-RW-02-G-B-20170218				10:00	17.0	6.9	7.9	33.0	14.9	Y	None	None	None	Brown
IA-RW-03	IA-RW-03-G-S-20170218	33.76244	-118.24399	2/18/2017	10:20	1.0	8.4	8.2	14.4	14.5	Y	None	None	None	Brown
	IA-RW-03-G-M-20170218				10:22	8.5	7.2	7.9	32.4	14.9	Y	None	None	None	Brown
	IA-RW-03-G-B-20170218				10:24	17.0	7.0	8.0	33.0	14.9	Y	None	None	None	Brown
IA-RW-04	IA-RW-04-G-S-20170218	33.75190	-118.27100	2/18/2017	10:55	1.0	8.1	8.2	19.4	14.6	Y	None	None	None	Brown
	IA-RW-04-G-M-20170218				10:57	9.5	7.2	7.9	32.8	14.9	Y	None	None	None	Brown
	IA-RW-04-G-B-20170218				11:00	18.0	8.0	8.0	33.0	14.8	Y	None	None	None	Brown
IA-RW-05	IA-RW-05-G-S-20170218	33.73234	-118.25128	2/18/2017	12:30	1.0	8.2	8.0	28.6	14.9	Y	None	None	None	None
	IA-RW-05-G-M-20170218				12:32	9.0	7.9	8.0	31.8	14.7	Y	None	None	None	None
	IA-RW-05-G-B-20170218				12:34	18.0	7.6	8.0	33.1	14.9	Y	None	None	None	None
IA-RW-06	IA-RW-06-G-S-20170218	33.72559	-118.27148	2/18/2017	11:40	1.0	7.8	8.0	24.0	14.6	Y	None	None	None	None
	IA-RW-06-G-M-20170218				11:42	8.5	7.6	8.0	31.6	14.8	Y	None	None	None	None
	IA-RW-06-G-B-20170218				11:44	17.0	7.5	8.0	33.0	14.8	Y	None	None	None	None
FH-RW-07	FH-RW-07-G-S-20170218	33.73576	118.26710	2/18/2017	12:10	1.0	7.9	8.0	29.9	14.7	Y	None	None	None	None
	FH-RW-07-G-M-20170218				12:12	3.3	7.7	8.0	31.6	14.8	Y	None	None	None	None
	FH-RW-07-G-B-20170218				12:15	6.5	7.4	8.0	33.0	15.3	Y	None	None	None	None
OA-RW-08	OA-RW-08-G-S-20170218	33.71450	-118.24235	2/18/2017	12:50	1.0	8.7	8.0	25.3	14.6	Y	None	None	None	None
	OA-RW-08-G-M-20170218				12:55	12.5	8.1	8.0	33.0	14.9	Y	None	None	None	None
	OA-RW-08-G-B-20170218				13:00	24.0	7.8	8.0	33.2	14.9	Y	None	None	None	None
OA-RW-09	OA-RW-09-G-S-20170218	33.71201	-118.26328	2/18/2017	13:05	1.0	8.5	7.9	28.9	14.8	Y	None	None	None	None
	OA-RW-09-G-M-20170218				13:07	3.0	8.5	8.0	29.2	14.7	Y	None	None	None	None
	OA-RW-09-G-B-20170218				13:10	6.0	8.1	8.0	32.3	14.7	Y	None	None	None	None
CM-RW-10	CM-RW-10-G-S-20170218	33.71929	-118.27914	2/18/2017	13:35	1.0	8.4	7.9	24.6	14.5	Y	None	None	None	None
	CM-RW-10-G-M-20170218				13:37	5.3	8.0	8.0	30.3	14.5	Y	None	None	None	None
	CM-RW-10-G-B-20170218				13:40	10.0	7.7	8.0	31.8	14.7	Y	None	None	None	None
CB-RW-11	CB-RW-11-G-S-20170218	33.71198	-118.28088	2/18/2017	13:55	1.0	8.4	7.9	30.0	15.0	Y	None	None	None	None
	CB-RW-11-G-M-20170218				13:57	1.8	8.5	8.0	30.0	15.0	Y	None	None	None	None
	CB-RW-11-G-B-20170218				14:00	3.0	8.4	8.1	28.9	14.9	Y	None	None	None	None
IB-RW-12	IB-RW-12-G-S-20170218	33.76844	-118.22810	2/18/2017	11:20	1.0	7.6	6.3	23.0	14.8	Y	None	None	None	None
	IB-RW-12-G-M-20170218				11:25	9.0	7.5	6.7	32.3	14.9	Y	None	None	None	None
	IB-RW-12-G-B-20170218				11:30	17.3	7.4	6.9	33.1	14.9	Y	None	None	None	None
IB-RW-13	IB-RW-13-G-S-20170218	33.75390	-118.21621	2/18/2017	12:15	1.0	8.4	7.9	29.9	14.9	Y	None	None	None	None
	IB-RW-13-G-M-20170218				12:20	12.0	7.8	7.9	32.8	14.9	Y	None	None	None	None
	IB-RW-13-G-B-20170218				12:25	23.5	7.7	7.9	33.1	14.9	Y	None	None	None	None
IB-RW-14	IB-RW-14-G-S-20170218	33.74900	-118.23117	2/18/2017	11:50	1.0	8.2	7.5	29.6	14.8	Y	None	None	None	None
	IB-RW-14-G-M-20170218				11:55	8.0	7.8	7.6	32.7	14.8	Y	None	None	None	None
	IB-RW-14-G-B-20170218				12:00	15.0	7.9	7.6	33.2	14.9	Y	None	None	None	None

Table 13
Winter 2017 Water Quality Field Data

Station ID	Sample ID	Latitude	Longitude	Date	Time	Depth (m)	DO	pH	Salinity (ppt)	Temperature (°C)	Sample Collected (Y/N)	Description of Sample			
												Floating Material	Odor	Sheen	Color
IB-RW-15	IB-RW-15-G-S-20170218	33.74214	-118.19948	2/18/2017	9:00	1.0	8.2	7.3	26.8	14.4	Y	Trace particulates	None	None	None
	IB-RW-15-G-M-20170218				9:05	7.6	7.6	7.7	31.3	14.8	Y	Trace particulates	None	None	None
	IB-RW-15-G-B-20170218				9:10	15.0	7.3	7.6	31.8	14.8	Y	Trace particulates	None	None	None
OB-RW-16	OB-RW-16-G-S-20170218	33.73120	-118.22119	2/18/2017	13:30	1.0	8.7	8.2	24.3	14.8	Y	None	None	None	None
	OB-RW-16-G-M-20170218				13:35	9.0	8.1	8.1	32.6	15.0	Y	None	None	None	None
	OB-RW-16-G-B-20170218				13:40	17.0	7.9	8.1	33.2	15.0	Y	None	None	None	None
OB-RW-17	OB-RW-17-G-S-20170218	33.72759	-118.1860575	2/18/2017	9:45	1.0	8.7	7.6	25.4	14.2	Y	None	None	None	Brown
	OB-RW-17-G-M-20170218				9:44	12.0	7.5	7.5	31.6	14.9	Y	None	None	None	None
	OB-RW-17-G-B-20170218				9:43	23.4	7.6	7.4	31.5	14.8	Y	None	None	None	None
SP-RW-18	SP-RW-18-G-S-20170218	33.75361	-118.18125	2/18/2017	14:50	1.0	9.2	8.6	13.5	13.9	Y	None	None	None	Brown
	SP-RW-18-G-M-20170218				14:55	7.0	7.9	7.9	32.7	15.0	Y	None	None	None	Brown
	SP-RW-18-G-B-20170218				15:00	12.5	7.4	8.0	33.0	15.1	Y	None	None	None	Brown
SP-RW-19	SP-RW-19-G-S-20170218	33.73667	-118.131591	2/18/2017	11:15	1.0	8.4	7.5	25.1	14.7	Y	None	None	None	None
	SP-RW-19-G-M-20170218				11:11	4.5	8.0	7.4	31.3	14.8	Y	None	None	None	None
	SP-RW-19-G-B-20170218				11:10	8.5	7.8	7.3	31.5	14.8	Y	None	None	None	None
SP-RW-20	SP-RW-20-G-S-20170218	33.72548	-118.157332	2/18/2017	10:31	1.0	8.7	7.5	27.8	14.5	Y	None	None	None	None
	SP-RW-20-G-M-20170218				10:30	7.6	8.3	7.4	30.1	14.7	Y	None	None	None	None
	SP-RW-20-G-B-20170218				10:29	15.9	8.0	7.2	31.8	14.8	Y	None	None	None	None
LE-RW-21	LE-RW-21-G-S-20170218	33.75639	-118.19314	2/18/2017	16:00	1.0	8.9	8.0	13.9	14.2	Y	None	None	None	Brown
	LE-RW-21-G-M-20170218				Too shallow, no sample collected										
	LE-RW-21-G-B-2016122				Too shallow, no sample collected										
LE-RW-22	LE-RW-22-G-S-20170218	33.76101	-118.20211	2/18/2017	8:00	0.1	10.2	8.0	0.4	14.5	Y	Trace particulates	None	None	Brown
	LE-RW-22-G-M-20170218				8:01	0.8	10.2	8.3	1.5	12.6	Y	Trace particulates	None	None	Brown
	LE-RW-22-G-B-20170218				8:02	1.5	8.4	7.9	26.4	14.5	Y	Trace particulates	None	None	Brown

Notes:

DO: dissolved oxygen

m: meter

ppt: parts per thousand

Table 14
Winter 2017 Water Quality Chemistry Results

	Area Location ID	Consolidated Slip CS-RW-01_201702	Consolidated Slip CS-RW-01_201702	Inner Harbor - LA IA-RW-02_201702	Inner Harbor - LA IA-RW-03_201702	Inner Harbor - LA IA-RW-04_201702	Inner Harbor - LA IA-RW-05_201702	Inner Harbor - LA IA-RW-06_201702		
	Sample ID	CS-RW-01-G-S-20170218	CS-RW-1001-G-M-20170218	IA-RW-02-G-S-20170218	IA-RW-03-G-S-20170218	IA-RW-04-G-S-20170218	IA-RW-05-G-S-20170218	IA-RW-06-G-S-20170218		
	Sample Date	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017		
	Depth	1 m	2.5 m	1 m	1 m	1 m	1 m	1 m		
	Sample Type	N	FD	N	N	N	N	N		
	Matrix	WO	WO	WO	WO	WO	WO	WO		
X		-118.24549	-118.24549	-118.25408	-118.24399	-118.27100	-118.25128	-118.27148		
Y		33.77473	33.77473	33.76255	33.76244	33.75190	33.73234	33.72559		
	Method	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration							
Conventional Parameters (mg/L)										
Total suspended solids (surface)	SM2540D	--	--	54	--	9.3	14	6.6	5.4	5.0
Total suspended solids (middle)*	SM2540D	--	--	49	38	8.3	8.1	5.4	5.0	4.9
Total suspended solids (bottom)*	SM2540D	--	--	36	--	4.5	5.5	2.2	4.1	3.8
Metals (µg/L)										
Cadmium	E1640	--	--	0.133 J	--	0.0796 J	0.182 J	0.0916 J	0.044 J	0.0611 J
Chromium	E1640	--	--	2.30 J	--	1.65 J	3.09 J	1.38 J	0.290 U	0.399 U
Copper	E1640	--	--	15.5	--	5.05	5.96	4.49	1.49	4.19
Lead	E1640	--	--	11.2	--	4.49	1.76	1.31	0.468	0.965
Mercury	E1631E	--	--	0.00750	--	0.00126	0.00566	0.00361	0.00391	0.00386
Zinc	E1640	--	--	91.6	--	49.7	19.6	41.6	5.85	21.1
Metals, Dissolved (µg/L)										
Cadmium	E1640	--	9.3	0.0923	--	0.0675	0.119	0.0775	0.0607	0.0709
Chromium	E1640	--	50	1.18	--	0.835 U	0.767 U	0.798 U	0.164 U	0.288 U
Copper	E1640	--	3.1	5.19	--	2.50	2.27	2.50	0.831	1.72
Lead	E1640	--	8.1	0.266 J	--	0.122 J	0.0245 J	0.0726 J	0.0979 J	0.165 J
Mercury	E1631E	0.051	0.94	0.00225	--	0.000313 J	0.00168	0.00196	0.000810 U	0.00535
Zinc	E1640	--	81	65.3 J	--	39.4 J	11.1 J	30.3 J	4.15 J	14.6 J
Pesticides (µg/L)										
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00049 U	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00049 U	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.00097 U	--	0.00097 U	0.00098 U	0.00098 U	0.00099 U	0.00097 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00049 U	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00049 U	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
4,4'-DDT (p,p'-DDT)	SW8081A	0.00059	0.001	0.00049 U	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0016 U	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0016 U	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Dieldrin	SW8081A	0.00014	0.0019	0.00049 U	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
Nonachlor, cis-	SW8081A	--	--	0.0016 U	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Nonachlor, trans-	SW8081A	--	--	0.0016 U	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Oxychlordane	SW8081A	--	--	0.0016 U	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Toxaphene	SW8081A	--	0.0002	0.024 U	--	0.024 U	0.025 U	0.025 U	0.025 U	0.024 U
Total Chlordane (U = 0)	--	0.00059	0.004	0.00080 U	--	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
Total DDx (U = 0)	--	0.00059	0.001	0.000485 U	--	0.000485 U	0.00049 U	0.00049 U	0.000495 U	0.000485 U
PCB Congeners - Low resolution (µg/L)										
PCB-018	SW8270CSIM	--	--	0.00045 U	--	0.00044 U	0.00044 U	0.00044 U	0.00045 U	0.00044 U
PCB-028	SW8270CSIM	--	--	0.00052 U	--	0.00050 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U
PCB-037	SW8270CSIM	--	--	0.00029 U	--	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U
PCB-044	SW8270CSIM	--	--	0.00070 U	--	0.00068 U	0.00068 U	0.00068 U	0.00069 U	0.00068 U
PCB-049	SW8270CSIM	--	--	0.00052 U	--	0.00050 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U
PCB-052	SW8270CSIM	--	--	0.00055 U	--	0.00053 U	0.00053 U	0.00053 U	0.00054 U	0.00053 U
PCB-066	SW8270CSIM	--	--	0.00039 U	--	0.00038 U	0.00039 U	0.00039 U	0.00039 U	0.00039 U
PCB-070	SW8270CSIM	--	--	0.00040 U	--	0.00039 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U
PCB-074	SW8270CSIM	--	--	0.00048 U	--	0.00046 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U

Table 14
Winter 2017 Water Quality Chemistry Results

		Area Location ID	Consolidated Slip CS-RW-01_201702	Consolidated Slip CS-RW-01_201702	Inner Harbor - LA IA-RW-02_201702	Inner Harbor - LA IA-RW-03_201702	Inner Harbor - LA IA-RW-04_201702	Inner Harbor - LA IA-RW-05_201702	Inner Harbor - LA IA-RW-06_201702
		Sample ID	CS-RW-01-G-S-20170218	CS-RW-1001-G-M-20170218	IA-RW-02-G-S-20170218	IA-RW-03-G-S-20170218	IA-RW-04-G-S-20170218	IA-RW-05-G-S-20170218	IA-RW-06-G-S-20170218
		Sample Date	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017
		Depth	1 m	2.5 m	1 m	1 m	1 m	1 m	1 m
		Sample Type	N	FD	N	N	N	N	N
		Matrix	WO	WO	WO	WO	WO	WO	WO
		X	-118.24549	-118.24549	-118.25408	-118.24399	-118.27100	-118.25128	-118.27148
		Y	33.77473	33.77473	33.76255	33.76244	33.75190	33.73234	33.72559
	Method	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration						
PCB-077	SW8270CSIM	--	--	0.00061 U	--	0.00059 U	0.00060 U	0.00060 U	0.00060 U
PCB-081	SW8270CSIM	--	--	0.00047 U	--	0.00046 U	0.00047 U	0.00047 U	0.00047 U
PCB-087	SW8270CSIM	--	--	0.00070 U	--	0.00068 U	0.00068 U	0.00068 U	0.00068 U
PCB-099	SW8270CSIM	--	--	0.00060 U	--	0.00058 U	0.00059 U	0.00059 U	0.00059 U
PCB-101	SW8270CSIM	--	--	0.00049 U	--	0.00047 U	0.00048 U	0.00048 U	0.00048 U
PCB-105	SW8270CSIM	--	--	0.00046 U	--	0.00044 U	0.00045 U	0.00045 U	0.00045 U
PCB-110	SW8270CSIM	--	--	0.00033 U	--	0.00032 U	0.00032 U	0.00032 U	0.00032 U
PCB-114	SW8270CSIM	--	--	0.00046 U	--	0.00044 U	0.00045 U	0.00045 U	0.00045 U
PCB-118	SW8270CSIM	--	--	0.00049 U	--	0.00048 U	0.00048 U	0.00048 U	0.00048 U
PCB-119	SW8270CSIM	--	--	0.00017 U	--	0.00016 U	0.00017 U	0.00017 U	0.00017 U
PCB-123	SW8270CSIM	--	--	0.00082 U	--	0.00079 U	0.00080 U	0.00080 U	0.00080 U
PCB-126	SW8270CSIM	--	--	0.00025 U	--	0.00024 U	0.00024 U	0.00024 U	0.00024 U
PCB-128	SW8270CSIM	--	--	0.00042 U	--	0.00041 U	0.00042 U	0.00042 U	0.00042 U
PCB-132/153	SW8270CSIM	--	--	0.00068 U	--	0.00066 U	0.00067 U	0.00067 U	0.00067 U
PCB-138/158	SW8270CSIM	--	--	0.00058 U	--	0.00057 U	0.00057 U	0.00057 U	0.00057 U
PCB-149	SW8270CSIM	--	--	0.00023 U	--	0.00022 U	0.00022 U	0.00022 U	0.00022 U
PCB-151	SW8270CSIM	--	--	0.00040 U	--	0.00039 U	0.00039 U	0.00039 U	0.00039 U
PCB-156	SW8270CSIM	--	--	0.00039 U	--	0.00038 U	0.00039 U	0.00039 U	0.00039 U
PCB-157	SW8270CSIM	--	--	0.00040 U	--	0.00039 U	0.00039 U	0.00039 U	0.00039 U
PCB-167	SW8270CSIM	--	--	0.00079 U	--	0.00077 U	0.00078 U	0.00078 U	0.00078 U
PCB-168	SW8270CSIM	--	--	0.00051 U	--	0.00049 U	0.00050 U	0.00050 U	0.00050 U
PCB-169	SW8270CSIM	--	--	0.00040 U	--	0.00038 U	0.00039 U	0.00039 U	0.00039 U
PCB-170	SW8270CSIM	--	--	0.00041 U	--	0.00040 U	0.00041 U	0.00041 U	0.00041 U
PCB-177	SW8270CSIM	--	--	0.00027 U	--	0.00026 U	0.00027 U	0.00027 U	0.00027 U
PCB-180	SW8270CSIM	--	--	0.00059 U	--	0.00057 U	0.00058 U	0.00058 U	0.00058 U
PCB-183	SW8270CSIM	--	--	0.00051 U	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U
PCB-187	SW8270CSIM	--	--	0.00042 U	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U
PCB-189	SW8270CSIM	--	--	0.00048 U	--	0.00046 U	0.00047 U	0.00047 U	0.00047 U
PCB-194	SW8270CSIM	--	--	0.00025 U	--	0.00024 U	0.00024 U	0.00024 U	0.00024 U
PCB-201	SW8270CSIM	--	--	0.00046 U	--	0.00045 U	0.00045 U	0.00045 U	0.00045 U
PCB-206	SW8270CSIM	--	--	0.00042 U	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00041 U	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U

Table 14
Winter 2017 Water Quality Chemistry Results

		Area	Inner Harbor - LA	Fish Harbor	Outer Harbor - LA	Outer Harbor - LA	Cabrillo Marina	Cabrillo Beach	Inner Harbor - LB	
		Location ID	IA-RW-06_201702	FH-RW-07_201702	OA-RW-08_201702	OA-RW-09_201702	CM-RW-10_201702	CB-RW-11_201702	IB-RW-12_201702	
		Sample ID	IA-RW-1006-G-B-20170218	FH-RW-07-G-S-20170218	OA-RW-08-G-S-20170218	OA-RW-09-G-S-20170218	CM-RW-10-G-S-20170218	CB-RW-11-G-S-20170218	IB-RW-12-G-S-20170218	
		Sample Date	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	
		Depth	17 m	1 m	1 m	1 m	1 m	1 m	1 m	
		Sample Type	FD	N	N	N	N	N	N	
		Matrix	WO	WO	WO	WO	WO	WO	WO	
		X	-118.27148	118.26710	-118.24235	-118.26328	-118.27914	-118.28088	-118.22810	
		Y	33.72559	33.73576	33.71450	33.71201	33.71929	33.71198	33.76844	
		Method	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration						
Conventional Parameters (mg/L)										
Total suspended solids (surface)	SM2540D	--	--	--	1.9	7.5	6.2	3.0	5.9	4.5
Total suspended solids (middle)*	SM2540D	--	--	--	1.5	5.3	5.8	6.6	5.2	3.5
Total suspended solids (bottom)*	SM2540D	--	--	4.0	1.4	10	6.2	5.6	7.2	3.1
Metals (µg/L)										
Cadmium	E1640	--	--	--	0.0396 J	0.0621 J	0.0440 J	0.0760 J	0.0656 J	0.0700
Chromium	E1640	--	--	--	0.164 U	0.576 U	0.164 U	0.164 U	0.322 U	0.456 J
Copper	E1640	--	--	--	2.02	2.25	1.36	5.37	1.61	2.44
Lead	E1640	--	--	--	0.247	0.822	0.457	0.310	0.557	1.02 J
Mercury	E1631E	--	--	--	0.0678	0.00140	0.00168	0.0202	0.00271	0.00145
Zinc	E1640	--	--	--	9.79	8.45	4.42	33.8	7.76	21.5 J
Metals, Dissolved (µg/L)										
Cadmium	E1640	--	9.3	--	0.0592	0.0640	0.0615	0.0986	0.0633	0.0670
Chromium	E1640	--	50	--	0.176 U	0.261 U	0.195 U	0.232 U	0.204 U	0.274 J
Copper	E1640	--	3.1	--	1.66	1.25	0.775	5.54	0.989	1.70
Lead	E1640	--	8.1	--	0.0933 J	0.0350 J	0.0821 J	0.140 J	0.0930 J	0.121
Mercury	E1631E	0.051	0.94	--	0.00109 U	0.00114	0.00319	0.00168	0.00215	0.000464 U
Zinc	E1640	--	81	--	9.86 J	7.02 J	3.63 J	41.6 J	6.41 J	15.2 J
Pesticides (µg/L)										
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	--	0.00097 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
4,4'-DDT (p,p'-DDT)	SW8081A	0.00059	0.001	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Dieldrin	SW8081A	0.00014	0.0019	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00049 U
Nonachlor, cis-	SW8081A	--	--	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Nonachlor, trans-	SW8081A	--	--	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Oxychlordane	SW8081A	--	--	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Toxaphene	SW8081A	--	0.0002	--	0.024 U	0.025 U	0.024 U	0.024 U	0.024 U	0.024 U
Total Chlordane (U = 0)	--	0.00059	0.004	--	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
Total DDx (U = 0)	--	0.00059	0.001	--	0.000485 U	0.000495 U	0.000485 U	0.000485 U	0.000485 U	0.000485 U
PCB Congeners - Low resolution (µg/L)										
PCB-018	SW8270CSIM	--	--	--	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00045 U	0.00044 U
PCB-028	SW8270CSIM	--	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00051 U	0.00050 U
PCB-037	SW8270CSIM	--	--	--	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U
PCB-044	SW8270CSIM	--	--	--	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00069 U	0.00068 U
PCB-049	SW8270CSIM	--	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00051 U	0.00050 U
PCB-052	SW8270CSIM	--	--	--	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00054 U	0.00053 U
PCB-066	SW8270CSIM	--	--	--	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00039 U	0.00038 U
PCB-070	SW8270CSIM	--	--	--	0.00039 U	0.00039 U	0.00039 U	0.00039 U	0.00040 U	0.00039 U
PCB-074	SW8270CSIM	--	--	--	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00047 U	0.00046 U

Table 14
Winter 2017 Water Quality Chemistry Results

		Area	Inner Harbor - LA	Fish Harbor	Outer Harbor - LA	Outer Harbor - LA	Cabrillo Marina	Cabrillo Beach	Inner Harbor - LB	
		Location ID	IA-RW-06_201702	FH-RW-07_201702	OA-RW-08_201702	OA-RW-09_201702	CM-RW-10_201702	CB-RW-11_201702	IB-RW-12_201702	
		Sample ID	IA-RW-1006-G-B-20170218	FH-RW-07-G-S-20170218	OA-RW-08-G-S-20170218	OA-RW-09-G-S-20170218	CM-RW-10-G-S-20170218	CB-RW-11-G-S-20170218	IB-RW-12-G-S-20170218	
		Sample Date	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	
		Depth	17 m	1 m	1 m	1 m	1 m	1 m	1 m	
		Sample Type	FD	N	N	N	N	N	N	
		Matrix	WO	WO	WO	WO	WO	WO	WO	
		X	-118.27148	118.26710	-118.24235	-118.26328	-118.27914	-118.28088	-118.22810	
		Y	33.72559	33.73576	33.71450	33.71201	33.71929	33.71198	33.76844	
	Method	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration							
PCB-077	SW8270CSIM	--	--	--	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00060 U	0.00059 U
PCB-081	SW8270CSIM	--	--	--	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00047 U	0.00046 U
PCB-087	SW8270CSIM	--	--	--	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00069 U	0.00068 U
PCB-099	SW8270CSIM	--	--	--	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00059 U	0.00058 U
PCB-101	SW8270CSIM	--	--	--	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00048 U	0.00047 U
PCB-105	SW8270CSIM	--	--	--	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00045 U	0.00044 U
PCB-110	SW8270CSIM	--	--	--	0.00032 U	0.00032 U	0.00032 U	0.00032 U	0.00033 U	0.00032 U
PCB-114	SW8270CSIM	--	--	--	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00045 U	0.00044 U
PCB-118	SW8270CSIM	--	--	--	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U
PCB-119	SW8270CSIM	--	--	--	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00017 U	0.00016 U
PCB-123	SW8270CSIM	--	--	--	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00081 U	0.00079 U
PCB-126	SW8270CSIM	--	--	--	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00025 U	0.00024 U
PCB-128	SW8270CSIM	--	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00042 U	0.00041 U
PCB-132/153	SW8270CSIM	--	--	--	0.00066 U	0.00066 U	0.00066 U	0.00066 U	0.00067 U	0.00066 U
PCB-138/158	SW8270CSIM	--	--	--	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00058 U	0.00057 U
PCB-149	SW8270CSIM	--	--	--	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00023 U	0.00022 U
PCB-151	SW8270CSIM	--	--	--	0.00039 U	0.00039 U	0.00039 U	0.00039 U	0.00039 U	0.00039 U
PCB-156	SW8270CSIM	--	--	--	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00039 U	0.00038 U
PCB-157	SW8270CSIM	--	--	--	0.00039 U	0.00039 U	0.00039 U	0.00039 U	0.00039 U	0.00039 U
PCB-167	SW8270CSIM	--	--	--	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00078 U	0.00077 U
PCB-168	SW8270CSIM	--	--	--	0.00049 U	0.00049 U	0.00049 U	0.00049 U	0.00050 U	0.00049 U
PCB-169	SW8270CSIM	--	--	--	0.00038 U	0.00038 U	0.00038 U	0.00038 U	0.00039 U	0.00038 U
PCB-170	SW8270CSIM	--	--	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00041 U	0.00040 U
PCB-177	SW8270CSIM	--	--	--	0.00026 U	0.00026 U	0.00026 U	0.00026 U	0.00027 U	0.00026 U
PCB-180	SW8270CSIM	--	--	--	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00058 U	0.00057 U
PCB-183	SW8270CSIM	--	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00051 U	0.00050 U
PCB-187	SW8270CSIM	--	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00042 U	0.00041 U
PCB-189	SW8270CSIM	--	--	--	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00047 U	0.00046 U
PCB-194	SW8270CSIM	--	--	--	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U
PCB-201	SW8270CSIM	--	--	--	0.00045 U	0.00045 U	0.00045 U	0.00045 U	0.00045 U	0.00045 U
PCB-206	SW8270CSIM	--	--	--	0.00041 U	0.00041 U	0.00041 U	0.00041 U	0.00042 U	0.00041 U
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	--	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U	0.00040 U

Table 14
Winter 2017 Water Quality Chemistry Results

Area		Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Outer Harbor - LB	Outer Harbor - LB	San Pedro Bay	San Pedro Bay		
Location ID		IB-RW-13_201702	IB-RW-14_201702	IB-RW-15_201702	OB-RW-16_201702	OB-RW-17_201702	SP-RW-18_201702	SP-RW-18_201702		
Sample ID		IB-RW-13-G-S-20170218	IB-RW-14-G-S-20170218	IB-RW-15-G-S-20170218	OB-RW-16-G-S-20170218	OB-RW-17-G-S-20170218	SP-RW-18-G-S-20170218	SP-RW-1018-G-M-20170218		
Sample Date		2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017		
Depth		1 m	1 m	1 m	1 m	1 m	1 m	7 m		
Sample Type		N	N	N	N	N	N	FD		
Matrix		WO	WO	WO	WO	WO	WO	WO		
X		-118.21621	-118.23117	-118.19948	-118.22119	-118.1860575	-118.18125	-118.18125		
Y		33.75390	33.74900	33.74214	33.73120	33.72759	33.75361	33.75361		
Method										
Criteria for Protection of Human Health Organisms Only										
California Toxics Rule Saltwater Continuous Concentration										
Conventional Parameters (mg/L)										
Total suspended solids (surface)	SM2540D	--	--	4.6	5.8	6.0	9.5	12	59	--
Total suspended solids (middle)*	SM2540D	--	--	2.4	2.4	2.4	4.9	5.0	17	16
Total suspended solids (bottom)*	SM2540D	--	--	3.0	5.9	9.0	7.2	15	15	--
Metals (µg/L)										
Cadmium	E1640	--	--	0.0613 J	0.0668 J	0.0495 J	0.103	0.204 J	0.320	--
Chromium	E1640	--	--	0.242 U	0.273 U	0.164 U	0.593 J	1.27 J	4.08	--
Copper	E1640	--	--	0.997	1.17	1.19	2.70	3.57	17.1	--
Lead	E1640	--	--	0.372	0.527	1.01	0.816 J	4.32	17.7 J	--
Mercury	E1631E	--	--	0.00102	0.00140	0.00250	0.00337	0.00355	0.00524	--
Zinc	E1640	--	--	4.97	5.29	7.15	7.88 J	9.61	35.4 J	--
Metals, Dissolved (µg/L)										
Cadmium	E1640	--	9.3	0.0618	0.0652	0.0657	0.0816	0.174	0.163	--
Chromium	E1640	--	50	0.164 U	0.195 U	0.166 U	0.270 J	0.664 U	0.355 J	--
Copper	E1640	--	3.1	0.726	0.734	1.06	1.24	2.14	2.32	--
Lead	E1640	--	8.1	0.0803 J	0.104 J	0.233 J	0.0235 J	10.0 J	0.0480	--
Mercury	E1631E	0.051	0.94	0.00286	0.00137 U	0.000299 J	0.00355	0.000799	0.00131	--
Zinc	E1640	--	81	4.20 J	4.27 J	9.60 J	4.16 J	6.51 J	4.22 J	--
Pesticides (µg/L)										
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00049 U	0.00049 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00049 U	0.00049 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.00097 U	0.00097 U	0.0010 U	0.00098 U	0.0010 U	0.00098 U	--
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00049 U	0.00049 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00049 U	0.00049 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
4,4'-DDT (p,p'-DDT)	SW8081A	0.00059	0.001	0.00049 U	0.00049 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	--
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	--
Dieldrin	SW8081A	0.00014	0.0019	0.00049 U	0.00049 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
Nonachlor, cis-	SW8081A	--	--	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	--
Nonachlor, trans-	SW8081A	--	--	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	--
Oxychlordane	SW8081A	--	--	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	--
Toxaphene	SW8081A	--	0.0002	0.024 U	0.024 U	0.025 U	0.025 U	0.025 U	0.025 U	--
Total Chlordane (U = 0)	--	0.00059	0.004	0.00080 U	0.00080 U	0.00085 U	0.00080 U	0.00085 U	0.00080 U	--
Total DDx (U = 0)	--	0.00059	0.001	0.000485 U	0.000485 U	0.00050 U	0.00049 U	0.00050 U	0.00049 U	--
PCB Congeners - Low resolution (µg/L)										
PCB-018	SW8270CSIM	--	--	0.00044 U	0.00044 U	0.00045 U	0.00044 U	0.00046 U	0.00044 U	--
PCB-028	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00052 U	0.00050 U	0.00053 U	0.00050 U	--
PCB-037	SW8270CSIM	--	--	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00030 U	0.00029 U	--
PCB-044	SW8270CSIM	--	--	0.00068 U	0.00068 U	0.00070 U	0.00068 U	0.00071 U	0.00068 U	--
PCB-049	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00052 U	0.00050 U	0.00053 U	0.00050 U	--
PCB-052	SW8270CSIM	--	--	0.00053 U	0.00053 U	0.00055 U	0.00053 U	0.00056 U	0.00053 U	--
PCB-066	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00039 U	0.00038 U	0.00040 U	0.00038 U	--
PCB-070	SW8270CSIM	--	--	0.00039 U	0.00039 U	0.00040 U	0.00039 U	0.00041 U	0.00039 U	--
PCB-074	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00048 U	0.00046 U	0.00049 U	0.00046 U	--

Table 14
Winter 2017 Water Quality Chemistry Results

		Area	Inner Harbor - LB	Inner Harbor - LB	Inner Harbor - LB	Outer Harbor - LB	Outer Harbor - LB	San Pedro Bay	San Pedro Bay	
		Location ID	IB-RW-13_201702	IB-RW-14_201702	IB-RW-15_201702	OB-RW-16_201702	OB-RW-17_201702	SP-RW-18_201702	SP-RW-18_201702	
		Sample ID	IB-RW-13-G-S-20170218	IB-RW-14-G-S-20170218	IB-RW-15-G-S-20170218	OB-RW-16-G-S-20170218	OB-RW-17-G-S-20170218	SP-RW-18-G-S-20170218	SP-RW-1018-G-M-20170218	
		Sample Date	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017	
		Depth	1 m	1 m	1 m	1 m	1 m	1 m	7 m	
		Sample Type	N	N	N	N	N	N	FD	
		Matrix	WO	WO	WO	WO	WO	WO	WO	
		X	-118.21621	-118.23117	-118.19948	-118.22119	-118.1860575	-118.18125	-118.18125	
		Y	33.75390	33.74900	33.74214	33.73120	33.72759	33.75361	33.75361	
	Method	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration							
PCB-077	SW8270CSIM	--	--	0.00059 U	0.00059 U	0.00061 U	0.00059 U	0.00062 U	0.00059 U	--
PCB-081	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00047 U	0.00046 U	0.00048 U	0.00046 U	--
PCB-087	SW8270CSIM	--	--	0.00068 U	0.00068 U	0.00070 U	0.00068 U	0.00071 U	0.00068 U	--
PCB-099	SW8270CSIM	--	--	0.00058 U	0.00058 U	0.00060 U	0.00058 U	0.00061 U	0.00058 U	--
PCB-101	SW8270CSIM	--	--	0.00047 U	0.00047 U	0.00049 U	0.00047 U	0.00050 U	0.00047 U	--
PCB-105	SW8270CSIM	--	--	0.00044 U	0.00044 U	0.00046 U	0.00044 U	0.00047 U	0.00044 U	--
PCB-110	SW8270CSIM	--	--	0.00032 U	0.00032 U	0.00033 U	0.00032 U	0.00034 U	0.00032 U	--
PCB-114	SW8270CSIM	--	--	0.00044 U	0.00044 U	0.00046 U	0.00044 U	0.00047 U	0.00044 U	--
PCB-118	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00049 U	0.00048 U	0.00050 U	0.00048 U	--
PCB-119	SW8270CSIM	--	--	0.00016 U	0.00016 U	0.00017 U	0.00016 U	0.00017 U	0.00016 U	--
PCB-123	SW8270CSIM	--	--	0.00079 U	0.00079 U	0.00082 U	0.00079 U	0.00083 U	0.00079 U	--
PCB-126	SW8270CSIM	--	--	0.00024 U	0.00024 U	0.00025 U	0.00024 U	0.00025 U	0.00024 U	--
PCB-128	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00042 U	0.00041 U	0.00043 U	0.00041 U	--
PCB-132/153	SW8270CSIM	--	--	0.00066 U	0.00066 U	0.00068 U	0.00066 U	0.00069 U	0.00066 U	--
PCB-138/158	SW8270CSIM	--	--	0.00057 U	0.00057 U	0.00058 U	0.00057 U	0.00060 U	0.00057 U	--
PCB-149	SW8270CSIM	--	--	0.00022 U	0.00022 U	0.00023 U	0.00022 U	0.00023 U	0.00022 U	--
PCB-151	SW8270CSIM	--	--	0.00039 U	0.00039 U	0.00040 U	0.00039 U	0.00040 U	0.00039 U	--
PCB-156	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00039 U	0.00038 U	0.00040 U	0.00038 U	--
PCB-157	SW8270CSIM	--	--	0.00039 U	0.00039 U	0.00040 U	0.00039 U	0.00041 U	0.00039 U	--
PCB-167	SW8270CSIM	--	--	0.00077 U	0.00077 U	0.00079 U	0.00077 U	0.00081 U	0.00077 U	--
PCB-168	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00051 U	0.00049 U	0.00052 U	0.00049 U	--
PCB-169	SW8270CSIM	--	--	0.00038 U	0.00038 U	0.00040 U	0.00038 U	0.00040 U	0.00038 U	--
PCB-170	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00041 U	0.00040 U	0.00042 U	0.00040 U	--
PCB-177	SW8270CSIM	--	--	0.00026 U	0.00026 U	0.00027 U	0.00026 U	0.00028 U	0.00026 U	--
PCB-180	SW8270CSIM	--	--	0.00057 U	0.00057 U	0.00059 U	0.00057 U	0.00060 U	0.00057 U	--
PCB-183	SW8270CSIM	--	--	0.00050 U	0.00050 U	0.00051 U	0.00050 U	0.00052 U	0.00050 U	--
PCB-187	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00042 U	0.00041 U	0.00043 U	0.00041 U	--
PCB-189	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00048 U	0.00046 U	0.00049 U	0.00046 U	--
PCB-194	SW8270CSIM	--	--	0.00024 U	0.00024 U	0.00025 U	0.00024 U	0.00025 U	0.00024 U	--
PCB-201	SW8270CSIM	--	--	0.00045 U	0.00045 U	0.00046 U	0.00045 U	0.00047 U	0.00045 U	--
PCB-206	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00042 U	0.00041 U	0.00043 U	0.00041 U	--
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00040 U	0.00040 U	0.00041 U	0.00040 U	0.00042 U	0.00040 U	--

Table 14
Winter 2017 Water Quality Chemistry Results

	Area Location ID Sample ID Sample Date Depth Sample Type Matrix	San Pedro Bay SP-RW-19_201702 SP-RW-19-G-S-20170218 2/18/2017 1 m N WO	San Pedro Bay SP-RW-19_201702 SP-RW-1019-G-S-20170218 2/18/2017 1 m FD WO	San Pedro Bay SP-RW-20_201702 SP-RW-20-G-S-20170218 2/18/2017 1 m N WO	Los Angeles River Estuary LE-RW-21_201702 LE-RW-21-G-S-20170218 2/18/2017 1 m N WO	Los Angeles River Estuary LE-RW-22_201702 LE-RW-22-G-S-20170218 2/18/2017 0.1 m N WO	X Y	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration	Number Analyzed ¹	WQ Exceedances ¹	Percentage of Exceedance ¹
Conventional Parameters (mg/L)												
Total suspended solids (surface)	SM2540D	--	--	10	--	7.7	677	519	22	--	--	
Total suspended solids (middle)*	SM2540D	--	--	9.8	--	6.9	--	499	21	--	--	
Total suspended solids (bottom)*	SM2540D	--	--	34	--	24	--	521	21	--	--	
Metals (µg/L)												
Cadmium	E1640	--	--	0.0490 J	0.0527 J	0.0768 J	1.03	0.901 J	22	--	--	
Chromium	E1640	--	--	0.182 U	0.279 U	0.341 U	10.4	6.29 J	22	--	--	
Copper	E1640	--	--	1.41	1.54	1.90	34.6	25.9	22	--	--	
Lead	E1640	--	--	0.994	2.36	1.35	45.1	36.2	22	--	--	
Mercury	E1631E	--	--	0.00167	0.00133	0.00159	0.0270	0.0379	22	--	--	
Zinc	E1640	--	--	6.87	7.66	7.42	84.3 J	79.8	22	--	--	
Metals, Dissolved (µg/L)												
Cadmium	E1640	--	9.3	0.0562	0.0648	0.0868	0.398	0.0969	22	0	0%	
Chromium	E1640	--	50	0.164 U	0.164 U	0.169 U	0.807	0.650 U	22	0	0%	
Copper	E1640	--	3.1	0.790	0.821	0.930	2.72	3.67	22	3	14%	
Lead	E1640	--	8.1	0.0895 J	0.214 J	0.170 J	0.112	0.252 J	22	1	5%	
Mercury	E1631E	0.051	0.94	0.00126	0.000747	0.000163 J	0.00358	0.00865	22	0	0%	
Zinc	E1640	--	81	5.44 J	5.89 J	5.96 J	5.17 J	7.86 J	22	0	0%	
Pesticides (µg/L)												
2,4'-DDD (o,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00072 U	0.00050 U	22	--	--	
2,4'-DDE (o,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00072 U	0.00050 U	22	--	--	
2,4'-DDT (o,p'-DDT)	SW8081A	--	--	0.0010 U	0.0010 U	0.0010 U	0.0014 U	0.0010 U	22	--	--	
4,4'-DDD (p,p'-DDD)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00072 U	0.00050 U	22	--	--	
4,4'-DDE (p,p'-DDE)	SW8081A	--	--	0.00050 U	0.00050 U	0.00050 U	0.00072 U	0.00050 U	22	--	--	
4,4'-DDT (p,p'-DDT)	SW8081A	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	0.00072 U	0.00050 U	22	0	0%	
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0024 U	0.0017 U	22	--	--	
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0024 U	0.0017 U	22	--	--	
Dieldrin	SW8081A	0.00014	0.0019	0.00050 U	0.00050 U	0.00050 U	0.00072 U	0.00050 U	22	0	0%	
Nonachlor, cis-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0024 U	0.0017 U	22	--	--	
Nonachlor, trans-	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0024 U	0.0017 U	22	--	--	
Oxychlordane	SW8081A	--	--	0.0017 U	0.0017 U	0.0017 U	0.0024 U	0.0017 U	22	--	--	
Toxaphene	SW8081A	--	0.0002	0.025 U	0.025 U	0.025 U	0.036 U	0.025 U	22	--	--	
Total Chlordane (U = 0)	--	0.00059	0.004	0.00085 U	0.00085 U	0.00085 U	0.0012 U	0.00085 U	22	0	0%	
Total DDx (U = 0)	--	0.00059	0.001	0.00050 U	0.00050 U	0.00050 U	0.00070 U	0.00050 U	22	0	0%	
PCB Congeners - Low resolution (µg/L)												
PCB-018	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00046 U	0.00044 U	0.00046 U	22	--	--	
PCB-028	SW8270CSIM	--	--	0.00052 U	0.00052 U	0.00053 U	0.00051 U	0.00052 U	22	--	--	
PCB-037	SW8270CSIM	--	--	0.00030 U	0.00030 U	0.00030 U	0.00029 U	0.00030 U	22	--	--	
PCB-044	SW8270CSIM	--	--	0.00071 U	0.00071 U	0.00071 U	0.00068 U	0.00071 U	22	--	--	
PCB-049	SW8270CSIM	--	--	0.00052 U	0.00052 U	0.00053 U	0.00051 U	0.00052 U	22	--	--	
PCB-052	SW8270CSIM	--	--	0.00055 U	0.00055 U	0.00056 U	0.00053 U	0.00055 U	22	--	--	
PCB-066	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00039 U	0.00040 U	22	--	--	
PCB-070	SW8270CSIM	--	--	0.00041 U	0.00041 U	0.00041 U	0.00040 U	0.00041 U	22	--	--	
PCB-074	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00049 U	0.00047 U	0.00048 U	22	--	--	

Table 14
Winter 2017 Water Quality Chemistry Results

		Area	San Pedro Bay	San Pedro Bay	San Pedro Bay	Los Angeles River Estuary	Los Angeles River Estuary			
		Location ID	SP-RW-19_201702	SP-RW-19_201702	SP-RW-20_201702	LE-RW-21_201702	LE-RW-22_201702			
		Sample ID	SP-RW-19-G-S-20170218	SP-RW-1019-G-S-20170218	SP-RW-20-G-S-20170218	LE-RW-21-G-S-20170218	LE-RW-22-G-S-20170218			
		Sample Date	2/18/2017	2/18/2017	2/18/2017	2/18/2017	2/18/2017			
		Depth	1 m	1 m	1 m	1 m	0.1 m			
		Sample Type	N	FD	N	N	N			
		Matrix	WO	WO	WO	WO	WO			
		X	-118.131591	-118.131591	-118.157332	-118.19314	-118.20211			
		Y	33.73667	33.73667	33.72548	33.75639	33.76101			
	Method	Criteria for Protection of Human Health Organisms Only	California Toxics Rule Saltwater Continuous Concentration					Number Analyzed ¹	WQ Exceedances ¹	Percentage of Exceedance ¹
PCB-077	SW8270CSIM	--	--	0.00062 U	0.00062 U	0.00062 U	0.00060 U	22	--	--
PCB-081	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00048 U	0.00047 U	22	--	--
PCB-087	SW8270CSIM	--	--	0.00070 U	0.00070 U	0.00071 U	0.00068 U	22	--	--
PCB-099	SW8270CSIM	--	--	0.00060 U	0.00060 U	0.00061 U	0.00059 U	22	--	--
PCB-101	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00050 U	0.00048 U	22	--	--
PCB-105	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00047 U	0.00045 U	22	--	--
PCB-110	SW8270CSIM	--	--	0.00033 U	0.00033 U	0.00034 U	0.00032 U	22	--	--
PCB-114	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00047 U	0.00045 U	22	--	--
PCB-118	SW8270CSIM	--	--	0.00049 U	0.00049 U	0.00050 U	0.00048 U	22	--	--
PCB-119	SW8270CSIM	--	--	0.00017 U	0.00017 U	0.00017 U	0.00017 U	22	--	--
PCB-123	SW8270CSIM	--	--	0.00082 U	0.00082 U	0.00083 U	0.00080 U	22	--	--
PCB-126	SW8270CSIM	--	--	0.00025 U	0.00025 U	0.00025 U	0.00024 U	22	--	--
PCB-128	SW8270CSIM	--	--	0.00043 U	0.00043 U	0.00043 U	0.00042 U	22	--	--
PCB-132/153	SW8270CSIM	--	--	0.00069 U	0.00069 U	0.00069 U	0.00067 U	22	--	--
PCB-138/158	SW8270CSIM	--	--	0.00059 U	0.00059 U	0.00060 U	0.00057 U	22	--	--
PCB-149	SW8270CSIM	--	--	0.00023 U	0.00023 U	0.00023 U	0.00022 U	22	--	--
PCB-151	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00039 U	22	--	--
PCB-156	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00039 U	22	--	--
PCB-157	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00041 U	0.00039 U	22	--	--
PCB-167	SW8270CSIM	--	--	0.00080 U	0.00080 U	0.00081 U	0.00078 U	22	--	--
PCB-168	SW8270CSIM	--	--	0.00051 U	0.00051 U	0.00052 U	0.00050 U	22	--	--
PCB-169	SW8270CSIM	--	--	0.00040 U	0.00040 U	0.00040 U	0.00039 U	22	--	--
PCB-170	SW8270CSIM	--	--	0.00042 U	0.00042 U	0.00042 U	0.00041 U	22	--	--
PCB-177	SW8270CSIM	--	--	0.00027 U	0.00027 U	0.00028 U	0.00027 U	22	--	--
PCB-180	SW8270CSIM	--	--	0.00060 U	0.00060 U	0.00060 U	0.00058 U	22	--	--
PCB-183	SW8270CSIM	--	--	0.00052 U	0.00052 U	0.00052 U	0.00050 U	22	--	--
PCB-187	SW8270CSIM	--	--	0.00043 U	0.00043 U	0.00043 U	0.00041 U	22	--	--
PCB-189	SW8270CSIM	--	--	0.00048 U	0.00048 U	0.00049 U	0.00047 U	22	--	--
PCB-194	SW8270CSIM	--	--	0.00025 U	0.00025 U	0.00025 U	0.00024 U	22	--	--
PCB-201	SW8270CSIM	--	--	0.00046 U	0.00046 U	0.00047 U	0.00045 U	22	--	--
PCB-206	SW8270CSIM	--	--	0.00043 U	0.00043 U	0.00043 U	0.00041 U	22	--	--
Total PCB Congener - low resolution (U = 0)	--	0.00017	0.03	0.00041 U	0.00041 U	0.00042 U	0.00040 U	22	0	0%

Table 14
Winter 2017 Water Quality Chemistry Results

Notes:

*The total suspended solid results for samples collected from mid-depth and bottom depth are respectively labeled as "-M-" and "-B-" preceding the sample ID date. They are not direct results of the surface sample IDs indicated in the column headers in this spreadsheet.

1. Number analyzed and WQ exceedance counts do not include samples that were analyzed for field or laboratory quality control purposes (e.g., field duplicates). WQ exceedance counts do not include non-detect results above the screening levels.

Horizontal coordinate datum is GCS North American Datum 1983 latitude/longitude.

All undetect results are reported at the method detection limit.

Totals (U=0) are calculated as the sum of all detected results. If all results are not detected, half of the highest reporting limit value is reported as the sum.

Total chlordane is the sum of alpha-chlordane, beta-chlordane, gamma-chlordane, cis-nonachlor, trans-nonachlor, and oxychlordane.

Total DDx is the sum of 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT, if measured.

Total PCB congeners is the sum of all PCB congeners listed in this table.

USEPA Stage 2A data validation was completed by Anchor QEA.

Detected concentration is greater than California Toxics Rule Criteria for Protection of Human Health Organisms Only

Detected concentration is greater than California Toxics Rule Saltwater Continuous Concentration screening level

Italics: Non-detected concentration is above one or more identified screening levels

Bold: detected result

--: results not reported or not applicable

µg/L: microgram per liter

FD: field duplicate

J: estimated value

m: meter

mg/L: milligram per liter

N: normal environmental sample

PCB: polychlorinated biphenyl

U: compound analyzed but not detected above detection limit

USEPA: U.S. Environmental Protection Agency

WO: ocean water matrix

WQ: water quality

Table 15
Sediment Field Data (August 2016)

TMDL Waterbody	Site	Sample Type	Actual Collection Coordinates		Sample Collection	Number of Grabs	Analysis Type			Field Duplicate
			Latitude	Longitude			Chemical	Toxicity	Benthic Infauna	
Consolidated Slip	CS-SS-01	Sediment	33°46.3862	-118°14.9197	Grab	2	X	X	X	
Inner Harbor - LA	IA-SS-02	Sediment	33°46.2004	-118°15.0040	Grab	3	X	X	X	
Inner Harbor - LA	IA-SS-03	Sediment	33°45.6561	-118°16.4537	Grab	2	X	X	X	
Inner Harbor - LA	IA-SS-04	Sediment	33°45.0950	-118°15.9942	Grab	2	X	X	X	
Inner Harbor - LA	IA-SS-05	Sediment	33°43.8450	-118°15.4391	Grab	3	X	X	X	
Inner Harbor - LA	IA-SS-06	Sediment	33°44.0640	-118°16.4494	Grab	3	X	X	X	X
Fish Harbor	FH-SS-07	Sediment	33°43.8351	-118°15.9550	Grab	2	X	X	X	
Outer Harbor - LA	OA-SS-08	Sediment	33°42.9871	-118°14.4538	Grab	2	X	X	X	
Outer Harbor - LA	OA-SS-09	Sediment	33°43.2928	-118°15.6747	Grab	2	X	X	X	
Cabrillo Marina	CM-SS-10	Sediment	33°42.9642	-118°16.8240	Grab	3	X	X	X	
Cabrillo Beach	CB-SS-11	Sediment	33°42.9225	-118°16.8727	Grab	2	X	X	X	
Inner Harbor - LB	IB-SS-12	Sediment	33°46.4104	-118°13.0975	Grab	2	X	X	X	
Inner Harbor - LB	IB-SS-13	Sediment	33°45.4694	-118°12.8766	Grab	3	X	X	X	
Inner Harbor - LB	IB-SS-14	Sediment	33°44.9478	-118°14.4082	Grab	2	X	X	X	
Inner Harbor - LB	IB-SS-15	Sediment	33°44.5532	-118°12.0586	Grab	2	X	X	X	
Outer Harbor - LB	OB-SS-16	Sediment	33°44.3948	-118°12.9557	Grab	4	X	X	X	X
Outer Harbor - LB	OB-SS-17	Sediment	33°45.5613	-118°11.9520	Grab	2	X	X	X	
East San Pedro Bay	SP-SS-18	Sediment	33°44.8528	-118°11.1106	Grab	2	X	X	X	
East San Pedro Bay	SP-SS-19	Sediment	33°44.5352	-118°07.6139	Grab	5	X	X	X	
East San Pedro Bay	SP-SS-20	Sediment	33°44.2817	-118°09.9075	Grab	2	X	X	X	
Los Angeles River Estuary	LE-SS-21	Sediment	33°45.5378	-118°11.7893	Grab	2	X	X	X	
Los Angeles River Estuary	LE-SS-22	Sediment	33°45.6527	-118°11.9786	Grab	2	X	X	X	

Note:

TMDL: Total Maximum Daily Load

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	
	Sed Consolidated	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA
Area	Slip CS-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-
Location ID	01_201608	02_201608	03_201608	04_201608	05_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608	06_201608
Sample ID	CS-SS-01-0-5-	IA-SS-02-0-5-	IA-SS-03-0-5-	IA-SS-04-0-5-	IA-SS-05-0-5-	IA-SS-06-0-5-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-	IA-SS-1006-0-
Sample Date	20160817	20160817	20160816	20160817	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816	20160816
Depth Interval	8/17/2016	8/17/2016	8/16/2016	8/17/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016
Sample Type	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm
Matrix	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Matrix X	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Matrix X	-118.24866	-118.25007	-118.27423	-118.26657	-118.25732	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416	-118.27416
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	
Conventional Parameters (pct)																		
Total organic carbon	SW9060A	22	--	--	--	--	--	--	0.62 J	0.37 J	0.48	0.39 J	0.15	1.5	1.4	0.59	2.0 J	
Total solids	SM2540B	22	--	--	--	--	--	--	39.4	40.6	53.6	62.5	68.4	49.8	47.1	65.9	46.8	
Grain Size (pct)																		
Gravel (>2 mm)	D4464M	22	--	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Sand (2.00 mm - 1.00 mm)	D4464M	22	--	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.13	0.01 U	0.01 U	0.16	0.01 U	
Sand, coarse	D4464M	22	--	--	--	--	--	--	0.01 U	1.13	0.01 U	2.07	4.54	0.01 U	0.01 U	5.64	0.01 U	
Sand, medium	D4464M	22	--	--	--	--	--	--	1.49	8.15	3.62	8.59	21.49	0.01 U	0.01 U	20.02	0.05	
Sand, fine	D4464M	22	--	--	--	--	--	--	14.50	14.60	10.80	28.01	29.38	8.43	8.97	25.12	4.80	
Sand, very fine	D4464M	22	--	--	--	--	--	--	16.00	16.50	14.11	17.61	13.49	15.40	14.50	9.51	14.10	
Silt	D4464M	22	--	--	--	--	--	--	58.89	49.51	56.52	36.01	25.98	63.30	63.70	34.23	69.42	
Clay, <5 micron	D4464M	22	--	--	--	--	--	--	9.12	10.11	14.95	7.70	4.99	12.88	12.83	5.32	11.63	
Metals (mg/kg)																		
Cadmium	E1638M	22	1.2	2	9%	--	--	--	1.17	0.789	0.235	0.152	0.0970	0.293	0.392	0.141	0.671	
Chromium	E1638M	22	81	1	5%	--	--	--	69.8	65.1	37.6	30.1	21.6	31.9	44.2	23.5	38.1	
Copper	E1638M	22	34	18	82%	--	--	--	183	160	60.9	45.0	25.6	65.0	84.4	66.1	41.4	
Lead	E1638M	22	46.7	6	27%	--	--	--	95.9	81.8	23.6	16.0	7.51	24.1	29.5	19.0	17.2	
Mercury	E1631B	22	0.15	11	50%	--	--	--	0.624	0.637	0.229	0.119	0.0632	0.301	0.316	0.294	0.0748	
Zinc	E1638M	22	150	7	32%	--	--	--	467	297	98.9	82.2	57.2	106	135	83.2	96.0	
Polycyclic Aromatic Hydrocarbons (µg/kg)																		
1-Methylnaphthalene	SW8270CSIM	22	--	--	--	--	--	--	59 U	57 U	4.3 U	3.7 U	3.4 U	4.7 U	4.9 U	3.6 J	5.0 U	
1-Methylphenanthrene	SW8270CSIM	22	--	--	--	--	--	--	63 U	140 J	16 J	12 J	3.6 U	17 J	31	10 J	5.3 U	
2,6-Dimethylnaphthalene	SW8270CSIM	22	--	--	--	--	--	--	220 J	160 J	18 J	32	17	50	56	21	110	
2-Methylnaphthalene	SW8270CSIM	22	70	0	0%	--	--	--	59 U	57 U	4.3 U	3.7 U	3.4 U	5.9 J	5.8 J	6.9 J	5.0 U	
Acenaphthene	SW8270CSIM	22	16	2	9%	--	--	--	60 U	74 J	4.4 U	4.3 J	3.4 U	5.2 J	5.2 J	3.7 J	5.0 U	
Anthracene	SW8270CSIM	22	85.3	5	23%	--	--	--	280	370	46	85	5.1 U	130	130	42	13 J	
Benzo(a)anthracene	SW8270CSIM	22	261	3	14%	--	--	--	620	740	44	120	7.1 J	170	170	63	26	
Benzo(a)pyrene	SW8270CSIM	22	430	3	14%	--	--	--	750	1,000	140	160	9.6 J	250	310	97	46	
Benzo(e)pyrene	SW8270CSIM	22	--	--	--	--	--	--	700	730	92	110	8.6 J	180	200	69	33	
Biphenyl (1,1'-Biphenyl)	SW8270CSIM	22	--	--	--	--	--	--	47 U	46 U	3.5 U	3.0 U	2.7 U	3.7 U	4.0 U	2.8 U	4.3 J	
Chrysene	SW8270CSIM	22	384	3	14%	--	--	--	1,100	1,200	79	220	8.8 J	330	280	99	36	
Dibenzo(a,h)anthracene	SW8270CSIM	22	63.4	4	18%	--	--	--	180 J	160 J	26	35	2.8 U	38	56	21	4.2 U	
Fluoranthene	SW8270CSIM	22	600	2	9%	--	--	--	990	1,100	44	170	11 J	300	270	90	54	
Fluorene	SW8270CSIM	22	19	2	9%	--	--	--	79 U	86 J	5.8 U	8.8 J	4.5 U	13 J	12 J	5.9 J	6.7 U	
Naphthalene	SW8270CSIM	22	160	0	0%	--	--	--	88 U	85 U	6.4 U	5.5 U	5.1 U	6.9 U	7.4 U	6.0 J	7.4 U	
Perylene	SW8270CSIM	22	--	--	--	--	--	--	260	520	93	88	27	250	270	47	480	
Phenanthrene	SW8270CSIM	22	240	2	9%	--	--	--	330	560	17 J	68	3.7 J	80	56	49	21 J	
Pyrene	SW8270CSIM	22	665	3	14%	--	--	--	1,200	1,200	55	130	8.5 J	280	220	94	59	
Total HPAH (9 of 17) (U = 0)	--	22	1700	3	14%	--	--	--	4,840 J	5,400 J	388	835	45 J	1368	1,306	464	221	
Total LPAH (8 of 17) (U = 0)	--	22	552	3	14%	--	--	--	610	1,090 J	63 J	166 J	3.7 J	234 J	209 J	114 J	38 J	

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_								
	Sed Consolidated	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Inner Harbor - LA	Sed Outer Harbor - LA								
Area	Slip CS-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	Fish Harbor FH-SS-	Outer Harbor - LA OA-SS-							
Location ID	01_201608	02_201608	03_201608	04_201608	05_201608	06_201608	06_201608	07_201608	08_201608								
Sample ID	CS-SS-01-0-5-20160817	IA-SS-02-0-5-20160817	IA-SS-03-0-5-20160816	IA-SS-04-0-5-20160817	IA-SS-05-0-5-20160816	IA-SS-06-0-5-20160816	5-20160816	FH-SS-07-0-5-20160816	OA-SS-08-0-5-20160819								
Sample Date	8/17/2016	8/17/2016	8/16/2016	8/17/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/19/2016								
Depth Interval	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm								
Sample Type	N	N	N	N	N	N	FD	N	N								
Matrix	SE	SE	SE	SE	SE	SE	SE	SE	SE								
X	-118.24866	-118.25007	-118.27423	-118.26657	-118.25732	-118.27416	-118.27416	-118.26592	-118.24090								
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets Percentage of Exceedance ¹											
Total PAH (17) (U = 0)	--	22	4022	3	14%	--	--	--	5,450 J	6,490 J	451 J	1,001 J	49 J	1,602 J	1,515 J	578 J	259 J
Pesticides (µg/kg)																	
2,4'-DDD (o,p'-DDD)	SW8270CSIM	22	--	--	--	--	--	--	0.19 U	0.19 U	0.14 U	0.12 U	0.11 U	0.15 U	0.16 U	0.12 U	0.16 U
2,4'-DDE (o,p'-DDE)	SW8270CSIM	22	--	--	--	--	--	--	0.089 U	0.087 U	0.065 U	0.056 U	0.051 U	9.4	8.6	2.7	14
2,4'-DDT (o,p'-DDT)	SW8270CSIM	22	--	--	--	--	--	--	0.16 U	0.15 U	0.11 U	0.098 U	0.090 U	0.12 U	0.13 U	0.094 U	0.13 U
4,4'-DDD (p,p'-DDD)	SW8270CSIM	22	2	1	5%	--	--	--	0.10 U	19	0.074 U	0.063 U	0.058 U	0.080 U	0.084 U	0.060 U	0.085 U
4,4'-DDE (p,p'-DDE)	SW8270CSIM	22	2.2	21	95%	--	--	--	50	59	13	11	9.4	53	54	27	90
4,4'-DDT (p,p'-DDT)	SW8270CSIM	22	1	0	0%	--	--	--	0.13 U	0.13 U	0.097 U	0.083 U	0.076 U	0.11 U	0.11 U	0.080 U	0.11 U
Chlordane, alpha- (Chlordane, cis-)	SW8270CSIM	22	--	--	--	--	--	--	3.6	3.3	0.12 U	0.11 U	0.097 U	0.13 U	0.14 U	0.10 U	0.14 U
Chlordane, beta- (Chlordane, trans-)	SW8270CSIM	22	--	--	--	--	--	--	8.3	5.7	0.099 U	0.085 U	0.077 U	0.11 U	0.11 U	0.081 U	0.11 U
Dieldrin	SW8270CSIM	22	0.02	0	0%	--	--	--	0.27 U	0.26 U	0.20 U	0.17 U	0.15 U	0.21 U	0.22 U	0.16 U	0.23 U
Nonachlor, cis-	SW8270CSIM	22	--	--	--	--	--	--	2.9	2.1	0.094 U	0.080 U	0.074 U	0.10 U	0.11 U	0.077 U	0.11 U
Nonachlor, trans-	SW8270CSIM	22	--	--	--	--	--	--	5.8	2.7	0.079 U	0.068 U	0.062 U	0.086 U	0.091 U	0.065 U	0.092 U
Oxychlordane	SW8270CSIM	22	--	--	--	--	--	--	0.18 U	0.18 U	0.13 U	0.12 U	0.11 U	0.15 U	0.15 U	0.11 U	0.16 U
Toxaphene	SW8081A	22	--	--	--	0.1	0	0%	23 U	22 U	17 U	14 U	13 U	18 U	19 U	14 U	19 U
Total Chlordane (U = 0)	--	22	0.5	5	23%	1.3	5	23%	20.6	13.8	0.13 U	0.12 U	0.11 U	0.15 U	0.15 U	0.11 U	0.16 U
Total DDTs (U = 0)	--	22	1.58	21	95%	1.9	21	95%	50	78	13	11	9.4	62	63	30	104
PCB Congeners - Low resolution (µg/kg)																	
PCB-005/008	SW8270CSIM	22	--	--	--	--	--	--	0.36 U	0.36 U	0.27 U	0.23 U	0.21 U	0.29 U	0.31 U	0.22 U	0.39
PCB-018	SW8270CSIM	22	--	--	--	--	--	--	0.18 U	0.18 U	0.13 U	0.11 U	0.10 U	0.14 U	0.15 U	0.11 U	0.15 U
PCB-028	SW8270CSIM	22	--	--	--	--	--	--	0.084 U	0.083 U	0.063 U	0.053 U	0.049 U	0.067 U	1.1	0.050 U	0.95
PCB-037	SW8270CSIM	22	--	--	--	--	--	--	8.9	0.15 U	0.11 U	0.096 U	0.088 U	0.12 U	0.13 U	0.091 U	0.13 U
PCB-044	SW8270CSIM	22	--	--	--	--	--	--	16	0.21 U	0.16 U	0.14 U	0.13 U	1.6	1.9	0.13 U	1.8
PCB-049	SW8270CSIM	22	--	--	--	--	--	--	82	11	0.37 J	0.65	0.16 U	0.99	1.1	0.63	0.71
PCB-052	SW8270CSIM	22	--	--	--	--	--	--	200	16	1.1	0.73	0.091 U	2.5	2.1	1.2	1.4
PCB-066	SW8270CSIM	22	--	--	--	--	--	--	5.6	6.9	1.0	1.1	0.15 U	2.2	2.1	1.3	2.6
PCB-070	SW8270CSIM	22	--	--	--	--	--	--	7.8	8.4	1.3	0.98	0.087 U	2.6	2.1	1.5	2.2
PCB-074	SW8270CSIM	22	--	--	--	--	--	--	0.22 U	4.2	0.81	0.14 U	0.13 U	1.4	1.1	0.79	1.2
PCB-077	SW8270CSIM	22	--	--	--	--	--	--	29	8.5	0.14 U	0.12 U	0.11 U	1.8	0.16 U	0.12 U	0.16 U
PCB-081	SW8270CSIM	22	--	--	--	--	--	--	0.30 U	0.30 U	0.22 U	0.19 U	0.17 U	0.24 U	0.25 U	0.18 U	0.25 U
PCB-087	SW8270CSIM	22	--	--	--	--	--	--	7.3	7.7	1.5	0.92	0.16 U	3.8	3.1	1.4	3.2
PCB-099	SW8270CSIM	22	--	--	--	--	--	--	43	19	2.0	1.2	0.42	3.1	2.6	2.0	1.8
PCB-101	SW8270CSIM	22	--	--	--	--	--	--	59	29	3.6	2.1	0.66	6.7	5.6	3.7	2.9
PCB-105	SW8270CSIM	22	--	--	--	--	--	--	13	13	1.8	1.3	0.079 U	5.0	2.8	1.7	2.4
PCB-110	SW8270CSIM	22	--	--	--	--	--	--	30	18	3.9	2.1	0.74	6.9	5.5	3.4	3.1
PCB-114	SW8270CSIM	22	--	--	--	--	--	--	0.21 U	0.20 U	0.15 U	0.13 U	0.12 U	0.16 U	0.17 U	0.12 U	0.17 U
PCB-118	SW8270CSIM	22	--	--	--	--	--	--	17	18	4.7	2.8	0.84	6.7	6.1	4.2	3.8
PCB-119	SW8270CSIM	22	--	--	--	--	--	--	13	3.7	0.18 U	0.15 U	0.14 U	0.19 U	0.20 U	0.14 U	0.20 U
PCB-123	SW8270CSIM	22	--	--	--	--	--	--	0.26 U	0.26 U	0.19 U	0.17 U	0.15 U	0.21 U	0.22 U	0.16 U	0.22 U
PCB-126	SW8270CSIM	22	--	--	--	--	--	--	0.20 U	0.20 U	0.15 U	0.13 U	0.12 U	0.16 U	0.17 U	0.12 U	0.17 U

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_								
	Sed Consolidated	Sed Inner Harbor -	Sed Inner Harbor -	Sed Inner Harbor -	Sed Inner Harbor -	Sed Inner Harbor -	Sed Inner Harbor -	Sed Inner Harbor -	Sed Outer Harbor -								
Area	Slip	LA	LA	LA	LA	LA	LA	Fish Harbor	LA								
Location ID	CS-SS-01-0-5-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	IA-SS-	FH-SS-	OA-SS-								
Sample ID	01_201608	02_201608	03_201608	04_201608	05_201608	06_201608	06_201608	07_201608	08_201608								
Sample Date	CS-SS-01-0-5-	IA-SS-02-0-5-	IA-SS-03-0-5-	IA-SS-04-0-5-	IA-SS-05-0-5-	IA-SS-06-0-5-	IA-SS-1006-0-	FH-SS-07-0-5-	OA-SS-08-0-5-								
Depth Interval	20160817	20160817	20160816	20160817	20160816	20160816	20160816	5-20160816	20160819								
Sample Type	8/17/2016	8/17/2016	8/16/2016	8/17/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/19/2016								
Matrix	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm								
X	N	N	N	N	N	N	FD	N	N								
	SE	SE	SE	SE	SE	SE	SE	SE	SE								
	-118.24866	-118.25007	-118.27423	-118.26657	-118.25732	-118.27416	-118.27416	-118.26592	-118.24090								
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets Percentage of Exceedance ¹											
PCB-128	SW8270CSIM	22	--	--	--	--	4.6	5.7	1.2	0.16 U	0.15 U	2.1	1.2	1.1	0.22 U		
PCB-132/153	SW8270CSIM	22	--	--	--	--	160	98	7.6	4.4	0.93	11	10	7.3	5.2		
PCB-138/158	SW8270CSIM	22	--	--	--	--	91	51	6.7	3.7	0.49 J	9.8	7.8	5.3	4.9		
PCB-149	SW8270CSIM	22	--	--	--	--	250	59	3.7	2.1	0.46	5.6	4.4	3.3	2.7		
PCB-151	SW8270CSIM	22	--	--	--	--	69	20	1.4	1.2	0.098 U	2.4	2.0	1.6	1.2		
PCB-156	SW8270CSIM	22	--	--	--	--	0.14 U	3.6	0.73	0.092 U	0.084 U	1.3	0.12 U	0.087 U	0.12 U		
PCB-157	SW8270CSIM	22	--	--	--	--	0.13 U	0.13 U	0.097 U	0.083 U	0.076 U	0.10 U	0.11 U	0.078 U	0.11 U		
PCB-167	SW8270CSIM	22	--	--	--	--	0.15 U	0.15 U	0.11 U	0.098 U	0.090 U	0.12 U	0.13 U	0.093 U	0.13 U		
PCB-168	SW8270CSIM	22	--	--	--	--	0.12 U	0.12 U	0.091 U	0.078 U	0.071 U	0.097 U	0.10 U	0.073 U	0.10 U		
PCB-169	SW8270CSIM	22	--	--	--	--	8.4	2.5	0.11 U	0.097 U	0.089 U	0.12 U	0.13 U	0.092 U	0.13 U		
PCB-170	SW8270CSIM	22	--	--	--	--	44	24	1.2	0.86	0.092 U	1.8	1.8	1.3	1.8		
PCB-177	SW8270CSIM	22	--	--	--	--	17	13	0.16 U	0.14 U	0.13 U	0.95	1.0	0.13 U	0.18 U		
PCB-180	SW8270CSIM	22	--	--	--	--	90	63	2.2	1.9	0.061 U	4.0	4.0	3.0	2.4		
PCB-183	SW8270CSIM	22	--	--	--	--	34	15	0.56	0.62	0.16 U	0.88	0.99	1.1	0.23 U		
PCB-187	SW8270CSIM	22	--	--	--	--	170	45	1.2	1.1	0.12 U	2.2	2.0	1.7	1.7		
PCB-189	SW8270CSIM	22	--	--	--	--	0.15 U	0.15 U	0.11 U	0.097 U	0.089 U	0.12 U	0.13 U	0.092 U	0.13 U		
PCB-194	SW8270CSIM	22	--	--	--	--	40	12	0.21 U	0.18 U	0.16 U	0.82	1.0	0.8	0.24 U		
PCB-195	SW8270CSIM	22	--	--	--	--	15	6.0	0.22 U	0.19 U	0.17 U	0.23 U	0.25 U	0.18 U	0.25 U		
PCB-201	SW8270CSIM	22	--	--	--	--	5.5	2.8	0.18 U	0.15 U	0.14 U	0.19 U	0.20 U	0.15 U	0.20 U		
PCB-206	SW8270CSIM	22	--	--	--	--	14	5.1	0.36 U	0.31 U	0.28 U	0.38 U	0.41 U	0.79	0.41 U		
PCB-209	SW8270CSIM	22	--	--	--	--	2.6	2.1	0.27 U	0.23 U	0.21 U	0.76	1.2	0.22 U	0.31 U		
Total PCB Congener - low resolution (U = 0)	--	22	22.7	19	86%	3.2	21	95%	1547	591	48.6 J	29.8	4.54 J	89	75	49.1	48.4

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_
	Sed	Sed	Sed	Sed	Sed	Sed	Sed	Sed	Sed
Area	Outer Harbor -	Cabrillo	Cabrillo Beach	Inner Harbor -	Inner Harbor -	Inner Harbor -	Inner Harbor -	Outer Harbor -	Outer Harbor -
Location ID	LA	Marina	CB-SS-	LB	LB	LB	LB	OB-SS-	OB-SS-
Sample ID	OA-SS-	CM-SS-	CB-SS-	IB-SS-	IB-SS-	IB-SS-	IB-SS-	OB-SS-	OB-SS-
Sample Date	09_201608	10_201608	11_201608	12_201608	13_201608	14_201608	15_201608	16_201608	16_201608
Depth Interval	OA-SS-09-0-5-	CM-SS-10-0-5-	CB-SS-11-0-5-	IB-SS-12-0-5-	IB-SS-13-0-5-	IB-SS-14-0-5-	IB-SS-15-0-5-	OB-SS-16-0-5-	OB-SS-1016-0-
Sample Type	20160816	20160816	20160816	20160817	20160817	20160817	20160818	20160819	5-20160819
Matrix	8/16/2016	8/16/2016	8/16/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/19/2016	8/19/2016
Matrix	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm
Matrix	N	N	N	N	N	N	N	N	FD
Matrix	SE	SE	SE	SE	SE	SE	SE	SE	SE
Matrix	X	X	X	X	X	X	X	X	X
Matrix	-118.26125	-118.28040	-118.28121	-118.21829	-118.21461	-118.24014	-118.20098	-118.21593	-118.21593
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹
Conventional Parameters (pct)									
Total organic carbon	SW9060A	22	--	--	--	--	--	--	--
Total solids	SM2540B	22	--	--	--	--	--	--	--
Grain Size (pct)									
Gravel (>2 mm)	D4464M	22	--	--	--	--	--	--	--
Sand (2.00 mm - 1.00 mm)	D4464M	22	--	--	--	--	--	--	--
Sand, coarse	D4464M	22	--	--	--	--	--	--	--
Sand, medium	D4464M	22	--	--	--	--	--	--	--
Sand, fine	D4464M	22	--	--	--	--	--	--	--
Sand, very fine	D4464M	22	--	--	--	--	--	--	--
Silt	D4464M	22	--	--	--	--	--	--	--
Clay, <5 micron	D4464M	22	--	--	--	--	--	--	--
Metals (mg/kg)									
Cadmium	E1638M	22	1.2	2	9%	--	--	--	--
Chromium	E1638M	22	81	1	5%	--	--	--	--
Copper	E1638M	22	34	18	82%	--	--	--	--
Lead	E1638M	22	46.7	6	27%	--	--	--	--
Mercury	E1631B	22	0.15	11	50%	--	--	--	--
Zinc	E1638M	22	150	7	32%	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene	SW8270CSIM	22	--	--	--	--	--	--	--
1-Methylphenanthrene	SW8270CSIM	22	--	--	--	--	--	--	--
2,6-Dimethylnaphthalene	SW8270CSIM	22	--	--	--	--	--	--	--
2-Methylnaphthalene	SW8270CSIM	22	70	0	0%	--	--	--	--
Acenaphthene	SW8270CSIM	22	16	2	9%	--	--	--	--
Anthracene	SW8270CSIM	22	85.3	5	23%	--	--	--	--
Benzo(a)anthracene	SW8270CSIM	22	261	3	14%	--	--	--	--
Benzo(a)pyrene	SW8270CSIM	22	430	3	14%	--	--	--	--
Benzo(e)pyrene	SW8270CSIM	22	--	--	--	--	--	--	--
Biphenyl (1,1'-Biphenyl)	SW8270CSIM	22	--	--	--	--	--	--	--
Chrysene	SW8270CSIM	22	384	3	14%	--	--	--	--
Dibenzo(a,h)anthracene	SW8270CSIM	22	63.4	4	18%	--	--	--	--
Fluoranthene	SW8270CSIM	22	600	2	9%	--	--	--	--
Fluorene	SW8270CSIM	22	19	2	9%	--	--	--	--
Naphthalene	SW8270CSIM	22	160	0	0%	--	--	--	--
Perylene	SW8270CSIM	22	--	--	--	--	--	--	--
Phenanthrene	SW8270CSIM	22	240	2	9%	--	--	--	--
Pyrene	SW8270CSIM	22	665	3	14%	--	--	--	--
Total HPAH (9 of 17) (U = 0)	--	22	1700	3	14%	--	--	--	--
Total LPAH (8 of 17) (U = 0)	--	22	552	3	14%	--	--	--	--

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_								
	Sed	Sed	Sed	Sed	Sed	Sed	Sed	Sed	Sed								
Area	Outer Harbor -	Cabrillo	Cabrillo Beach	Inner Harbor -	Inner Harbor -	Inner Harbor -	Inner Harbor -	Outer Harbor -	Outer Harbor -								
Location ID	LA	Marina	CB-SS-	LB	LB	LB	LB	OB-SS-	OB-SS-								
Sample ID	OA-SS-09-0-5-	CM-SS-10-0-5-	CB-SS-11-0-5-	IB-SS-12-0-5-	IB-SS-13-0-5-	IB-SS-14-0-5-	IB-SS-15-0-5-	OB-SS-16-0-5-	OB-SS-1016-0-								
Sample Date	20160816	20160816	20160816	20160817	20160817	20160817	20160818	20160819	5-20160819								
Depth Interval	8/16/2016	8/16/2016	8/16/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/19/2016	8/19/2016								
Sample Type	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm								
Matrix	N	N	N	N	N	N	N	N	FD								
Matrix X	SE	SE	SE	SE	SE	SE	SE	SE	SE								
	-118.26125	-118.28040	-118.28121	-118.21829	-118.21461	-118.24014	-118.20098	-118.21593	-118.21593								
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets Percentage of Exceedance ¹											
Total PAH (17) (U = 0)	--	22	4022	3	14%	--	--	--	372 J	1,193 J	778 J	5,934	697 J	790 J	168 J	274 J	264 J
Pesticides (µg/kg)																	
2,4'-DDD (o,p'-DDD)	SW8270CSIM	22	--	--	--	--	--	--	0.17 U	0.19 U	0.14 U	0.16 U	0.15 U	0.12 U	0.12 U	0.14 U	0.14 U
2,4'-DDE (o,p'-DDE)	SW8270CSIM	22	--	--	--	--	--	--	16	7.5	0.066 U	0.072 U	0.070 U	2.1	0.056 U	4.5	4.2
2,4'-DDT (o,p'-DDT)	SW8270CSIM	22	--	--	--	--	--	--	0.14 U	0.15 U	0.12 U	0.13 U	0.12 U	0.10 U	0.099 U	0.12 U	0.12 U
4,4'-DDD (p,p'-DDD)	SW8270CSIM	22	2	1	5%	--	--	--	0.088 U	0.099 U	0.075 U	0.082 U	0.079 U	0.065 U	0.064 U	0.075 U	0.074 U
4,4'-DDE (p,p'-DDE)	SW8270CSIM	22	2.2	21	95%	--	--	--	120	48	15	73	15	8.1	8.9	32	26
4,4'-DDT (p,p'-DDT)	SW8270CSIM	22	1	0	0%	--	--	--	0.12 U	0.13 U	0.099 U	0.11 U	-- R	0.086 U	0.084 U	0.099 U	0.098 U
Chlordane, alpha- (Chlordane, cis-)	SW8270CSIM	22	--	--	--	--	--	--	0.15 U	0.17 U	0.13 U	0.14 U	0.13 U	0.11 U	0.11 U	0.13 U	0.12 U
Chlordane, beta- (Chlordane, trans-)	SW8270CSIM	22	--	--	--	--	--	--	0.12 U	0.13 U	0.10 U	0.11 U	0.11 U	0.087 U	0.085 U	0.10 U	0.099 U
Dieldrin	SW8270CSIM	22	0.02	0	0%	--	--	--	0.23 U	0.26 U	0.20 U	0.22 U	-- R	0.17 U	0.17 U	0.20 U	0.20 U
Nonachlor, cis-	SW8270CSIM	22	--	--	--	--	--	--	0.11 U	0.13 U	0.095 U	0.10 U	0.10 U	0.083 U	0.081 U	0.096 U	0.094 U
Nonachlor, trans-	SW8270CSIM	22	--	--	--	--	--	--	0.095 U	0.11 U	0.081 U	0.089 U	0.086 U	0.070 U	0.069 U	0.081 U	0.080 U
Oxychlordane	SW8270CSIM	22	--	--	--	--	--	--	0.16 U	0.18 U	0.14 U	0.15 U	0.15 U	0.12 U	0.12 U	0.14 U	0.14 U
Toxaphene	SW8081A	22	--	--	--	0.1	0	0%	20 U	22 U	17 U	18 U	18 U	15 U	14 U	17 U	17 U
Total Chlordane (U = 0)	--	22	0.5	5	23%	1.3	5	23%	0.16 U	0.18 U	0.14 U	0.15 U	0.15 U	0.12 U	0.12 U	0.14 U	0.14 U
Total DDTs (U = 0)	--	22	1.58	21	95%	1.9	21	95%	136	56	15	73	15 J	10.2	8.9	37	30
PCB Congeners - Low resolution (µg/kg)																	
PCB-005/008	SW8270CSIM	22	--	--	--	--	--	--	0.32 U	0.36 U	0.27 U	0.30 U	0.29 U	0.24 U	0.23 U	0.28 U	0.33
PCB-018	SW8270CSIM	22	--	--	--	--	--	--	0.16 U	0.18 U	0.13 U	0.15 U	0.14 U	0.12 U	0.11 U	0.14 U	0.13 U
PCB-028	SW8270CSIM	22	--	--	--	--	--	--	0.89	1.7	0.063 U	0.069 U	0.067 U	0.41	0.054 U	0.61	0.91
PCB-037	SW8270CSIM	22	--	--	--	--	--	--	0.13 U	0.15 U	0.11 U	0.12 U	0.12 U	0.099 U	0.097 U	0.11 U	0.11 U
PCB-044	SW8270CSIM	22	--	--	--	--	--	--	0.19 U	2.9	1.7	0.18 U	0.17 U	0.14 U	0.14 U	0.17 U	0.16 U
PCB-049	SW8270CSIM	22	--	--	--	--	--	--	0.75	1.6	0.91	0.23 U	0.22 U	0.60	0.18 U	0.21 U	0.21 U
PCB-052	SW8270CSIM	22	--	--	--	--	--	--	1.6	3.4	1.7	0.13 U	0.12 U	1.1	0.10 U	0.12 U	0.12 U
PCB-066	SW8270CSIM	22	--	--	--	--	--	--	2.2	2.0	1.5	5.3	0.2 U	0.98	0.17 U	1.3	1.4
PCB-070	SW8270CSIM	22	--	--	--	--	--	--	1.7	2.2	1.9	6.6	0.12 U	0.87	0.096 U	0.92	0.92
PCB-074	SW8270CSIM	22	--	--	--	--	--	--	1.1	1.3	1.1	3.8	0.17 U	0.14 U	0.14 U	0.17 U	0.16 U
PCB-077	SW8270CSIM	22	--	--	--	--	--	--	0.17 U	0.19 U	0.15 U	0.16 U	0.15 U	0.13 U	0.13 U	0.15 U	0.14 U
PCB-081	SW8270CSIM	22	--	--	--	--	--	--	0.27 U	0.3 U	0.22 U	0.25 U	0.24 U	0.2 U	0.19 U	0.23 U	0.22 U
PCB-087	SW8270CSIM	22	--	--	--	--	--	--	2.8	1.9	2.2	0.22 U	0.21 U	1.1	0.17 U	1.3	1.4
PCB-099	SW8270CSIM	22	--	--	--	--	--	--	2.4	2.6	1.8	5.2	1.5	1.4	0.098 U	1.2	1.2
PCB-101	SW8270CSIM	22	--	--	--	--	--	--	3.2	5.1	3.5	8.0	2.2	2.7	0.16 U	1.2	1.9
PCB-105	SW8270CSIM	22	--	--	--	--	--	--	2.4	2.6	1.8	0.11 U	0.11 U	1.4	0.088 U	1.1	1.6
PCB-110	SW8270CSIM	22	--	--	--	--	--	--	3.5	4.3	3.3	10	3.3	3.1	1.0	1.8	2.0
PCB-114	SW8270CSIM	22	--	--	--	--	--	--	0.18 U	0.20 U	0.15 U	0.17 U	0.16 U	0.13 U	0.13 U	0.16 U	0.15 U
PCB-118	SW8270CSIM	22	--	--	--	--	--	--	3.9	3.9	3.8	10	3.1	3.2	1.2	2.1	2.4
PCB-119	SW8270CSIM	22	--	--	--	--	--	--	0.21 U	0.23 U	0.18 U	0.19 U	0.19 U	0.15 U	0.15 U	0.18 U	0.18 U
PCB-123	SW8270CSIM	22	--	--	--	--	--	--	0.23 U	0.26 U	0.20 U	0.22 U	0.21 U	0.17 U	0.17 U	0.2 U	0.19 U
PCB-126	SW8270CSIM	22	--	--	--	--	--	--	0.18 U	0.2 U	0.15 U	0.16 U	0.16 U	0.13 U	0.13 U	0.15 U	0.15 U

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_								
	Sed	Sed	Sed	Sed	Sed	Sed	Sed	Sed	Sed								
Area	Outer Harbor -	Cabrillo	Cabrillo Beach	Inner Harbor -	Inner Harbor -	Inner Harbor -	Inner Harbor -	Outer Harbor -	Outer Harbor -								
Location ID	LA	Marina	CB-SS-	LB	LB	LB	LB	LB	LB								
Sample ID	OA-SS-	CM-SS-	CB-SS-	IB-SS-	IB-SS-	IB-SS-	IB-SS-	OB-SS-	OB-SS-								
Sample Date	09_201608	10_201608	11_201608	12_201608	13_201608	14_201608	15_201608	16_201608	16_201608								
Depth Interval	OA-SS-09-0-5-	CM-SS-10-0-5-	CB-SS-11-0-5-	IB-SS-12-0-5-	IB-SS-13-0-5-	IB-SS-14-0-5-	IB-SS-15-0-5-	OB-SS-16-0-5-	OB-SS-1016-0-								
Sample Type	20160816	20160816	20160816	20160817	20160817	20160817	20160818	20160819	5-20160819								
Matrix	8/16/2016	8/16/2016	8/16/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/19/2016	8/19/2016								
X	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm								
	N	N	N	N	N	N	N	N	FD								
	SE	SE	SE	SE	SE	SE	SE	SE	SE								
	-118.26125	-118.28040	-118.28121	-118.21829	-118.21461	-118.24014	-118.20098	-118.21593	-118.21593								
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets Percentage of Exceedance ¹											
PCB-128	SW8270CSIM	22	--	--	--	--	--	0.23 U	0.25 U	0.19 U	0.21 U	0.20 U	1.1	0.16 U	0.19 U	0.19 U	
PCB-132/153	SW8270CSIM	22	--	--	--	--	--	5.8	6.0	4.7	24	4.8	7.5	2.1	3.8	4.1	
PCB-138/158	SW8270CSIM	22	--	--	--	--	--	4.3	4.4	3.8	19	3.2	5.2	1.2	3.0	3.2	
PCB-149	SW8270CSIM	22	--	--	--	--	--	2.1	2.7	2.1	12	2.8	3.7	0.83	1.7	1.9	
PCB-151	SW8270CSIM	22	--	--	--	--	--	1.5	1.6	1.3	5.7	0.13 U	1.6	0.11 U	0.13 U	0.60	
PCB-156	SW8270CSIM	22	--	--	--	--	--	0.13 U	0.14 U	0.11 U	0.12 U	0.11 U	0.094 U	0.093 U	0.11 U	0.11 U	
PCB-157	SW8270CSIM	22	--	--	--	--	--	0.12 U	0.13 U	0.098 U	0.11 U	0.10 U	0.085 U	0.084 U	0.099 U	0.097 U	
PCB-167	SW8270CSIM	22	--	--	--	--	--	0.14 U	0.15 U	0.12 U	0.13 U	0.12 U	0.10 U	0.099 U	0.12 U	0.11 U	
PCB-168	SW8270CSIM	22	--	--	--	--	--	0.11 U	0.12 U	0.091 U	18	0.097 U	0.079 U	0.079 U	0.093 U	0.091 U	
PCB-169	SW8270CSIM	22	--	--	--	--	--	0.14 U	0.15 U	0.11 U	0.13 U	0.12 U	0.099 U	0.098 U	0.12 U	0.11 U	
PCB-170	SW8270CSIM	22	--	--	--	--	--	1.2	0.16 U	0.85	7.2	1.5	2.1	0.10 U	0.83	1.0	
PCB-177	SW8270CSIM	22	--	--	--	--	--	0.19 U	0.21 U	0.16 U	3.3	0.17 U	1.1	0.14 U	0.17 U	0.16 U	
PCB-180	SW8270CSIM	22	--	--	--	--	--	2.4	1.9	1.8	16	2.4	4.3	0.068 U	1.5	1.6	
PCB-183	SW8270CSIM	22	--	--	--	--	--	0.24 U	0.27 U	0.51	3.7	0.22 U	1.2	0.18 U	0.21 U	0.21 U	
PCB-187	SW8270CSIM	22	--	--	--	--	--	1.5	1.5	0.96	6.5	1.3	2.5	0.14 U	1.1	1.2	
PCB-189	SW8270CSIM	22	--	--	--	--	--	0.14 U	0.15 U	0.11 U	0.13 U	0.12 U	0.10 U	0.098 U	0.12 U	0.11 U	
PCB-194	SW8270CSIM	22	--	--	--	--	--	0.25 U	0.28 U	0.21 U	3.8	0.22 U	0.18 U	0.18 U	0.21 U	0.21 U	
PCB-195	SW8270CSIM	22	--	--	--	--	--	0.26 U	0.29 U	0.22 U	0.24 U	0.23 U	0.19 U	0.19 U	0.22 U	0.22 U	
PCB-201	SW8270CSIM	22	--	--	--	--	--	0.21 U	0.24 U	0.18 U	0.20 U	0.19 U	0.16 U	0.16 U	0.18 U	0.18 U	
PCB-206	SW8270CSIM	22	--	--	--	--	--	0.43 U	0.48 U	0.36 U	2.7	0.38 U	0.31 U	0.31 U	0.37 U	0.36 U	
PCB-209	SW8270CSIM	22	--	--	--	--	--	0.32 U	0.36 U	0.27 U	3.7	1.2	1.6	0.23 U	0.28 U	1.0	
Total PCB Congener - low resolution (U = 0)	--	22	22.7	19	86%	3.2	21	95%	45.2	53.6	41.2	175	27.3	48.8	6.3	23.5	28.7

Table 16
2016 Sediment Chemistry Results

Task	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_				GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_
	Sed	Sed	Sed	Sed	Sed	Sed	ERL	Fish-Associated	Fish-Associated	Sed	Sed	Sed	Sed	Sed	Sed
Area	Outer Harbor -	San Pedro Bay	San Pedro Bay	San Pedro Bay	San Pedro Bay	Los Angeles									
Location ID	OB-SS-17_201608	SP-SS-18_201608	SP-SS-19_201608	SP-SS-20_201608	SP-SS-20_201608	LE-SS-21_201608									
Sample ID	OB-SS-17-0-5-20160818	SP-SS-18-0-5-20160818	SP-SS-19-0-5-20160818	SP-SS-20-0-5-20160818	SP-SS-20-0-5-20160818	LE-SS-21-0-5-20160818									
Sample Date	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016									
Depth Interval	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm									
Sample Type	N	N	N	N	N	N									
Matrix	SE	SE	SE	SE	SE	SE									
X	-118.19920	-118.18518	-118.12690	-118.16513	-118.16513	-118.19649									
Method	Number Analyzed ¹	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets Percentage of Exceedance ¹									
Conventional Parameters (pct)															
Total organic carbon	SW9060A	22	--	--	--	--	--	--	1.4	1.6	0.025 U	1.3	6.1	6.6	
Total solids	SM2540B	22	--	--	--	--	--	--	47.8	46.5	68.2	48.7	41.0	33.6	
Grain Size (pct)															
Gravel (>2 mm)	D4464M	22	--	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Sand (2.00 mm - 1.00 mm)	D4464M	22	--	--	--	--	--	--	0.01 U	0.01 U	2.05	0.01 U	0.01 U	0.01 U	
Sand, coarse	D4464M	22	--	--	--	--	--	--	0.01 U	0.01 U	0.85	0.01 U	0.34	0.01 U	
Sand, medium	D4464M	22	--	--	--	--	--	--	0.01 U	0.01 U	3.64	0.01 U	3.87	0.67	
Sand, fine	D4464M	22	--	--	--	--	--	--	0.08	0.37	22.61	0.19	17.20	12.20	
Sand, very fine	D4464M	22	--	--	--	--	--	--	12.90	8.58	58.52	12.49	21.30	12.20	
Silt	D4464M	22	--	--	--	--	--	--	75.59	76.92	11.40	74.96	51.41	67.91	
Clay, <5 micron	D4464M	22	--	--	--	--	--	--	11.42	14.13	0.93	12.36	5.87	7.01	
Metals (mg/kg)															
Cadmium	E1638M	22	1.2	2	9%	--	--	--	0.372	0.830	0.0460 J	0.323	1.32	2.32	
Chromium	E1638M	22	81	1	5%	--	--	--	47.1	41.8	9.84	27.5	28.5	46.4	
Copper	E1638M	22	34	18	82%	--	--	--	48.5	47.7	5.55	30.3	75.1	131	
Lead	E1638M	22	46.7	6	27%	--	--	--	29.9	70.2	5.40	33.0	57.1	88.3	
Mercury	E1631B	22	0.15	11	50%	--	--	--	0.0791	0.0649	0.00814	0.0729	0.0520	0.0640	
Zinc	E1638M	22	150	7	32%	--	--	--	128	159	31.4	93.9	354	559	
Polycyclic Aromatic Hydrocarbons (µg/kg)															
1-Methylnaphthalene	SW8270CSIM	22	--	--	--	--	--	--	4.8 U	5.0 U	3.4 U	4.8 U	28 U	35 U	
1-Methylphenanthrene	SW8270CSIM	22	--	--	--	--	--	--	5.5 J	19 J	4.4 J	5.1 U	30 U	37 U	
2,6-Dimethylnaphthalene	SW8270CSIM	22	--	--	--	--	--	--	73	62	3.3 J	61	410	480	
2-Methylnaphthalene	SW8270CSIM	22	70	0	0%	--	--	--	5.9 J	7.6 J	3.4 U	5.2 J	28 U	35 U	
Acenaphthene	SW8270CSIM	22	16	2	9%	--	--	--	4.9 U	5.1 U	3.4 U	4.8 U	29 U	35 U	
Anthracene	SW8270CSIM	22	85.3	5	23%	--	--	--	12 J	13 J	5.1 U	13 J	42 U	52 U	
Benzo(a)anthracene	SW8270CSIM	22	261	3	14%	--	--	--	27	33	3.1 U	33	95 J	130 J	
Benzo(a)pyrene	SW8270CSIM	22	430	3	14%	--	--	--	49	57	2.7 U	48	110 J	150	
Benzo(e)pyrene	SW8270CSIM	22	--	--	--	--	--	--	34	46	2.9 U	37	130	170	
Biphenyl (1,1'-Biphenyl)	SW8270CSIM	22	--	--	--	--	--	--	3.9 U	6.5 J	2.7 U	3.8 U	23 U	28 U	
Chrysene	SW8270CSIM	22	384	3	14%	--	--	--	35	50	3.3 U	50	190	270	
Dibenzo(a,h)anthracene	SW8270CSIM	22	63.4	4	18%	--	--	--	11 J	8.6 J	2.8 U	9.5 J	24 U	29 U	
Fluoranthene	SW8270CSIM	22	600	2	9%	--	--	--	54	70	2.7 U	77	280	300	
Fluorene	SW8270CSIM	22	19	2	9%	--	--	--	6.5 U	6.7 U	4.6 U	6.4 U	38 U	47 U	
Naphthalene	SW8270CSIM	22	160	0	0%	--	--	--	7.2 U	9.2 J	5.1 U	7.1 U	42 U	52 U	
Perylene	SW8270CSIM	22	--	--	--	--	--	--	82	36	3.5 U	32	55 J	83 J	
Phenanthrene	SW8270CSIM	22	240	2	9%	--	--	--	20 J	38	3.2 U	53	140	120 J	
Pyrene	SW8270CSIM	22	665	3	14%	--	--	--	52	77	3.3 U	67	300	400	
Total HPAH (9 of 17) (U = 0)	--	22	1700	3	14%	--	--	--	228 J	296 J	3.3 U	284 J	975 J	1,250 J	
Total LPAH (8 of 17) (U = 0)	--	22	552	3	14%	--	--	--	38 J	74 J	5.1 U	71 J	140	120 J	

Table 16
2016 Sediment Chemistry Results

	Method	Number Analyzed ¹	ERL	ERL Exceedances ¹	ERL Percentage of Exceedance ¹	Fish-Associated Sediment Targets	Fish-Associated Sediment Target Exceedances ¹	Fish-Associated Sediment Targets Percentage of Exceedance ¹	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_
									Outer Harbor - LB OB-SS-17_201608	San Pedro Bay SP-SS-18_201608	San Pedro Bay SP-SS-19_201608	San Pedro Bay SP-SS-20_201608	Los Angeles River Estuary LE-SS-21_201608	Los Angeles River Estuary LE-SS-22_201608
Total PAH (17) (U = 0)	--	22	4022	3	14%	--	--	--	266 J	370 J	5.1 U	356 J	1,115 J	1,370 J
Pesticides (µg/kg)														
2,4'-DDD (o,p'-DDD)	SW8270CSIM	22	--	--	--	--	--	--	0.16 U	0.17 U	0.11 U	0.16 U	0.19 U	0.23 U
2,4'-DDE (o,p'-DDE)	SW8270CSIM	22	--	--	--	--	--	--	8.2	6.7	0.052 U	6.1	0.086 U	0.11 U
2,4'-DDT (o,p'-DDT)	SW8270CSIM	22	--	--	--	--	--	--	0.13 U	0.14 U	0.091 U	0.13 U	0.15 U	0.19 U
4,4'-DDD (p,p'-DDD)	SW8270CSIM	22	2	1	5%	--	--	--	0.083 UJ	0.087 U	0.058 U	0.081 U	0.097 U	0.12 U
4,4'-DDE (p,p'-DDE)	SW8270CSIM	22	2.2	21	95%	--	--	--	59	28	0.38	31	16	22
4,4'-DDT (p,p'-DDT)	SW8270CSIM	22	1	0	0%	--	--	--	-- R	0.11 U	0.077 U	0.11 U	0.13 U	0.16 U
Chlordane, alpha- (Chlordane, cis-)	SW8270CSIM	22	--	--	--	--	--	--	0.14 UJ	0.65	0.098 U	0.14 U	2.5	3.3
Chlordane, beta- (Chlordane, trans-)	SW8270CSIM	22	--	--	--	--	--	--	0.11 UJ	1.7	0.078 U	0.11 U	3.5	4.7
Dieldrin	SW8270CSIM	22	0.02	0	0%	--	--	--	-- R	0.23 U	0.16 U	0.22 U	0.26 U	0.32 U
Nonachlor, cis-	SW8270CSIM	22	--	--	--	--	--	--	0.11 U	0.59	0.075 U	0.10 U	1.2	0.15 U
Nonachlor, trans-	SW8270CSIM	22	--	--	--	--	--	--	0.089 U	0.48	0.063 U	0.088 U	1.6	2.5
Oxychlordane	SW8270CSIM	22	--	--	--	--	--	--	0.15 U	0.16 U	0.11 U	0.15 U	0.18 U	0.22 U
Toxaphene	SW8081A	22	--	--	--	0.1	0	0%	19 U	19 U	13 U	18 U	22 U	27 U
Total Chlordane (U = 0)	--	22	0.5	5	23%	1.3	5	23%	0.15 UJ	3.4	0.11 U	0.15 U	8.8	10.5
Total DDTs (U = 0)	--	22	1.58	21	95%	1.9	21	95%	67 J	35	0.38	37	16	22
PCB Congeners - Low resolution (µg/kg)														
PCB-005/008	SW8270CSIM	22	--	--	--	--	--	--	0.49	3.9	0.21 U	1.3	0.36 U	0.43 U
PCB-018	SW8270CSIM	22	--	--	--	--	--	--	0.15 U	6.1	0.10 U	1.2	0.18 U	0.21 U
PCB-028	SW8270CSIM	22	--	--	--	--	--	--	0.95	7.9	0.049 U	2.5	1.7	3.1
PCB-037	SW8270CSIM	22	--	--	--	--	--	--	0.13 U	1.9	0.088 U	0.76	0.15 U	0.18 U
PCB-044	SW8270CSIM	22	--	--	--	--	--	--	0.79	9.9	0.13 U	2.4	3.2	3.3
PCB-049	SW8270CSIM	22	--	--	--	--	--	--	0.64	6.4	0.16 U	1.5	1.5	2.5
PCB-052	SW8270CSIM	22	--	--	--	--	--	--	1.0	9.8	0.091 U	2.5	2.7	3.8
PCB-066	SW8270CSIM	22	--	--	--	--	--	--	1.9	11	0.15 U	4.1	2.5	3.8
PCB-070	SW8270CSIM	22	--	--	--	--	--	--	1.2	12	0.087 U	3.3	3.2	5.7
PCB-074	SW8270CSIM	22	--	--	--	--	--	--	0.77	5.7	0.13 U	1.8	1.5	2.6
PCB-077	SW8270CSIM	22	--	--	--	--	--	--	0.16 U	1.5	0.11 U	1.7	0.19 U	0.23 U
PCB-081	SW8270CSIM	22	--	--	--	--	--	--	0.25 U	0.26 U	0.17 U	0.25 U	0.3 U	0.35 U
PCB-087	SW8270CSIM	22	--	--	--	--	--	--	1.5	4.7	0.16 U	1.8	2.0	0.32 U
PCB-099	SW8270CSIM	22	--	--	--	--	--	--	1.6	5.2	0.089 U	2.3	1.9	2.9
PCB-101	SW8270CSIM	22	--	--	--	--	--	--	2.0	11	0.14 U	4.1	4.7	5.2
PCB-105	SW8270CSIM	22	--	--	--	--	--	--	1.5	6.7	0.080 U	2.1	0.13 U	5.7
PCB-110	SW8270CSIM	22	--	--	--	--	--	--	2.3	12	0.067 U	4.6	5.3	6.2
PCB-114	SW8270CSIM	22	--	--	--	--	--	--	0.17 U	0.18 U	0.12 U	0.17 U	0.20 U	0.24 U
PCB-118	SW8270CSIM	22	--	--	--	--	--	--	2.7	10	0.12 U	4.3	4.4	6.4
PCB-119	SW8270CSIM	22	--	--	--	--	--	--	0.20 U	0.20 U	0.14 U	0.19 U	0.23 U	0.28 U
PCB-123	SW8270CSIM	22	--	--	--	--	--	--	0.22 U	0.22 U	0.15 U	0.21 U	0.26 U	0.31 U
PCB-126	SW8270CSIM	22	--	--	--	--	--	--	0.17 U	0.17 U	0.12 U	0.16 U	0.20 U	0.24 U

Table 16
2016 Sediment Chemistry Results

									GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_	GWMA_2016_
									Sed	Sed	Sed	Sed	Sed	Sed
									Outer Harbor -	San Pedro Bay	San Pedro Bay	San Pedro Bay	River Estuary	River Estuary
									LB	SP-SS-	SP-SS-	SP-SS-	LE-SS-	LE-SS-
									OB-SS-	SP-SS-	SP-SS-	SP-SS-	LE-SS-	LE-SS-
									17_201608	18_201608	19_201608	20_201608	21_201608	22_201608
									OB-SS-17-0-5-	SP-SS-18-0-5-	SP-SS-19-0-5-	SP-SS-20-0-5-	LE-SS-21-0-5-	LE-SS-22-0-5-
									20160818	20160818	20160818	20160818	20160818	20160818
									8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016
									0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm	0 - 5 cm
									N	N	N	N	N	N
									SE	SE	SE	SE	SE	SE
									-118.19920	-118.18518	-118.12690	-118.16513	-118.19649	-118.19964
					ERL	Fish-	Fish-	Fish-Associated						
	Method	Number	ERL	ERL	ERL	Associated	Associated	Sediment						
		Analyzed ¹	Exceedances ¹	Exceedances ¹	Percentage	Sediment	Sediment	Targets						
					of	Targets	Target	Percentage of						
					Exceedance ¹	Exceedances ¹	Exceedances ¹	Exceedance ¹						
PCB-128	SW8270CSIM	22	--	--	--	--	--	--	0.55	2.3	0.15 U	0.74	0.25 U	0.30 U
PCB-132/153	SW8270CSIM	22	--	--	--	--	--	--	4.0	14	0.25 U	6.9	10	13
PCB-138/158	SW8270CSIM	22	--	--	--	--	--	--	3.3	12	0.14 U	5.7	9.0	10
PCB-149	SW8270CSIM	22	--	--	--	--	--	--	1.6	7.3	0.14 U	3.4	5.8	7.6
PCB-151	SW8270CSIM	22	--	--	--	--	--	--	0.81	3.0	0.098 U	1.2	2.0	2.7
PCB-156	SW8270CSIM	22	--	--	--	--	--	--	0.12 U	1.3	0.084 U	0.12 U	0.14 U	0.17 U
PCB-157	SW8270CSIM	22	--	--	--	--	--	--	0.11 U	0.11 U	0.076 U	0.11 U	0.13 U	0.15 U
PCB-167	SW8270CSIM	22	--	--	--	--	--	--	0.13 U	0.13 U	0.090 U	0.13 U	0.15 U	0.18 U
PCB-168	SW8270CSIM	22	--	--	--	--	--	--	0.10 U	0.10 U	0.071 U	0.10 U	0.12 U	0.14 U
PCB-169	SW8270CSIM	22	--	--	--	--	--	--	0.13 U	0.13 U	0.089 U	0.13 U	0.15 U	0.18 U
PCB-170	SW8270CSIM	22	--	--	--	--	--	--	0.85	4.3	0.093 U	2.1	3.9	4.6
PCB-177	SW8270CSIM	22	--	--	--	--	--	--	0.70	2.0	0.13 U	0.18 U	0.21 U	0.26 U
PCB-180	SW8270CSIM	22	--	--	--	--	--	--	1.4	8.5	0.061 U	3.3	5.4	7.0
PCB-183	SW8270CSIM	22	--	--	--	--	--	--	0.39 J	1.7	0.16 U	0.75	1.5	2.5
PCB-187	SW8270CSIM	22	--	--	--	--	--	--	1.1	3.7	0.12 U	1.9	2.4	5.1
PCB-189	SW8270CSIM	22	--	--	--	--	--	--	0.13 U	0.13 U	0.089 U	0.13 U	0.15 U	0.18 U
PCB-194	SW8270CSIM	22	--	--	--	--	--	--	0.24 U	2.1	0.16 U	1.2	0.28 U	0.33 U
PCB-195	SW8270CSIM	22	--	--	--	--	--	--	0.25 U	0.25 U	0.17 U	0.24 U	0.29 U	0.35 U
PCB-201	SW8270CSIM	22	--	--	--	--	--	--	0.20 U	0.72	0.14 U	0.20 U	0.24 U	0.29 U
PCB-206	SW8270CSIM	22	--	--	--	--	--	--	0.41 U	1.8	0.28 U	1.2	0.48 U	0.57 U
PCB-209	SW8270CSIM	22	--	--	--	--	--	--	0.72	1.2	0.21 U	3.3	2.0	2.3
Total PCB Congener - low resolution (U = 0)	--	22	22.7	19	86%	3.2	21	95%	34.8 J	192	0.28 U	74.0	77	106

Table 17
Toxicity Raw Results (August 2016)

TMDL Waterbody	Station	Species			
		<i>M. galloprovincialis</i>		<i>E. estuarius</i>	
		% Survival	p-value	% Survival	p-value
N/A	Control 1, Batch 1	97.4	0.05	97.0	0.05
	Control 2, Batch 1	96.1	0.05	--	--
	Control 1, Batch 2	97.3	0.05	--	--
	Control 2, Batch 2	95.1	0.05	--	--
Consolidated Slip	CS-SS-01	80.7	0.00	42.0	0.00
Inner Harbor - LA	IA-SS-02	96.1	0.50	98.0	0.64
	IA-SS-03	96.6	0.68	98.0	0.64
	IA-SS-04	95.6	0.28	97.0	0.47
	IA-SS-05	96.4	0.10	95.0	0.21
	IA-SS-06	97.1	0.42	97.0	0.66
Fish Harbor	FH-SS-07	84.0	0.00	75.0	0.00
Outer Harbor - LA	OA-SS-08	95.3	0.51	96.0	0.35
	OA-SS-09	96.7	0.31	96.0	0.35
Cabrillo Marina	CM-SS-10	97.3	0.49	98.0	0.78
Cabrillo Beach	CB-SS-11	97.5	0.51	96.0	0.35
Inner Harbor - LB	IB-SS-12	65.0	0.00	79.0	0.00
	IB-SS-13	95.5	0.33	95.0	0.26
	IB-SS-14	95.6	0.28	99.0	0.80
	IB-SS-15	83.6	0.00	78.0	0.00
Outer Harbor - LB	OB-SS-16	94.3	0.25	98.0	0.64
	OB-SS-17	97.3	0.33	88.0	0.01
East San Pedro Bay	SP-SS-18	96.3	0.13	93.0	0.13
	SP-SS-19	97.2	0.33	95.0	0.26
	SP-SS-20	96.0	0.12	87.0	0.01
Los Angeles River Estuary	LE-SS-21	96.0	0.12	98.0	0.78
	LE-SS-22	93.1	0.07	92.0	0.06

Notes:

Red: significant

--: not applicable

N/A: not applicable

TMDL: total maximum daily load

Table 18
Benthic Taxa Summary (August 2016)

TMDL Waterbody	Station	Total Number of Taxa	Number of Mollusc Taxa	Number of Crustacean Taxa	Percentage of Sensitive Taxa
Consolidated Slip	CS-SS-01	464	7	6	8.2
Inner Harbor - LA	IA-SS-02	221	9	3	16.1
	IA-SS-03	99	4	4	7.7
	IA-SS-04	127	6	1	15.4
	IA-SS-05	150	10	7	17.9
	IA-SS-06	159	5	5	14.0
Fish Harbor	FH-SS-07	203	6	9	14.0
Outer Harbor - LA	OA-SS-08	173	11	3	15.9
	OA-SS-09	137	9	6	18.0
Cabrillo Marina	CM-SS-10	46	3	10	18.2
Cabrillo Beach	CB-SS-11	333	10	10	14.3
Inner Harbor - LB	IB-SS-12	90	5	5	2.9
	IB-SS-13	125	6	4	13.8
	IB-SS-14	153	8	6	10.9
	IB-SS-15	72	7	6	11.6
Outer Harbor - LB	OB-SS-16	230	7	7	8.6
	OB-SS-17	162	7	8	19.5
Eastern San Pedro Bay	SP-SS-18	143	7	6	23.3
	SP-SS-19	53	2	8	23.8
	SP-SS-20	162	12	7	18.4
Los Angeles River Estuary	LE-SS-21	92	7	4	15.4
	LE-SS-22	81	2	2	12.5

Notes:

Detailed taxa available in Appendix E

TMDL: Total Maximum Daily Load

Table 19
2016 Sediment Quality Objective – Sediment Chemistry Line of Evidence Evaluation

Station	Chemical Score Index		CA Logistic Regression Model (CA LRM)		Integrated Chemistry LOE Score
	CSI Score	CSI Category Score	CA LRM Value	Station Score	
CS-SS-01	2.88	Moderate	0.79	High	High
IA-SS-02	3.04	High	0.7	High	High
IA-SS-03	1.53	Minimal	0.42	Low	Low
IA-SS-04	1.37	Minimal	0.38	Low	Low
IA-SS-05	1.1	Minimal	0.29	Minimal	Minimal
IA-SS-06	1.57	Minimal	0.44	Low	Minimal
FH-SS-07	1.51	Minimal	0.38	Low	Low
OA-SS-08	1.29	Minimal	0.44	Low	Low
OA-SS-09	1.7	Low	0.47	Low	Low
CM-SS-10	2.23	Low	0.63	Moderate	Moderate
CB-SS-11	1.7	Low	0.53	Moderate	Moderate
IB-SS-12	2.27	Low	0.74	High	Moderate
IB-SS-13	1.87	Low	0.47	Low	Low
IB-SS-14	1.37	Minimal	0.35	Low	Low
IB-SS-15	1.1	Minimal	0.32	Minimal	Minimal
OB-SS-16	1.2	Minimal	0.46	Low	Low
OB-SS-17	1.62	Minimal	0.49	Low	Low
SP-SS-18	2.03	Low	0.63	Moderate	Moderate
SP-SS-19	1	Minimal	0.18	Minimal	Minimal
SP-SS-20	1.43	Low	0.41	Low	Low
LE-SS-21	2.34	High	0.74	High	High
LE-SS-22	2.66	High	0.82	High	High

Notes:

CA LRM: California Logistic Regression Model

CSI: Chemical Score Index

GWMA: Gateway Water Management Authority

LOE: line of evidence

SQO: Sediment Quality Objective

Table 20
2016 Sediment Quality Objective – Toxicity Line of Evidence Evaluation

Site	Amphipod Test		Bivalve Larvae Test		Station Totals	
	Significant Effect	Mean Survival (Control adjusted mean survival) (%)	Significant Effect	Mean Development/Survival Score (Control adjusted mean development/survival) (%)	Station Score	Toxicity LOE
CS-SS-01	Yes	42 (43.3)	Yes	81	3	Moderate
IA-SS-02	No	98	No	96	1	Nontoxic
IA-SS-03	No	98	No	97	1	Nontoxic
IA-SS-04	No	97	No	96	1	Nontoxic
IA-SS-05	No	95	No	96	1	Nontoxic
IA-SS-06	No	97	No	97	1	Nontoxic
FH-SS-07	Yes	75 (77.3)	Yes	84	2	Low
OA-SS-08	No	96	No	95	1	Nontoxic
OA-SS-09	No	96	No	97	1	Nontoxic
CM-SS-10	No	98	No	98	1	Nontoxic
CB-SS-11	No	96	No	97	1	Nontoxic
IB-SS-12	Yes	79 (81.4)	Yes	65.02 (67.6)	3	Moderate
IB-SS-13	No	95	No	96	1	Nontoxic
IB-SS-14	No	99	No	96	1	Nontoxic
IB-SS-15	Yes	78 (80.4)	Yes	84	2	Low
OB-SS-16	No	98	No	94	1	Nontoxic
OB-SS-17	Yes	88 (90.7)	No	97	2	Low
SP-SS-18	No	93	No	96	1	Nontoxic
SP-SS-19	No	95	No	97	1	Nontoxic
SP-SS-20	Yes	87 (89.7)	No	96	2	Low
LE-SS-21	No	98	No	96	1	Nontoxic
LE-SS-22	No	92	No	93	1	Nontoxic

Notes:

Station Category	Station Score
Unimpacted	1
Likely unimpacted	2
Possibly impacted	3
Likely impacted	4
Clearly impacted	5

GWMA: Gateway Water Management Authority

LOE: line of evidence

SQO: Sediment Quality Objective

Table 21**2016 Sediment Quality Objective – Benthic Community Line of Evidence Evaluation**

Station ID	BRI Category	IBI Category	RBI Category	RIVPAC Category	Integrated Category Score	Category
CS-SS-01	2	2	2	3	2	Low Dist
IA-SS-02	1	2	3	3	3	Mod Dist
IA-SS-03	1	2	3	3	3	Mod Dist
IA-SS-04	1	2	3	3	3	Mod Dist
IA-SS-05	1	2	2	3	2	Low Dist
IA-SS-06	1	2	2	3	2	Low Dist
FH-SS-07	1	2	2	3	2	Low Dist
OA-SS-08	1	2	2	3	2	Low Dist
OA-SS-09	1	2	2	3	2	Low Dist
CM-SS-10	1	2	3	3	3	Mod Dist
CB-SS-11	1	2	2	3	2	Low Dist
IB-SS-12	1	2	3	3	3	Mod Dist
IB-SS-13	1	2	3	4	3	Mod Dist
IB-SS-14	1	2	2	3	2	Low Dist
IB-SS-15	1	2	2	3	2	Low Dist
OB-SS-16	1	2	2	3	2	Low Dist
OB-SS-17	1	1	2	3	2	Low Dist
SP-SS-18	1	1	3	3	2	Low Dist
SP-SS-19	1	1	3	4	2	Low Dist
SP-SS-20	1	2	2	3	2	Low Dist
LE-SS-21	2	2	3	2	2	Low Dist
LE-SS-22	3	3	4	4	4	High Dist

Notes:

Benthic Category	Category Score
Reference	1
Low disturbance	2
Moderate disturbance	3
High disturbance	4

BRI: Benthic Response Index

Dist: Distribution

GWMA: Gateway Water Management Authority

IBI: Index of Biotic Integrity

RBI: Relative Benthic Index

RIVPAC: River Invertebrate Prediction and Classification System

SQO: Sediment Quality Objective

Table 22
2016 Sediment Quality Objective – Integrated Station Assessment Results

Station	Sediment Chemistry Exposure	Sediment Toxicity	Benthic Community Exposure	Station Assessment	Number of Impacted Stations per Waterbody ¹
CS-SS-01	High	Moderate	Low Dist	Likely impacted	1 of 1
IA-SS-02	High	Nontoxic	Mod Dist	Likely impacted	1 of 5
IA-SS-03	Low	Nontoxic	Mod Dist	Likely unimpacted	
IA-SS-04	Low	Nontoxic	Mod Dist	Likely unimpacted	
IA-SS-05	Minimal	Nontoxic	Low Dist	Unimpacted	
IA-SS-06	Minimal	Nontoxic	Low Dist	Unimpacted	
FH-SS-07	Low	Low	Low Dist	Likely unimpacted	1 of 1
OA-SS-08	Low	Nontoxic	Low Dist	Unimpacted	0 of 2
OA-SS-09	Low	Nontoxic	Low Dist	Unimpacted	
CM-SS-10	Moderate	Nontoxic	Mod Dist	Possibly impacted	1 of 1
CB-SS-11	Moderate	Nontoxic	Low Dist	Unimpacted	0 of 1
IB-SS-12	Moderate	Moderate	Mod Dist	Likely impacted	1 of 4
IB-SS-13	Low	Nontoxic	Mod Dist	Likely unimpacted	
IB-SS-14	Low	Nontoxic	Low Dist	Unimpacted	
IB-SS-15	Minimal	Low	Low Dist	Likely unimpacted	
OB-SS-16	Low	Nontoxic	Low Dist	Unimpacted	0 of 2
OB-SS-17	Low	Low	Low Dist	Likely unimpacted	
SP-SS-18	Moderate	Nontoxic	Low Dist	Unimpacted	0 of 3
SP-SS-19	Minimal	Nontoxic	Low Dist	Unimpacted	
SP-SS-20	Low	Low	Low Dist	Likely unimpacted	
LE-SS-21	High	Nontoxic	Low Dist	Likely unimpacted	1 of 2
LE-SS-22	High	Nontoxic	High Dist	Likely impacted	

Notes:

1. Result by waterbody is the number of possibly impacted, likely impacted, and clearly impacted station results relative to total number of waterbodies per station.

Dist: Distribution

GWMA: Gateway Water Management Authority

SQO: Sediment Quality Objective

Table 23
Summer 2016 Fish Sampling Field Data

Sample ID	Common Name	Scientific Name	Latitude	Longitude	Waterbody	Date	Time	Average Fish Length in composite (cm)	Total Weight of composite (g)	Average Fish Weight in composite (g)	Number of Fish in Composite
OA-FF-WC-C1-20160820	White croaker	<i>Genyonemus lineatus</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	10:15	22.3	441.0	147.0	3
OA-FF-WC-C2-20160820	White croaker	<i>Genyonemus lineatus</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	10:15	20.8	490.0	122.5	4
OA-FF-WC-C3-20160820	White croaker	<i>Genyonemus lineatus</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	10:15	15.2	505.0	42.1	12
OA-FF-CH-C1-20160820	California halibut	<i>Paralichthys californicus</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	8:30	31.1	1165.0	291.3	4
OA-FF-CH-C2-20160820	California halibut	<i>Paralichthys californicus</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	8:30	28.3	860.0	215.0	4
OA-FF-CH-C3-20160820	California halibut	<i>Paralichthys californicus</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	8:30	24.5	557.0	139.3	4
OA-WO-SS-C1-20160820	Shiner surfperch	<i>Cymatogaster aggregata</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	9:00	9.7	63.0	15.8	4
OA-WO-SS-C2-20160820	Shiner surfperch	<i>Cymatogaster aggregata</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	9:00	8.8	51.0	10.2	5
OA-WO-NA-C1-20160820	Northern anchovy	<i>Engraulis mordax</i>	33.707753	-118.27367	Outer Los Angeles	8/20/2016	8:30	N/A	79.0	N/A	>100
OB-FF-WC-C1-20160820	White croaker	<i>Genyonemus lineatus</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	11:45	22.7	583.0	145.6	4
OB-FF-WC-C2-20160820	White croaker	<i>Genyonemus lineatus</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	11:45	20.5	567.0	94.5	6
OB-FF-WC-C3-20160820	White croaker	<i>Genyonemus lineatus</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	8:00	19.5	649.0	81.1	8
OB-FF-CH-C1-20160820	California halibut	<i>Paralichthys californicus</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	14:10	27.1	558.0	186.0	3
OB-FF-CH-C2-20160820	California halibut	<i>Paralichthys californicus</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	14:10	24.4	681.0	136.2	5
OB-FF-CH-C3-20160820	California halibut	<i>Paralichthys californicus</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	14:10	21.3	551.0	91.8	6
OB-WO-NA-C1-20160820	Northern anchovy	<i>Engraulis mordax</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	12:10	N/A	250.0	N/A	>100
OB-WO-NA-C2-20160820	Northern anchovy	<i>Engraulis mordax</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	12:10	N/A	250.0	N/A	>100
OB-WO-NA-C3-20160820	Northern anchovy	<i>Engraulis mordax</i>	33.72951	-118.238168	Outer Long Beach	8/20/2016	12:10	N/A	255.0	N/A	>100
SP-FF-WC-C1-20160821	White croaker	<i>Genyonemus lineatus</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	8:00	23.1	793.0	158.6	5
SP-FF-WC-C2-20160821	White croaker	<i>Genyonemus lineatus</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	8:00	22.9	714.0	142.8	5
SP-FF-WC-C3-20160821	White croaker	<i>Genyonemus lineatus</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	8:00	22.2	617.0	123.4	5
SP-FF-CH-C1-20160821	California halibut	<i>Paralichthys californicus</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	9:30	82.0	7200.0	7200.0	1
SP-FF-CH-C2-20160821	California halibut	<i>Paralichthys californicus</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	9:30	30.9	1044.0	261.0	4
SP-FF-CH-C3-20160821	California halibut	<i>Paralichthys californicus</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	9:30	24.3	492.0	98.4	5
SP-WO-NA-C1-20160821	Northern anchovy	<i>Engraulis mordax</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	9:30	N/A	304.0	N/A	>100
SP-WO-NA-C2-20160821	Northern anchovy	<i>Engraulis mordax</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	9:30	N/A	294.0	N/A	>100
SP-WO-NA-C3-20160821	Northern anchovy	<i>Engraulis mordax</i>	33.748854	-118.17788	Eastern San Pedro Bay	8/21/2016	9:30	N/A	295.0	N/A	>100
CS-FF-WC-C1-20160821	White croaker	<i>Genyonemus lineatus</i>	33.769753	-118.250701	Consolidated Slip	8/21/2016	15:35	25.4	785.0	196.3	4
CS-FF-WC-C2-20160821	White croaker	<i>Genyonemus lineatus</i>	33.769753	-118.250701	Consolidated Slip	8/21/2016	15:35	23.5	629.0	157.3	4
CS-FF-WC-C3-20160821	White croaker	<i>Genyonemus lineatus</i>	33.769753	-118.250701	Consolidated Slip	8/21/2016	15:35	20.7	744.0	106.3	7

Notes:

California halibut and white croaker were composited using skin-off fillets.

Pacific pompano and white surfperch were composited using whole body.

cm: centimeter

g: gram

mm: millimeter

N/A: data not available

Table 24
2016 Fish Tissue Chemistry Results

Area	Consolidated Slip			Outer Harbor - LA									
	Location ID	CS 2016 Fish	CS 2016 Fish	CS 2016 Fish	OA 2016 Fish	OA 2016 Fish	OA 2016 Fish	OA 2016 Fish	OA 2016 Fish	OA 2016 Fish	OA 2016 Fish	OA 2016 Fish	
Sample ID	CS-FF-WC-C1-20160821	CS-FF-WC-C2-20160821	CS-FF-WC-C3-20160821	OA-FF-CH-C1-20160820	OA-FF-CH-C2-20160820	OA-FF-CH-C3-20160820	OA-FF-WC-C1-20160820	OA-FF-WC-C2-20160820	OA-FF-WC-C3-20160820	OA-WO-NA-C1-20160820	OA-WO-SS-C1-20160820		
Common Name	White croaker	White croaker	White croaker	California halibut	California halibut	California halibut	White croaker	White croaker	White croaker	Northern anchovy	Shiner surfperch		
Scientific Name	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Engraulis mordax</i>	<i>Cymatogaster aggregata</i>		
Tissue Type	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Whole Body	Whole Body		
Sample Date	8/21/2016	8/21/2016	8/21/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016		
	X	6485469.808277	6485469.808277	6485469.808277	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468		
	Y	1738684.735688	1738684.735688	1738684.735688	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742		
Method	TMDL Fish Tissue Target												
Conventional Parameters (pct)													
Lipids	NOAALipids1993	--	5.3	2.9	5.0	0.14	0.12	0.13	6.3	5.6	1.0	0.96	1.4
Moisture (water) content	D2216	--	73	74	75	80	81	82	72	77	66	78	76
Pesticides (µg/kg)													
2,4'-DDD (o,p'-DDD)	SW8081A	--	0.29 U	0.29 U	0.29 U	0.28 U	0.28 U	0.28 U	0.28 U	0.29 U	0.29 U	0.29 U	0.29 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	14 J	31	21	0.99 U	1.3 J	0.99 U	63	7.2	19 J	0.99 U	0.99 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	140	260	230	17	25	14	590	210	250	32	89
4,4'-DDT (p,p'-DDT)	SW8081A	--	16	32	22	0.84 J	1.6	0.95 J	26	4.4	6.4	1.7	4.8
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	0.41 U	0.41 U	0.41 U	0.40 U	0.40 U	0.40 U	0.40 U	0.41 U	0.41 U	0.41 U	0.41 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	0.89 U	0.89 U	0.89 U	0.88 U	0.88 U	0.88 U	0.88 U	0.89 U	0.89 U	0.89 U	0.89 U
Dieldrin	SW8081A	0.46	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
Nonachlor, cis-	SW8081A	--	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Nonachlor, trans-	SW8081A	--	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Oxychlordane	SW8081A	--	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Toxaphene	SW8081A	6.1	88	98	94	8.9 U	13 J	8.9 U	92	40	41	14 J	34
Total Chlordane (U = 0)	--	5.6	0.45 U	0.45 U	0.45 U	0.44 U	0.44 U	0.44 U	0.44 U	0.45 U	0.45 U	0.45 U	0.45 U
Total DDTs (U = 0)	--	21	170 J	323	273	18 J	28 J	15 J	679	222	275 J	34	94
PCB Congeners - Low resolution (µg/kg)													
PCB-018	SW8270CSIM	--	0.99	1.8	1.3	0.071 U	0.071 U	0.071 U	0.59	0.82	0.39	0.071 U	0.071 U
PCB-028	SW8270CSIM	--	2.9	4.2	3.6	0.033 U	0.033 U	0.12 J	2.1	1.5	1.2	0.034 U	0.34
PCB-037	SW8270CSIM	--	0.91	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U
PCB-044	SW8270CSIM	--	3.7	4.6	4.7	0.086 U	0.086 U	0.086 U	2.9	1.8	1.6	0.24	0.37
PCB-049	SW8270CSIM	--	7.9	6.1	5.6	0.16 J	0.21	0.17 J	3.0	1.9	1.6	0.29	0.51
PCB-052	SW8270CSIM	--	14	12	9.3	0.30	0.42	0.31	5.2	3.1	2.4	0.50	1.1
PCB-066	SW8270CSIM	--	6.9	10	9.3	0.31	0.36	0.26	6.8	4.0	3.6	0.35	1.0
PCB-070	SW8270CSIM	--	4.2	5.2	4.2	0.11 J	0.12 J	0.059 U	4.6	2.6	2.2	0.060 U	0.95
PCB-074	SW8270CSIM	--	3.5	5.0	4.8	0.086 U	0.16 J	0.13 J	3.3	1.9	1.8	0.087 U	0.087 U
PCB-077	SW8270CSIM	--	3.2	4.1	3.1	0.077 U	0.077 U	0.077 U	1.9	1.0	0.94	0.078 U	0.078 U
PCB-081	SW8270CSIM	--	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB-087	SW8270CSIM	--	6.9	12	10	0.30	0.48	0.33	11	5.3	6.1	0.66	1.7
PCB-099	SW8270CSIM	--	15	21	19	0.43	0.83	0.50	10	6.1	5.6	0.90	2.6
PCB-101	SW8270CSIM	--	23	35	28	0.67	1.2	0.86	16	9.7	8.3	1.8	3.4
PCB-105	SW8270CSIM	--	5.3	9.3	6.5	0.21	0.37	0.31	6.2	3.3	2.8	0.57	1.2
PCB-110	SW8270CSIM	--	13	23	15	0.41	0.72	0.48	12	6.6	5.2	1.1	0.046 U

Table 24
2016 Fish Tissue Chemistry Results

Area	Consolidated Slip			Outer Harbor - LA									
	Location ID	CS_2016_Fish	CS_2016_Fish	CS_2016_Fish	OA_2016_Fish	OA_2016_Fish	OA_2016_Fish	OA_2016_Fish	OA_2016_Fish	OA_2016_Fish	OA_2016_Fish	OA_2016_Fish	
Sample ID	CS-FF-WC-C1-20160821	CS-FF-WC-C2-20160821	CS-FF-WC-C3-20160821	OA-FF-CH-C1-20160820	OA-FF-CH-C2-20160820	OA-FF-CH-C3-20160820	OA-FF-WC-C1-20160820	OA-FF-WC-C2-20160820	OA-FF-WC-C3-20160820	OA-WO-NA-C1-20160820	OA-WO-SS-C1-20160820		
Common Name	White croaker	White croaker	White croaker	California halibut	California halibut	California halibut	White croaker	White croaker	White croaker	Northern anchovy	Shiner surfperch		
Scientific Name	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Engraulis mordax</i>	<i>Cymatogaster aggregata</i>		
Tissue Type	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Whole Body	Whole Body		
Sample Date	8/21/2016	8/21/2016	8/21/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/20/2016		
X	6485469.808277	6485469.808277	6485469.808277	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468	6478427.321468		
Y	1738684.735688	1738684.735688	1738684.735688	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742	1716139.452742		
	Method	TMDL Fish Tissue Target											
PCB-114	SW8270CSIM	--	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	
PCB-118	SW8270CSIM	--	16	27	22	0.56	1.1	0.76	17	9.4	8.4	1.5	4.1
PCB-119	SW8270CSIM	--	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	
PCB-123	SW8270CSIM	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	
PCB-126	SW8270CSIM	--	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.35	
PCB-128	SW8270CSIM	--	3.2	5.7	4.0	0.10 U	0.31	0.1 U	3.8	2.1	1.6	0.28	0.10 U
PCB-132/153	SW8270CSIM	--	39	58	53	1.1	2.1	1.4	30	17	16	3.2	6.3
PCB-138/158	SW8270CSIM	--	27	42	35	0.84	1.7	1.2	25	14	12	2.1	5.1
PCB-149	SW8270CSIM	--	22	30	24	0.39	0.59	0.49	12	7.2	5.8	1.5	1.0
PCB-151	SW8270CSIM	--	6.6	8.4	7.5	0.067 U	0.28	0.21	3.5	1.9	1.9	0.46	0.067 U
PCB-156	SW8270CSIM	--	1.5	2.5	1.7	0.057 U	0.057 U	0.057 U	1.8	0.96	0.84	0.058 U	0.53
PCB-157	SW8270CSIM	--	0.47	0.65	0.46	0.052 U	0.052 U	0.052 U	0.54	0.27	0.22	0.052 U	0.052 U
PCB-167	SW8270CSIM	--	0.99	1.3	0.99	0.061 U	0.061 U	0.061 U	0.99	0.46	0.46	0.062 U	0.062 U
PCB-168	SW8270CSIM	--	0.049 U	0.049 U	0.049 U	0.048 U	0.048 U	0.048 U	0.048 U	0.049 U	0.049 U	0.049 U	0.049 U
PCB-169	SW8270CSIM	--	0.72	0.97	1.2	0.061 U	0.061 U	0.061 U	0.45	0.20	0.24	0.061 U	0.20 J
PCB-170	SW8270CSIM	--	5.3	8.2	8.2	0.12 J	0.26	0.14 J	3.3	1.7	1.7	0.40	1.1
PCB-177	SW8270CSIM	--	3.2	4.2	4.2	0.087 U	0.087 U	0.087 U	2.4	1.4	1.2	0.30	0.087 U
PCB-180	SW8270CSIM	--	11	15	13	0.34	0.63	0.41	8.6	4.2	4.3	0.96	1.9
PCB-183	SW8270CSIM	--	3.9	5.3	4.9	0.11 J	0.19 J	0.14 J	2.8	1.4	1.6	0.30	0.64
PCB-187	SW8270CSIM	--	13	15	15	0.27	0.49	0.37	7.9	4.4	4.6	0.84	1.1
PCB-189	SW8270CSIM	--	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U
PCB-194	SW8270CSIM	--	1.1	1.6	1.9	0.11 U	0.11 U	0.11 U	1.0	0.49	0.57	0.11 U	0.30
PCB-201	SW8270CSIM	--	0.44	0.60	0.46	0.096 U	0.096 U	0.096 U	0.31	0.097 U	0.20	0.097 U	0.097 U
PCB-206	SW8270CSIM	--	0.31	0.34	1.1	0.19 U	0.19 U	0.19 U	0.24	0.19 U	0.37	0.19 U	0.19 U
Total PCB Congener - low resolution (U = 0)	--	3.6	267	380	323	6.6 J	12.5 J	8.6 J	207	117	106	18.3	35.8 J

Table 24
2016 Fish Tissue Chemistry Results

Area	Outer Harbor - LB												
	Location ID	OA_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	SP_2016_Fish	
Sample ID	OA-WO-SS-C2-20160820	OB-FF-CH-C1-20160820	OB-FF-CH-C2-20160820	OB-FF-CH-C3-20160820	OB-FF-WC-C1-20160820	OB-FF-WC-C2-20160820	OB-FF-WC-C3-20160820	OB-WO-NA-C1-20160820	OB-WO-NA-C2-20160820	OB-WO-NA-C3-20160820	SP-FF-CH-C1-20160821		
Common Name	Shiner surfperch	California halibut	California halibut	California halibut	White croaker	White croaker	White croaker	Northern anchovy	Northern anchovy	Northern anchovy	California halibut		
Scientific Name	<i>Cymatogaster aggregata</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>	<i>Paralichthys californicus</i>		
Tissue Type	Whole Body	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Whole Body	Whole Body	Whole Body	Fillet without skin		
Sample Date	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/21/2016	8/21/2016	8/21/2016	8/20/2016	8/20/2016	8/20/2016	8/21/2016		
	X	6478427.321468	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6507589.359468		
	Y	1716139.452742	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1731031.827463		
Method	TMDL Fish Tissue Target												
Conventional Parameters (pct)													
Lipids	NOAALipids1993	--	0.58	0.12	0.14	0.13	4.5	4.3	4.9	0.91	0.87	0.87	0.10
Moisture (water) content	D2216	--	--	80	80	80	76	73	71	78	78	78	75
Pesticides (µg/kg)													
2,4'-DDD (o,p'-DDD)	SW8081A	--	0.28 U	0.29 U	0.29 U	0.28 U	0.29 U	0.28 U	0.29 U	0.28 U	0.29 U	0.28 U	0.29 U
2,4'-DDE (o,p'-DDE)	SW8081A	--	0.99 U	0.99 U	0.99 U	0.99 U	23	45	71	2	2.4	3.3	0.99 U
2,4'-DDT (o,p'-DDT)	SW8081A	--	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
4,4'-DDD (p,p'-DDD)	SW8081A	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
4,4'-DDE (p,p'-DDE)	SW8081A	--	78	16	12	7.9	210	310	340	30	30	42	8.5 J
4,4'-DDT (p,p'-DDT)	SW8081A	--	3.5	0.71 J	0.73 J	0.63 J	22	4.9	14	1.4	2.3	3.0	1.2
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	0.40 U	0.41 U	0.41 U	0.40 U	0.41 U	0.40 U	0.41 U	0.40 U	0.41 U	0.40 U	0.41 U
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	0.88 U	0.89 U	0.89 U	0.88 U	0.89 U	0.88 U	0.89 U	0.88 U	0.89 U	0.88 U	0.89 U
Dieldrin	SW8081A	0.46	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
Nonachlor, cis-	SW8081A	--	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Nonachlor, trans-	SW8081A	--	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Oxychlordane	SW8081A	--	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Toxaphene	SW8081A	6.1	26	9.0 U	9.0 U	8.9 U	47	32	83	11 J	22	22	9.7 J
Total Chlordane (U = 0)	--	5.6	0.44 U	0.45 U	0.45 U	0.44 U	0.45 U	0.44 U	0.45 U	0.44 U	0.45 U	0.44 U	0.45 U
Total DDTs (U = 0)	--	21	82	17 J	13 J	8.5 J	255	360	425	33	35	48	9.7 J
PCB Congeners - Low resolution (µg/kg)													
PCB-018	SW8270CSIM	--	0.071 U	0.071 U	0.071 U	0.071 U	2.2	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
PCB-028	SW8270CSIM	--	0.30	0.034 U	0.11 J	0.033 U	3.6	1.3	1.8	0.27	0.24	0.23	0.26
PCB-037	SW8270CSIM	--	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U
PCB-044	SW8270CSIM	--	0.35	0.087 U	0.20	0.086 U	5.4	1.2	2.0	0.31	0.31	0.32	0.20 J
PCB-049	SW8270CSIM	--	0.47	0.12 J	0.23	0.13 J	6.5	1.4	2.4	0.26	0.28	0.43	0.43
PCB-052	SW8270CSIM	--	0.92	0.23	0.42	0.24	10	1.9	3.0	0.51	0.44	0.70	0.64
PCB-066	SW8270CSIM	--	0.62	0.23	0.33	0.28	8.1	3.4	5.2	0.45	0.57	0.74	0.62
PCB-070	SW8270CSIM	--	0.66	0.16 J	0.24	0.059 U	5.5	1.5	2.3	0.059 U	0.22	0.059 U	0.32
PCB-074	SW8270CSIM	--	0.56	0.087 U	0.14 J	0.15 J	4.5	0.086 U	0.087 U	0.086 U	0.11 J	0.17 J	0.34
PCB-077	SW8270CSIM	--	0.26	0.078 U	0.078 U	0.077 U	2.3	0.88	1.1	0.077 U	0.23	0.30	0.078 U
PCB-081	SW8270CSIM	--	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB-087	SW8270CSIM	--	1.3	0.31	0.31	0.27	8.5	5.9	7.6	0.67	0.61	1.0	0.40
PCB-099	SW8270CSIM	--	2.0	0.45	0.49	0.45	13	5.5	9.2	1.0	0.99	1.6	0.67
PCB-101	SW8270CSIM	--	2.8	0.67	0.82	0.68	23	6.8	11	1.8	1.7	2.5	0.98
PCB-105	SW8270CSIM	--	1.0	0.27	0.23	0.22	5.9	2.3	4.3	0.49	0.48	0.85	0.36
PCB-110	SW8270CSIM	--	0.87	0.39	0.47	0.42	13	0.046 U	0.046 U	1.0	1.0	1.6	0.68

Table 24
2016 Fish Tissue Chemistry Results

Area	Outer Harbor - LB												
	Location ID	OA_2016 Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016_Fish	OB_2016 Fish	OB_2016 Fish	OB_2016 Fish	OB_2016 Fish	OB_2016 Fish	SP_2016 Fish	
Sample ID	OA-WO-SS-C2-20160820	OB-FF-CH-C1-20160820	OB-FF-CH-C2-20160820	OB-FF-CH-C3-20160820	OB-FF-WC-C1-20160820	OB-FF-WC-C2-20160820	OB-FF-WC-C3-20160820	OB-WO-NA-C1-20160820	OB-WO-NA-C2-20160820	OB-WO-NA-C3-20160820	SP-FF-CH-C1-20160821		
Common Name	Shiner surfperch	California halibut	California halibut	California halibut	White croaker	White croaker	White croaker	Northern anchovy	Northern anchovy	Northern anchovy	California halibut		
Scientific Name	<i>Cymatogaster aggregata</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>	<i>Paralichthys californicus</i>		
Tissue Type	Whole Body	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Whole Body	Whole Body	Whole Body	Fillet without skin		
Sample Date	8/20/2016	8/20/2016	8/20/2016	8/20/2016	8/21/2016	8/21/2016	8/21/2016	8/20/2016	8/20/2016	8/20/2016	8/21/2016		
X	6478427.321468	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6489244.533324	6507589.359468		
Y	1716139.452742	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1724029.937068	1731031.827463		
	Method	TMDL Fish Tissue Target											
PCB-114	SW8270CSIM	--	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	
PCB-118	SW8270CSIM	--	3.3	0.64	0.71	0.53	18	7.5	13	1.4	1.4	2.1	0.86
PCB-119	SW8270CSIM	--	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U
PCB-123	SW8270CSIM	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
PCB-126	SW8270CSIM	--	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U
PCB-128	SW8270CSIM	--	0.43	0.10 U	0.10 U	0.10 U	3.5	1.5	3.4	0.32	0.29	0.51	0.10 U
PCB-132/153	SW8270CSIM	--	5.7	1.3	1.4	1.2	40	14	25	3.0	2.8	4.9	1.4
PCB-138/158	SW8270CSIM	--	4.3	1.1	1.2	0.95	29	11	20	2.2	2.1	3.5	1.3
PCB-149	SW8270CSIM	--	0.96	0.45	0.48	0.40	18	5.6	8.0	1.4	1.4	2.2	0.46
PCB-151	SW8270CSIM	--	0.52	0.067 U	0.28	0.21	5.3	1.2	2.6	0.4	0.37	0.67	0.23
PCB-156	SW8270CSIM	--	0.38	0.058 U	0.058 U	0.057 U	2.0	0.057 U	0.058 U	0.057 U	0.058 U	0.057 U	0.058 U
PCB-157	SW8270CSIM	--	0.052 U	0.052 U	0.052 U	0.052 U	0.54	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U
PCB-167	SW8270CSIM	--	0.27	0.062 U	0.062 U	0.061 U	0.97	0.061 U	0.75	0.061 U	0.062 U	0.061 U	0.062 U
PCB-168	SW8270CSIM	--	0.048 U	0.049 U	0.049 U	0.048 U	0.049 U	0.048 U	0.049 U	0.048 U	0.049 U	0.048 U	0.049 U
PCB-169	SW8270CSIM	--	0.061 U	0.061 U	0.061 U	0.061 U	0.73	0.30	0.39	0.061 U	0.061 U	0.061 U	0.061 U
PCB-170	SW8270CSIM	--	0.70	0.17 J	0.16 J	0.12 J	4.9	1.8	2.9	0.33	0.36	0.57	0.17 J
PCB-177	SW8270CSIM	--	0.35	0.087 U	0.087 U	0.087 U	3.7	1.3	2.4	0.32	0.30	0.4	0.087 U
PCB-180	SW8270CSIM	--	1.6	0.43	0.45	0.30	13	3.3	6.8	0.80	0.83	1.3	0.41
PCB-183	SW8270CSIM	--	0.56	0.11 U	0.14 J	0.11 U	4.0	1.1	2.0	0.28	0.24	0.46	0.12 J
PCB-187	SW8270CSIM	--	1.3	0.42	0.40	0.29	12	3.9	7.8	0.82	0.76	1.4	0.38
PCB-189	SW8270CSIM	--	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U
PCB-194	SW8270CSIM	--	0.25	0.11 U	0.11 U	0.11 U	1.7	0.84	1.0	0.11 U	0.11 U	0.11 U	0.11 U
PCB-201	SW8270CSIM	--	0.096 U	0.097 U	0.097 U	0.096 U	0.57	0.096 U	0.30	0.096 U	0.097 U	0.096 U	0.097 U
PCB-206	SW8270CSIM	--	0.19 U	0.19 U	0.19 U	0.19 U	0.97	0.36	0.61	0.19 U	0.19 U	0.19 U	0.19 U
Total PCB Congener - low resolution (U = 0)	--	3.6	32.7	7.3 J	9.2 J	6.8 J	270	86	147	18.0	18.0 J	28.4 J	11.2 J

Table 24
2016 Fish Tissue Chemistry Results

Area	San Pedro Bay									Number Analyzed	Number of Exceedances	Percent of Exceedance	
	Location ID	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish				
Sample ID	SP-FF-CH-C2-20160821	SP-FF-CH-C3-20160821	SP-FF-WC-C1-20160821	SP-FF-WC-C2-20160821	SP-FF-WC-C3-20160821	SP-WO-NA-C1-20160821	SP-WO-NA-C2-20160821	SP-WO-NA-C3-20160821					
Common Name	California halibut	California halibut	White croaker	White croaker	White croaker	Northern anchovy	Northern anchovy	Northern anchovy					
Scientific Name	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>					
Tissue Type	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Whole Body	Whole Body	Whole Body					
Sample Date	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016					
X	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468					
Y	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463					
Method	TMDL Fish Tissue Target												
Conventional Parameters (pct)													
Lipids	NOAALipids1993	--	0.14	0.12	5.0	2.1	1.6	0.89	1.1	0.70	30	--	--
Moisture (water) content	D2216	--	80	81	75	72	79	77	78	77	29	--	--
Pesticides (µg/kg)													
2,4'-DDD (o,p'-DDD)	SW8081A	--	0.28 U	0.28 U	0.28 U	0.29 U	0.29 U	0.28 U	0.29 U	0.28 U	30	--	--
2,4'-DDE (o,p'-DDE)	SW8081A	--	1.4 J	1.0 J	11	12 J	17 J	1.7 J	1.5 J	2.2	30	--	--
2,4'-DDT (o,p'-DDT)	SW8081A	--	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	30	--	--
4,4'-DDD (p,p'-DDD)	SW8081A	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	30	--	--
4,4'-DDE (p,p'-DDE)	SW8081A	--	19 J	8.8 J	130	120	150	15	14	18	30	--	--
4,4'-DDT (p,p'-DDT)	SW8081A	--	1.3	1.0	13	14	18	1.6	1.5	1.9	30	--	--
Chlordane, alpha- (Chlordane, cis-)	SW8081A	--	0.40 U	0.40 U	0.40 U	0.41 U	0.41 U	0.40 U	0.41 U	0.40 U	30	--	--
Chlordane, beta- (Chlordane, trans-)	SW8081A	--	0.88 U	0.88 U	0.88 U	0.89 U	0.89 U	0.88 U	0.89 U	0.88 U	30	--	--
Dieldrin	SW8081A	0.46	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	30	0	0%
Nonachlor, cis-	SW8081A	--	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	30	--	--
Nonachlor, trans-	SW8081A	--	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	30	--	--
Oxychlordane	SW8081A	--	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	30	--	--
Toxaphene	SW8081A	6.1	9.8 J	8.9 U	150	97	88	12 J	9.9 J	16 J	30	24	80%
Total Chlordane (U = 0)	--	5.6	0.44 U	0.44 U	0.44 U	0.45 U	0.45 U	0.44 U	0.45 U	0.44 U	30	0	0%
Total DDTs (U = 0)	--	21	22 J	10.8 J	154	146 J	185 J	18 J	17 J	22	30	21	70%
PCB Congeners - Low resolution (µg/kg)													
PCB-018	SW8270CSIM	--	0.071 U	0.071 U	1.6	2.1	2.5	0.071 U	0.071 U	0.20 J	30	--	--
PCB-028	SW8270CSIM	--	0.14 J	0.033 U	3.3	4.5	8.1	0.33	0.29	0.55	30	--	--
PCB-037	SW8270CSIM	--	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.20 J	30	--	--
PCB-044	SW8270CSIM	--	0.086 U	0.086 U	4.4	7.0	11	0.74	0.70	1.3	30	--	--
PCB-049	SW8270CSIM	--	0.22	0.26	4.3	6.5	10	0.65	0.51	0.95	30	--	--
PCB-052	SW8270CSIM	--	0.39	0.41	5.9	8.6	14	0.99	0.89	1.4	30	--	--
PCB-066	SW8270CSIM	--	0.35	0.51	6.7	9.7	15	1.1	0.91	2.0	30	--	--
PCB-070	SW8270CSIM	--	0.21	0.059 U	3.6	5.5	9.6	0.059 U	0.39	1.2	30	--	--
PCB-074	SW8270CSIM	--	0.23	0.26	4.0	0.087 U	9.2	0.24	0.29	0.50	30	--	--
PCB-077	SW8270CSIM	--	0.077 U	0.077 U	1.4	1.6	2.0	0.077 U	0.078 U	0.36	30	--	--
PCB-081	SW8270CSIM	--	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	30	--	--
PCB-087	SW8270CSIM	--	0.43	0.36	5.7	7.8	8.7	0.72	0.65	1.1	30	--	--
PCB-099	SW8270CSIM	--	0.66	0.62	9.8	13	16	1.2	1.1	1.6	30	--	--
PCB-101	SW8270CSIM	--	0.92	0.90	15	19	26	2.2	1.7	2.8	30	--	--
PCB-105	SW8270CSIM	--	0.30	0.31	4.2	6.9	6.7	0.6	0.62	0.93	30	--	--
PCB-110	SW8270CSIM	--	0.50	0.58	8.1	0.046 U	14	1.5	1.2	2.0	30	--	--

Table 24
2016 Fish Tissue Chemistry Results

Area	San Pedro Bay									Number Analyzed	Number of Exceedances	Percent of Exceedance	
	Location ID	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish	SP_2016_Fish				
Sample ID	SP-FF-CH-C2-20160821	SP-FF-CH-C3-20160821	SP-FF-WC-C1-20160821	SP-FF-WC-C2-20160821	SP-FF-WC-C3-20160821	SP-WO-NA-C1-20160821	SP-WO-NA-C2-20160821	SP-WO-NA-C3-20160821					
Common Name	California halibut	California halibut	White croaker	White croaker	White croaker	Northern anchovy	Northern anchovy	Northern anchovy					
Scientific Name	<i>Paralichthys californicus</i>	<i>Paralichthys californicus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Genyonemus lineatus</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>	<i>Engraulis mordax</i>					
Tissue Type	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Fillet without skin	Whole Body	Whole Body	Whole Body					
Sample Date	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016	8/21/2016					
X	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468	6507589.359468					
Y	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463	1731031.827463					
Method	TMDL Fish Tissue Target												
PCB-114	SW8270CSIM	--	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	30	--	--
PCB-118	SW8270CSIM	--	0.90	0.73	12	19	18	1.5	1.3	2.0	30	--	--
PCB-119	SW8270CSIM	--	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	30	--	--
PCB-123	SW8270CSIM	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	30	--	--
PCB-126	SW8270CSIM	--	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	30	--	--
PCB-128	SW8270CSIM	--	0.10 U	0.10 U	2.7	3.9	3.6	0.4	0.29	0.38	30	--	--
PCB-132/153	SW8270CSIM	--	1.8	1.4	26	33	32	2.8	2.3	3.3	30	--	--
PCB-138/158	SW8270CSIM	--	1.5	1.1	20	26	26	2.2	1.7	2.6	30	--	--
PCB-149	SW8270CSIM	--	0.59	0.44	10	12	14	1.4	1.2	1.7	30	--	--
PCB-151	SW8270CSIM	--	0.22	0.21	3.2	0.067 U	4.1	0.41	0.26	0.43	30	--	--
PCB-156	SW8270CSIM	--	0.057 U	0.057 U	1.1	0.058 U	1.5	0.057 U	0.058 U	0.057 U	30	--	--
PCB-157	SW8270CSIM	--	0.052 U	0.052 U	0.37	0.052 U	0.45	0.052 U	0.052 U	0.052 U	30	--	--
PCB-167	SW8270CSIM	--	0.061 U	0.061 U	0.44	1.0	0.80	0.061 U	0.062 U	0.061 U	30	--	--
PCB-168	SW8270CSIM	--	0.048 U	0.048 U	0.048 U	0.049 U	0.049 U	0.048 U	0.049 U	0.048 U	30	--	--
PCB-169	SW8270CSIM	--	0.061 U	0.061 U	0.55	0.54	0.86	0.061 U	0.061 U	0.061 U	30	--	--
PCB-170	SW8270CSIM	--	0.25	0.18 J	3.7	4.2	5.4	0.33	0.24	0.32	30	--	--
PCB-177	SW8270CSIM	--	0.087 U	0.087 U	2.3	3.1	3.1	0.26	0.21	0.32	30	--	--
PCB-180	SW8270CSIM	--	0.63	0.42	7.9	13	11	0.69	0.53	0.75	30	--	--
PCB-183	SW8270CSIM	--	0.21	0.13 J	2.5	3.5	3.5	0.27	0.16 J	0.27	30	--	--
PCB-187	SW8270CSIM	--	0.59	0.38	7.7	8.9	10	0.67	0.53	0.72	30	--	--
PCB-189	SW8270CSIM	--	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	30	--	--
PCB-194	SW8270CSIM	--	0.11 U	0.11 U	1.1	1.6	1.6	0.11 U	0.11 U	0.11 U	30	--	--
PCB-201	SW8270CSIM	--	0.096 U	0.096 U	0.30	0.44	0.44	0.096 U	0.097 U	0.096 U	30	--	--
PCB-206	SW8270CSIM	--	0.19 U	0.19 U	0.51	0.95	0.80	0.19 U	0.19 U	0.19 U	30	--	--
Total PCB Congener - low resolution (U = 0)	--	3.6	11.0 J	9.2 J	180	223	290	21.2	18.0 J	29.9 J	30	30	100%

Table 24
2016 Fish Tissue Chemistry Results

Notes:

Horizontal coordinate datum is North American Datum 1983 State Plane California V FIPS 0405 (U.S. Survey Feet).

All non-detect results are reported at the method detection limit.

Number analyzed and WQ exceedance counts do not include samples that were analyzed for field or laboratory quality control purposes (e.g.: field duplicates). WQ exceedance counts do not include non-detect results above the screening levels.


Totals (U=0) are calculated as the sum of all detected results. If all results are not detected, half of the highest reporting limit value is reported as the sum.

Total chlordane is the sum of alpha-chlordane, beta-chlordane, gamma-chlordane, cis-nonachlor, trans-nonachlor, and oxychlordane.

Total DDTs is the sum of 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT, if measured.

Total PCB congeners is the sum of all PCB congeners listed in this table.

U.S. Environmental Protection Agency Stage 2A data validation was completed by Anchor QEA.

 Detected concentration is greater than TMDL Fish Tissue Target screening level

Italicized: Non-detected concentration is above one or more identified screening levels

Bold: detected result

--: results not reported or not applicable

µg/kg: micrograms per kilogram

J: estimated value

N: normal environmental sample

PCB: polychlorinated biphenyl

pct: percent

TMDL: Total Maximum Daily Load

U: compound analyzed but not detected above detection limit

WQ: water quality

Table 25
Summary of Tissue Exceedances per Event

	Consolidated Slip	Outer Harbor - LA	Outer Harbor - LB	Eastern San Pedro Bay
	Summer 2016 (n=3)	Summer 2016 (n=9)	Summer 2016 (n=9)	Summer 2016 (n=9)
Organic Compounds				
Total chlordane	0	0	0	0
Total DDTs	3	7	6	5
Total PCB congeners	3	9	9	9
Dieldrin	0	0	0	0
Toxaphene	3	7	6	8

Note:

PCB: polychlorinated biphenyl

Figures

Waterbody Code	Media Code	Station Number	Sample Depth	Date
Outer Harbor LA: OA Outer Harbor LB: OB Inner Harbor-LA: IA Consolidated Slip: CS Fish Harbor: FH Cabrillo Marina: CM Cabrillo Beach: CB San Pedro Bay: SP Dominguez Channel: DC Cabrillo Pier: CP	Receiving Water: RW Surface Sediment: SS Field Blank: FB	01, 02, etc.	Water: Surface: S Mid-depth: M Bottom: B Sediment: 0-15 cm, 15-60 cm, etc.	YYYYMMDD
Example				
↓	↓	↓	↓	↓
OA	SS	09	0-5	20160731
OA-SS-09-0-5-20160731				

Filepath: S:\PROJECTS\GWMA\RMC_Compliance Monitoring(141205-01.01)\Deliverables\Annual Reports\2017\Figures\Figure 1.docx



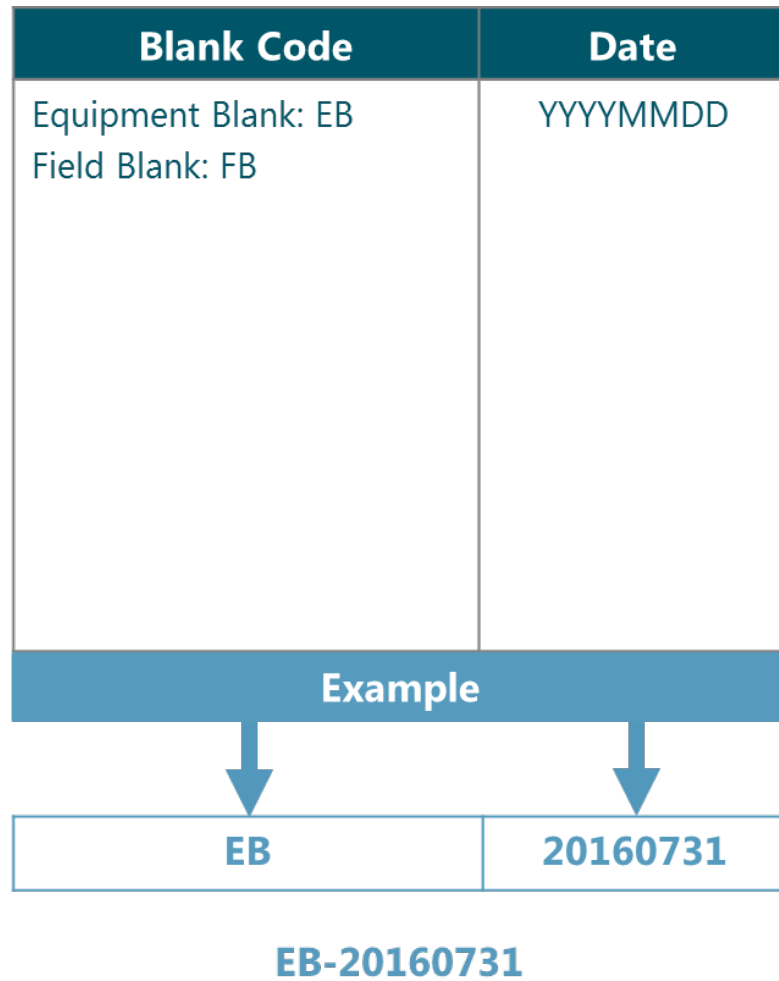
Figure 1
Water/Sediment Sample Nomenclature
2016/17 Annual Report
Greater Los Angeles and Long Beach Harbor Waters

Waterbody Code	Media Code	10	Station Number	Sample Depth	Date
Outer Harbor LA: OA Outer Harbor LB: OB Inner Harbor-LA: IA Consolidated Slip: CS Fish Harbor: FH Cabrillo Marina: CM Cabrillo Beach: CB San Pedro Bay: SP Dominguez Channel: DC Cabrillo Pier: CP	Receiving Water: RW Surface Sediment: SS Fish Fillet skin off (muscle): FF Whole Body: WO	Indicates Field Duplicate	01, 02, etc.	Water: Surface: S Mid-depth: M Bottom: B Sediment: 0-15 cm, 15-60 cm, etc.	YYYYMMDD
Example					
↓	↓	↓	↓	↓	↓
OA	RW	10	09	S	20160731
OA-RW-1009-S-20160731					

Filepath: S:\PROJECTS\GWMA\RMC_Compliance Monitoring(141205-01.01)\Deliverables\Annual Reports\2017\Figures\Figure 2.docx



Figure 2
Field Duplicate Sample Nomenclature
2016/17 Annual Report
Greater Los Angeles and Long Beach Harbor Waters



Filepath: S:\PROJECTS\GWMA\RMC_Compliance Monitoring(141205-01.01)\Deliverables\Annual Reports\2017\Figures\Figure 3.docx



Figure 3
Field Blank/Equipment Blank Sample Nomenclature

2016/17 Annual Report
Greater Los Angeles and Long Beach Harbor Waters

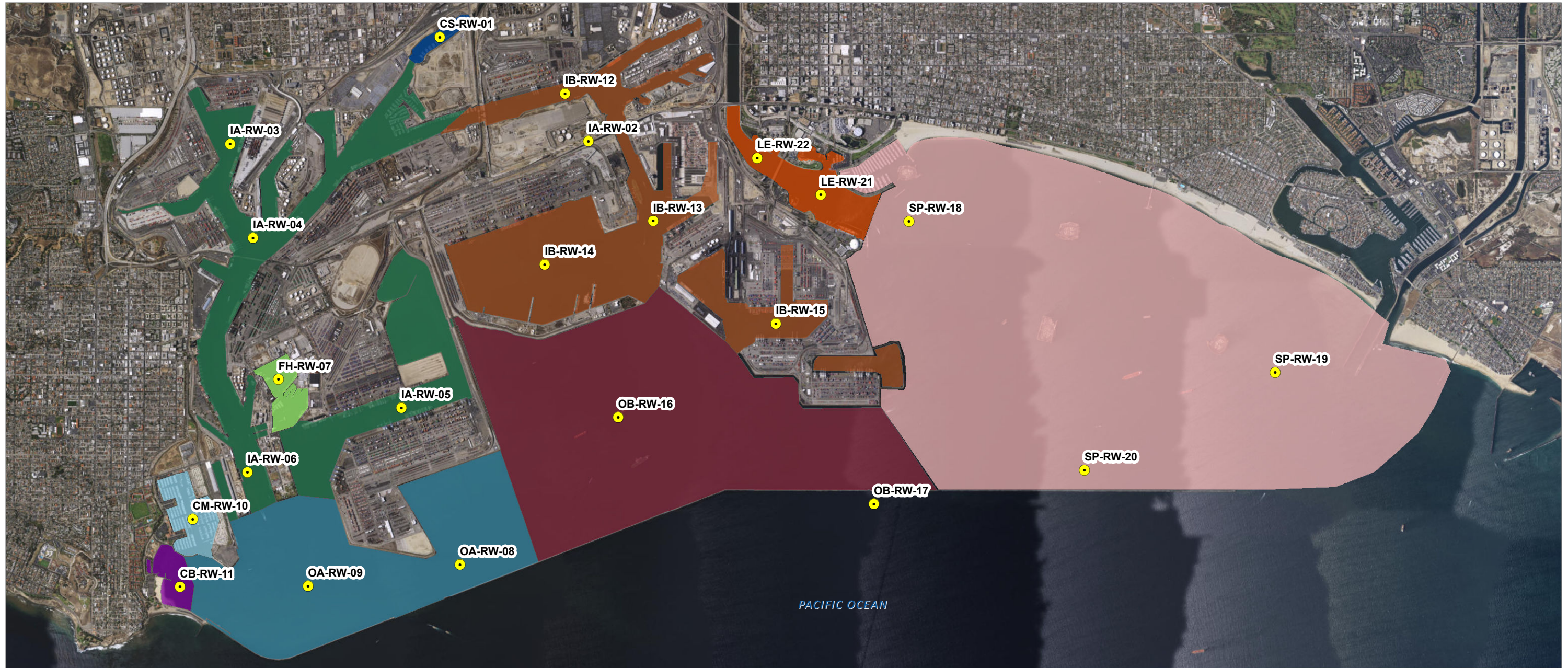
Waterbody Code	Media Code	Organism Code	Organism or Composite Number	Date
Outer Harbor LA: OA Outer Harbor LB: OB Inner Harbor-LA: IA Consolidated Slip: CS Fish Harbor: FH Cabrillo Marina: CM Cabrillo Beach: CB San Pedro Bay: SP Dominguez Channel: DC Cabrillo Pier: CP	Fish Fillet skin off (muscle): FF Whole Body: WO	White croaker (<i>Genyonemus lineatus</i>): WC California halibut (<i>Paralichthys californicus</i>): CH Shiner surfperch (<i>Cymatogaster aggregata</i>): SS Northern anchovy (<i>Engraulis mordax</i>): NA	1, 2, 3, etc. or C1, C2, C3, etc.	YYYYMMDD
Example				
OB	WO	WC	C1	20160731
OB-WO-WC-C1-20160731				

Filepath: S:\PROJECTS\GWMA\RMC_Compliance Monitoring(141205-01.01)\Deliverables\Annual Reports\2017\Figures\Figure 4.docx



Figure 4
Tissue Sample Nomenclature

2016/17 Annual Report
Greater Los Angeles and Long Beach Harbor Waters

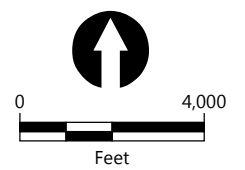


LEGEND:

● Summer 2016

TMDL Waterbodies

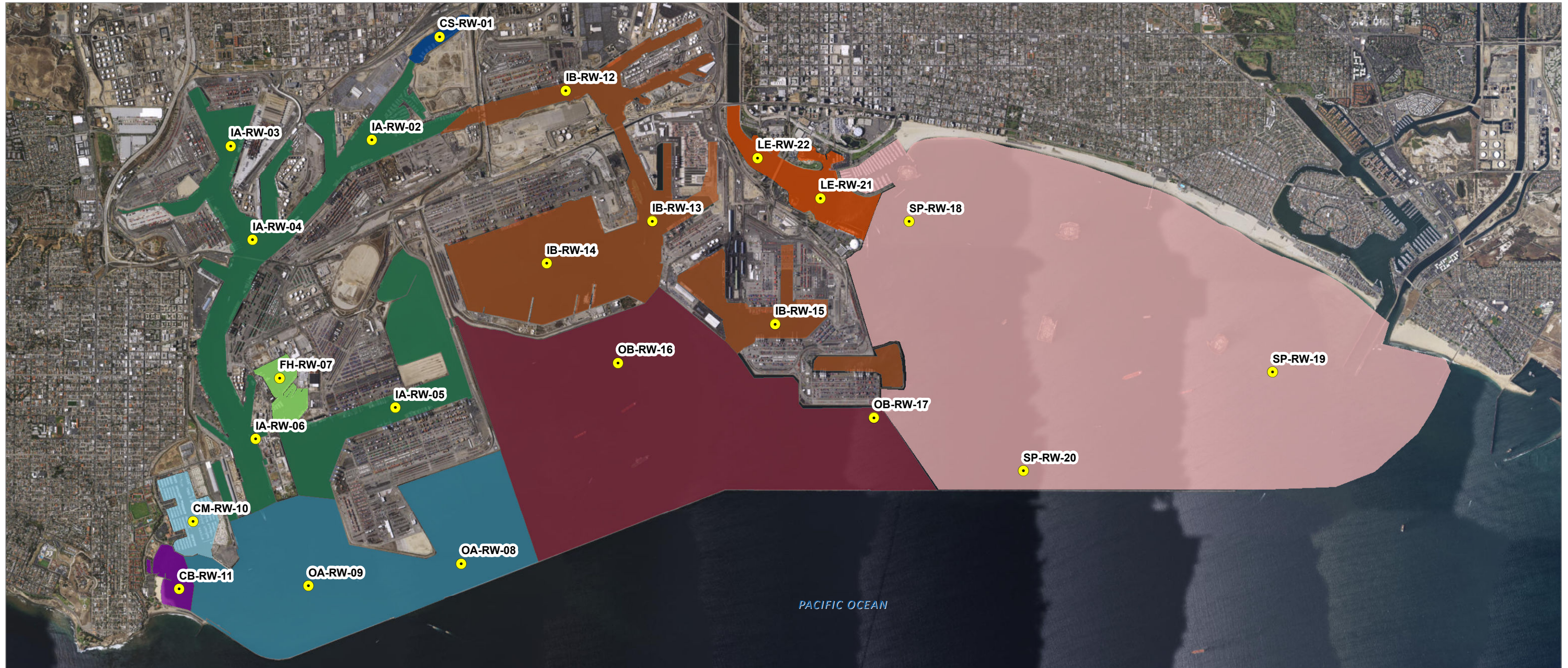
- East San Pedro Bay
- Los Angeles Harbor - Fish Harbor
- Los Angeles Harbor - Cabrillo Marina
- Los Angeles Harbor - Consolidated Slip
- Los Angeles Harbor - Inner Cabrillo Beach Area
- Los Angeles Outer Harbor (inside breakwater)
- Los Angeles River Estuary (Queensway Bay)
- Long Beach Inner Harbor
- Long Beach Outer Harbor (inside breakwater)



Publish Date: 2017/08/30, 2:56 PM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\TMDL_Compliance_Monitoring_Locs_Summer_2016.mxd



Figure 5
TMDL Compliance Monitoring Receiving Water Locations – Summer 2016
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters

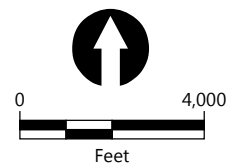


LEGEND:

● Fall 2016

TMDL Waterbodies

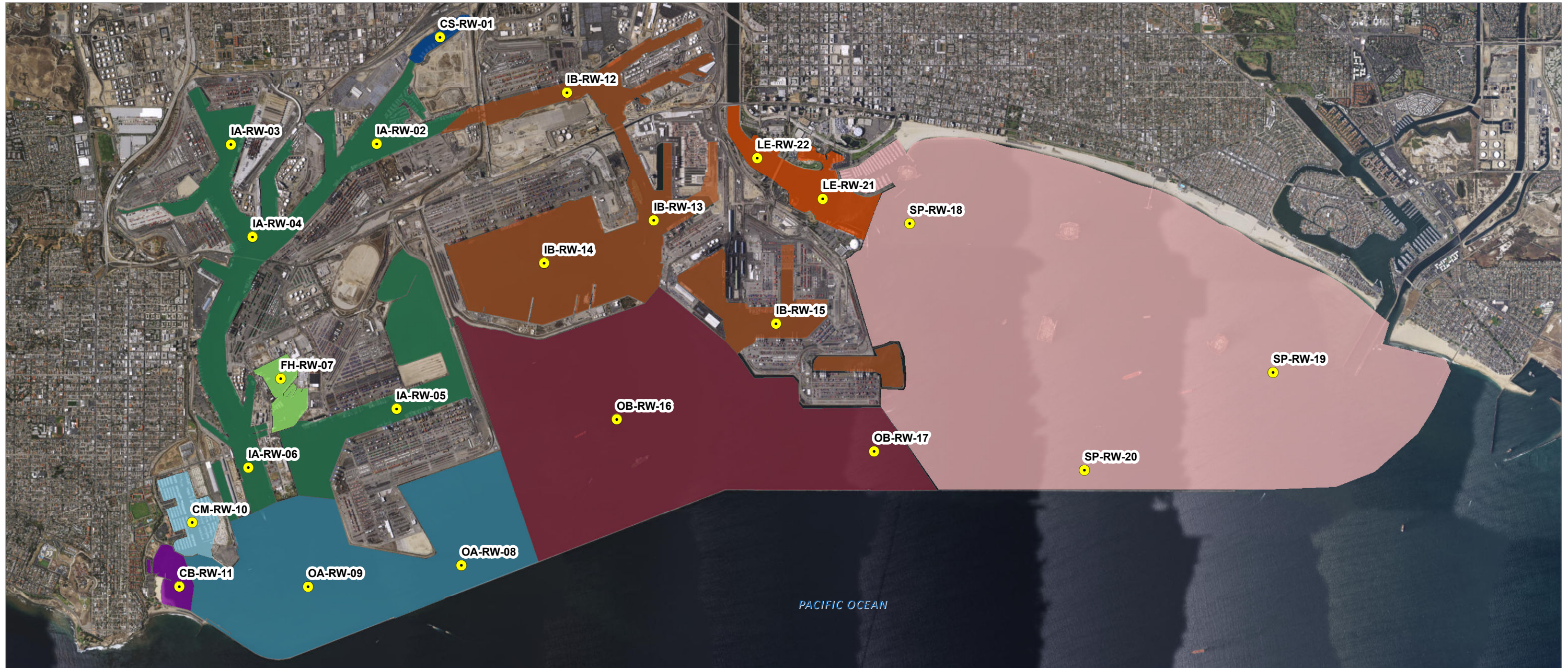
- East San Pedro Bay
- Los Angeles Harbor - Fish Harbor
- Los Angeles Harbor - Cabrillo Marina
- Los Angeles Harbor - Consolidated Slip
- Los Angeles Harbor - Inner Cabrillo Beach Area
- Los Angeles Inner Harbor
- Los Angeles Outer Harbor (inside breakwater)
- Los Angeles River Estuary (Queensway Bay)
- Long Beach Inner Harbor
- Long Beach Outer Harbor (inside breakwater)



Publish Date: 2017/08/30, 2:57 PM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\TMDL_Compliance_Monitoring_Locs_Fall_2016.mxd



Figure 6
TMDL Compliance Monitoring Receiving Water Locations – Fall 2016
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters



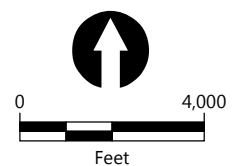
LEGEND:

● Winter 2017

TMDL Waterbodies

- East San Pedro Bay
- Los Angeles Harbor - Fish Harbor
- Los Angeles Harbor - Cabrillo Marina
- Los Angeles Harbor - Consolidated Slip
- Los Angeles Harbor - Inner Cabrillo Beach Area

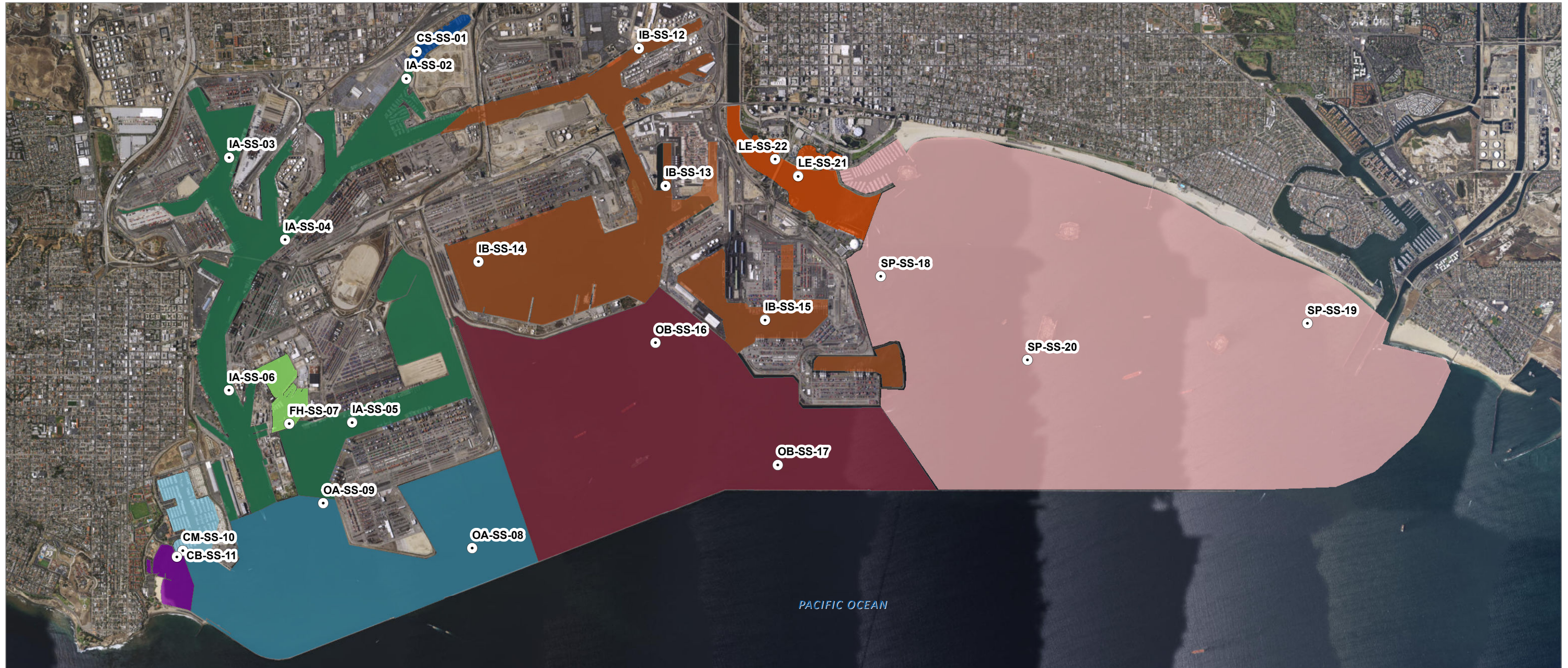
- Los Angeles Inner Harbor
- Los Angeles Outer Harbor (inside breakwater)
- Los Angeles River Estuary (Queensway Bay)
- Long Beach Inner Harbor
- Long Beach Outer Harbor (inside breakwater)



Publish Date: 2017/08/31, 9:42 AM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\TMDL_Compliance_Monitoring_Locs_Winter_2017.mxd



Figure 7
TMDL Compliance Monitoring Receiving Water Locations – Winter 2017
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters

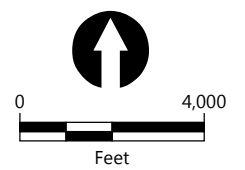


LEGEND:

○ Sample Location

TMDL Waterbodies

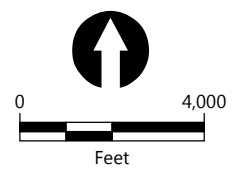
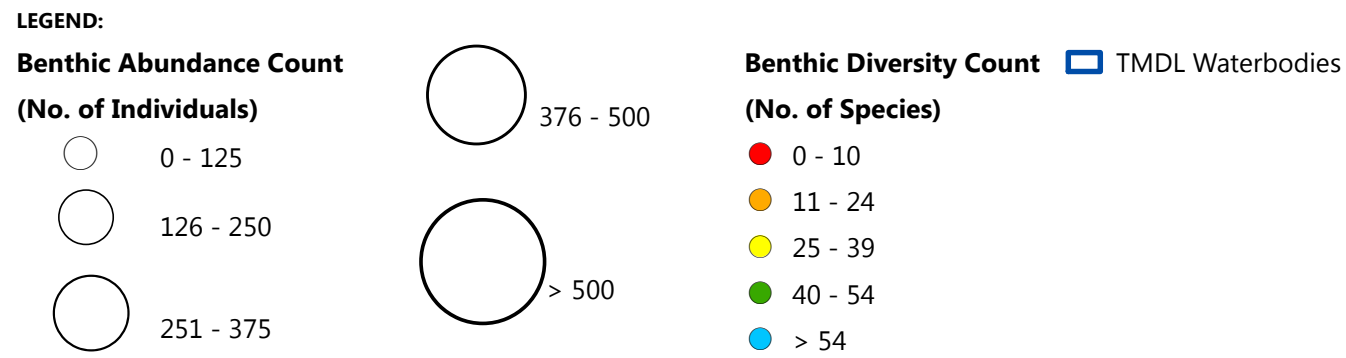
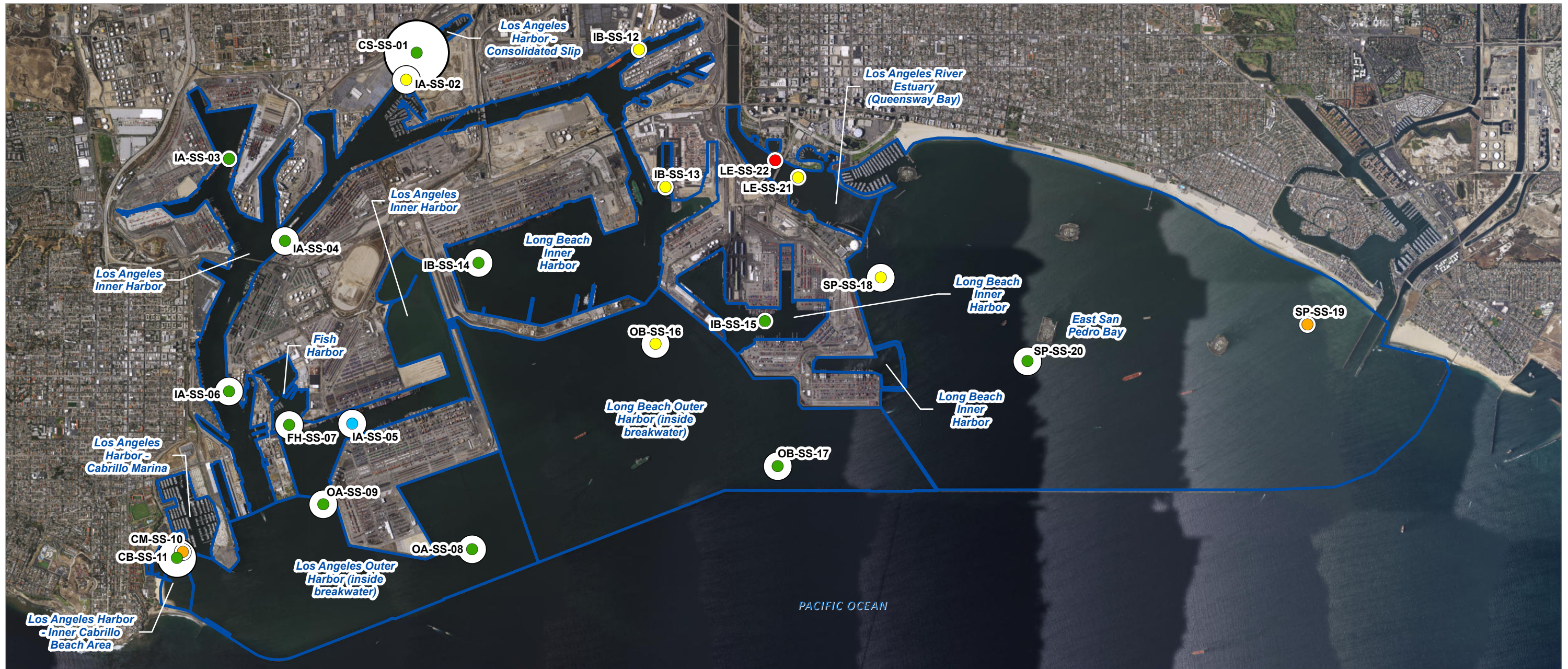
- East San Pedro Bay
- Los Angeles Harbor - Fish Harbor
- Los Angeles Harbor - Cabrillo Marina
- Los Angeles Harbor - Consolidated Slip
- Los Angeles Harbor - Inner Cabrillo Beach Area
- Los Angeles Outer Harbor (inside breakwater)
- Los Angeles River Estuary (Queensway Bay)
- Long Beach Inner Harbor
- Long Beach Outer Harbor (inside breakwater)



Publish Date: 2017/08/30, 2:51 PM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\GWMA_Sediment_Locs_2016.mxd



Figure 8
TMDL Compliance Monitoring Sediment Locations – Summer 2016
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters



Publish Date: 2017/08/30, 2:38 PM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\GWMA_Benthic_Diversity_2016.mxd

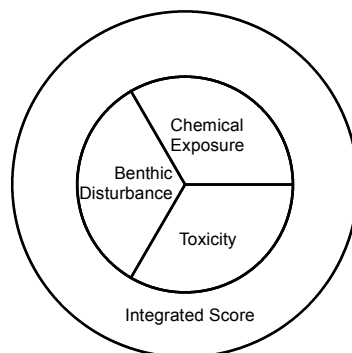


Figure 9
TMDL Compliance Monitoring Benthic Diversity – Summer 2016
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters

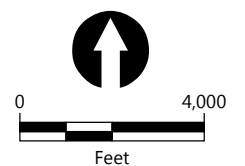


LEGEND:

Individual Category	Integrated Score
● High	● Clearly Impacted
● Moderate	● Likely Impacted
● Low	● Possibly Impacted
● Reference	● Likely Unimpacted
	● Unimpacted



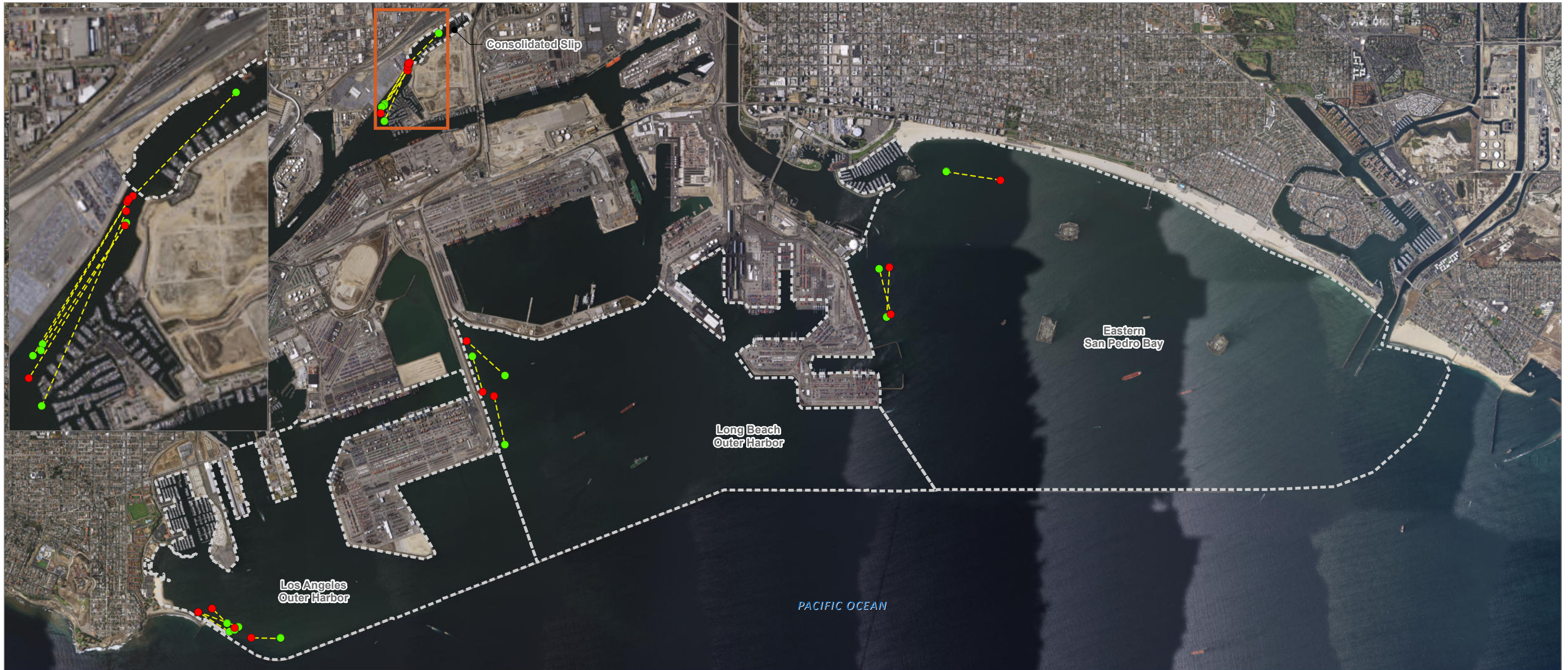
□ TMDL Waterbodies



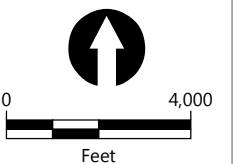
Publish Date: 2017/08/30, 2:52 PM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\GWMA_SQO_Integrated Assessment_Score_2016.mxd



Figure 10
2016 Sediment Quality Objective Integrated Assessment Scores
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters



LEGEND:
Fish Trawls Indirect Effects Assessment Unit
 Start
 End



Publish Date: 2017/08/18, 3:25 PM | User: ckiblinger
 Filepath: \\orcas\gis\Jobs\GatewayWaterMgmtAuth_1205\RegionalMonitoring\Maps\2017_03_Annual_Report\Fish_Trawls_2016.mxd



Figure 11
TMDL Compliance Fish Tissue Monitoring Trawl Locations: Summer 2016
 2016/17 Annual Report
 Greater Los Angeles and Long Beach Harbor Waters

Appendix A

Correspondence

From: Anthony Arevalo
To: Samuel.Unger@waterboards.ca.gov
Cc: LB.Nye@waterboards.ca.gov; Nguyen.Thanhloan@Waterboards; Andy.Martin
Subject: Random Sampling Approach for Sediment Quality Samples Collected in the Domingues Channel and Greater LA and LB Harbor Waters
Date: Wednesday, June 29, 2016 11:19:21 AM
Attachments: [1B646638-9E95-4EE2-9137-1CEE927F85A\[9\].png](#)
[Signed HRMC Random Sediment Sample Approach.pdf](#)
[Random Sediment Sample Approach_062916.pdf](#)

Dear Mr Unger,

On behalf of the Greater Los Angeles and LongBeach Harbor Waters Regional Monitoring Coalition (RMC), I am submitting to you and your Staff our letter and attachments which describes an approach developed to randomly select sediment sampling stations for the Summer 2016 monitoring event and presents the proposed locations of one primary and two alternate sediment sampling stations per each of the 22 Harbor Toxics TMDL-specified station location areas (i.e., Compliance Monitoring Program [CMP] Area). The RMC requests the RWQCB's review and approve for this approach and the proposed sediment sampling stations.

Should you or your staff have questions, need more information or would like to meet to discuss this approach, please contact me by return email or by phone at the information below. Andrew Martin, Managing Environmental Scientist from Anchor QEA is the Consultant for us who put together this approach. Mr Martin is also available for you and your Staff to contact at your convenience by return email or contacting him at the following phone numbers: P: 949-347-2780 & M: 760-443-2402.

Respectfully submitted,



Anthony Arevalo

Division Officer, Public Works

Storm Water Management Division

P: (562) 570-6023 M: (424) 201-9109

June 29, 2016

Samuel Unger, P.E.
Executive Officer
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: Random Sampling Approach for Sediment Quality Samples Collected in Support of Compliance Monitoring and Reporting for the Total Maximum Daily Load for Toxic Pollutants in Dominquez Channel and Greater Los Angeles and Long Beach Harbor Waters

Dear Mr. Unger:

As specified in correspondence to you from the Port of Los Angeles and Port of Long Beach, on behalf of the Regional Monitoring Coalition (RMC; April 21, 2014), the RMC confirmed sediment sampling stations would be drawn randomly for sediment monitoring events not coordinated with the Bight Program, considering the following:

- Random selection would be conducted similar to methods used by the Southern California Coastal Water Research Project (SCCWRP) for selecting Bight Program stations.
- One station would be located in each of the 22 Harbor Toxics Total Maximum Daily Load (TMDL)-specified station location areas (Figure 1) within the Harbor Toxics TMDL Specific Sampling Area.
- A subset of the compliance monitoring stations may be strategically placed (i.e., targeted, not random) to confirm results of Bight Program or other program Sediment Quality Objective (SQO) results.
- Locations of all sediment sampling stations, and the justification for their selection, will be provided to the Regional Water Quality Control Board (RWQCB) for approval prior to conducting the sediment monitoring event.

OBJECTIVE

This letter describes the approach developed to randomly select sediment sampling stations for the Summer 2016 monitoring event and presents the proposed locations of one primary and two alternate sediment sampling stations per each of the 22 Harbor Toxics TMDL-specified station location areas (i.e., Compliance Monitoring Program [CMP] Area). The RMC requests the RWQCB review and approve this approach and the proposed sediment sampling stations.

RANDOM SELECTION APPROACH

Similar to SCCWRP's Bight Program methodology, a hexagonal grid was overlain on each of the 22 Harbor Toxics TMDL-specified station location areas. The diameter of each grid cell varied per station location area in order to have an approximately equal number of grid cells in each area. Grid cells in each area were numbered from 1 to n (n was approximately 60 but varied per station location area due to the variable configurations of each area and obstacles that could interfere with sampling within each area). To prevent sample placement in close proximity to recently collected Bight '13 Program sediment samples, areas within close proximity to Bight '13 Program stations were excluded from selection. Close proximity was defined as within two times the diameter of the inscribed circle of a hexagonal grid cell. Using a random number generator function in Microsoft Excel, a grid cell was randomly selected from each of the 22 Harbor Toxics TMDL-specified areas and a GIS-based tool was used to randomly place a station within each grid cell. This process was completed three times for each of the 22 Harbor Toxics TMDL-specified station location areas. The first attempt was designated as the primary station location, and the second and third attempts were designated as alternate station locations.

RESULTS

Figures 2 through 23 illustrate the location of the proposed sediment sampling stations, in addition to suitable alternate stations, should the primary target stations be inaccessible or if sediment samples are unable to be collected due to unexpected conditions in the field. Station coordinates are provided in Table 1.

SCHEDULE

In accordance with SQO guidelines, sediment samples should be collected between June 1 and September 30 of each year. The RMC is targeting a mid-August monitoring effort.

On behalf of the RMC, I request that the RWQCB accept the random sample station selection approach and proposed sediment sampling stations.

Sincerely,

Anthony Arevalo

City of Long Beach Storm Water/Environmental Compliance Officer

Chairperson, Greater Harbor Waters Regional Monitoring Coalition

Cc: California Department of Transportation City of Rolling Hills Estates
City of Bellflower City of Signal Hill
City of Lakewood Los Angeles County
City of Los Angeles Los Angeles County Flood Control District
City of Paramount Port of Long Beach
City of Rancho Palos Verdes Port of Los Angeles
City of Rolling Hills

**Table 1
Proposed Sampling Locations**

Harbor Toxics TMDL Area	Station ID	Primary Station Location		Alternate Number 1 Station Location		Alternate Number 2 Station Location	
		Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
Consolidated Slip	1	33.77320	-118.24859	33.77635	-118.24388	33.77689	-118.24156
East Basin, Los Angeles Harbor	2	33.76980	-118.25039	33.76462	-118.24678	33.76556	-118.24777
West Basin, Los Angeles Harbor	3	33.76096	-118.27428	33.76224	-118.27291	33.76756	-118.27892
Turning Basin, Los Angeles Harbor	4	33.75171	-118.26662	33.74807	-118.27342	33.75632	-118.26844
Piers 300 and 400 Approach Channel and Seaplane Lagoon, Los Angeles Harbor	5	33.73074	-118.25718	33.72605	-118.26018	33.73400	-118.24612
Main Channel, Los Angeles Harbor	6	33.73455	-118.27402	33.72729	-118.27101	33.73116	-118.27393
Fish Harbor	7	33.73053	-118.26583	33.73276	-118.26749	33.73287	-118.26550
Los Angeles Outer Harbor Near Pier 400	8	33.71666	-118.24082	33.71554	-118.25372	33.72606	-118.23796
Los Angeles Outer Harbor South of Main Channel	9	33.72135	-118.26137	33.71725	-118.26427	33.70602	-118.27033
Cabrillo Marina	10	33.71610	-118.28017	33.72390	-118.28013	33.72336	-118.28281
Inner Cabrillo Beach	11	33.71288	-118.27871	33.71124	-118.27700	33.71518	-118.28126
Cerritos Channel, Long Beach Harbor	12	33.77379	-118.21827	33.76625	-118.23607	33.76693	-118.23399
Back Channel, Long Beach Harbor	13	33.75772	-118.21457	33.75751	-118.21825	33.75851	-118.21771
West Basin, Long Beach Harbor	14	33.74926	-118.24033	33.74513	-118.22803	33.75059	-118.23405
Southeast Basin, Long Beach Harbor	15	33.74248	-118.20100	33.74199	-118.20026	33.74374	-118.20784
Long Beach Outer Harbor	16	33.73989	-118.21588	33.73119	-118.20625	33.72285	-118.21896
Long Beach Outer Harbor, South of Pier J	17	33.72627	-118.19903	33.72403	-118.19662	33.73160	-118.19985
Northwest San Pedro Bay, South of Los Angeles River Estuary	18	33.74739	-118.18520	33.75078	-118.16864	33.75286	-118.18439
Eastern San Pedro Bay	19	33.74215	-118.12723	33.75113	-118.14710	33.73699	-118.11614
Southern San Pedro Bay	20	33.73800	-118.16506	33.73310	-118.18017	33.73505	-118.16099
Los Angeles River Estuary Queensway Bay	21	33.75871	-118.19675	33.75646	-118.19552	33.75554	-118.18925
Los Angeles River Estuary	22	33.76335	-118.20408	33.75913	-118.20021	33.76082	-118.19968

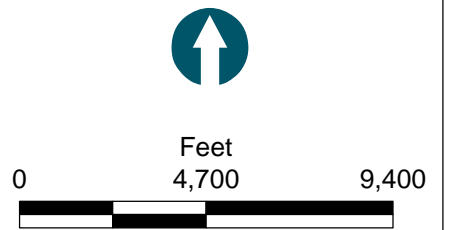
Notes:

DD = Decimal Degrees, GCS NAD 83

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:43:05 PM



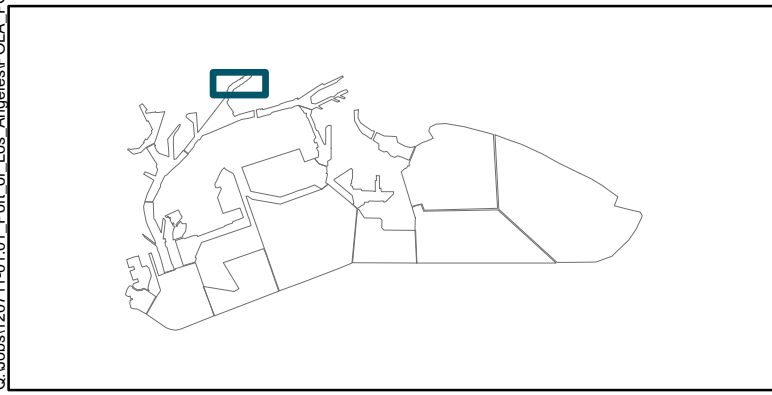
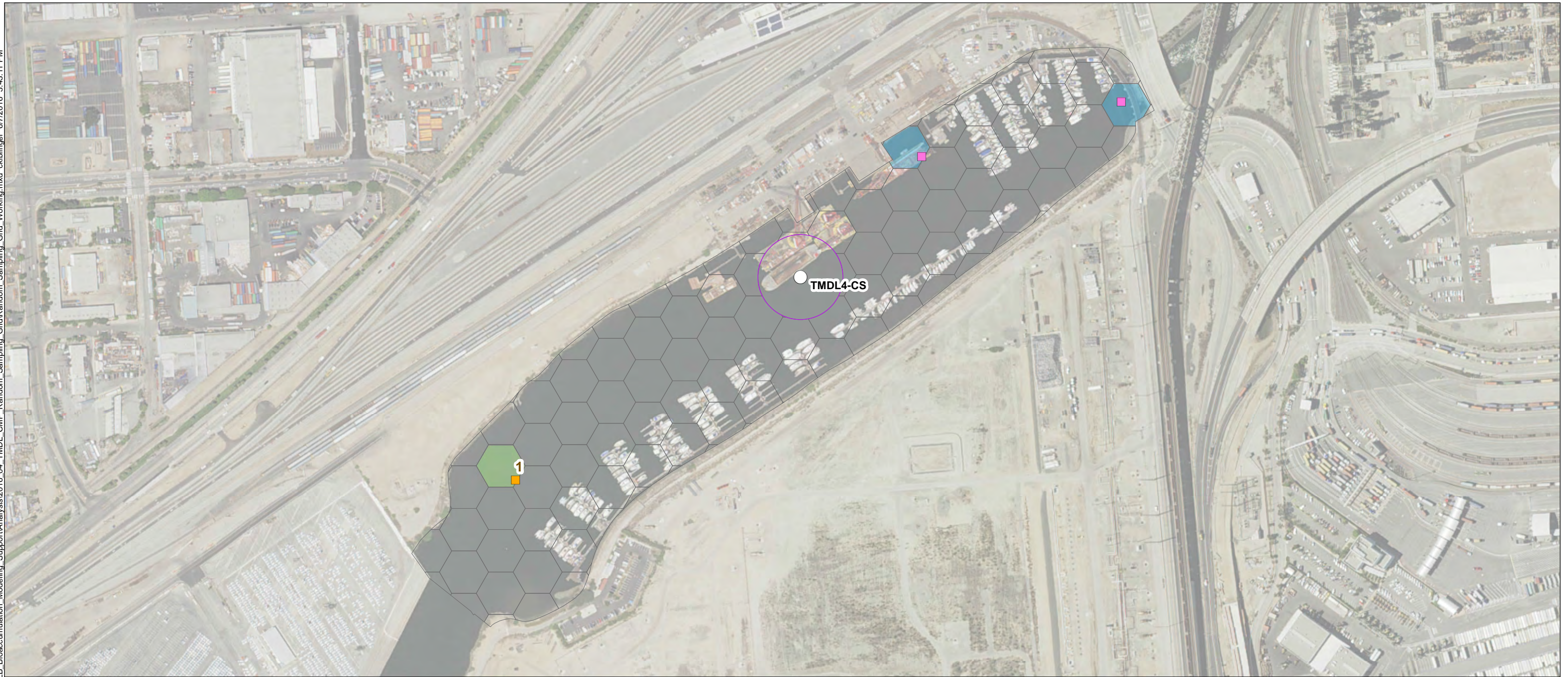
□ CMP Areas










DRAFT

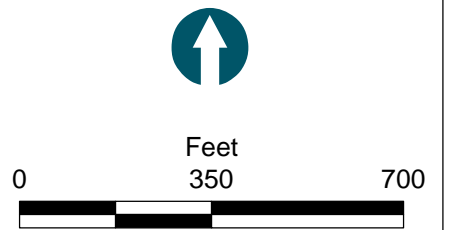


Figure 1
Overview of Harbor Toxics TMDL Specified Waterbodies/Sampling Areas
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program



-  Bight '13 Station Locations
-  Random Sample Location
-  Randomly Selected Cell
-  Alternate Random Sample Location
-  Alternate Randomly Selected Cell
-  Bight '13 Station Buffers¹
-  Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

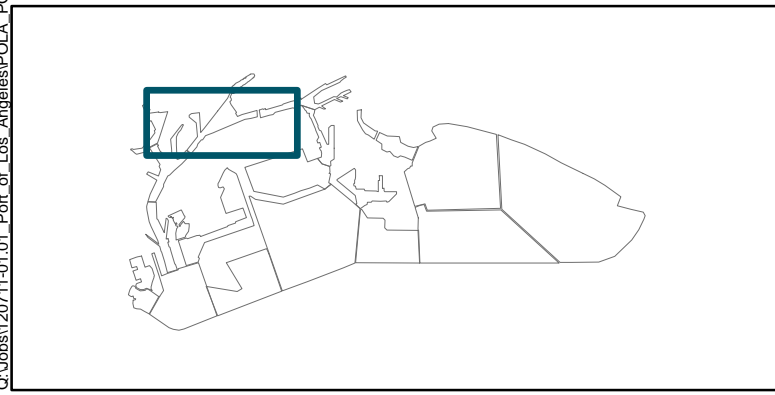
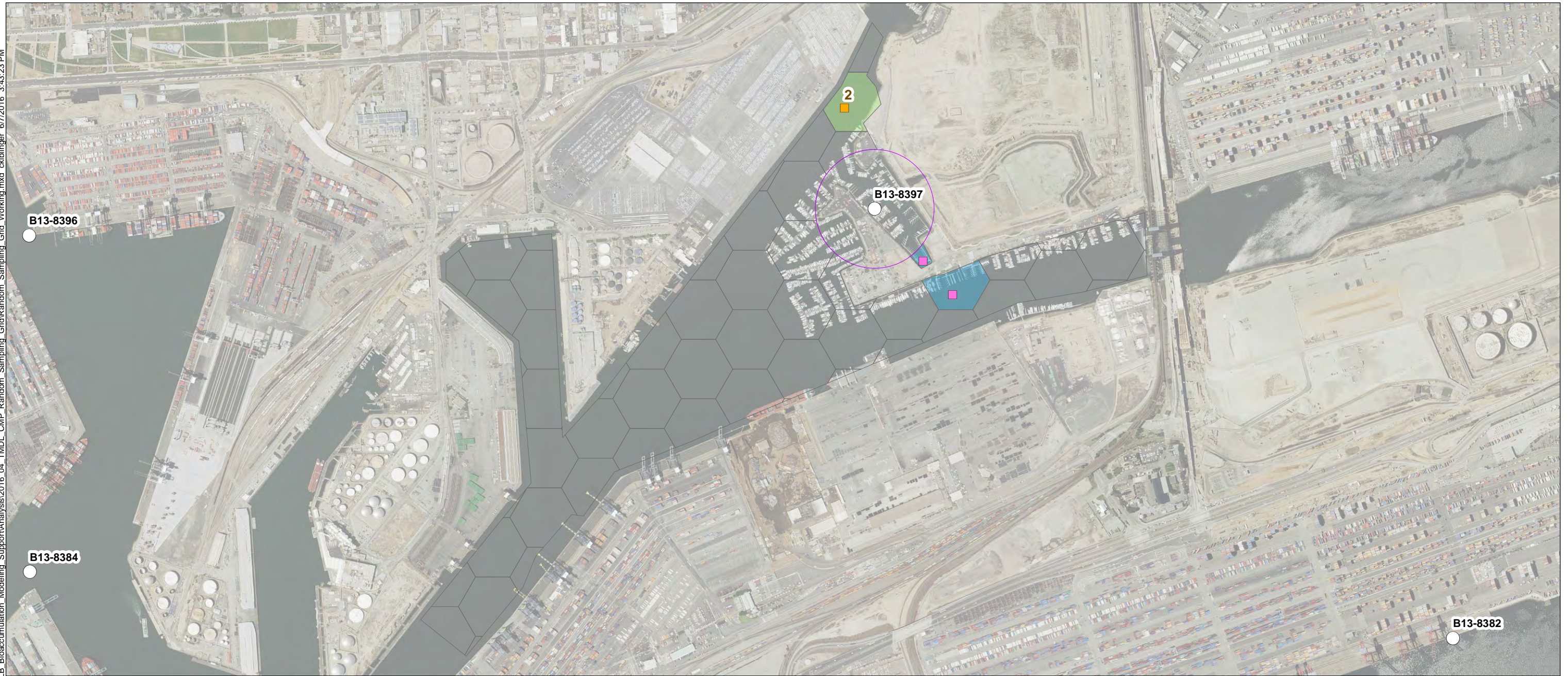


DRAFT



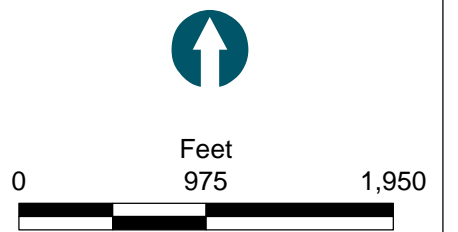
Figure 2
Consolidated Slip
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program

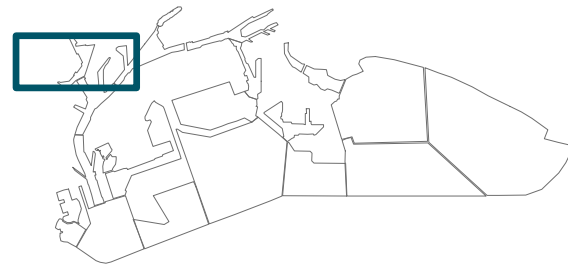
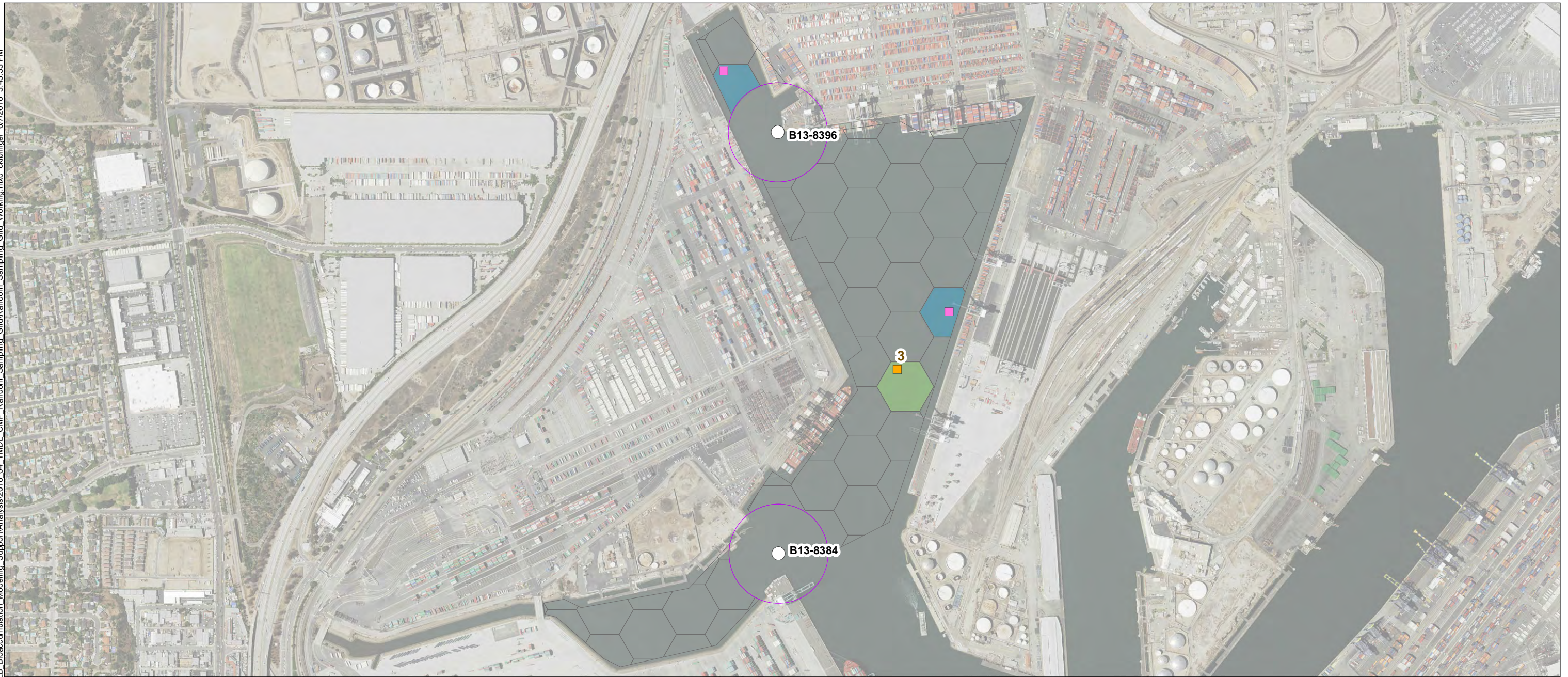
Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:43:23 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- Hexagonal Sampling Grid Cells

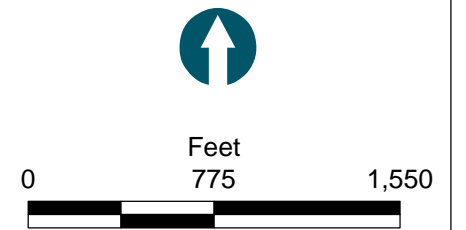
NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.





- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

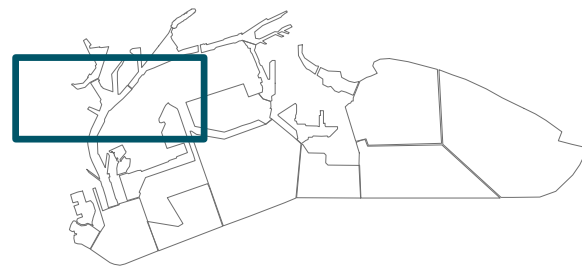
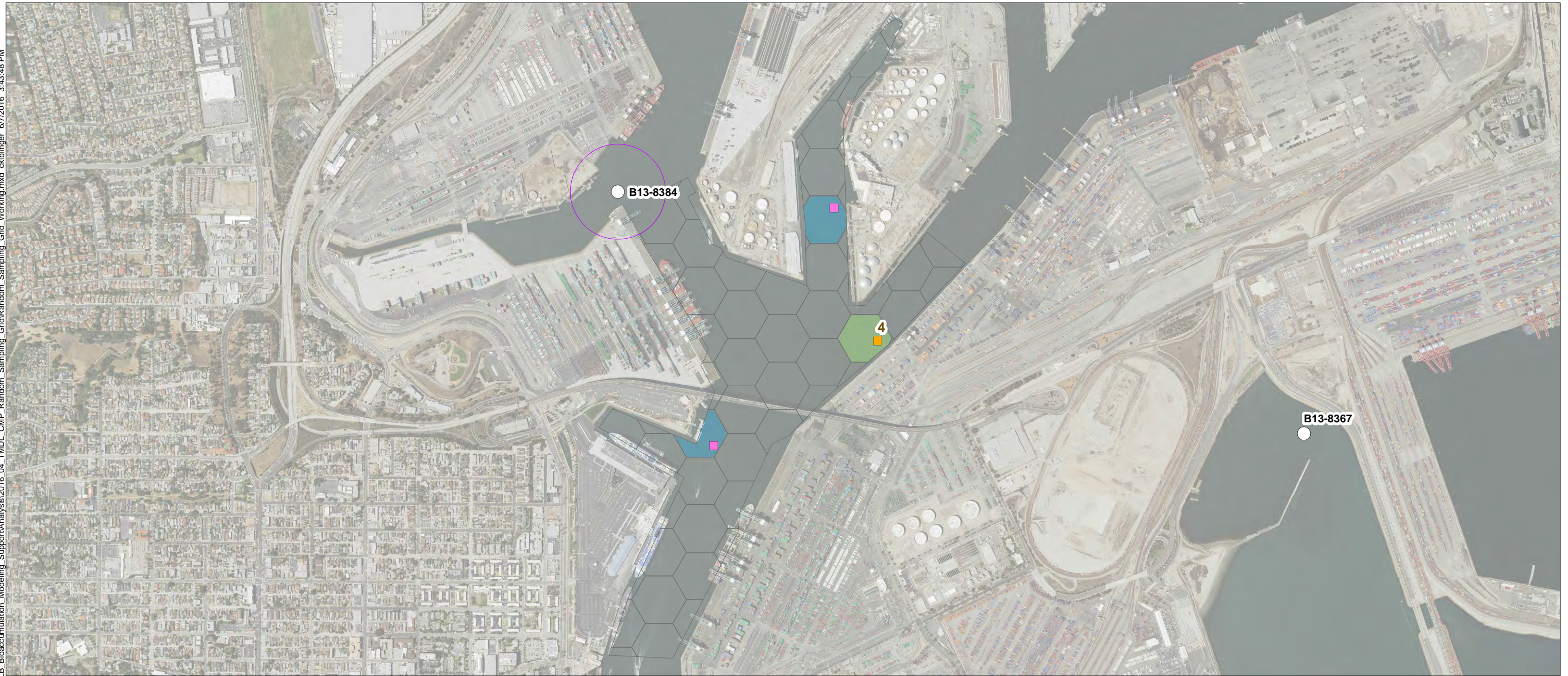
NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.



DRAFT

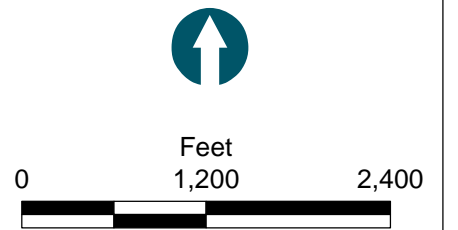


Figure 4
West Basin, Los Angeles Harbor
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

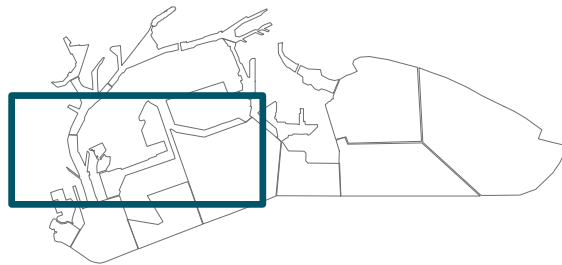
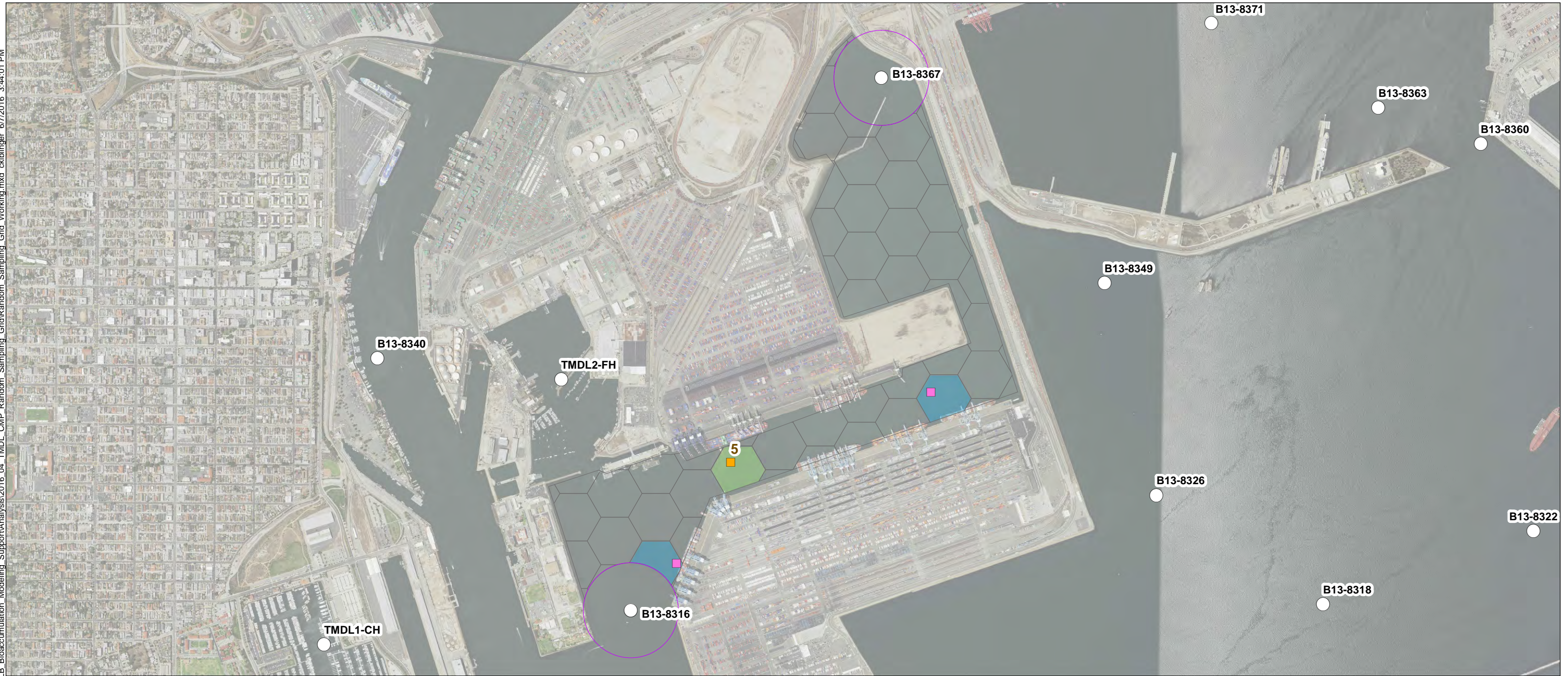


DRAFT



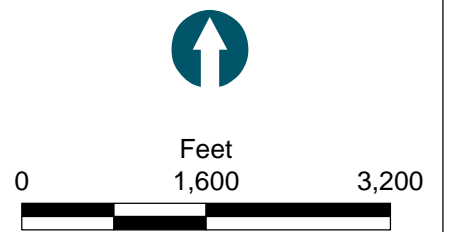
Figure 5
Turning Basin, Los Angeles Harbor
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:44:01 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

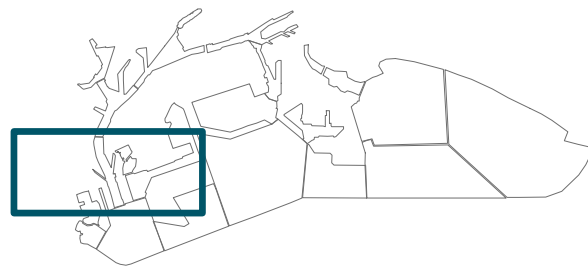


DRAFT



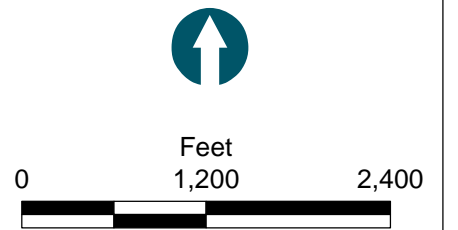
Figure 6
 Piers 300 and 400 Approach Channel and Seaplane Lagoon, Los Angeles Harbor
 Random Sampling Design
 Greater Harbor Waters Regional Monitoring Coalition
 Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_SupportAnalysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:44:16 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.










DRAFT



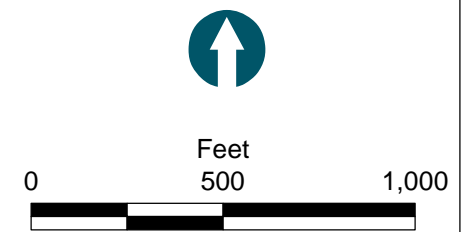
Figure 7
 Main Channel, Los Angeles Harbor
 Random Sampling Design
 Greater Harbor Waters Regional Monitoring Coalition
 Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:44:23 PM



-  Bight '13 Station Locations
-  Random Sample Location
-  Randomly Selected Cell
-  Alternate Random Sample Location
-  Alternate Randomly Selected Cell
-  Bight '13 Station Buffers¹
-  Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

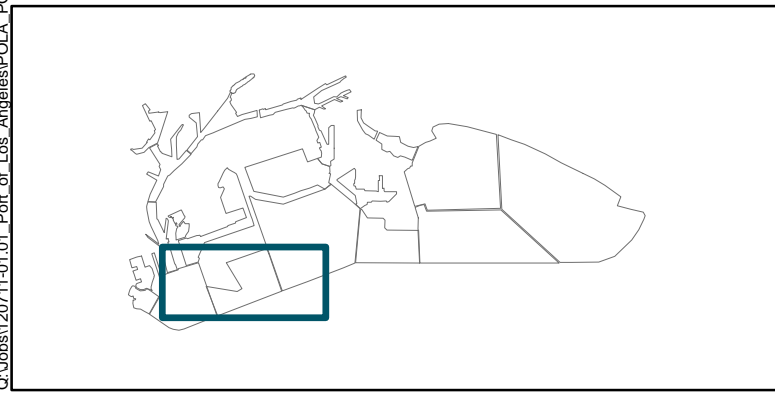
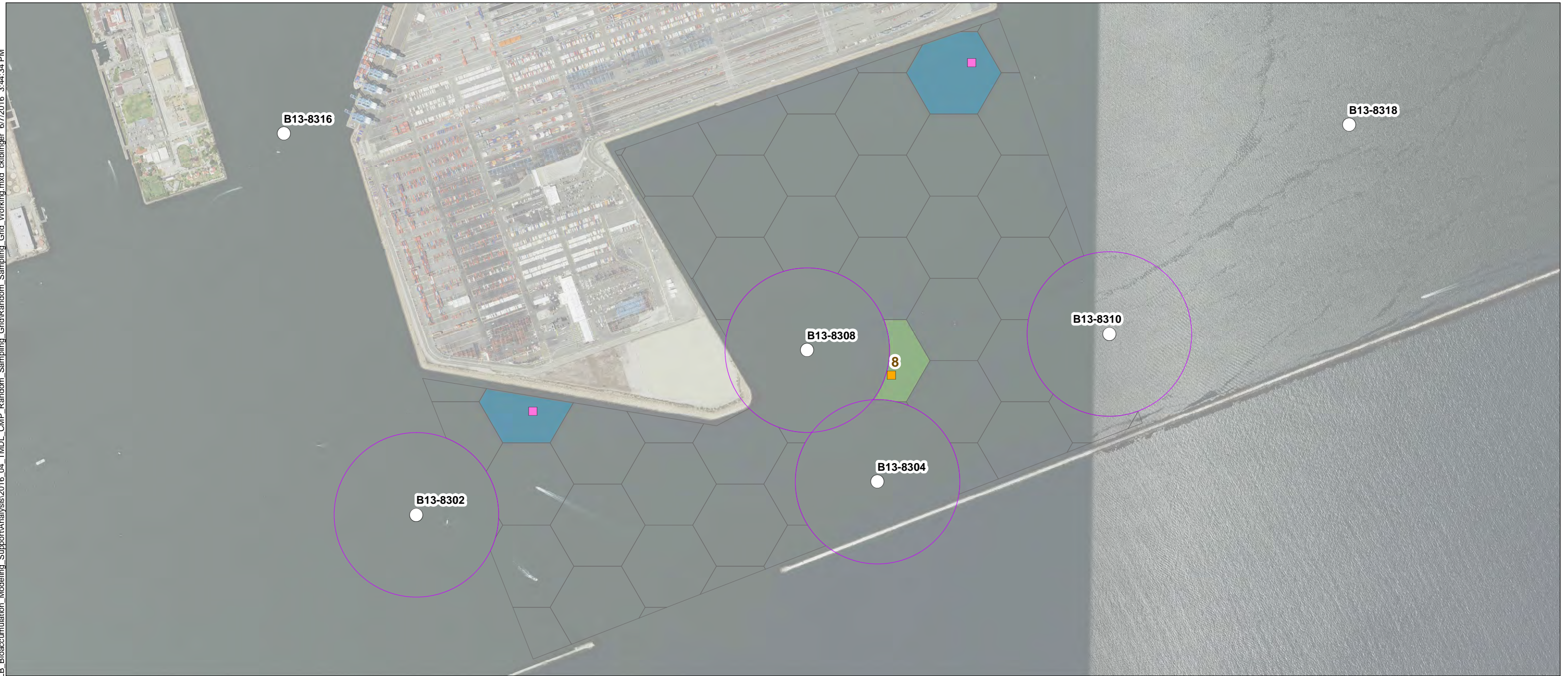









DRAFT



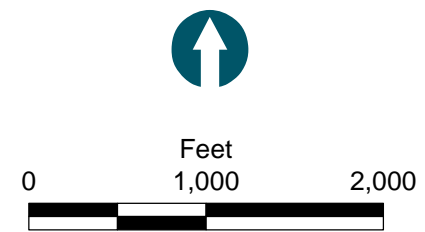
Figure 8
Fish Harbor
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_SupportAnalysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckiblinger 6/7/2016 3:44:34 PM

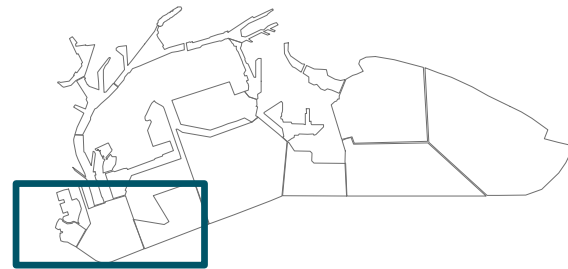


-  Bight '13 Station Locations
-  Random Sample Location
-  Randomly Selected Cell
-  Alternate Random Sample Location
-  Alternate Randomly Selected Cell
-  Bight '13 Station Buffers¹
-  Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

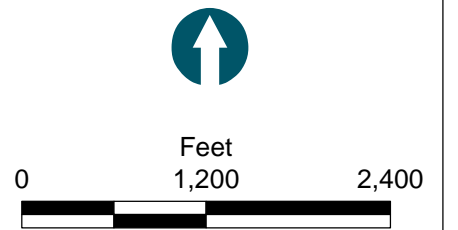


Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB Bioaccumulation_Modeling_SupportAnalysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid\Working.mxd ckiblinger 6/7/2016 3:44:46 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

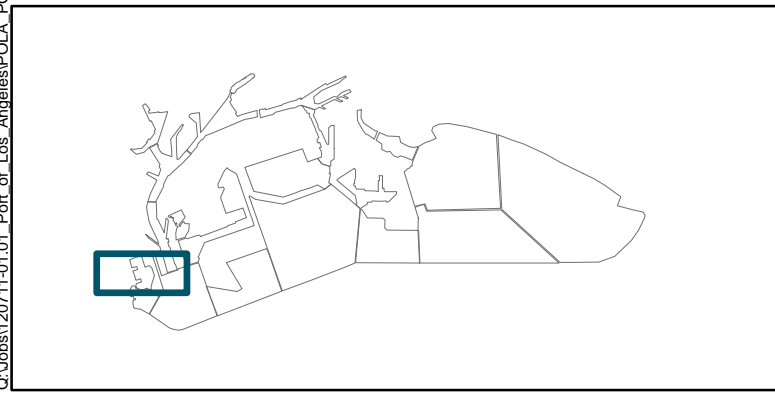


DRAFT



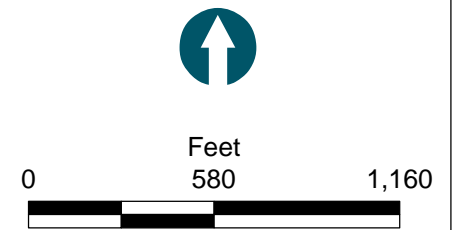
Figure 10
 Los Angeles Outer Harbor South of Main Channel
 Random Sampling Design
 Greater Harbor Waters Regional Monitoring Coalition
 Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01.01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_SupportAnalysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:44:55 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

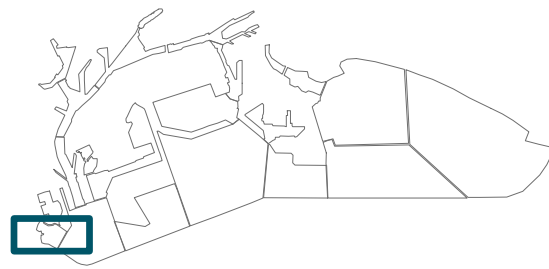


DRAFT



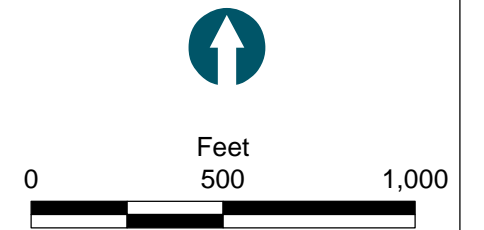
Figure 11
Cabrillo Marina
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:45:02 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

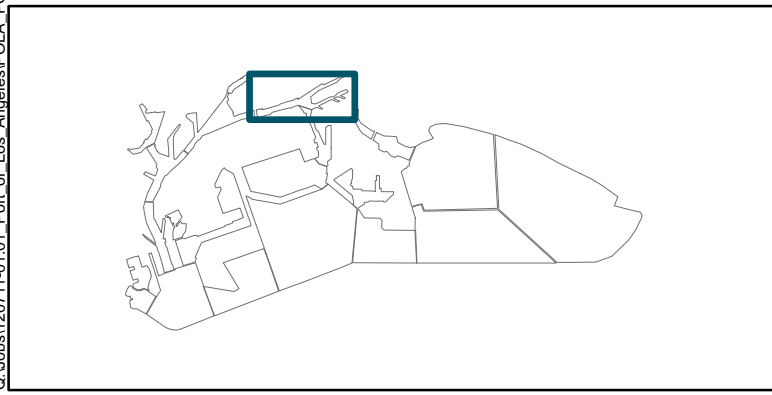
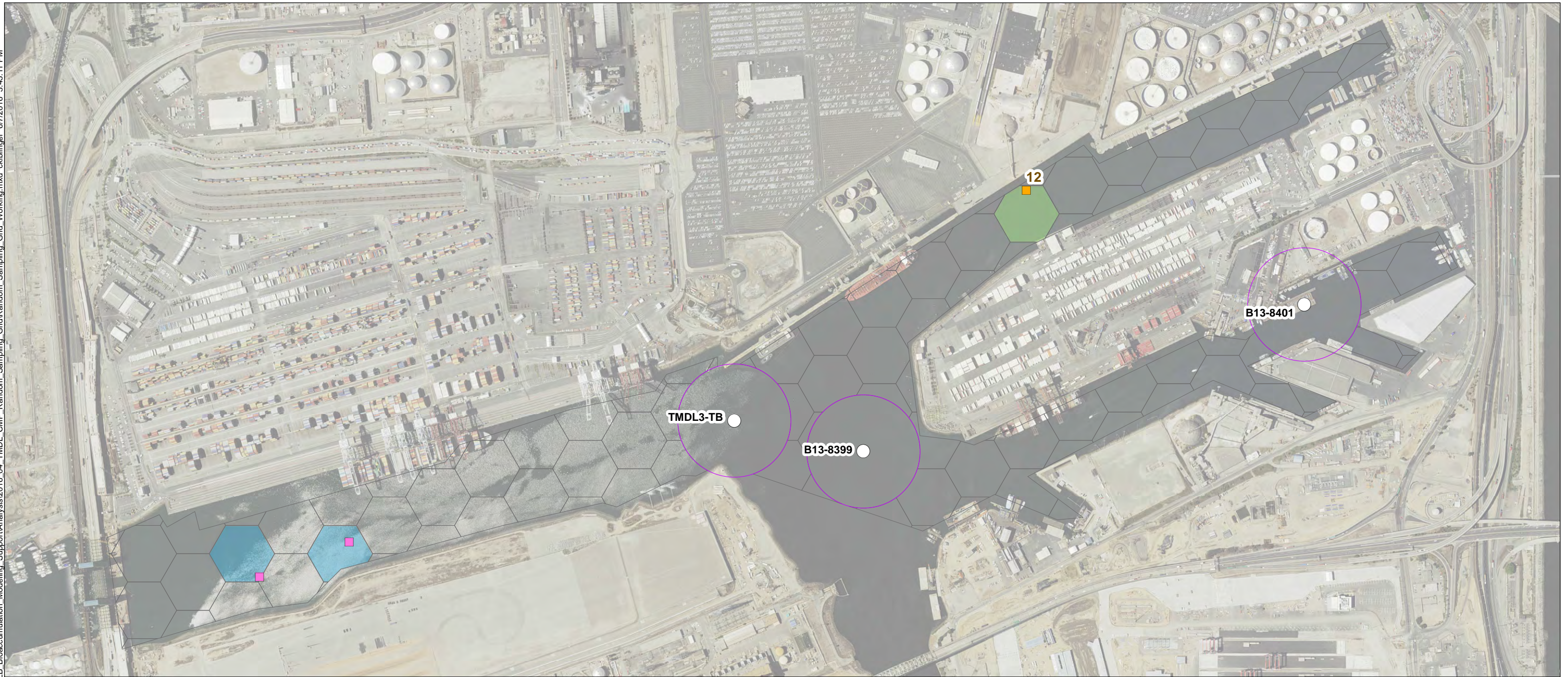
NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.



DRAFT

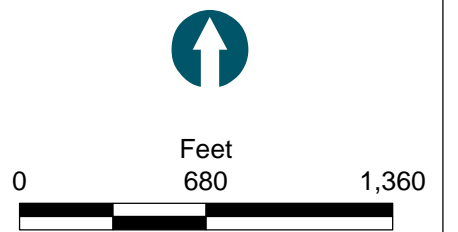


Figure 12
Inner Cabrillo Beach
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program

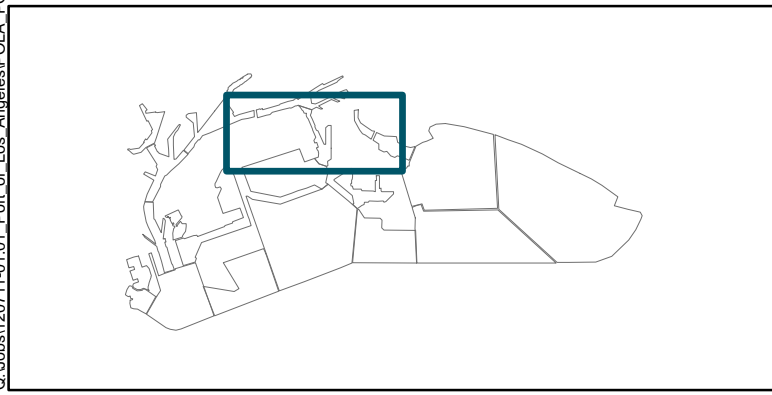


- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

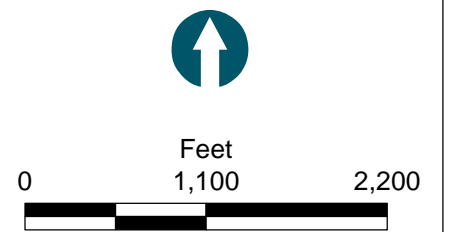


Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLA Bioaccumulation Modeling Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:45:26 PM

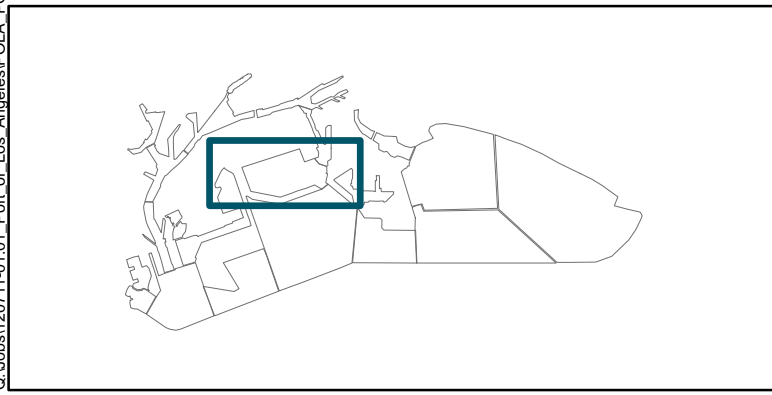


- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

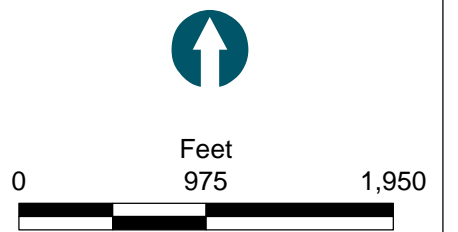


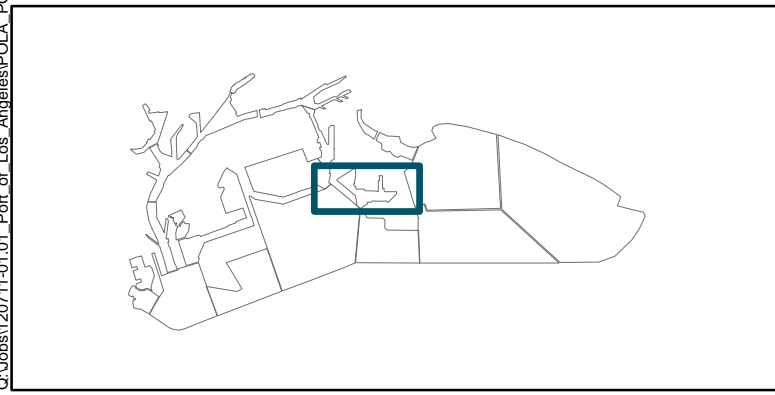
Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:45:37 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

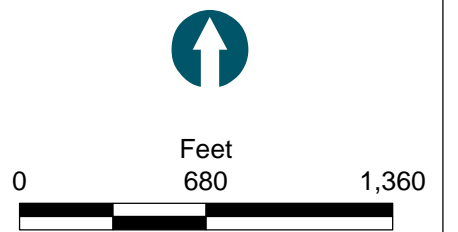
NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.



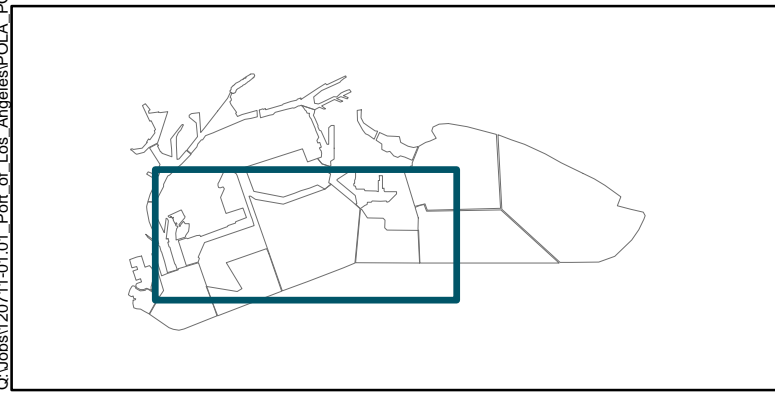


- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

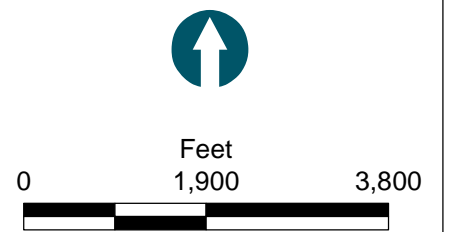


Q:\Jobs\120711-01.01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckiblinger 6/7/2016 3:46:02 PM

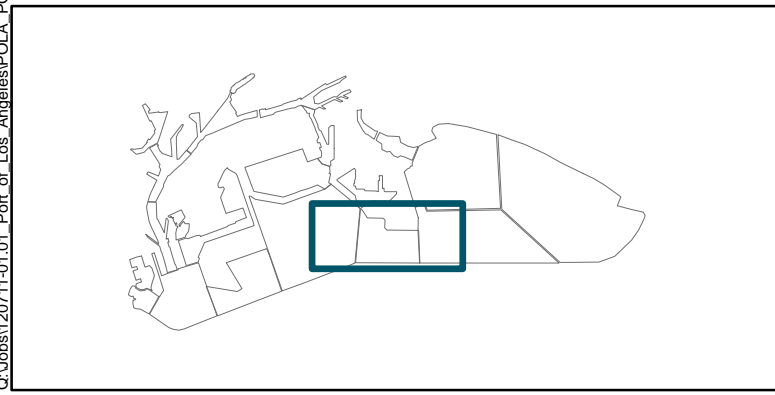


- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

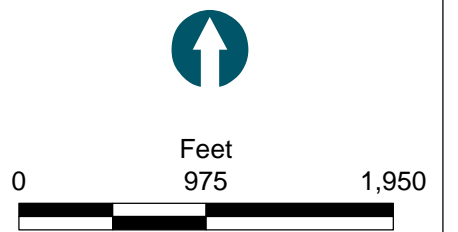


Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckbinger 6/7/2016 3:46:14 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

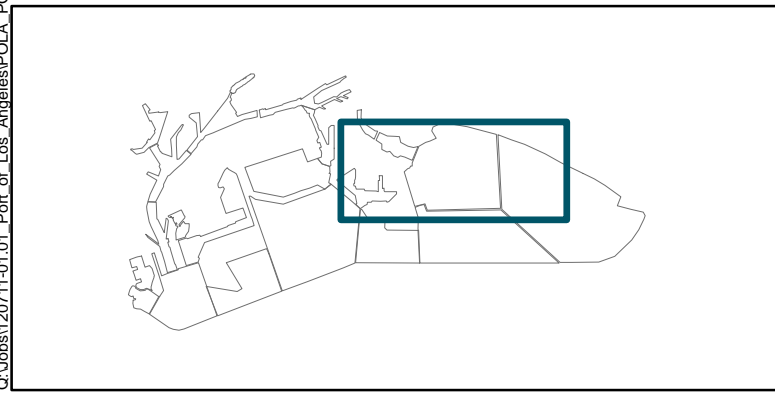
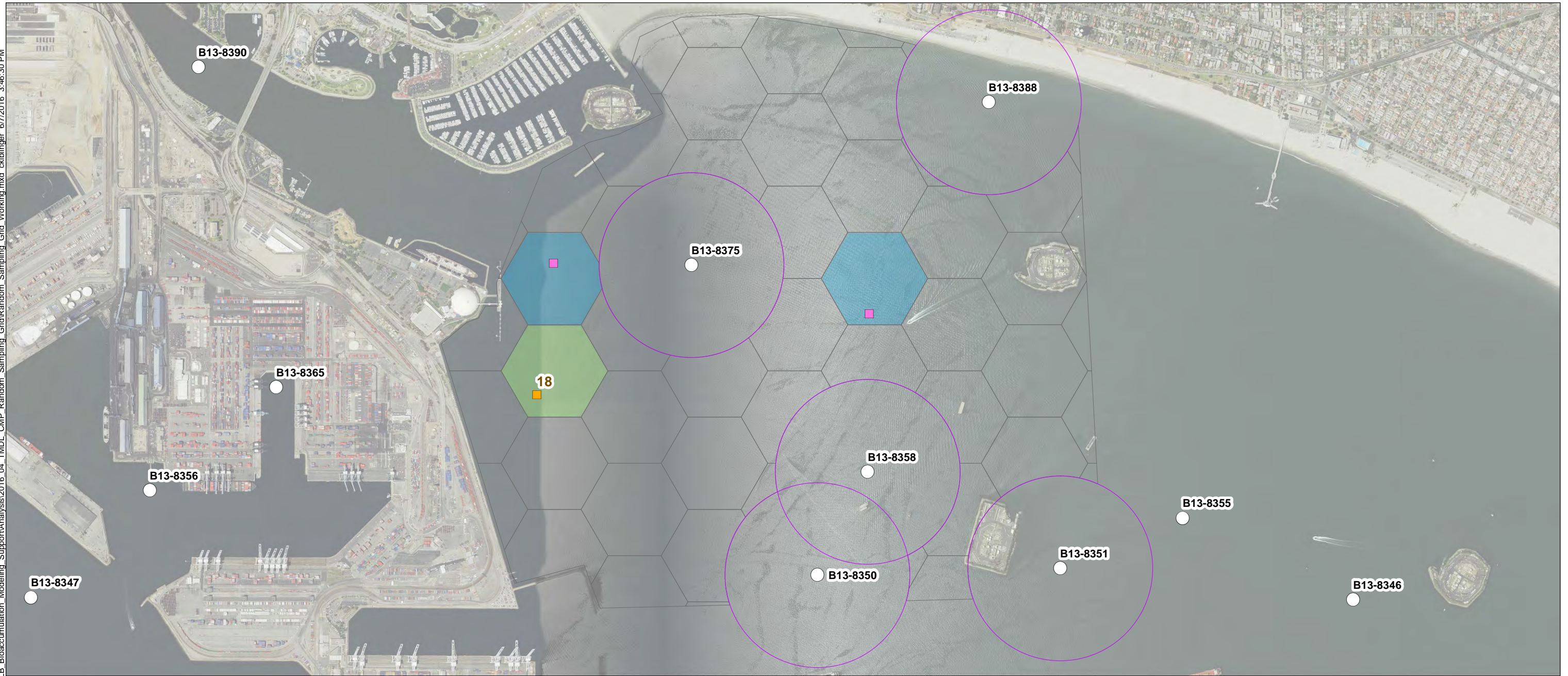









DRAFT



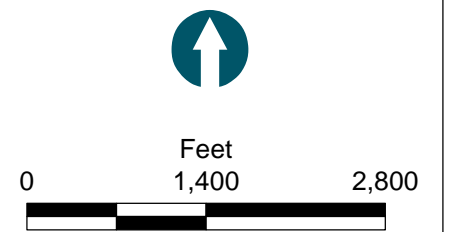
Figure 18
 Long Beach Outer Harbor, South of Pier J
 Random Sampling Design
 Greater Harbor Waters Regional Monitoring Coalition
 Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLA Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckblinger 6/7/2016 3:46:30 PM

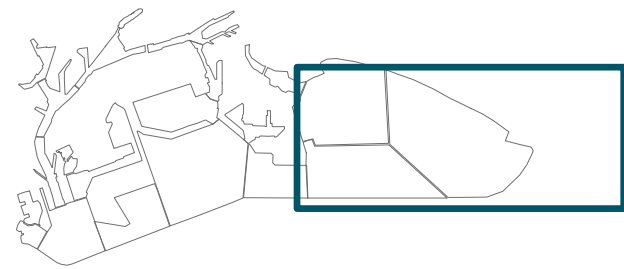
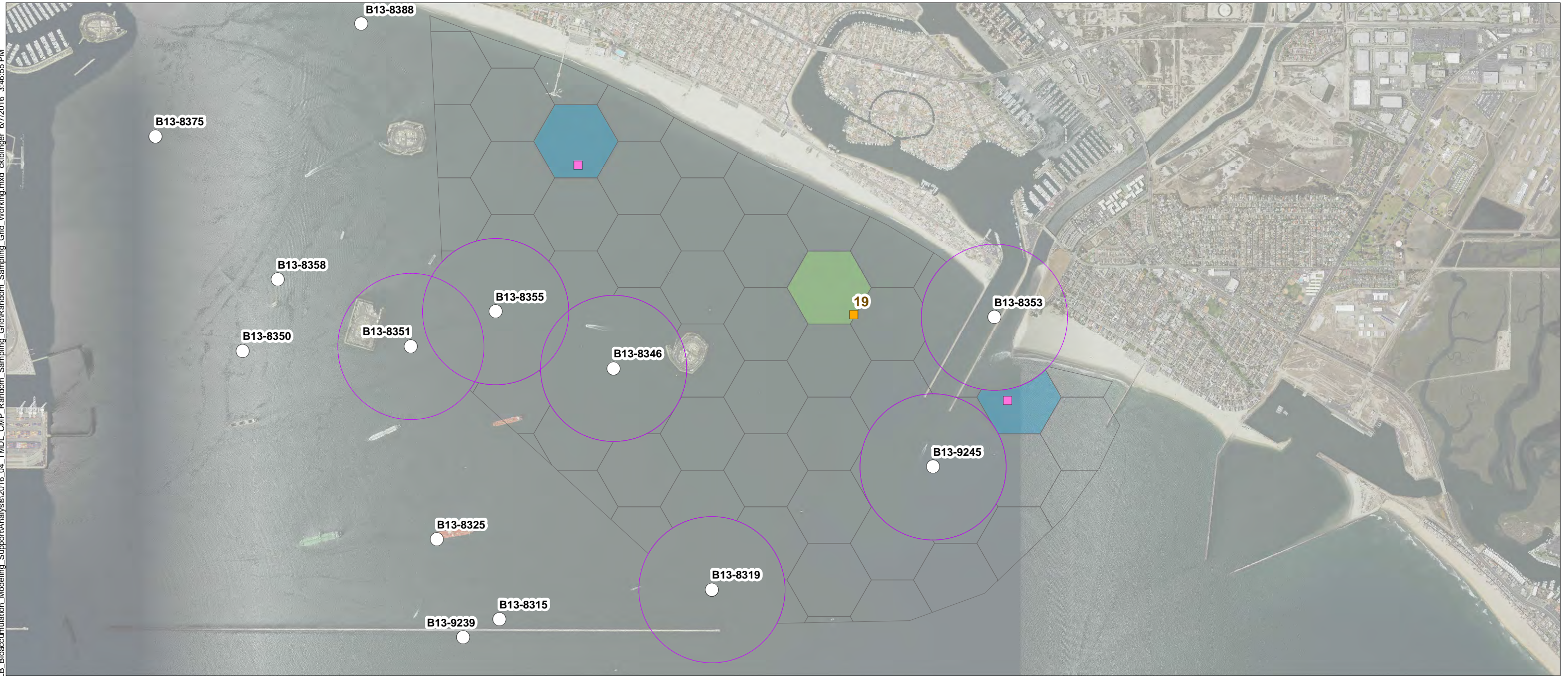


-  Bight '13 Station Locations
-  Random Sample Location
-  Randomly Selected Cell
-  Alternate Random Sample Location
-  Alternate Randomly Selected Cell
-  Bight '13 Station Buffers¹
-  Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

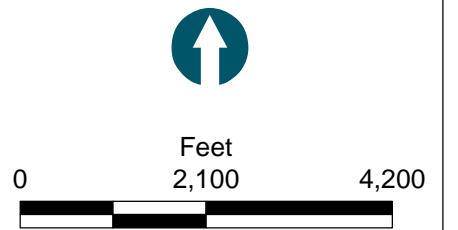


Q:\Jobs\120711-01.Port of Los Angeles\POLA_POLB Bioaccumulation Modeling Support\Analysis\2016_04_TMDL CMP Random Sampling_Grid\Random_Sampling_Grid_Working.mxd ckiblinger 6/7/2016 3:46:55 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

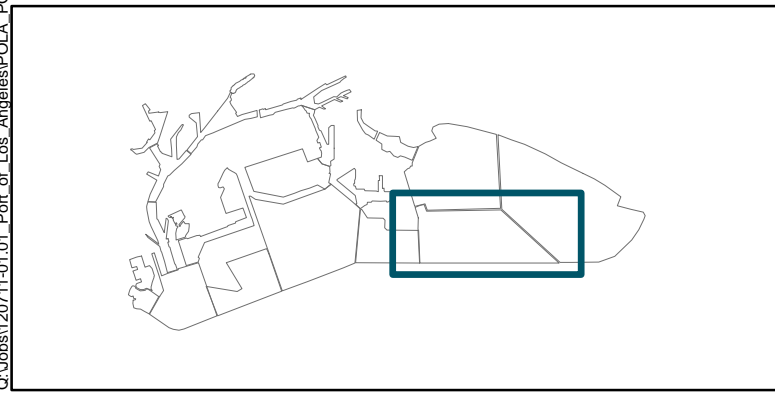
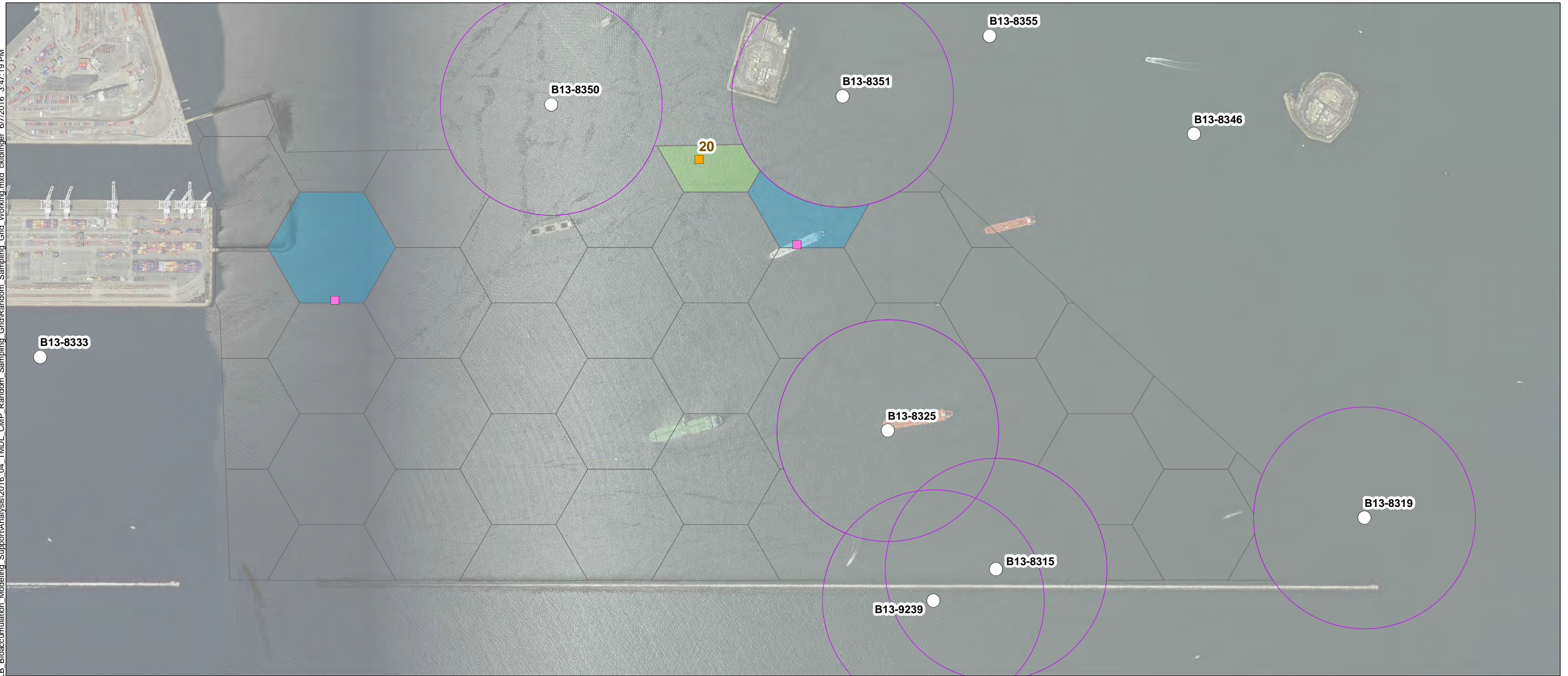


DRAFT



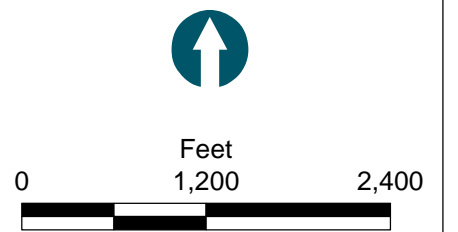
Figure 20
 Eastern San Pedro Bay
 Random Sampling Design
 Greater Harbor Waters Regional Monitoring Coalition
 Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckiblinger 6/7/2016 3:47:19 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.

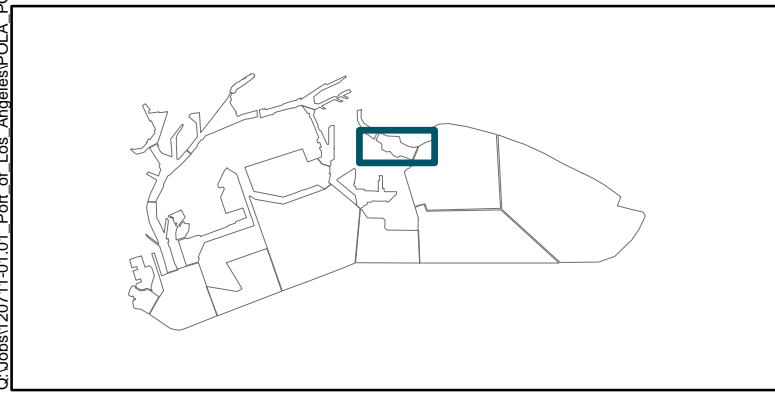


DRAFT



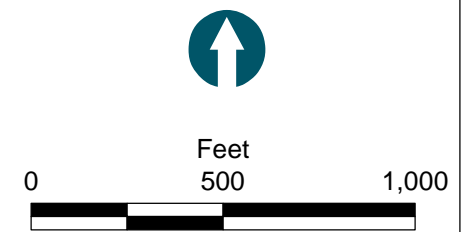
Figure 21
Southern San Pedro Bay
Random Sampling Design
Greater Harbor Waters Regional Monitoring Coalition
Harbor Toxics TMDL Compliance Monitoring and Reporting Program

Q:\Jobs\120711-01.01_Port of Los Angeles\POLA_POLB_Bioaccumulation_Modeling_Support\Analysis\2016_04_TMDL_CMP_Random_Sampling_Grid\Random_Sampling_Grid_Working.mxd ckiblinger 6/7/2016 3:47:27 PM



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

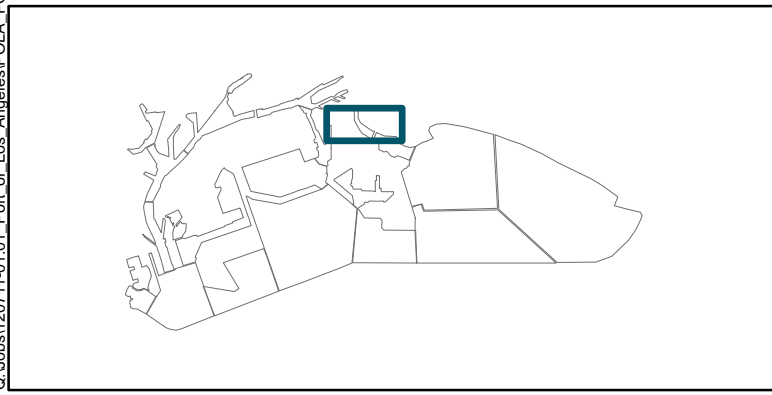
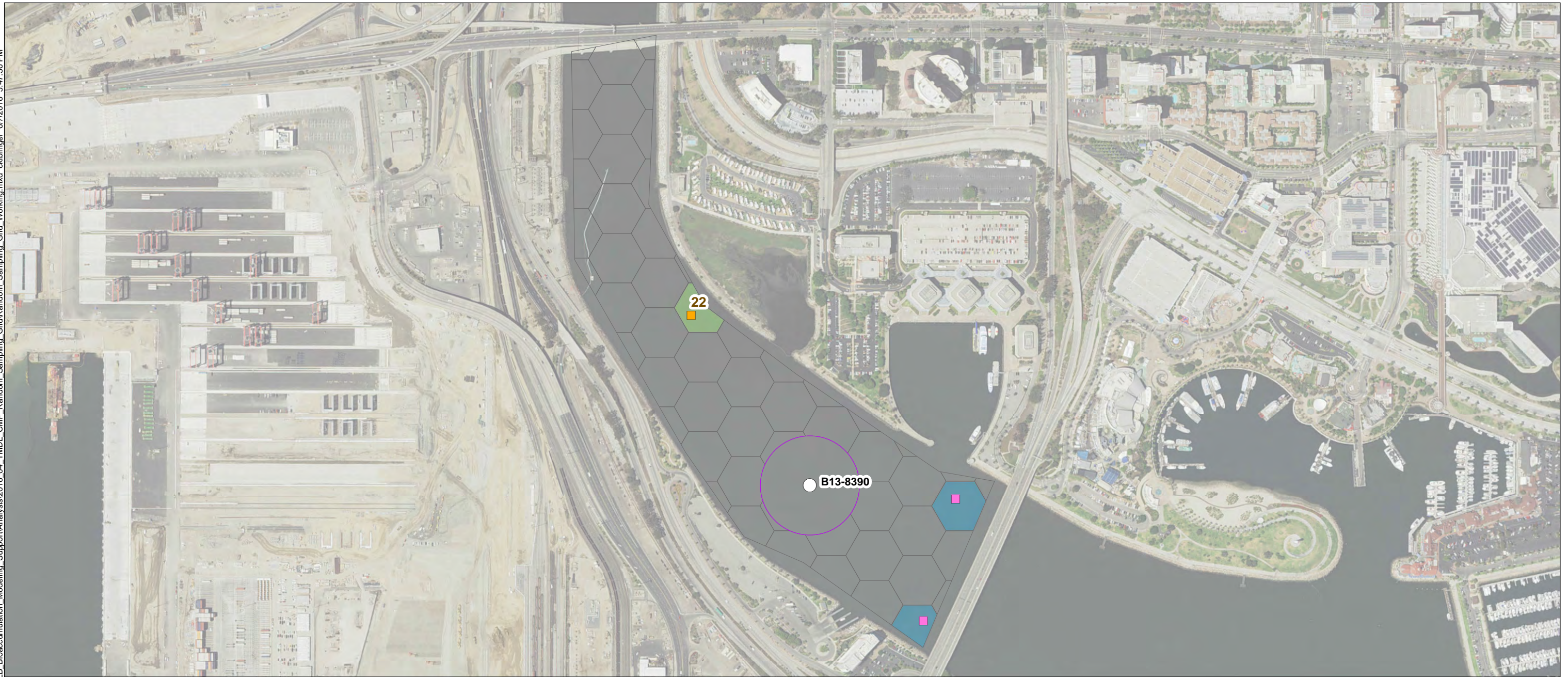
NOTE:
 1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.



DRAFT

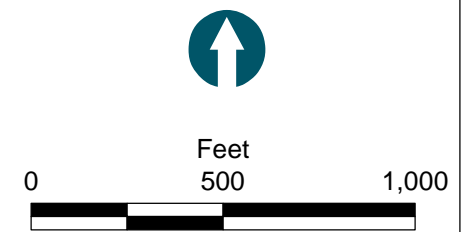


Figure 22
 Los Angeles River Estuary Queens Bay
 Random Sampling Design
 Greater Harbor Waters Regional Monitoring Coalition
 Harbor Toxics TMDL Compliance Monitoring and Reporting Program



- Bight '13 Station Locations
- Random Sample Location
- Randomly Selected Cell
- Alternate Random Sample Location
- Alternate Randomly Selected Cell
- Bight '13 Station Buffers¹
- ⬡ Hexagonal Sampling Grid Cells

NOTE:
1. Buffer radii are equal to two times the inscribed circle of a hexagonal grid cell.





CITY OF LONG BEACH

DEPARTMENT OF PUBLIC WORKS

333 W. Ocean Blvd., 9th Floor | Long Beach, CA 90802 | (562) 570-6023 FAX: (562) 570-6501

STORM WATER/ENVIRONMENTAL COMPLIANCE DIVISION

June 29, 2016

Samuel Unger, P.E.
Executive Officer
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: Random Sampling Approach for Sediment Quality Samples Collected in Support of Compliance Monitoring and Reporting for the Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters

Dear Mr. Unger:

As specified in correspondence to you from the Port of Los Angeles and Port of Long Beach, on behalf of the Regional Monitoring Coalition (RMC; April 21, 2014), the RMC confirmed sediment sampling stations would be drawn randomly for sediment monitoring events not coordinated with the Bight Program, considering the following:

- Random selection would be conducted similar to methods used by the Southern California Coastal Water Research Project (SCCWRP) for selecting Bight Program stations.
- One station would be located in each of the 22 Harbor Toxics Total Maximum Daily Load (TMDL)-specified station location areas (Figure 1) within the Harbor Toxics TMDL Specific Sampling Area.
- A subset of the compliance monitoring stations may be strategically placed (i.e., targeted, not random) to confirm results of Bight Program or other program Sediment Quality Objective (SQO) results.
- Locations of all sediment sampling stations, and the justification for their selection, will be provided to the Regional Water Quality Control Board (RWQCB) for approval prior to conducting the sediment monitoring event.

Objective

This letter describes the approach developed to randomly select sediment sampling stations for the Summer 2016 monitoring event and presents the proposed locations of one primary and two alternate sediment sampling stations per each of the 22 Harbor Toxics TMDL-specified station location areas (i.e., Compliance Monitoring Program [CMP] Area). The RMC requests the RWQCB review and approve this approach and the proposed sediment sampling stations.

Random Selection Approach

Similar to SCCWRP's Bight Program methodology, a hexagonal grid was overlain on each of the 22 Harbor Toxics TMDL-specified station location areas. The diameter of each grid cell varied per station location area in order to have an approximately equal number of grid cells in each area. Grid cells in each area were numbered from 1 to n (n was approximately 60 but varied per station location area due to the variable configurations of each area and obstacles that could interfere with sampling within each area). To prevent sample placement in close proximity to recently collected Bight '13 Program sediment samples, areas within close proximity to Bight '13 Program stations were excluded from selection. Close proximity was defined as within two times the diameter of the inscribed circle of a hexagonal grid cell. Using a random number generator function in Microsoft Excel, a grid cell was randomly selected from each of the 22 Harbor Toxics TMDL-specified areas and a GIS-based tool was used to randomly place a station within each grid cell. This process was completed three times for each of the 22 Harbor Toxics TMDL-specified station location areas. The first attempt was designated as the primary station location, and the second and third attempts were designated as alternate station locations.

Results

Figures 2 through 23 illustrate the location of the proposed sediment sampling stations, in addition to suitable alternate stations, should the primary target stations be inaccessible or if sediment samples are unable to be collected due to unexpected conditions in the field. Station coordinates are provided in Table 1.

Schedule

In accordance with SQO guidelines, sediment samples should be collected between June 1 and September 30 of each year. The RMC is targeting a mid-August monitoring effort.

On behalf of the RMC, I request that the RWQCB accept the random sample station selection approach and proposed sediment sampling stations.

Sincerely,



Anthony Arevalo
City of Long Beach Storm Water/Environmental Compliance Officer
Chairperson, Greater Harbor Waters Regional Monitoring Coalition

Att:

Cc: California Department of Transportation City of Rolling Hills Estates
City of Bellflower City of Signal Hill
City of Lakewood Los Angeles County
City of Los Angeles Los Angeles County Flood Control District
City of Paramount Port of Long Beach
City of Rancho Palos Verdes Port of Los Angeles
City of Rolling Hills

Los Angeles Regional Water Quality Control Board

August 16, 2016

Anthony Arevalo
City of Long Beach Storm Water/Environmental Compliance Officer
Chairperson, Greater Harbor Waters Regional Monitoring Coalition
333 W. Ocean Blvd., 9th Floor
Long Beach, CA 90802

RANDOM SAMPLING APPROACH FOR SEDIMENT QUALITY SAMPLES COLLECTED IN SUPPORT OF COMPLIANCE MONITORING AND REPORTING OF THE TOTAL MAXIMUM DAILY LOAD FOR TOXIC POLLUTANTS IN DOMINGUEZ CHANNEL AND GREATER LOS ANGELES AND LONG BEACH HARBOR WATERS

Dear Mr. Arevalo,

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) received the letter dated June 29, 2016 from the Port of Los Angeles and the Port of Long Beach on behalf of the Greater Harbor Waters Regional Monitoring Coalition (RMC), which proposed the random sampling approach for sediment sampling and requested approval of the approach in order to start sampling for the Summer 2016.

The Regional Board adopted the TMDL on May 5, 2011, and the TMDL became effective on March 23, 2012. The TMDL requires the responsible parties to conduct a TMDL monitoring program under technically appropriate Monitoring and Reporting Plans (MRPs) and Quality Assurance Project Plans (QAPPs). The Greater Harbor Waters Regional Monitoring Coalition's Coordinated Compliance and Reporting Plan (CCMRP) was submitted to the Regional Board by the RMC and approved by the Regional Board on June 6, 2014.

The CCMRP for the Greater Los Angeles and Long Beach Harbor Waters is developed in accordance with State and Regional monitoring program protocols and requirements. In addition, the CCMRP coordinates with the Southern California Bight Regional Monitoring Program (Bight Program). The Bight Program is carried out every 5 years and conducts SQO sediment monitoring at 41 stations within the Greater Harbor Waters.

Your letter described the approach developed to randomly selected sediment sampling stations for the Summer 2016 monitoring events and presents the proposed locations of one primary and two alternate sediment sampling stations per each of the 22 Harbor Toxic TMDL specified station areas (Attachment 1) as determined by the approved TMDL and CCMRP.

The Regional Board staff finds that the proposed randomly selected sediment sampling stations provide appropriate spatial coverage of the Harbors and San Pedro Bay in addition to the Bight Program and comply with the TMDL required monitoring. The Regional Board finds that the proposed random sampling approach complies with the intent of the TMDL-required monitoring and approves this approach and the sediment sampling stations proposed by the RMC.

We look forward to working with you on monitoring and continued implementation of the Dominguez Channel and Greater Los Angeles and Long Beach Harbor Water Toxic Pollutants TMDL. If you have any questions regarding this matter, please contact L.B. Nye at (213) 576-6785 or Thanhloan Nguyen at (213) 576-6689.

Sincerely,



Samuel Unger, P.E.
Executive Officer

- cc: California Department of Transportation City of Rolling Hills
City of Bellflower City of Rolling Hills Estates
City of Lakewood City of Signal Hill
City of Long Beach Los Angeles County
City of Los Angeles Los Angeles County Flood Control District
City of Paramount Port of Long Beach
City of Rancho Palos Verdes Port of Los Angeles

Appendix B
National Weather Service Observation
Reports

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS55 KLOX 011655
 CF6CQT
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: DOWNTOWN LOS ANGELES (USC) CA
 MONTH: NOVEMBER
 YEAR: 2016
 LATITUDE: 34 1 N
 LONGITUDE: 118 17 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
=====																		
12Z AVG MX 2MIN																		
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
=====																		
1	70	58	64	-2	1	0	0.00	0.0	0	1.4	9	270	M	M	3		13	280
2	78	54	66	0	0	1	0.00	0.0	0	1.2	8	270	M	M	0		11	260
3	88	57	73	8	0	8	0.00	0.0	0	1.1	8	270	M	M	0		13	270
4	83	58	71	6	0	6	0.00	0.0	0	1.2	8	270	M	M	0		12	280
5	81	57	69	4	0	4	0.00	0.0	0	1.2	9	280	M	M	0	18	13	270
6	76	56	66	1	0	1	0.00	0.0	0	1.0	6	260	M	M	2	18	13	280
7	79	56	68	4	0	3	0.00	0.0	0	0.9	7	270	M	M	0	18	11	270
8	90	57	74	10	0	9	0.00	0.0	0	1.0	8	270	M	M	0	18	10	270
9	93	64	79	15	0	14	0.00	0.0	0	3.2	10	280	M	M	0		15	270
10	90	63	77	13	0	12	0.00	0.0	0	1.7	9	280	M	M	0	8	14	270
11	87	61	74	10	0	9	0.00	0.0	0	2.2	8	280	M	M	0		12	280
12	82	62	72	9	0	7	0.00	0.0	0	0.9	8	280	M	M	0	8	12	280
13	88	60	74	11	0	9	0.00	0.0	0	1.3	8	280	M	M	0		12	270
14	88	61	75	12	0	10	0.00	0.0	0	1.3	8	280	M	M	0	8	12	280
15	78	56	67	5	0	2	0.00	0.0	M	0.7	8	270	M	M	0	18	12	270
16	70	55	63	1	2	0	0.00	0.0	0	0.7	8	280	M	M	3	18	12	280
17	72	52	62	0	3	0	0.00	0.0	0	1.1	7	270	M	M	0		12	340
18	78	54	66	4	0	1	0.00	0.0	0	2.4	7	270	M	M	0		11	350
19	75	49	62	0	3	0	0.00	0.0	0	0.9	8	280	M	M	0		13	270
20	65	54	60	-1	5	0	0.55	0.0	0	1.2	7	100	M	M	6	1	10	110
21	67	56	62	1	3	0	0.20	0.0	0	2.3	10	100	M	M	5	1	16	110
22	70	52	61	0	4	0	0.00	0.0	0	1.0	7	260	M	M	1		11	280
23	72	50	61	1	4	0	0.00	0.0	0	1.7	10	330	M	M	0		20	330
24	78	52	65	5	0	0	0.00	0.0	0	2.3	6	280	M	M	0		10	360
25	75	51	63	3	2	0	0.00	0.0	M	1.8	7	70	M	M	0		11	20
26	63	45	54	-6	11	0	0.13	M	0	1.1	13	270	M	M	3	18	26	270
27	65	50	58	-2	7	0	T	0.0	0	2.8	16	270	M	M	5	1	26	270
28	64	47	56	-3	9	0	0.00	0.0	0	1.4	7	110	M	M	1		10	110
29	69	47	58	-1	7	0	0.00	0.0	0	1.0	8	270	M	M	0		12	280
30	68	45	57	-2	8	0	0.00	0.0	0	1.8	9	280	M	M	0		12	280
=====																		
SM	2302	1639			69	96	0.88		0.0	43.9			M		29			
=====																		
AV	76.7	54.6								1.5	FASTST	M	M	1		MAX(MPH)		
=====																		
MISC	----> # 16 270																	
=====																		
																	# 26	270

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: DOWNTOWN LOS ANGELES (USC) CA
MONTH: NOVEMBER
YEAR: 2016
LATITUDE: 34 1 N
LONGITUDE: 118 17 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 65.7
DPTR FM NORMAL: 3.3
HIGHEST: 93 ON 9
LOWEST: 45 ON 30,26

TOTAL FOR MONTH: 0.88
DPTR FM NORMAL: -0.16
GRTST 24HR 0.75 ON 20-21
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

- 1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

[WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 3
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

0.01 INCH OR MORE: 3
0.10 INCH OR MORE: 3
0.50 INCH OR MORE: 1
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 69
DPTR FM NORMAL -42
TOTAL FM JUL 1 71
DPTR FM NORMAL -60

CLEAR (SCALE 0-3) 25
PTCLDY (SCALE 4-7) 5
CLOUDY (SCALE 8-10) 0

[CDD (BASE 65)]

TOTAL THIS MO. 96
DPTR FM NORMAL 63
TOTAL FM JAN 1 1522
DPTR FM NORMAL 282

[PRESSURE DATA]
HIGHEST SLP 30.17 ON 24
LOWEST SLP 29.82 ON 28

[REMARKS]

#FINAL-11-16#

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS55 KLOX 011655
 CF6LGB
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA
 MONTH: NOVEMBER
 YEAR: 2016
 LATITUDE: 33 49 N
 LONGITUDE: 118 9 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
=====																		
12Z AVG MX 2MIN																		
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
=====																		
1	70	55	63	-2	2	0	0.00	0.0	0	4.0	15	290	M	M	3		17	290
2	81	53	67	2	0	2	0.00	0.0	0	3.5	12	310	M	M	0		16	310
3	85	57	71	7	0	6	0.00	0.0	0	3.8	14	290	M	M	0		17	190
4	76	56	66	2	0	1	0.00	0.0	0	3.3	9	210	M	M	1	12	13	200
5	77	58	68	4	0	3	0.00	0.0	0	2.9	13	320	M	M	4	128	14	300
6	72	57	65	1	0	0	0.00	0.0	0	3.1	9	190	M	M	3	128	13	200
7	77	56	67	3	0	2	0.00	0.0	0	3.1	12	290	M	M	3	128	13	300
8	93	56	75	12	0	10	0.00	0.0	0	3.6	16	290	M	M	0	18	18	290
9	96	61	79	16	0	14	0.00	0.0	0	3.9	14	290	M	M	0		15	300
10	90	64	77	14	0	12	0.00	0.0	0	4.0	10	290	M	M	0		13	210
11	85	57	71	8	0	6	0.00	0.0	0	2.9	10	200	M	M	0		14	200
12	86	59	73	11	0	8	0.00	0.0	0	3.0	15	300	M	M	0		16	300
13	89	57	73	11	0	8	0.00	0.0	0	3.5	15	290	M	M	0		18	290
14	86	57	72	10	0	7	0.00	0.0	0	3.3	14	300	M	M	0		17	300
15	76	55	66	4	0	1	0.00	0.0	0	2.1	14	290	M	M	2	128	15	290
16	69	57	63	2	2	0	0.00	0.0	0	3.5	14	290	M	M	5	18	17	280
17	74	50	62	1	3	0	0.00	0.0	0	4.3	13	290	M	M	1		M	M
18	79	52	66	5	0	1	0.00	0.0	0	4.0	9	210	M	M	0		13	210
19	74	48	61	1	4	0	0.00	0.0	0	3.3	13	300	M	M	0		15	300
20	64	55	60	0	5	0	0.42	0.0	0	3.0	14	100	M	M	7	1	18	100
21	66	55	61	1	4	0	0.38	0.0	0	5.8	12	270	M	M	5	1	17	330
22	69	52	61	1	4	0	0.00	0.0	0	3.1	13	300	M	M	1		14	290
23	70	50	60	0	5	0	0.00	0.0	0	3.5	14	310	M	M	0	18	16	310
24	82	50	66	7	0	1	0.00	0.0	0	6.3	14	340	M	M	0		16	310
25	72	50	61	2	4	0	0.00	0.0	0	2.9	8	180	M	M	0	1	10	150
26	64	45	55	-4	10	0	0.35	M	0	3.5	22	270	M	M	4	1	26	290
27	63	49	56	-3	9	0	0.05	M	0	7.3	28	280	M	M	6	1	34	280
28	63	46	55	-3	10	0	0.00	0.0	0	4.1	13	270	M	M	0		16	290
29	71	47	59	1	6	0	0.00	0.0	0	4.2	15	290	M	M	0	1	19	110
30	66	45	56	-2	9	0	0.00	0.0	0	3.2	10	280	M	M	0		13	290
=====																		
SM	2285	1609			77	82	1.20		0.0	112.0			M		45			
=====																		
AV	76.2	53.6								3.7	FASTST		M	M	2	MAX(MPH)		
=====																		
MISC ----> # 28 280 # 34 280																		

=====

NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: LONG BEACH AIRPORT CA
MONTH: NOVEMBER
YEAR: 2016
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 64.9
DPTR FM NORMAL: 3.5
HIGHEST: 96 ON 9
LOWEST: 45 ON 30,26TOTAL FOR MONTH: 1.20
DPTR FM NORMAL: 0.20
GRTST 24HR 0.80 ON 20-21
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 01 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

[WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 3
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 00.01 INCH OR MORE: 4
0.10 INCH OR MORE: 3
0.50 INCH OR MORE: 0
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 77
DPTR FM NORMAL -51
TOTAL FM JUL 1 80
DPTR FM NORMAL -69CLEAR (SCALE 0-3) 21
PTCLDY (SCALE 4-7) 9
CLOUDY (SCALE 8-10) 0

[CDD (BASE 65)]

TOTAL THIS MO. 82
DPTR FM NORMAL 61
TOTAL FM JAN 1 1446
DPTR FM NORMAL 321

[PRESSURE DATA]

HIGHEST SLP 30.17 ON 23
LOWEST SLP 29.81 ON 28

[REMARKS]

#FINAL-11-16#



CALIFORNIA NEVADA RIVER FORECAST CENTER

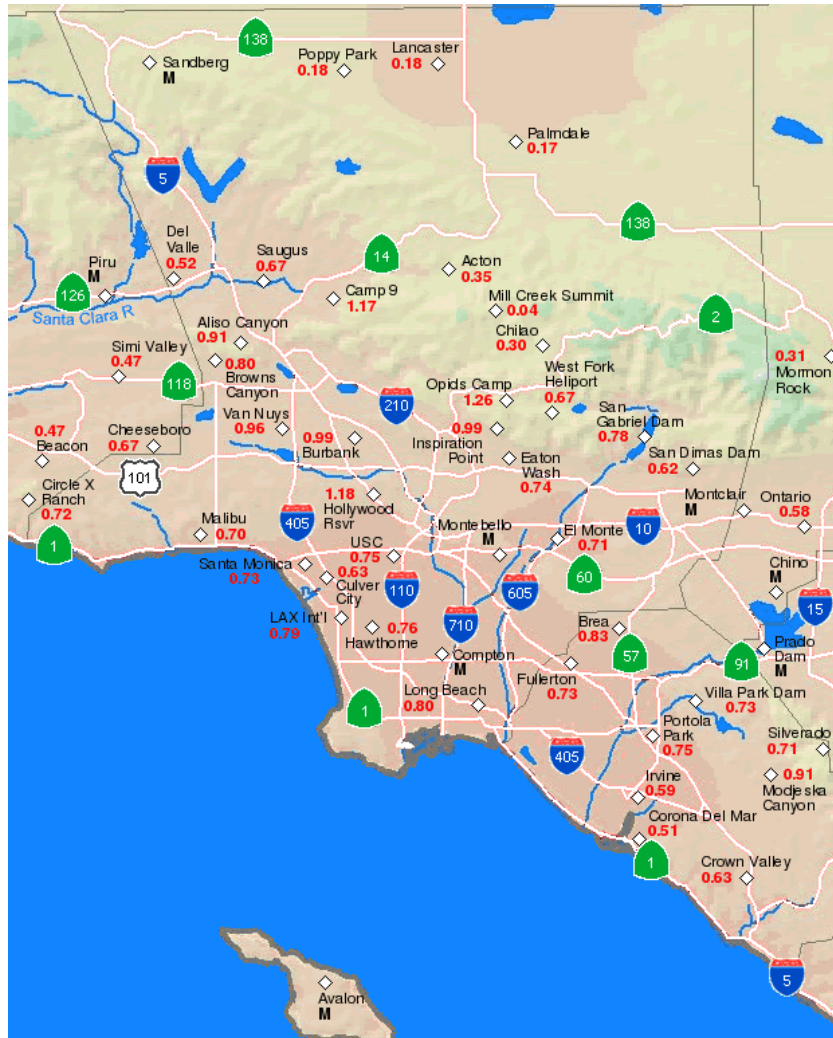
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



- [HOME](#)
- [HYDROLOGY](#)
- [WEATHER](#)
- [CLIMATE](#)
- [RESEARCH / OUTREACH](#)
- [LINKS](#)
- [SEARCH](#)
- [ABOUT US](#)

Los Angeles Area Observed Precipitation Map

Basin Area: - Los Angeles Area Hour: - 24 Hours [Get Map](#)



24 Hour Precipitation (Inches) Ending Mon Nov 21 2016 at 09 AM PST
 NOAA / NWS / California Nevada River Forecast Center An 'M' on the Map Denotes MISSING Data

- Past Duration: [1 HR](#) [6 HR](#) **[24 HR](#)**
- 6 Hour Periods (PST): [4 AM - 10 AM](#) [10 AM - 4 PM](#) [4 PM - 10 PM](#) [10 PM - 4 AM](#)
- Daily (PST): [4 AM - 4 AM](#)

Local Area Selectable Precipitation: 24-Hour Precipitation

UPPER KLAMATH

- | | | |
|---|--|--|
| NORTH COAST | SHASTA / SACRAMENTO VALLEY | NORTHERN SIERRA NEVADA |
| RUSSIAN / NAPA | SACRAMENTO AREA | RENO / LAKE TAHOE |
| SAN FRANCISCO BAY AREA | CENTRAL COAST | SOUTHERN SIERRA NEVADA |
| SANTA BARBARA / VENTURA | LOS ANGELES AREA | KERN COUNTY / TEHACHAPIS |
| | SOUTHWEST CALIFORNIA | SAN DIEGO AREA |

Regional Area Selectable Precipitation: 24-Hour Precipitation

- | | | |
|-------------------------------------|-------------------------------------|------------------------|
| NORTHERN CALIFORNIA | SOUTHERN CALIFORNIA | NEVADA |
| | CNRFC AREA | |

[Follow us on Twitter](#) [Follow us on Facebook](#) [Follow us on YouTube](#)

[NWS RSS Feed](#)



03

US Dept of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
California Nevada River Forecast Center
3310 El Camino Avenue, Room 227
Sacramento, CA 95821-6373

[Disclaimer](#) [Privacy Policy](#)
[Information Quality](#) [Freedom of Information Act](#)
[Help](#) [About Us](#)
[Glossary](#) [Career Opportunities](#)
[Links](#)

Telephone Number: (916) 979-3056
Webmaster Email: cnrfc.webmaster@noaa.gov



National Weather Service Forecast Office

Los Angeles/Oxnard

Home News Organization FAQ Share Search

● **WR** ○ NWS ○ ALL NOAA



Get Local Forecast for:

[Search Help](#)



XML [RSS Feeds](#)

[Printer Friendly](#) [Go Back](#)

MISCELLANEOUS HYDROLOGIC REPORT
 NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD, CA
 1002 AM PST MON NOV 21 2016

Preliminary precipitation amounts in Los Angeles County for the following time periods ending at 10 AM today... m = minutes h = hours d = days

Current Hazards

- [Outlooks](#)
- [Submit Report](#)
- [Tsunami](#)

Current Conditions

- [Observations](#)
- [Radar](#)
- [Satellite](#)
- [Precipitation](#)
- [Buoy & Coastal](#)
- [Air Quality](#)

Forecasts

- [Forecast Discussion](#)
- [Local Area](#)
- [Activity Planner](#)
- [Aviation Weather](#)
- [Fire Weather](#)
- [Marine Weather](#)
- [Severe Weather](#)
- [Hurricane Center](#)
- [User Defined Area](#)
- [Travel](#)
- [Mobile](#)

Hydrology

- [Rivers and Lakes](#)
- [Forecasts & More](#)

Climate

- [Local](#)
- [National](#)
- [Drought](#)
- [More...](#)
- [Climate portal](#)

Weather Safety

- [Preparedness](#)
- [Weather Radio](#)
- [Skywarn™](#)
- [StormReady](#)
- [Hazard Definitions](#)

Additional Info

- [Items of Interest](#)
- [Other Useful Links](#)
- [Education Resources](#)
- [COOP Observer](#)
- [Our Office](#)

Debris Flow

- [NWS News](#)

Contact Us

- [Contact Info](#)
- [Feedback](#)
- [FAQ](#)



	1H	3H	6H	12H	24H	48H	5D
LA CO. (Metropolitan)							
Monte Nido FS	0.00	0.00	0.00	0.60	0.71	0.71	0.71
Big Rock Mesa	0.00	0.00	0.00	0.59	0.71	0.71	0.71
Bel Air	0.00	0.00	0.00	1.03	1.03	1.26	1.26
Culver City	0.00	0.00	0.00	0.37	0.63	0.63	0.63
Beverly Hills	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hollywood Rsvr	0.00	0.00	0.00	0.51	1.18	1.18	1.18
South Gate	0.00	0.00	0.00	0.64	1.08	1.09	1.09
Dominguez Water Co	0.00	0.00	0.00	0.48	1.03	1.04	1.04
La Habra Heights	0.00	0.00	0.08	0.12	0.83	0.83	0.83
Downtown Los Angeles	0.00	0.00	0.03	0.37	0.75	0.75	0.75
LA CO. (Valleys)							
Agoura	0.00	0.00	0.00	0.55	0.67	0.71	0.71
Chatsworth Rsvr	0.00	0.00	0.00	0.57	0.81	0.83	0.83
Canoga Park	0.00	0.00	0.00	0.48	0.63	0.63	0.63
Sepulveda Cyn @ Mulhl	0.00	0.00	0.04	1.10	1.37	1.37	1.37
Pacoima Dam	0.00	0.00	0.00	0.63	1.07	1.07	1.07
Hansen Dam	0.00	0.01	0.01	0.59	0.96	0.97	0.97
Newhall-Soledad Schl	0.00	0.00	0.00	0.43	0.82	0.82	0.82
Saugus	0.00	0.01	0.01	0.46	0.67	0.68	0.68
Del Valle	0.00	0.01	0.01	0.36	0.51	0.52	0.52
LA CO. (San Gab Val)							
L.A. City College	0.00	0.00	0.05	0.64	1.19	1.19	1.19
Eagle Rock Rsvr	0.00	0.00	0.08	0.39	0.82	0.82	0.82
Eaton Wash @ Loftus	0.00	0.00	0.06	0.54	0.81	0.82	0.82
San Gabriel R @ Vly	0.00	0.00	0.08	0.40	0.71	0.71	0.71
Eaton Dam	0.00	0.00	0.06	0.29	0.74	0.74	0.74
Walnut Ck S.B.	0.00	0.00	0.04	0.59	0.82	0.82	0.82
Puddingstone Div	0.00	0.00	0.04	0.39	0.55	0.55	0.55
Santa Fe Dam	0.00	0.00	0.07	0.37	0.53	0.53	0.53
Whittier Hills	0.00	0.00	0.03	0.65	0.96	0.96	0.96
Claremont	0.00	0.00	0.05	0.46	0.56	0.56	0.56
LA CO. (Mtns & Fthls)							
W Fk Heliport	0.00	0.00	0.04	0.43	0.67	0.67	0.67
Santa Anita Dam	0.00	0.00	0.04	0.32	0.87	0.87	0.87
San Gabriel Dam	0.00	0.00	0.00	0.48	0.79	0.79	0.79

Morris Dam	0.00	0.00	0.02	0.33	0.71	0.71	0.71
Big Dalton Dam	0.00	0.00	0.00	0.31	0.67	0.67	0.67
Crystal Lake	0.00	0.00	0.00	0.67	1.02	0.98	1.02
Opids Camp	0.00	0.00	0.12	0.70	1.26	1.26	1.26
Sierga Madre Maint Yd	0.00	0.00	0.05	0.28	0.79	0.79	0.79
Tanbark	0.00	0.00	0.01	0.50	0.66	0.67	0.67
San Antonio Dam	0.00	0.00	0.00	0.00	0.08	0.08	0.08
Mill Ck	0.00	0.00	0.01	0.25	0.28	0.28	0.28
Chilao	0.00	0.00	0.03	0.23	0.30	0.30	0.30
Mt Baldy FS	0.00	0.00	0.00	0.69	0.78	0.78	0.78
Whitaker Peak	0.00	0.00	0.00	0.31	0.59	0.59	0.59
Warm Springs	0.00	0.00	0.01	0.45	0.75	0.78	0.78
Acton	0.00	0.00	0.00	0.32	0.35	0.35	0.35
Camp 9	0.00	0.00	0.01	0.44	1.17	1.20	1.20

LA CO. (Deserts)	1H	3H	6H	12H	24H	48H	5D
Palmdale Water Dist	0.00	0.00	0.00	0.12	0.16	0.16	0.16
Lancaster	0.00	0.00	0.00	0.11	0.12	0.12	0.12

Notice...This report contains provisional data from automated gauges.
The accuracy of this data has not been verified.

Many of the included gage reports are courtesy of Los Angeles County Department of Public Works, the Army Corps of Engineers, and Los Angeles County Fire Department.

\$\$

[Webmaster](#)
US Dept of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Los Angeles/Oxnard Weather Forecast Office
520 North Elevar Street
Oxnard, CA 93030

[Disclaimer](#)
[Information Quality](#)
[Credits](#)
[Glossary](#)
[Organization](#)

[Privacy Policy](#)
[Freedom of Information Act](#)
[About Us](#)
[Career Opportunities](#)

Tel: (805) 988-6610

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS55 KLOX 011655
 CF6LGB
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA
 MONTH: FEBRUARY
 YEAR: 2017
 LATITUDE: 33 49 N
 LONGITUDE: 118 9 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
=====																		
12Z AVG MX 2MIN																		
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
=====																		
1	66	46	56	-1	9	0	0.00	0.0	0	3.0	10	220	M	M	3	128	12	200
2	67	49	58	1	7	0	0.00	0.0	0	2.4	9	300	M	M	4	18	12	300
3	60	56	58	1	7	0	0.22	0.0	0	2.3	10	90	M	M	10	18	13	90
4	66	56	61	4	4	0	T	0.0	0	5.2	14	300	M	M	8	1	18	290
5	59	54	57	0	8	0	0.00	0.0	0	3.7	10	130	M	M	9	8	14	210
6	61	54	58	1	7	0	1.11	0.0	0	6.1	15	120	M	M	10	1	19	120
7	65	59	62	5	3	0	0.17	0.0	0	5.5	14	300	M	M	8	1	18	280
8	71	58	65	8	0	0	0.03	0.0	0	4.1	12	300	M	M	7	18	14	310
9	73	56	65	8	0	0	0.00	0.0	0	4.9	15	300	M	M	5	128	17	310
10	64	56	60	3	5	0	0.21	0.0	0	3.0	12	300	M	M	8	18	14	280
11	62	52	57	0	8	0	0.02	0.0	0	3.8	12	280	M	M	7	1	15	250
12	74	48	61	4	4	0	0.00	0.0	0	1.9	9	300	M	M	1	18	12	210
13	71	50	61	4	4	0	0.00	0.0	0	4.2	12	200	M	M	0		14	190
14	65	54	60	2	5	0	0.00	0.0	0	3.8	12	210	M	M	3	18	14	210
15	80	51	66	8	0	1	0.00	0.0	0	4.2	15	300	M	M	4	128	18	280
16	69	51	60	2	5	0	0.00	0.0	0	2.6	15	300	M	M	4	128	20	300
17	60	53	57	-1	8	0	2.77	0.0	0	12.9	30	140	M	M	10	18	46	130
18	60	52	56	-2	9	0	0.10	0.0	0	6.3	14	280	M	M	5	18	M	M
19	61	49	55	-3	10	0	0.01	M	0	4.0	12	190	M	M	7	18	17	200
20	63	53	58	0	7	0	0.02	0.0	0	5.9	12	200	M	M	10	1	23	120
21	67	57	62	4	3	0	0.00	0.0	0	6.3	12	290	M	M	6	1	M	M
22	65	53	59	1	6	0	0.00	0.0	0	8.0	20	290	M	M	2	1	23	290
23	63	48	56	-2	9	0	0.00	0.0	0	10.4	23	320	M	M	0		29	320
24	61	41	51	-7	14	0	0.00	0.0	0	4.8	13	300	M	M	0		16	210
25	61	41	51	-7	14	0	0.00	0.0	0	4.2	13	290	M	M	2		17	210
26	57	49	53	-5	12	0	0.06	M	0	5.3	12	250	M	M	9	18	16	310
27	58	49	54	-4	11	0	T	M	0	3.3	10	280	M	M	8		14	270
28	64	44	54	-4	11	0	0.00	0.0	0	4.4	14	200	M	M	0		19	220
=====																		
SM	1813	1439			190	1	4.72		0.0	136.5			M		150			
=====																		
AV	64.8	51.4								4.9	FASTST	M	M	5		MAX(MPH)		
=====																		
MISC ----> # 30 140 # 46 130																		
=====																		

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: LONG BEACH AIRPORT CA
MONTH: FEBRUARY
YEAR: 2017
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 58.1
DPTR FM NORMAL: 0.5
HIGHEST: 80 ON 15
LOWEST: 41 ON 25,24

TOTAL FOR MONTH: 4.72
DPTR FM NORMAL: 1.63
GRTST 24HR 2.77 ON 17-17
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

[WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

0.01 INCH OR MORE: 11
0.10 INCH OR MORE: 6
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 2

[HDD (BASE 65)]

TOTAL THIS MO. 190
DPTR FM NORMAL -22
TOTAL FM JUL 1 778
DPTR FM NORMAL -113

CLEAR (SCALE 0-3) 9
PTCLDY (SCALE 4-7) 13
CLOUDY (SCALE 8-10) 6

[CDD (BASE 65)]

TOTAL THIS MO. 1
DPTR FM NORMAL -4
TOTAL FM JAN 1 1
DPTR FM NORMAL -7

[PRESSURE DATA]
HIGHEST SLP 30.35 ON 21
LOWEST SLP 29.44 ON 17

[REMARKS]

#FINAL-02-17#

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS55 KLOX 011655
 CF6CQT
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: DOWNTOWN LOS ANGELES (USC) CA
 MONTH: FEBRUARY
 YEAR: 2017
 LATITUDE: 34 1 N
 LONGITUDE: 118 17 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
=====																		
12Z AVG MX 2MIN																		
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
=====																		
1	72	48	60	2	5	0	0.00	0.0	0	1.1	9	280	M	M	0	18	13	280
2	68	53	61	3	4	0	0.00	0.0	0	1.1	7	280	M	M	6	18	11	270
3	61	55	58	0	7	0	0.23	0.0	0	1.7	8	90	M	M	10	18	13	110
4	66	55	61	3	4	0	0.00	0.0	0	1.8	10	280	M	M	7	18	17	270
5	61	55	58	0	7	0	T	0.0	0	1.4	7	100	M	M	9	18	10	90
6	61	54	58	0	7	0	0.88	0.0	0	4.0	13	100	M	M	10	1	19	110
7	66	58	62	4	3	0	0.27	0.0	0	2.0	8	270	M	M	10	1	14	280
8	73	59	66	7	0	1	0.03	0.0	0	0.7	8	280	M	M	7	12	12	280
9	75	58	67	8	0	2	0.00	0.0	0	0.9	10	270	M	M	4	12	14	270
10	65	58	62	3	3	0	0.30	0.0	M	1.1	8	100	M	M	6	18	11	80
11	65	55	60	1	5	0	0.21	0.0	0	0.3	6	160	M	M	8	1	10	270
12	75	50	63	4	2	0	0.00	0.0	0	0.3	6	270	M	M	1		10	270
13	77	53	65	6	0	0	0.00	0.0	0	1.0	6	110	M	M	0		13	270
14	73	56	65	6	0	0	0.00	0.0	M	1.4	12	270	M	M	1	1	15	270
15	80	53	67	8	0	2	0.00	0.0	M	1.4	9	280	M	M	1	1	15	280
16	68	51	60	1	5	0	0.00	0.0	0	0.7	8	280	M	M	4	128	14	270
17	61	53	57	-2	8	0	2.01	0.0	0	7.1	17	130	M	M	10	1	30	140
18	63	53	58	-1	7	0	0.09	0.0	0	2.5	9	270	M	M	6	18	15	280
19	63	54	59	0	6	0	0.03	0.0	0	2.1	8	270	M	M	9	1	12	270
20	64	54	59	0	6	0	0.03	0.0	0	2.1	8	130	M	M	10	18	13	130
21	68	58	63	4	2	0	0.03	0.0	0	0.6	8	280	M	M	9	18	12	280
22	66	51	59	0	6	0	0.00	0.0	0	2.0	13	270	M	M	2	1	17	260
23	62	49	56	-3	9	0	0.00	0.0	0	5.1	17	270	M	M	0		27	280
24	64	44	54	-6	11	0	0.00	0.0	0	1.8	10	280	M	M	0		14	280
25	66	44	55	-5	10	0	0.00	0.0	0	1.2	10	270	M	M	2		16	260
26	58	49	54	-6	11	0	0.06	M	0	2.0	8	130	M	M	9		13	100
27	61	52	57	-3	8	0	0.00	0.0	0	2.1	7	280	M	M	7		11	90
28	66	47	57	-3	8	0	0.00	0.0	0	1.7	9	270	M	M	1		15	280
=====																		
SM	1868	1479			144	5	4.17		0.0	51.2			M			149		
=====																		
AV	66.7	52.8								1.8	FASTST	M	M	5		MAX(MPH)		
=====																		
MISC ----> # 17 130 # 30 140																		
=====																		

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: DOWNTOWN LOS ANGELES (USC) CA
 MONTH: FEBRUARY
 YEAR: 2017
 LATITUDE: 34 1 N
 LONGITUDE: 118 17 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 59.8
 DPTR FM NORMAL: 0.9
 HIGHEST: 80 ON 15
 LOWEST: 44 ON 25,24

TOTAL FOR MONTH: 4.17
 DPTR FM NORMAL: 0.37
 GRTST 24HR 2.09 ON 17-18

SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

[WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 0
 MIN 0 OR BELOW: 0

0.01 INCH OR MORE: 12
 0.10 INCH OR MORE: 6
 0.50 INCH OR MORE: 2
 1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 144
 DPTR FM NORMAL -40
 TOTAL FM JUL 1 652
 DPTR FM NORMAL -123

CLEAR (SCALE 0-3) 10
 PTCLDY (SCALE 4-7) 8
 CLOUDY (SCALE 8-10) 10

[CDD (BASE 65)]

TOTAL THIS MO. 5
 DPTR FM NORMAL -9
 TOTAL FM JAN 1 8
 DPTR FM NORMAL -15

[PRESSURE DATA]
 HIGHEST SLP 30.35 ON 21
 LOWEST SLP 29.43 ON 17

[REMARKS]

#FINAL-02-17#

THE WEATHER PREDICTION CENTER



COLLEGE PARK, MD

STORM SUMMARY MESSAGE

STORM SUMMARY NUMBER 9 FOR SOUTHERN CALIFORNIA AND ARIZONA HEAVY
RAINFALL EVENT
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
700 AM PST SUN FEB 19 2017

...HEAVY RAIN HAS DIMINISHED IN INTENSITY OVER CENTRAL/SOUTHERN
ARIZONA...

WINTER STORM WARNINGS...AND WINTER WEATHER ADVISORIES ARE IN
EFFECT FOR THE MONGOLLON RIM...GILA...AND SAN FRANCISCO MOUNTAINS
OF ARIZONA AND WESTERN NEW MEXICO.

FOR A DETAILED GRAPHICAL DEPICTION OF THE LATEST
WATCHES...WARNINGS AND ADVISORIES...PLEASE SEE WWW.WEATHER.GOV

AT 600 AM PST...A DEEP UPPER-LEVEL TROUGH OVER SOUTHWESTERN
ARIZONA CONTINUED TO DIRECT SUBTROPICAL MOISTURE INTO THE
SOUTHWESTERN U.S. AT THE SURFACE...A LOW PRESSURE CENTER WITH A
SEA-LEVEL PRESSURE OF 1004 MB...29.65 INCHES...WAS LOCATED IN WEST
TEXAS WITH A COLD FRONT EXTENDING ACROSS THE BIG BEND OF TEXAS AND
INTO MEXICO. NATIONAL WEATHER SERVICE DOPPLER RADARS AND SURFACE
OBSERVATIONS INDICATED THE AREA OF LIGHT TO MODERATE RAIN WAS
STILL FALLING OVER CENTRAL ARIZONA. LIGHT TO MODERATE SNOW WAS
OBSERVED ACROSS CENTRAL AND NORTHERN ARIZONA.

...SELECTED STORM TOTAL RAINFALL IN INCHES FROM 1200 AM PST FRI
FEB 17 THROUGH 600 AM PST SUN FEB 19...

...ARIZONA...

CROWN KING	2.04
ROCKEN SACK CANYON	2.01
HARQUAHALA MOUNTAIN	1.96
SUNFLOWER	1.72
BURN SPRING	1.62
YARNELL	1.54
CAMP CREEK	1.53
UPPER TRILBY WASH	1.53
VULTURE MINE	1.53
HUALAPAI PEAK 3 S	1.34
AUDREY PEAK	1.30
AGUA FRIA HUMBOLDT 3S	1.22
CAREFREE 1 ENE	1.18
HUMBUG CREEK	1.04
GLADDEN 14 NNW	1.01
PHOENIX-DEER VALLEY MUNI ARPT	0.90

...NEVADA...

NEVADA DESERT NAT'L WR	2.61
GRAPEVINE SPRING	2.52
HARRIS SPRINGS	2.05
HAWTHORNE	1.96
TULE SPRINGS NORTHWEST	1.74
BEATTY - TIMBER MTN	1.69
GOLDFIELD 1 N	1.53
NORTH LAS VEGAS AIRPORT	0.75

...SELECTED STORM TOTAL SNOWFALL IN INCHES FROM 1200 AM PST FRI
FEB 17 THROUGH 600 AM PST SUN FEB 19...

...CALIFORNIA...

JUNE LAKE	36.0
MAMMOTH MOUNTAIN	30.0

...NEW MEXICO...

MOGOLLON 6 ESE	6.0
LUNA 6 SSE	1.0

...SELECTED PEAK WIND GUSTS IN MILES PER HOUR EARLIER IN THE
EVENT...

...ARIZONA...

TUCSON 4 SW	56
HOPKINS	51
SELLS	46
NOGALAS AIRPORT	45
SASABE	44
SIERRA VISTA MUNI ARPT	43

...CALIFORNIA...

GRAPEVINE PEAK	108
CARMEL VALLEY VILLAGE 10 SW	86
BIG BEAR CITY 13 ESE	84
BURNS CANYON	84
ACTON 9 SE	82
MILL CREEK	81
CHILAO	80
MOUNT WILSON 8 NNE	80
ALTADENA 6 N	77
CLEAR CREEK	77
TORO PEAK	76
CASTROVILLE 2 NW	75
GRASS MOUNTAIN	75
LANCASTER 14 WSW	75
PALOMAR MTN LOOKOUT	75
PORT OF LOS ANGELES (PIER F)	75
SAN PEDRO 4 E	75
HESPERIA 5 SW	72
SAN CLEMENTE 5 E	72
RUNNING SPRINGS 2 NW	71
SALINAS AIRPORT	71
AGUANGA 6 SSE	70
PYRAMID LAKE 6 NE	70
SANDBERG	70

...SELECTED STORM TOTAL RAINFALL IN INCHES WHERE THE EVENT HAS
ENDED...

...CALIFORNIA...

EL DESEO RANCH	10.45
OLD MAN MOUNTAIN	9.95

UPPER MATILIJA CANYON	9.87
SAN MARCOS PASS	9.33
MONTECITO	9.30
CACHUMA LAKE	9.19
GIBRALTAR DAM	9.17
SULPHUR MOUNTAIN CREEK	7.79
ALISAL RESERVOIR	6.74
MINING RIDGE	6.66
CELITE	4.93
OXNARD AIRPORT	4.56
POINT REYES	4.30
SANTA BARBARA MUNI ARPT	4.24
SANDBERG	4.17
GOLETA WATER DISTRICT	4.03
SANTA BARBARA CITY COLLEGE	3.73
CAMARILLO AIRPORT	3.48
SANTA BARBARA FLOOD CONTROL OFFICE	3.42
THREE PEAKS	3.36
VAN NUYS AIRPORT	3.36
CATALINA ISLAND	3.19
LONG BEACH AIRPORT	2.75
SANTA CRUZ ISLAND	2.61
INDEPENDENCE 4 WNW	2.34
VANDENBERG AFB/LOMPOC	2.21
SANTA MARIA PUBLIC APT	2.17
LOS ANGELES DOWNTOWN	2.11
SAN FRANCISCO	1.17
SAN DIEGO	1.09

THE UPPER LEVEL TROUGH AND ASSOCIATED SURFACE FRONT WILL CONTINUE TO TRACK EASTWARD ACROSS THE SOUTHERN PLAINS TODAY AND GRADUALLY WEAKEN. AN ADDITIONAL HALF AN INCH TO AN INCH OF RAIN IS POSSIBLE TODAY ACROSS EASTERN ARIZONA...WITH RAIN TAPERING OFF BY THIS EVENING. SNOW SHOWERS ARE EXPECTED ALONG THE HIGHER ELEVATIONS OF THE MOGOLLON RIM INTO THE GILA AND SAN FRANCISCO MOUNTAIN RANGES OF EASTERN ARIZONA AND WESTERN NEW MEXICO WHERE A FEW ADDITIONAL INCHES OF SNOW CAN BE EXPECTED TODAY.

THIS WILL BE THE LAST STORM SUMMARY ISSUED BY THE WEATHER PREDICTION CENTER FOR THIS EVENT. PLEASE REFER TO YOUR LOCAL NATIONAL WEATHER SERVICE OFFICE FOR ADDITIONAL INFORMATION.

REINHART

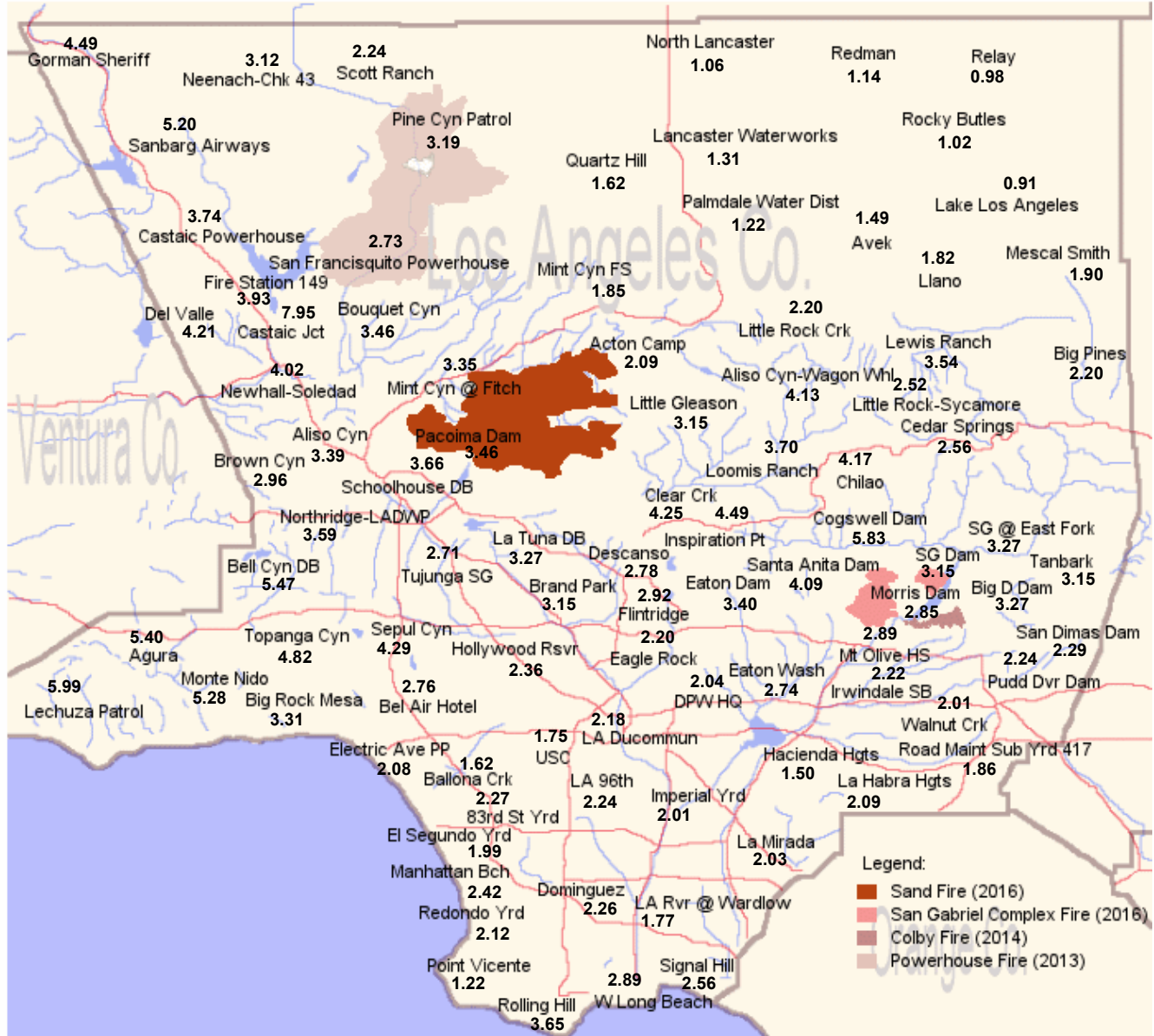
Last Updated: 921 AM EST SUN FEB 19 2017

Storm Summary February 21, 2017 (Preliminary)

The latest rainfall event affected Los Angeles County from Friday (2/17/17) to Monday (2/20/17). Rainfall accumulations throughout the County were generally between 2.0 and 6.0 inches. Storm water capture facilities were activated in the West, East, and South Areas. Approximately 7,300 acre feet (2.4 billion gallons) of storm water was captured at the spreading grounds. That's enough water for 58,400 people for one year. The attached map shows the rainfall totals from this weather system as of Tuesday, February 21, 2017. Total water conserved since October 1, 2016 for the 2016-17 water year is approximately 84,000 acre feet (27 Billion gallons). This is enough water for 672,000 County residents for one year.

This map displays data for the most recent storm.

Storm Displayed: Begin: 02/17/17 00:00 End: 02/21/17 07:00



Appendix C-1

Water Sampling Field Forms

Water Quality Sample Form

Project Name: <u>GWMA TRAIL</u>		Project Number: <u>141205-01-02</u>		Date: <u>9/27/16</u>	Time: <u>1243</u>
Station ID: <u>CS-RW-01</u>	Latitude/Northing: <u>33.77472</u>	Longitude/Easting: <u>118.24551</u>		Water Depth (ft): (m): <u>6</u>	
Weather Conditions: <u>Sunny</u>				Field Personnel: <u>M. Kennedy</u> <u>M. Angher</u>	
Wind Speed and Direction (see Beaufort Scale): <u>1 knot ;</u>				Recorded By: <u>M. Kennedy</u>	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <u>none</u>					
Description of In-water activities (e.g., recreational boating, active discharges): <u>none</u>					

In Situ Field Parameters and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
<u>1243</u>	<u>1m</u>	<u>S</u>	<u>8.57</u>	<u>7.98</u>	<u>33.98</u>	<u>18.7</u>	<u>y</u>	<u>see comments</u>	<u>TSS only</u> <u>Full suite</u>	<u>CS-RW-01-G-3-20160927</u>	
<u>1245</u>	<u>3.5</u>	<u>m</u>	<u>8.75</u>	<u>7.95</u>	<u>33.98</u>	<u>18.33</u>	<u>y</u>	<u>↓</u>	<u>TSS only</u> <u>Full suite</u>	<u>CS-RW-01-G-M-20160927</u>	
<u>1255</u>	<u>5</u>	<u>B</u>	<u>8.67</u>	<u>7.96</u>	<u>34.04</u>	<u>18.02</u>	<u>y</u>	<u>↓</u>	<u>TSS only</u> <u>Full suite</u>	<u>CS-RW-01-G-B-20160927</u>	
									<u>TSS only</u> <u>Full suite</u>		
									<u>TSS only</u> <u>Full suite</u>		
									<u>TSS only</u> <u>Full suite</u>		
									<u>TSS only</u> <u>Full suite</u>		
QA/QC Samples Collected <u>Y</u> /N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							<u>TSS only</u> <u>Full suite</u>		

Comments (include photographs taken, if any):

no floating particulates; no odor; no sheen; MS/MSD collected (metals)

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16		Time: 12:10			
Station ID: 1A-RW-02		Latitude/Northing: 33.76292		Longitude/Easting: 118.22515		Water Depth (ft): (m): 18.5					
Weather Conditions: Sunny							Field Personnel: N. Kennedy, M. Angher				
Wind Speed and Direction (see Beaufort Scale): 2 knots, west							Recorded By: N. Kennedy				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): birds no fish											
Description of In-water activities (e.g., recreational boating, active discharges): recreational boating											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
12:10	1m	S	9.16	7.99	34.09	18.19	Y	see comments	TSS only <input checked="" type="radio"/> Full suite	1A-RW-02-G-S-20160927	
12:15	8.5	M	8.37	7.91	34.13	17.42	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-02-G-M-20160927	
12:18	17.0	B	7.11	7.87	34.15	16.9	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-02-G-B-20160927	
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
QA/QC Samples Collected: Y/ <input checked="" type="radio"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only <input type="radio"/> Full suite <input type="radio"/>		
Comments (include photographs taken, if any): no floating particulates; no odor; no sheen triplicate taken on YSI											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16		Time: 1132		
Station ID: 1A-RW-03		Latitude/Northing: 33.7628		Longitude/Easting: 118.2741		Water Depth (ft): (m): 17.4				
Weather Conditions: Sunny						Field Personnel: N. Kennedy, M. Anghelescu				
Wind Speed and Direction (see Beaufort Scale): 2 knots West						Recorded By: N. Kennedy				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none										
Description of In-water activities (e.g., recreational boating, active discharges): none										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1132	1m	S	8.15	8.00	34.22	18.42	Y	see comment	TSS only <input checked="" type="radio"/> Full suite	1A-RW-03-G-S-20160927
1136	8.0	M	8.58	7.94	34.18	17.04	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-03-G-M-20160927
1140	16.5	B	8.50	7.95	34.18	17.35	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-03-G-B-20160927
									TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	
									TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	
									TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	
									TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	
QA/QC Samples Collected: Y <input checked="" type="radio"/> N <input type="radio"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>		
Comments (include photographs taken, if any): 1 photo taken no floating particulates; no sheen; no odor										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: <u>GROWMA</u>	Project Number: <u>141205-01.02</u>	Date: <u>9/27/14</u>	Time: <u>1107</u>
Station ID: <u>1A-RW-04</u>	Latitude/Northing: <u>33.75178</u>	Longitude/Easting: <u>118.27092</u>	Water Depth (ft): (m): <u>20</u>
Weather Conditions: <u>cloudy</u>	Wind Speed and Direction (see Beaufort Scale): <u>5 knots NW</u>		Field Personnel: <u>N. Kennedy</u> <u>Dr. Mghw</u>
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <u>none</u>			Recorded By: <u>N. Kennedy</u>
Description of In-water activities (e.g., recreational boating, active discharges): <u>none</u>			

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1107	1m	S	8.84	7.99	34.21	18.37	Y	see comment	TSS only <input checked="" type="radio"/> Full suite	1A-RW-04-G-S-20140927
1115	9.5m	M	8.47	7.98	34.18	17.64	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-04-G-M-20140927
1117	19m	B	8.05	7.91	34.18	17.25	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-04-G-B-20140927
									TSS only <input type="radio"/> Full suite	
									TSS only <input type="radio"/> Full suite	
									TSS only <input type="radio"/> Full suite	
									TSS only <input type="radio"/> Full suite	
									TSS only <input type="radio"/> Full suite	
QA/QC Samples Collected (Y/N)	Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)								TSS only <input checked="" type="radio"/> Full suite	

Comments (include photographs taken, if any):

no floating particulates; no odor; no sheen; 1 lab duplicate collected

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

dup @ 1111

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/14	Time: 0928
Station ID: 1A-RW-05	Latitude/Northing: 33.73219	Longitude/Easting: 118.25060		Water Depth (ft): (m): 19.6	
Weather Conditions: Sunny				Field Personnel: W. Kennedy M. Anguiera	
Wind Speed and Direction (see Beaufort/Scale): 5 knots, West				Recorded By: N. Kennedy	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none					
Description of In-water activities (e.g., recreational boating, active discharges): 2 barges approaching					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
0928	1	S	8.63	7.99	34.19	18.46	ye	see comments flee comment	TSS only <input checked="" type="radio"/> Full suite	1A-RW-05-07-S-2016 0928	
0930	9	M	8.11	7.96	34.17	17.63	y	↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-05-07-M-2016 0928	
0932	18	B	7.67	7.94	34.19	16.35		↓	TSS only <input checked="" type="radio"/> Full suite	1A-RW-05-07-B-2016 0928	
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
									TSS only <input type="radio"/> Full suite <input type="radio"/>		
QA/QC Samples Collected: Y/N <input checked="" type="radio"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only <input type="radio"/> Full suite <input type="radio"/>		

Comments (include photographs taken, if any):
minor floating material, no sheen, no odor

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/10	Time: 1020
Station ID: 1A-RW-04	Latitude/Northing: 33.72504	Longitude/Easting: 118.27160		Water Depth (ft): (m): 18	
Weather Conditions: Sunny				Field Personnel: W. Kennedy M. Anghera	
Wind Speed and Direction (see Beaufort Scale): 5 knots NW				Recorded By: W. Kennedy	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): None					
Description of In-water activities (e.g., recreational boating, active discharges): Floating barge					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1020	1	S	8.67	8.01	34.20	18.33	Y	See comment	TSS only <input checked="" type="radio"/> Full suite	
1025	8.5	M	8.27	7.99	34.02	17.72	Y	↓	TSS only <input checked="" type="radio"/> Full suite	
1035	17	B	7.88	7.95	34.20	16.50	Y	↓	TSS only <input checked="" type="radio"/> Full suite	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <input type="radio"/> Full suite <input type="radio"/>		

Comments (include photographs taken, if any): 1 photo taken
 No floating particulates; no sheen; no odor; barge came through area after mid sample collected @ 1030

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/16	Time: 0958
Station ID: FW-RW-07	Latitude/Northing: 33.73565	Longitude/Easting: 118.26741		Water Depth (ft): (m): 7.7	
Weather Conditions: Sunny				Field Personnel: W. Kennedy, M. Anghera	
Wind Speed and Direction (see Beaufort Scale): 5 knots; W				Recorded By: W. Kennedy	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none					
Description of In-water activities (e.g., recreational boating, active discharges): none					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
0958	1	S	8.62	7.99	34.28	19.48	y	see comment	TSS only <input checked="" type="radio"/> Full suite	FW-RW-07-G-S-20160927
1000	3	M	8.58	7.98	34.23	18.95	y	↓	<input checked="" type="radio"/> TSS only Full suite	FW-RW-07-G-M-20160927
1005	6	B	7.52	7.93	34.21	18.07	y	↓	<input checked="" type="radio"/> TSS only Full suite	FW-RW-07-G-B-20160927
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/ <input checked="" type="radio"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		

Comments (include photographs taken, if any):

No floating particles; material or odor sheen

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/14		Time: 1300		
Station ID: OA-RW-28		Latitude/Northing: 33.71456		Longitude/Easting: -118.24257		Water Depth (ft): 845 (m):				
Weather Conditions: Sunny							Field Personnel: CD / CC			
Wind Speed and Direction (see Beaufort Scale):							Recorded By: CD			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton):										
Description of In-water activities (e.g., recreational boating, active discharges): n/a										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1300	1	S	8.6	8.1	42.4 35.4	19.03	Y	see comment	TSS only <u>Full suite</u>	OA-RW-09-G-5-16160927
1305	41	M	8.2	8.1	47.7 36.4	17.2	Y	↓	TSS only <u>Full suite</u>	M-
1310	83	B	8.5 7.5	8.0	46.7 37.6	16.1	Y	↓	TSS only <u>Full suite</u>	B-
									TSS only <u>Full suite</u>	
									TSS only <u>Full suite</u>	
									TSS only <u>Full suite</u>	
									TSS only <u>Full suite</u>	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <u>Full suite</u>		
Comments (include photographs taken, if any): No particulates, color, odor or sheen										

Notes:

1. Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
2. Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16			Time: 1345			
Station ID: OA-RW-09		Latitude/Northing: 33.71208			Longitude/Easting: -118.26324			Water Depth (ft): 20 (m): 7				
Weather Conditions: Sunny						Field Personnel: CD/CC						
Wind Speed and Direction (see Beaufort Scale): n/a						Recorded By: CD						
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a												
Description of In-water activities (e.g., recreational boating, active discharges): kelp bed												
In Situ Field Parameters ¹ and Water Sample Collection												
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID	
1345	1	S	8.4	8.2	47.24 35.5	18.9	Y	see comment	TSS only	Full suite	OA-RW-09-G-S-20160927	
1350	3.5	M	8.8	8.1	47.31 36.1	18.1	Y	↓	TSS only	Full suite	-M-	
1353	6	B	8.7	8.1	47.37 36.2	18.0	Y	↓	TSS only	Full suite	-B-	
									TSS only	Full suite		
									TSS only	Full suite		
									TSS only	Full suite		
									TSS only	Full suite		
QA/QC Samples Collected: (Y)N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						Field dup TSS - mid @ 1355		TSS only	Full suite	
Comments (include photographs taken, if any): No particulates, sheen, color or odor												

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/16	Time: 1445
Station ID: CM-RW-10	Latitude/Northing: 33.71967	Longitude/Easting: -118.27907		Water Depth (ft): 38 (m): 12	
Weather Conditions: Sunny				Field Personnel: CD/CC	
Wind Speed and Direction (see Beaufort Scale):				Recorded By: CD	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a					
Description of In-water activities (e.g., recreational boating, active discharges): Sailboat					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1445	1	S	10.0	8.1	35.1	19.3	Y	Clear	TSS only <u>Full suite</u>	CM-RW-10-G-S-20160927
1450	6	M	8.9	8.1	36.1	18.2	Y	↓	<u>TSS only</u> Full suite	-M-
1455	11	B	8.0	8.1	36.6	17.6	Y	see comment	<u>TSS only</u> Full suite	-B-
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N	Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event) Field dup -TSS @ 1500								TSS only Full suite	

Comments (include photographs taken, if any):
No particulates, color, odor or sheen

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/16	Time: 1415
Station ID: CB-RW-11	Latitude/Northing: 33.71194	Longitude/Easting: -118.28079		Water Depth (ft): 11 (m): 37	
Weather Conditions: sunny, light breeze				Field Personnel: CD/CO	
Wind Speed and Direction (see Beaufort Scale): light breeze, NW				Recorded By: CO	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): terns, gulls					
Description of In-water activities (e.g., recreational boating, active discharges): n/a					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1415	0.5	S	8.7	8.1	47.577 35.5	18.8	Y	see comment	TSS only Full suite	CB-RW-11-GSP-20160927	
1420	1.5	M	8.8	8.1	47.535 35.8	18.5	Y	↓	TSS only Full suite	-M-	
1425	3	B	7.8	8.1	47.377 36.0	18.3	Y	↓	TSS only Full suite	-B-	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		

Comments (include photographs taken, if any):
No particulates, color, odor, or sheen

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/16	Time: 1328
Station ID: 1B-RW-12	Latitude/Northing: 33.76033	Longitude/Easting: 118.22836	Water Depth (ft): (m): 16.5		
Weather Conditions: Sunny				Field Personnel: N. Kennedy, M. Angiere	
Wind Speed and Direction (see Beaufort Scale): 5-7 knots; west				Recorded By: N. Kennedy	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none					
Description of In-water activities (e.g., recreational boating, active discharges): none					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1328	1m	S	8.57	7.97	34.19	19.07	Y	see comments	TSS only <input checked="" type="radio"/> Full suite	1B-RW-12-G-S-20160927
1335	7.5	M	8.77	7.94	34.15	17.97	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1B-RW-12-G-M-20160927
1338	15.5	B	8.16	7.87	34.14	17.04	Y	↓	TSS only <input checked="" type="radio"/> Full suite	1B-RW-12-B-B-20160927
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
QA/QC Samples Collected <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)								TSS only <input type="radio"/> Full suite <input type="radio"/>	

Comments (include photographs taken, if any):
 no particulates; no odor; no sheening
 lab duplicate collected (TSS)

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

24.7m

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/29/14	Time: 1400
Station ID: 1B-RW-13	Latitude/Northing: 33.75382	Longitude/Easting: 118.21629	Water Depth (ft): (m): 24.7		
Weather Conditions: Sunny			Field Personnel: N. Kennedy, M. Angher		
Wind Speed and Direction (see Beaufort Scale): 5-10 knots ; west			Recorded By: N. Kennedy		
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): fish present ; no birds ;					
Description of In-water activities (e.g., recreational boating, active discharges): itty went by before sampling					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1400	1m	S	9.12	7.99	34.18	19.21	yes	see comment	TSS only / Full suite	1B-RW-13-07-S-20140927	
1408	1.65	M	8.12	7.95	34.15	17.82	y	↓	TSS only / Full suite	1B-RW-13-07-M-20140927	
1410	23	B	6.79	7.87	34.17	16.49	y	↓	TSS only / Full suite	1B-RW-13-07-B-20140927	
									TSS only / Full suite		
									TSS only / Full suite		
									TSS only / Full suite		
									TSS only / Full suite		
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only / Full suite		

Comments (include photographs taken, if any):
 NO floating particulates; no odor; no sheening
 triplicate measure taken at surface

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 9/27/16	Time: 14:3
Station ID: B-RW-14	Latitude/Northing: 33.74983	Longitude/Easting: 118.23109		Water Depth (ft): (m):	
Weather Conditions: Sunny				Field Personnel: N. Kennedy, M. Angher	
Wind Speed and Direction (see Beaufort Scale): S knots ; West				Recorded By: N. Kennedy	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none					
Description of In-water activities (e.g., recreational boating, active discharges): none					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1430	1m	S	9.60	8.05	34.18	19.66	Y	see comments	TSS only <u>Full suite</u>	B-RW-14-G-S-20160927	
1435	6.5m	M	10.13	8.06	34.17	18.11	Y	↓	TSS only <u>Full suite</u>	B-RW-14-G-M-20160927	
1437	13m	B	8.58	7.99	34.17	17.60	Y	↓	TSS only <u>Full suite</u>	B-RW-14-G-S-20160927	
<u>1440</u>	13m	B	8.42	8.00	34.11	16.88	Y	↓	TSS only <u>Full suite</u>	↓ + ↓ ↓ ↓	
									TSS only <u>Full suite</u>		
									TSS only <u>Full suite</u>		
									TSS only <u>Full suite</u>		
QA/QC Samples Collected: <u>Y</u> / <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only <u>Full suite</u>		

Comments (include photographs taken, if any):

no floating particulates; no sheering; no odor; at bottom relocated back to station; use second reading

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

Field dup collected at 1445

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16		Time: 7:20			
Station ID: 15		Latitude/Northing: 33.74214303		Longitude/Easting: -118.1994876		Water Depth (ft): (m):					
Weather Conditions: w. temp of 66.9°F							Field Personnel: ND, RW, TVB				
Wind Speed and Direction (see Beaufort Scale): 1							Recorded By: ND				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): None, floating algae											
Description of In-water activities (e.g., recreational boating, active discharges): None, docked cargo ships & tugs											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (ft)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
7:20	58 ft	B	7.33	7.32	34.47	16.64	Y	clear	TSS only Full suite	15-RW-G-B-2016 0927	
7:20	30 ft	M	8.14	7.36	34.40	17.73	Y	clear	TSS only Full suite	15-RW-G-M-2016 0927	
7:20	1 ft	S	9.13	7.43	34.43	19.22	Y	clear	TSS only Full suite	15-RW-G-S-2016 0927	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any): 2 organics, 1 PCB MS/MD											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16		Time: 8:15			
Station ID: 16		Latitude/Northing: 33.73144867		Longitude/Easting: -118.2210007		Water Depth (ft): 62 (m): 18.8976					
Weather Conditions: sunny, 5-10% cloud cover						Field Personnel: ND, RW, TVG					
Wind Speed and Direction (see Beaufort Scale): 0.5 mph, 76.7°F air temp (1)						Recorded By: ND					
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, terns, floating algae											
Description of In-water activities (e.g., recreational boating, active discharges): None											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID
8:15	18	B	7.52	7.45	34.44	16.86	Y	clear, trace particulates	TSS only	Full suite	08-RW-16-B-B-20160927
8:15	9	M	8.20	7.47	34.45	17.85	Y	clear, trace particulates	TSS only	Full suite	08-RW-16-G-M-20160927
8:15	1	S	8.08	7.51	34.46	18.72	Y	clear, trace particulates	TSS only	Full suite	08-RW-16-G-S-20160927
									TSS only	Full suite	
									TSS only	Full suite	
									TSS only	Full suite	
									TSS only	Full suite	
QA/QC Samples Collected: Y (N)		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16		Time: 9:00			
Station ID: 17		Latitude/Northing: 33.72759372		Longitude/Easting: -118.1860575		Water Depth (ft): 81 (m): 24.68					
Weather Conditions: 15% cloud cover, rain, 80° air temp							Field Personnel: ND, RW, TVG				
Wind Speed and Direction (see Beaufort Scale): 6.7 w temp, 0.5 knots from E @ 8F							Recorded By: ND				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): sealions (5 juveniles) on buoy											
Description of In-water activities (e.g., recreational boating, active discharges): pilot/post boats - cargo ships transiting											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
9:00	29	B	8.18	7.50	34.43	16.09	Y	Clear	<u>TSS only</u> Full suite	03-RW-17-G-B-20160927	
9:00	11	M	8.45	7.52	34.51	17.81	Y	Clear	<u>TSS only</u> Full suite	03-RW-17-G-M-20160927	
9:00	1	S	8.93	7.54	34.38	18.93	Y	clear	TSS only <u>Full suite</u>	03-RW-17-G-S-20160927	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any): +2 metals, 2 Hg sample: clear, no particulates, no odor or sheen											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: <u>GWMA TMDL WQ Sampling</u>		Project Number: <u>141205-01.02</u>		Date: <u>9/27/16</u>		Time: <u>11:17</u>				
Station ID: <u>18</u>		Latitude/Northing: <u>33.75383222</u>		Longitude/Easting: <u>-118.1813321</u>		Water Depth (ft): <u>41</u> (m): <u>12.4</u>				
Weather Conditions: <u>sunny, 90% cloud cover 87° air temp</u>						Field Personnel: <u>ND, TVG, RW</u>				
Wind Speed and Direction (see Beaufort Scale): <u>2.4 mph from E @ 1 BF</u>						Recorded By: <u>ND</u>				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <u>none</u>										
Description of In-water activities (e.g., recreational boating, active discharges): <u>recreational & work boats leaving POLB</u>										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
11:17	12	B	5.85	7.43	34.34	17.61	Y	clear	TSS only (circled) Full suite	SP-RW-18-B-B-20160927
11:17	6	M	6.64	7.46	34.33	18.64	Y	clear	TSS only (circled) Full suite	SP-RW-18-B-M-20160927
11:17	1	S	9.7	7.55	33.66	19.91	Y	clear	TSS only (circled) Full suite	SP-RW-18-S-S-20160917
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any):										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16		Time: 12:09		
Station ID: 19		Latitude/Northing: 33.73667149		Longitude/Easting: -118.231209		Water Depth (ft): 28 (m): 8.3				
Weather Conditions: 10% cloud cover; 88° air temp.							Field Personnel: ND, TVG, RW			
Wind Speed and Direction (see Beaufort Scale): Impl E @ 8F							Recorded By: ND			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none										
Description of In-water activities (e.g., recreational boating, active discharges): some recreational and commercial boat traffic										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
	7	B	7.93	7.51	34.40	18.69			TSS only Full suite	SP-RW-19-G-B-20160927
	3.5	M	8.77	7.54	34.40	19.35			TSS only Full suite	SP-RW-19-G-M-20160927
	0.5	S	8.99	7.56	34.27	20.74			TSS only Full suite	SP-RW-19-G-S-20160927
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): Lab duplicate taken. → 2 TSS: SP-RW-19-G-M-20160927, SP-RW-19-G-B-20160927 in Amber bottles, have TSS labels										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.02				Date: 9/27/16		Time: 9:32	
Station ID: 20		Latitude/Northing: 33.72547972			Longitude/Easting: -118.1573319			Water Depth (ft): 53 (m): 16.1514			
Weather Conditions: 76° air temp, 10% cloud cover								Field Personnel: ND, RW, TVG			
Wind Speed and Direction (see Beaufort Scale): Wind 1.5 mph from E.								Recorded By: ND			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gull											
Description of In-water activities (e.g., recreational boating, active discharges):											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID
9:32	16.0	B	6.34	7.43	34.46	16.64	Y	clear, trace particles	<input checked="" type="radio"/> TSS only <input type="radio"/> Full suite	SP-RW-20-G-B-20160927	
9:32	8	M	8.21	7.51	34.44	18.61	Y	clear, trace particles	<input checked="" type="radio"/> TSS only <input type="radio"/> Full suite	SP-RW-20-G-M-20160927	
9:32	1	S	8.62	7.54	34.41	19.10	Y	clear, trace particles	<input type="radio"/> TSS only <input checked="" type="radio"/> Full suite	SP-RW-20-G-S-20160927	
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							<input type="radio"/> TSS only <input type="radio"/> Full suite		
Comments (include photographs taken, if any):											

Notes:

1. Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
2. Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.02				Date: 9/27/16		Time: 10:53		
Station ID: 21		Latitude/Northing: 33.156 33.156			Longitude/Easting: -118.193943			Water Depth (ft): 6 (m): 2.05				
Weather Conditions: sunny, 15% cloud cover, 82°F air temp.								Field Personnel: MB, RW, RLW				
Wind Speed and Direction (see Beaufort Scale): 1 mph								Recorded By: ND				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, pelicans.												
Description of In-water activities (e.g., recreational boating, active discharges): recreational small vessel traffic												
In Situ Field Parameters ¹ and Water Sample Collection												
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID	
10:53	1.5	B	6.38	7.47	34.05	19.52	Y	clear	TSS only	Full suite	IE-RW-21-G-B-20160927	
10:53	.75	M	7.01	7.49	33.44	19.64	Y	clear	TSS only	Full suite	IE-RW-21-G-M-20160927	
10:53	.1	S	7.02	7.48	33.36	19.69	Y	clear	TSS only	Full suite	IE-RW-21-G-S-20160927	
									TSS only	Full suite		
									TSS only	Full suite		
									TSS only	Full suite		
									TSS only	Full suite		
QA/QC Samples Collected: (Y)/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event) Field dupe TSS @ bottom (IE-RW-1021-G-B-dup)								TSS only Full suite		
Comments (include photographs taken, if any):												

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 9/27/16			Time: 10:26			
Station ID: 22		Latitude/Northing: 33.761013			Longitude/Easting: -118.202111			Water Depth (ft): 7 (m): 2				
Weather Conditions: 95% cloud cover, 81.6°F, 10						Field Personnel: ND, RW, TVG						
Wind Speed and Direction (see Beaufort Scale): 1.0 mph						Recorded By: ND						
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): water seen Juv. Sea Lion, blue heron, gulls on w. bank												
Description of In-water activities (e.g., recreational boating, active discharges): Catalina Flyer												
In Situ Field Parameters ¹ and Water Sample Collection												
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID	
9:26	2	B	5.39	7.44	34.14	19.35	Y	cloudy trace particulate	<input checked="" type="radio"/> TSS only	<input type="radio"/> Full suite	CE-RW-22-F-B-20160927	
10:26	1	M	5.45	7.44	34.09	19.40	Y	cloudy particulate	<input checked="" type="radio"/> TSS only	<input type="radio"/> Full suite	CE-RW-22-M-M-20160927	
10:26	0	S	8.41	7.50	33.10	19.97	Y	cloudy particles	TSS only	<input checked="" type="radio"/> Full suite	CE-RW-22-S-S-20160927	
									TSS only	<input type="radio"/> Full suite		
									TSS only	<input type="radio"/> Full suite		
									TSS only	<input type="radio"/> Full suite		
									TSS only	<input type="radio"/> Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only		<input type="radio"/> Full suite	
Comments (include photographs taken, if any):												

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



DQO Measurements

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02				
Station ID: 1A-RW-02		Time: 1219			Date: 9/12/14		
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
1219	S	1	9.2	7.94	34.10	18.5	
1220	S	1	9.4	7.96	34.08	18.49	
1221	S	1	9.4	7.97	34.09	18.47	
Average			9.3	7.95	34.09	18.48	
Difference between max and min			0.2	0.03	0.02	0.02	
RPD			2%				
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²		Y	Y	Y	Y	Y	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

DQO Measurements

Project Name: <u>GWMA TMDL Water Quality</u>		Project Number: <u>141205-01.03</u>					
Station ID: <u>DA-RW-01</u>		Time: <u>1300</u>			Date: <u>1300 9/27/14</u>		
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m) <i>At</i>	DO (mg/L)	pH (units)	Salinity (ppt) <i>(C)</i>	Temp (°C)	Comments
<u>1305</u>	<u>M</u>	<u>41</u>	<u>8.6</u>	<u>8.1</u>	<u>36.1</u>	<u>18.1</u>	
<u>1305</u>	<u>M</u>	<u>41</u>	<u>8.2</u>	<u>8.1</u>	47.3 <u>36.4</u>	<u>17.8</u>	
<u>1305</u>	<u>M</u>	<u>41</u>	<u>8.2</u>	<u>8.1</u>	47.3	<u>17.8</u>	
Average		<u>41</u>	<u>8.3</u>	<u>8.0</u>	<u>36.4</u>		
Difference between max and min		<u>0</u>	<u>0.4</u>	<u>0</u>	<u>0.3</u>		
RPD		<u>-</u>	<u>4%</u>	<u>-</u>	<u>-</u>		
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²		<u>Y</u>		<u>Y</u>	<u>Y</u>	<u>Y</u>	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.



DQO Measurements

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02				
Station ID: 13-RW-13		Time: 1412		Date: 9/27/10			
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
1412	S	1m	8.36	7.95	34.24	19.43	
1413	S	1m	8.13	7.95	34.17	19.34	
1415	S	1m	8.16	7.99	34.10	19.20	
Average			8.18	7.94	34.19	19.3	
Difference between max and min			0.3	0.03	0.05	0.2	
RPD			3.4%	—	—	1%	
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²		Y	Y	Y	Y	Y	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

DQO Measurements

Project Name: <u>BWMA TMDL - WB</u>			Project Number: <u>191205-03.01</u>				
Station ID: <u>19</u>		Time: <u>12:31</u>		Date: <u>9/27/16</u>			
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
<u>12:25</u>	<u>M</u>	<u>3.5</u>	<u>9.06</u>	<u>7.59</u>	<u>34.33</u>	<u>19.80</u>	
<u>12:27</u>	<u>M</u>	<u>3.5</u>	<u>9.07</u>	<u>7.59</u>	<u>34.33</u>	<u>19.77</u>	
<u>12:28</u>	<u>M</u>	<u>3.5</u>	<u>9.06</u>	<u>7.59</u>	<u>34.33</u>	<u>19.79</u>	
Average		<u>3.5</u>	<u>9.063</u>	<u>7.59</u>	<u>34.33</u>	<u>19.786</u>	
Difference between max and min		<u>∅</u>	<u>.01</u>	<u>∅</u>	<u>∅</u>	<u>0.03</u>	
RPD		<u>∅</u>	<u>.11%</u>	<u>0</u>	<u>∅</u>	<u>0.15°C</u>	
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²		<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1005		
Station ID: CS-RW-01		Latitude/Northing: 33°46.487'		Longitude/Easting: -118°14.732'		Water Depth (ft): (m): 6.1				
Weather Conditions: partly cloudy							Field Personnel: C. Osuch B. B. B.			
Wind Speed and Direction (see Beaufort Scale): <1 mph (S/SSE)							Recorded By: C. Osuch			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): None										
Description of In-water activities (e.g., recreational boating, active discharges): None										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
37.0 53.2 54.8	1006 1016 1018	S M B	6.36 5.62 5.70	7.8 7.9 7.9	56.52 76.67 78.91	17.0 17.2 17.2	Y Y Y	Brownish Clear Clear	TSS only <u>Full suite</u> <u>TSS only</u> Full suite <u>TSS only</u> Full suite	CS-RW-01-G-S-20161122 CS-RW-01-G-M-20161122 CS-RW-01-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): triplicate measurements. No odor or sheen										

Salinity ppt

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

DQO Measurements

Project Name: <u>GWMA TMDL WQ</u>			Project Number: <u>14120501.03</u>				
Station ID: <u>CS-RW-01</u>		Time: <u>1005</u>			Date: <u>11/22/16</u>		
In Situ Field Parameters							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Cond Salinity (ppt) mS/cm	Temp (°C)	Comments
<u>1006</u>	<u>S</u>	<u>1</u>	<u>5.36</u>	<u>7.8</u>	<u>56.52</u>	<u>17.0</u>	
<u>1008</u>	<u>S</u>	<u>1</u>	<u>5.34</u>	<u>7.8</u>	<u>57.70</u>	<u>16.7</u>	
<u>1011</u>	<u>S</u>	<u>1</u>	<u>5.30</u>	<u>7.8</u>	<u>58.01</u>	<u>17.0</u>	
Average		<u>-</u>	<u>5.33</u>	<u>7.8</u>	<u>57.41</u>	<u>16.97</u>	<u>17.0</u>
Difference between max and min			<u>0.06</u>	<u>0.0</u>	<u>1.49</u>	<u>0.21</u>	<u>① slightly over-rechecked. 17.0</u>
RPD			<u>1.13</u>	<u>0</u>	<u>2.60</u>	<u>0.588</u>	
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²			<u>Y</u>	<u>Y</u>		<u>0</u>	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1042		
Station ID: IA-RW-02		Latitude/Northing: 33°45.779'		Longitude/Easting: -118°15.285'		Water Depth (ft): (m): 17.3				
Weather Conditions: partly cloudy							Field Personnel: C. Osuch, B. Basse			
Wind Speed and Direction (see Beaufort Scale): < 1 mph							Recorded By: C. Osuch			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): None										
Description of In-water activities (e.g., recreational boating, active discharges): 2 tugs, 159.6 boat										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1042	1	S	6.01	7.9	76.56	17.3	Y	clear	TSS only <u>Full suite</u>	IA-RW-02-G-S-20161122
1045	8.45	M	5.98	7.9	79.81	17.3	Y	↓	<u>TSS only</u> Full suite	IA-RW-02-G-M-20161122
1048	16	B	5.95	7.9	79.97	17.3	Y	↓	<u>TSS only</u> Full suite	IA-RW-02-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <u>(N)</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (Include photographs taken, if any): No color, odor, or sheen										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 11/22/16	Time: 1112
Station ID: IA-RW-03	Latitude/Northing: 33°45.76735	Longitude/Easting: -118°16.442	Water Depth (ft): (m): 17.4		
Weather Conditions: partly cloudy				Field Personnel: C. Osuch, B. Base	
Wind Speed and Direction (see Beaufort Scale): <1 mph				Recorded By: C. Osuch	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): 4 unidentified birds					
Description of In-water activities (e.g., recreational boating, active discharges): None					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1120	1	S	6.46	7.9	76.89	17.1	Y	floating particulate	TSS only <input checked="" type="radio"/> Full suite	IA-RW-03-G-S-20161122	
1125	8.5	M	6.20	7.9	79.84	17.3	Y	↓	<input checked="" type="radio"/> TSS only Full suite	IA-RW-03-G-M-20161122	
1129	16	B	6.11	7.9	80.05	17.3	Y	↓	<input checked="" type="radio"/> TSS only Full suite	IA-RW-03-G-B-20161122	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (Include photographs taken, if any): 1st dup TSS @ surface. No color, odor, or sheen											

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1151		
Station ID: IA-RW-04		Latitude/Northing: 33°45.094		Longitude/Easting: -118°16.260		Water Depth (ft): (m): 19.0				
Weather Conditions: Partly cloudy							Field Personnel: C. Osuch, B. Biss			
Wind Speed and Direction (see Beaufort Scale): 1-3 mph from South							Recorded By: C. Osuch			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): 3 western gulls										
Description of In-water activities (e.g., recreational boating, active discharges): None										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond. Salinity (ppt) MS/cm	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1153	1	S	6.30	7.9	77.23	17.2	Y	clear	TSS only <u>Full suite</u>	IA-RW-04-G-S-2016/22
1156	9.5	M	6.17	7.9	79.74	17.2	Y		<u>TSS only</u> Full suite	IA-RW-04-G-M-2016/22
1158	18	B	6.15	7.9	80.00	17.2	Y	↓	<u>TSS only</u> Full suite	IA-RW-04-G-B-2016/22
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): MS/MSD PCBs + pest. @ surface. No color, odor, or sheen.										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1440		
Station ID: IA-RW-05		Latitude/Northing: 33°43.948'		Longitude/Easting: -118°15.086'		Water Depth (ft): (m): 17.8				
Weather Conditions: <u>SUNNY</u>							Field Personnel: <u>C. Osuch B. Basse</u>			
Wind Speed and Direction (see Beaufort Scale): <u>3-7 mph from southwest</u>							Recorded By: <u>C. Osuch</u>			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <u>None</u>										
Description of In-water activities (e.g., recreational boating, active discharges): <u>1 vessel (240' long; work vessel)</u>										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond. Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1440	1	S	7.49	8.1	77.74	17.5	Y	trace floating particulates	TSS only <u>Full suite</u>	IA-RW-05-G-S-2016/22
1443	9	M	6.85	8.1	80.06	17.1	Y	↓	<u>TSS only</u> Full suite	IA-RW-05-G-M-2016/22
1446	17	B	6.63	8.1	80.11	17.0	Y	↓	<u>TSS only</u> Full suite	IA-RW-05-G-B-2016/22
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y / <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): <u>Lab dup TSS @ surface. No color, odor, or sheen</u>										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1325			
Station ID: IA-RW-06		Latitude/Northing: 33°43' 731'		Longitude/Easting: -118°16' 321'		Water Depth (ft): (m): 18					
Weather Conditions: partly cloudy							Field Personnel: C. Osuch, P. Basso				
Wind Speed and Direction (see Beaufort Scale): 8-12 mph from south west							Recorded By: C. Osuch				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): None											
Description of In-water activities (e.g., recreational boating, active discharges): None											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1336	1	S	6.51	8.0	78.61	17.5	Y	clear	TSS only <u>Full suite</u>	IA-RW-06-G-S-20161122	
1341	9	M	6.49	8.0	79.74	17.2	Y	↓ ^①	TSS only Full suite	IA-RW-06-G-M-20161122	
1346	17	B	6.54	8.0	80.09	17.1	Y	↓	TSS only Full suite	IA-RW-06-G-B-20161122	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: <input checked="" type="checkbox"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only <u>Full suite</u>		
Comments (include photographs taken, if any): No color, odor, or sheen ① floating particulates in mid-depth sample and bottom											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1416		
Station ID: FH-RW-07		Latitude/Northing: 33°44.147		Longitude/Easting: -118°16.035		Water Depth (ft):		(m): 7.1		
Weather Conditions: <i>partly cloudy sunny</i>							Field Personnel: C. Osuch, B. Base			
Wind Speed and Direction (see Beaufort Scale): <i>3-7 mph from southwest</i>							Recorded By: C. Osuch			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <i>one unidentified bird</i>										
Description of in-water activities (e.g., recreational boating, active discharges): <i>None</i>										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond. Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1420	1	S	6.84	8.0	79.63	17.5	Y	<i>trace float particulates</i>	TSS only <u>Full suite</u>	FH-RW-07-G-S-20161122
1423	3.5	M	6.65	8.0	79.76	17.2	Y	↓	<u>TSS only</u> Full suite	FH-RW-07-G-M-20161122
1425	6	B	6.18	8.0	79.98	17.2	Y	↓	<u>TSS only</u> Full suite	FH-RW-07-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y / <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): <i>no color, odor, or sheen</i>										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1430		
Station ID: OA-RW-08		Latitude/Northing: 33 714665		Longitude/Easting: 118 242382		Water Depth (ft): (m): 24.9				
Weather Conditions: sunny						Field Personnel: CD/RM				
Wind Speed and Direction (see Beaufort Scale): light breeze						Recorded By: CD				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, dolphins										
Description of in-water activities (e.g., recreational boating, active discharges): n/a										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1436	1	S	8.1	8.2	33.3	17.6	Y	Clear	TSS only <u>Full suite</u>	OA-RW-08-G-S-2461122
1435	12.5	M	7.9	8.1	33.6	17.3	Y	Clear	<u>TSS only</u> Full suite	OA-RW-08-B-M-2461122
1440	23.5	B	7.9	8.1	33.8	17.0	Y	Clear	<u>TSS only</u> Full suite	OA-RW-08-B-B-2461122
	20.3								TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y (N)		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any):										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

DQO Measurements

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.023			
Station ID: DA-RW-08		Time: 1435		Date: 11/22/16			
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
1435	M	12.5	7.8	8.1	33.6	17.3	
1435	M	12.5	7.8	8.1	33.6	17.3	
1435	M	12.5	7.8	8.1	33.7	17.2	
Average		12.5	7.8	8.1	33.6	17.2	
Difference between max and min		0	0	0	0.1	0.1	
RPD		-	-	-			
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²		Y	Y	Y	Y	Y	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/14		Time: 1410		
Station ID: OA-RW-09		Latitude/Northing: 33.712095		Longitude/Easting: 118.263245		Water Depth (ft): (m): 6.4				
Weather Conditions: sunny, breezy							Field Personnel: CD/RM			
Wind Speed and Direction (see Beaufort Scale): light air							Recorded By: CD			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, cormorants, sea lion										
Description of In-water activities (e.g., recreational boating, active discharges): sailboat										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1410	1	S	7.9	8.1	32.9	17.7	Y	clear	TSS only <u>Full suite</u>	OA-RW-09-G-S-20161122
1415	3	M	8.1	8.1	33.3	17.4	Y	clear	<u>TSS only</u> Full suite	OA-RW-09-G-M-20161122
1420	5.5	B	8.0	8.1	33.6	17.2	Y	clear	<u>TSS only</u> Full suite	OA-RW-09-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): Field dup TSS @ 1412										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 1305		
Station ID: CM-RW-10		Latitude/Northing: 33.719406		Longitude/Easting: 118.279023		Water Depth (ft): (m): 11.7				
Weather Conditions: Sunny, Set								Field Personnel: CO/RM		
Wind Speed and Direction (see Beaufort Scale): calm								Recorded By: CO		
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a										
Description of In-water activities (e.g., recreational boating, active discharges): 2 recreational boats passing										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1305	1	S	7.7	7.7	33.4	17.5	Y	Clear	TSS only <input checked="" type="radio"/> Full suite	CM-RW-10-G-S-20161122
1310	5.5	M	7.6	7.8	33.7	17.1	Y	Clear	<input checked="" type="radio"/> TSS only Full suite	CM-RW-10-G-M-20161122
1315	10.5	B	7.5	8.0	33.9	17.2	Y	Clear	<input checked="" type="radio"/> TSS only Full suite	CM-RW-10-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): Field dup TSS @ bottom @ 1320 surface										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 1/22/16		Time: 1335		
Station ID: CB-RW-11		Latitude/Northing: 33 711702		Longitude/Easting: 118 280285		Water Depth (ft): (m): 35				
Weather Conditions: Sunny, breezy						Field Personnel: CD/RM				
Wind Speed and Direction (see Beaufort Scale): calm						Recorded By: CD				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, pelicans										
Description of In-water activities (e.g., recreational boating, active discharges):										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1335	1	1335 S	7.8	8.1	33.0	17.1	Y	clear	TSS only <u>Full suite</u>	CB-RW-11-G-S-20161122
1340	1.5	1340 M	7.8	8.1	33.1	17.2	Y	clear	<u>TSS only</u> Full suite	CB-RW-11-G-M-20161122
1345	2.5	1345 B	7.8	8.1	33.2	17.1	Y	clear	<u>TSS only</u> Full suite	CB-RW-11-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <u>(N)</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any):										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



DQO Measurements

Project Name: <u>GUAMA TMDL WR</u>			Project Number: <u>141205-01.03</u>				
Station ID: <u>CB-RW-11</u>		Time: <u>1335</u>		Date: <u>11/20/14</u>			
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
<u>1335</u>	<u>S</u>	<u>1</u>	<u>2.179</u>	<u>8.1</u>	<u>33.0</u>	<u>17.3</u>	
<u>↓</u>	<u>S</u>	<u>1</u>	<u>5.179</u>	<u>8.1</u>	<u>33.0</u>	<u>17.3</u>	
<u>↓</u>	<u>S</u>	<u>1</u>	<u>5.179</u>	<u>8.1</u>	<u>33.0</u>	<u>17.3</u>	
Average		<u>1</u>	<u>7.9</u>	<u>8.1</u>	<u>33.0</u>	<u>17.3</u>	
Difference between max and min		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
RPD		<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N)²		<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N)²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 11/22/16		Time: 0910		
Station ID: IB-RW-12		Latitude/Northing: 33°46.120'		Longitude/Easting: -118°13.696		Water Depth (ft):		(m): 17		
Weather Conditions: partly cloudy							Field Personnel: C. Osuch, B. Bass			
Wind Speed and Direction (see Beaufort Scale): < 1 mph (glassy)							Recorded By: C. Osuch			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): None										
Description of In-water activities (e.g., recreational boating, active discharges): None										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Cond. Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
0916	1	S	6.14	7.9	78.37	17.3	Y	trace floating particulates	TSS only Full suite	IB-RW-12-G-S-20161122
0920	8.5	M	6.01	8.0	79.46	17.4	Y	↓	TSS only Full suite	IB-RW-12-G-M-20161122
0922	16	B	5.95	8.0	79.62	17.4	Y	↓	TSS only Full suite	IB-RW-12-G-B-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (Include photographs taken, if any): MS/MSD total & diss. metals. @ surface. No color, odor, or sheen.										

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

0825

Project Name: <u>GOMA TMDL COMPLIANCE</u>		Project Number: <u>141205-01.03</u>		Date: <u>11/22/2016</u>		Time: <u>0825</u>	
Station ID: <u>13</u>	Latitude/Northing: <u>33° 45.228'</u>		Longitude/Easting: <u>118° 12.985'</u>		Water Depth (ft): (m): <u>22.6</u>		
Weather Conditions: <u>PT. CLOUDY</u>					Field Personnel: <u>MARCO/MICHAEL</u>		
Wind Speed and Direction (see Beaufort Scale): <u>LT. WEST BEAUFORT = 1</u>					Recorded By: <u>MUNTON</u>		
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <u>FEW BIRDS</u>							
Description of In-water activities (e.g., recreational boating, active discharges): <u>COLUMBIAN MARLIN DEPARTING AS APPROX TO STATION</u>							

In Situ Field Parameters and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
<u>0830</u>	<u>22.6</u>	<u>B</u>	<u>7.01</u>	<u>7.35</u>	<u>33.97</u>	<u>17.29</u>	<u>Y</u>	<u>NO ODOOR, SHEEN</u>	<u>TSS only</u> Full suite	<u>IB-RW-13-G-B-2016122</u>	
<u>0832</u>	<u>11.3</u>	<u>M</u>	<u>7.12</u>	<u>7.45</u>	<u>33.92</u>	<u>17.29</u>	<u>Y</u>	<u>↓</u>	<u>TSS only</u> Full suite	<u>IB-RW-13-G-M-2016122</u>	
<u>0833</u>	<u>1</u>	<u>S</u>	<u>7.11</u>	<u>7.49</u>	<u>33.82</u>	<u>17.31</u>	<u>Y</u>	<u>↓</u>	<u>TSS only</u> <u>Full suite</u>	<u>IB-RW-13-G-S-2016122</u>	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected <u>Y/N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)								<u>TSS only</u> Full suite	<u>IB-RW-1013-G-B-2016122</u>

Comments (include photographs taken, if any):

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: <u>GUMA TMDL COMPLIANCE</u>		Project Number: <u>141205-01.03</u>		Date: <u>11/22/10</u>	Time: <u>09:00</u>
Station ID: <u>14</u>	Latitude/Northing: <u>33° 44.937'</u>	Longitude/Easting: <u>-118° 13.849'</u>		Water Depth (ft): (m): <u>15.3</u>	
Weather Conditions: <u>PT. CLOUDY</u>				Field Personnel: <u>MARTIN/ANGEL</u>	
Wind Speed and Direction (see Beaufort Scale): <u>LT. WEST BEAUFORT = 1</u>				Recorded By: <u>MARTIN</u>	

Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): NONE OBSERVED

Description of In-water activities (e.g., recreational boating, active discharges): DROP-UP ACTIVITIES OCCURRING IN WEST BASIN.

In Situ Field Parameters and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
<u>47</u> <u>0903</u>	<u>14.3</u>	<u>B</u>	<u>6.77</u>	<u>7.95</u>	<u>33.95</u>	<u>17.37</u>	<u>Y</u>	<u>NO O, S, F LT. SWIRL</u>	<u>TSS only</u> Full suite	<u>IB-RW-14-G-B-20101122</u>	
<u>23.5</u> <u>0904</u>	<u>7.1</u>	<u>M</u>	<u>7.37</u>	<u>7.97</u>	<u>33.79</u>	<u>17.32</u>	<u>Y</u>	<u>NO O, S, F LT. SWIRL</u>	<u>TSS only</u> Full suite	<u>IB-RW-14-G-M-20101122</u>	
<u>0905</u>	<u>1.0</u>	<u>S</u>	<u>7.69</u>	<u>7.98</u>	<u>33.73</u>	<u>17.28</u>	<u>Y</u>	<u>NO O, S, F LT. SWIRL</u>	TSS only <u>Full suite</u>	<u>IB-RW-14-G-S-20101122</u>	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: <u>Y</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only	Full suite	

Comments (Include photographs taken, if any):

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02 3			Date: 11/22/2010		Time: 0945			
Station ID: 15		Latitude/Northing: 33° 44.525'		Longitude/Easting: -118 11.975'		Water Depth (ft): (m): 17.8					
Weather Conditions: SUNNY						Field Personnel: MARTIN/ANCHOR					
Wind Speed and Direction (see Beaufort Scale): LT. WIND BEAUFORT = 1						Recorded By: MARTIN					
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): NONE OBSERVED											
Description of In-water activities (e.g., recreational boating, active discharges): NONE											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
55.1 27.5 0945	14.8	B	7.53	8.12	33.92	17.28	Y	CLAR NO. OF SF	TSS only Full suite	IB-RW-15-G-B-20101122	
0947	8.4	M	7.39	8.12	33.79	17.37	Y	↓	TSS only Full suite	IB-RW-15-G-M-20101122	
0950	1.0	S	7.69	8.13	33.42	17.10	Y	↓	TSS only Full suite	IB-RW-15-G-S-20101122	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						LAD duplicate		TSS only Full suite	SAME AS SURFACE
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.023			Date: 1/22/2016		Time: 12:50		
Station ID: 16		Latitude/Northing: 33° 43.897'		Longitude/Easting: 118° 13.263'		Water Depth (ft): (m): 18.3				
Weather Conditions: SUNNY							Field Personnel: MARTIN, ARCELIA			
Wind Speed and Direction (see Beaufort Scale): LT 4.00 BLW FKT 3							Recorded By: MARTIN			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton):										
Description of In-water activities (e.g., recreational boating, active discharges):										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
50 28 12:56	17.3	B	7.29	8.19	33.90	17.31	Y	No odor, sheen or particulates	<u>TSS only</u> Full suite	06-RW-16-G-B-20161122
12:58	8.61	M	7.72	8.20	33.58	17.35	Y	↓	<u>TSS only</u> Full suite	02-RW-16-G-M-20161122
13:02	1.0	S	8.37	8.24	32.79	17.58	Y		TSS only <u>Full suite</u>	03-RW-16-G-S-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): Imp samples collected concurrently										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.073			Date: 11/22/2016		Time: 10:08			
Station ID: 17		Latitude/Northing: 33° 43.885'		Longitude/Easting: 118° 11.165'		Water Depth (ft): (m): 15.5					
Weather Conditions: SUNNY							Field Personnel: MARTIN / ANNA CLA				
Wind Speed and Direction (see Beaufort Scale): LT. DEFAULM = 1.0							Recorded By: MARTIN				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): SOME BIRDS											
Description of In-water activities (e.g., recreational boating, active discharges):											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
10:10	14.5	B	7.50	8.16	33.90	17.26	Y	CLEAR. NO O.F.S.	TSS only Full suite	03-RW-17-G-B-20161122	
10:12	7.2	M	7.77	8.17	33.69	17.45	X	↓	TSS only Full suite	03-RW-17-G-M-20161122	
10:13	1.0	S	8.09	8.21	31.60	16.99	Y	↓	TSS only Full suite	03-RW-17-G-S-20161122	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y <input checked="" type="checkbox"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any):											

- Notes:
1. Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 2. Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.073			Date: 11/22/2016		Time: 14:45		
Station ID: 18		Latitude/Northing: 33° 45.227'		Longitude/Easting: -118° 10.879'		Water Depth (ft): (m): 13.0				
Weather Conditions: <i>Sunny</i>							Field Personnel: <i>MANTON/ANCHOR</i>			
Wind Speed and Direction (see Beaufort Scale): <i>MODERATE UNW WIND BEAUFORT 3</i>							Recorded By: <i>MANTON</i>			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton):										
Description of In-water activities (e.g., recreational boating, active discharges):										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
<i>39</i> <i>20</i> 1450	12.0	B	5.32	8.14	33.85	17.46	Y	<i>LT. BELOW NO OF S</i>	<u>TSS only</u> Full suite	SP-RW-18-G-B-20161122
1452	6.0	M	7.15	8.18	33.73	17.58	Y		<u>TSS only</u> Full suite	SP-RW-18-G-M-20161122
1456	1.0	S	8.09	8.25	28.17	17.97	Y		TSS only <u>Full suite</u>	SP-RW-18-G-S-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): <i>IMP SAMPLES COLLECTED CONCURRENTLY</i>										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02 ³			Date: 11/22/2016		Time: 11:01			
Station ID: 19		Latitude/Northing: 33 44.203'		Longitude/Easting: -118 07.897'		Water Depth (ft): (m): 8.2					
Weather Conditions: <u>SUNNY</u>							Field Personnel: <u>MARTIN / ANCHOR</u>				
Wind Speed and Direction (see Beaufort Scale): <u>LT. WNW BEAUFORT = 1</u>							Recorded By: <u>MARTIN</u>				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <u>SOME BIRDS</u>											
Description of In-water activities (e.g., recreational boating, active discharges): <u>OCCASIONAL BOAT TRAFFIC</u>											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1103	7.2	B	7.95	8.22	33.96	17.76	Y	<u>CLEAR, NO O.F.S.</u>	<u>TSS only</u> Full suite	SP-RW-19-G-B-20161122	
1104	4.6	M	8.04	8.24	33.77	17.74	Y	↓	<u>TSS only</u> Full suite	SP-RW-19-G-M-20161122	
1105	1.0	S	8.45	8.25	33.28	17.69	Y	↓	TSS only <u>Full suite</u>	SP-RW-19-G-S-20161122	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y / <input checked="" type="checkbox"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.023			Date: 11/22/2016		Time: 10:38			
Station ID: 20		Latitude/Northing: 33° 43.524'		Longitude/Easting: -118° 09.439'		Water Depth (ft): (m): 155					
Weather Conditions: SUNNY							Field Personnel: MARTIN/ANNA/CLA				
Wind Speed and Direction (see Beaufort Scale): LT. WNW DEFOUR = 1							Recorded By: MARTIN				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): SOME BIRDS											
Description of In-water activities (e.g., recreational boating, active discharges): NONE											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1040	14.5	B	7.67	8.16	33.94	17.32	Y	CLM NO F.S	TSS only Full suite	SP-RW-20-G-B-20161122	
1042	7.2	M	7.74	8.19	33.83	17.56	Y		TSS only Full suite	SP-RW-20-G-M-20161122	
1043	1.0	S	7.83	8.19	32.97	17.42	Y	↓	TSS only Full suite	SP-RW-20-G-S-20161122	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Sample Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any):											

- Notes:
1. Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 2. Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.023			Date: 11/22/2016		Time: 1615		
Station ID: 21		Latitude/Northing: 33 45 58.7'		Longitude/Easting: -118° 11.007'		Water Depth (ft): (m): 1.7				
Weather Conditions: SUNNY							Field Personnel: MARTIN / ANGELO			
Wind Speed and Direction (see Beaufort Scale): 27. WIND WNW							Recorded By: MARTIN			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): NONE OBSERVED										
Description of In-water activities (e.g., recreational boating, active discharges):										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1619	1.0	S	7.32	8.20	31.1	17.42	Y		TSS only <u>Full suite</u>	LE-RW-21-G-S-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): MID + BOTTOM NOT SAMPLED. WATER DEPTH ONLY 1.7 M.										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.023			Date: 11/22/2014		Time: 1140		
Station ID: 22		Latitude/Northing: 33° 45.062'		Longitude/Easting: -118° 12.123'		Water Depth (ft): (m): 1.2				
Weather Conditions: SUNNY						Field Personnel: MARTIN / ANGELO				
Wind Speed and Direction (see Beaufort Scale): LT WNW. REFLECT = 1						Recorded By: MARTIN				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): SOME SANDS										
Description of in-water activities (e.g., recreational boating, active discharges): NONE										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
K42	0.75	S	5.08	8.20	24.19	17.64	Y	LT. BROWN - C.O.F.S.	TSS only Full suite	LE-RW-22-G-S-20161122
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (Include photographs taken, if any): MID + BOTTOM DEPTHS NOT SAMPLED. WATER DEPTH ONLY TO 1.2M. SURFACE SAMPLE AT 0.75M										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 0925			
Station ID: CS-RW-01		Latitude/Northing: 33.77473		Longitude/Easting: 118.24549		Water Depth (ft): (m): 6.2		Field Personnel: N. Kennedy, C. Clark			
Weather Conditions: rain; 52°F								Recorded By: N.K.			
Wind Speed and Direction (see Beaufort Scale): 1 knot; west											
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A											
Description of In-water activities (e.g., recreational boating, active discharges): N/A											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
0925	1	S	8.88	8.4	16.7	13.9	Y	Brownish green	TSS only Full suite	CS-RW-01-G-S-2017-0218	
0928	2.5	M	7.2	7.7	16.1	14.8	N		TSS only Full suite	CS-RW-01-G-M-2017-0218	
0930	5.0	B	7.1	7.79	31.71	15.02	Y		TSS only Full suite	CS-RW-01-B-B-2017-0218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)								TSS only Full suite	CS-RW-1001-G-M-2017-0218
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 08:55			
Station ID: RW-02	Latitude/Northing: 33.74255		Longitude/Easting: 118.25408			Water Depth (ft): (m): 77.9		Field Personnel: C.C. NIK			
Weather Conditions: rain; slight breeze							Recorded By: [Signature]				
Wind Speed and Direction (see Beaufort Scale): 1 knot west											
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A											
Description of In-water activities (e.g., recreational boating, active discharges): rowing activities											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID
0955	1	S	8.06	8.04	13.48	14.47	Y	Brown nosher	<input checked="" type="radio"/> TSS only	<input checked="" type="radio"/> Full suite	18-RW-02-G-S-2017-0215
0957	8.5	M	7.24	7.91	32.06	15.02	Y	↓	<input checked="" type="radio"/> TSS only	<input checked="" type="radio"/> Full suite	18-RW-02-G-M-2017-0215
1000	17	B	6.92	7.94	33.03	14.94	Y	↓	<input checked="" type="radio"/> TSS only	<input checked="" type="radio"/> Full suite	18-RW-02-G-B-2017-0215
									<input type="radio"/> TSS only	<input type="radio"/> Full suite	
									<input type="radio"/> TSS only	<input type="radio"/> Full suite	
									<input type="radio"/> TSS only	<input type="radio"/> Full suite	
									<input type="radio"/> TSS only	<input type="radio"/> Full suite	
QA/QC Samples Collected: Y <input checked="" type="radio"/> N <input type="radio"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)					N/A		<input type="radio"/> TSS only <input type="radio"/> Full suite		
Comments (include photographs taken, if any): -adjusted coordinates to avoid rowing team											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 2/10/17	Time: 1020
Station ID: RW-03	Latitude/Northing: 33.70244	Longitude/Easting: 118.24599		Water Depth (ft): (m): 16.2	
Weather Conditions: rainy; calm wind				Field Personnel: NK.CC	
Wind Speed and Direction (see Beaufort Scale): 1 knot; west				Recorded By: NK	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A					
Description of In-water activities (e.g., recreational boating, active discharges): N/A					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1020	1	S	8.37	8.19	14.42	14.45	Y	3 raw no sheen	TSS only <u>Full suite</u>	RW-03-G-S-20170218
1022	8.5	M	7.15	7.72	32.37	14.86	Y	↓	TSS only <u>Full suite</u>	RW-03-G-M-20170218
1024	17	B	6.97	7.98	32.95	14.82	Y	↓	TSS only <u>Full suite</u>	RW-03-G-B-S-20170218
									TSS only <u>Full suite</u>	
									TSS only <u>Full suite</u>	
									TSS only <u>Full suite</u>	
									TSS only <u>Full suite</u>	
QA/QC Samples Collected: Y <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <u>Full suite</u>		

Comments (include photographs taken, if any):

triplicate at surface w/ YSI

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

DQO Measurements

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.02			
Station ID: RW-03			Time: 1030		Date: 2/18/17		
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
1033	S	1	7.90	8.03	28.55	14.50	
1035	S	1	8.10	8.11	28.94	14.50	
1037	S	1	8.17	8.11	25.46	14.48	
Average		1	(7.90+8.10+8.17)/3 = 8.1	8.1	27.7		* Salinity variability expected at surface due to ongoing rain
Difference between max and min		0	0.27	0.09	0.39	0.02	
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²		Y		Y	N*	Y	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 1055		
Station ID: RW-04		Latitude/Northing: 33.751910		Longitude/Easting: 118 27100		Water Depth (ft): (m) 9.9				
Weather Conditions: rainy ; breezy						Field Personnel: N.K. C.				
Wind Speed and Direction (see Beaufort Scale): 1 knot west						Recorded By: N.K.				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A										
Description of In-water activities (e.g., recreational boating, active discharges): N/A										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1055	1	S	8.10	8.16	19.30	14.55	Y	Brown	(TSS only) (Full suite)	RW-04-07-S-20170218
1057	9.5	M	7.17	7.91	32.53	14.09	Y	↓	(TSS only) Full suite	RW-04-07-M-20170218
1400	10.00	B	7.08	7.90	32.97	14.00	Y	↓	(TSS only) Full suite	RW-04-07-B-20170218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any):										

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 2/18/17	Time: 1230
Station ID: RW-05	Latitude/Northing: 33.73234	Longitude/Easting: 118 25128		Water Depth (ft):	(m): 19.8
Weather Conditions: cloudy, windy				Field Personnel: WNK	
Wind Speed and Direction (see Beaufort Scale): 5 knot west				Recorded By: WNK	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A					
Description of In-water activities (e.g., recreational boating, active discharges): N/A					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1230	1	S	8.16	7.98	28.57	14.94	Y	clear no sheen	TSS only Full suite	RW-05-01-S-20170218
1232	9	M	7.94	8.01	31.83	14.74	Y	↓	TSS only Full suite	RW-05-01-M-20170218
1234	19.0	B	7.58	8.02	33.14	14.85		↓	TSS only Full suite	RW-05-01-B-20170218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		

Comments (include photographs taken, if any):

back check fines on bottles (past samples)

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 1140		
Station ID: RW-06		Latitude/Northing: 33.72539		Longitude/Easting: 118.27148		Water Depth (ft):		(m): 17.8		
Weather Conditions: Rainy; slight breeze						Field Personnel: NIK CC				
Wind Speed and Direction (see Beaufort Scale): 2knot west						Recorded By: NIK				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A										
Description of In-water activities (e.g., recreational boating, active discharges): N/A										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1140	1	S	7.82	8.05	23.95	14.61	Y	clear no stress	TSS only <input checked="" type="radio"/> Full suite <input type="radio"/>	RW-06-G-20170218
1142	8.5	M	7.50	7.96	31.63	14.75	Y	↓	TSS only <input checked="" type="radio"/> Full suite <input type="radio"/>	RW-06-G-M-20170218
1144	17	B	7.99	7.99	32.94	14.71	Y		TSS only <input checked="" type="radio"/> Full suite <input type="radio"/>	RW-06-G-B-20170218
			7.50						TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <input checked="" type="radio"/> Full suite <input type="radio"/>		
Comments (include photographs taken, if any):										

Notes:

1. Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
2. Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/10/17		Time: 12:10		
Station ID: RW-07		Latitude/Northing: 33.73576		Longitude/Easting: 118.20970		Water Depth (ft): (m): 7.4				
Weather Conditions: rainy; slight breeze						Field Personnel: CNE				
Wind Speed and Direction (see Beaufort Scale): S Knot from West						Recorded By: NK				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A										
Description of In-water activities (e.g., recreational boating, active discharges): N/A										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1210	1	S	7.94	7.98	29.85	14.14	Y	Clear No smell	SS only <u>Full suite</u>	RW-07-07-S-2017-0218
1212	3.25	M <u>(NK)</u>	8.10	8.01	31.56	14.82	Y	↓	TSS only Full suite	RW-07-07-M-2017-0218
1215	6.5	B	7.30	8.00	33.02	15.29	Y	↓	TSS only Full suite	RW-07-07-B-2017-0218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <u>(NK)</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): triplicate taken 7.73 at 1212 DO										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

DQO Measurements

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.02			
Station ID: <u>PW-07</u>		Time: <u>1215</u>		Date: <u>2/18/17</u>			
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
<u>1215</u>	<u>W</u>	<u>2.25</u>	<u>7.47</u>	<u>8.10</u>	<u>30.74</u>	<u>14.62</u>	
<u>1217</u>	<u>M</u>	<u>3.25</u>	<u>7.59</u>	<u>8.10</u>	<u>30.68</u>	<u>14.61</u>	
<u>1220</u>	<u>m</u>	<u>3.25</u>	<u>7.15</u>	<u>8.10</u>	<u>30.78</u>	<u>14.63</u>	
Average		<u>3.25</u>	<u>7.08</u>	<u>8.1</u>	<u>30.73</u>	<u>14.2</u>	
Difference between max and min		<u>0</u>	<u>0.44</u>	<u>0</u>	<u>0.1</u>	<u>0.0</u>	
RPD		<u>0</u>	<u>2.3%</u>	<u>0</u>	<u>0.3%</u>	<u>0.7%</u>	
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²		<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		<u>± 0.1</u>	<u>5 percent</u>	<u>± 0.2</u>	<u>± 0.2</u>	<u>± 0.5 °C</u>	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02				Date: 2/18/17		Time: 12:50		
Station ID: OA-RW-08		Latitude/Northing: 33 71450		Longitude/Easting: -118. 24235			Water Depth (ft): (m): 25				
Weather Conditions: overcast							Field Personnel: C/M/A				
Wind Speed and Direction (see Beaufort Scale): SE 10 knots							Recorded By: CP				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a											
Description of In-water activities (e.g., recreational boating, active discharges): n/a ferry boat											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1250	1	S	8.7	8.0	25.3	14.6	Y	Clear Trace particulates	TSS only <u>Full suite</u>	OA-RW-08-G-S-20170215	
1255	12.5	M	8.1	8.0	33.0	14.9	Y	Clear	<u>TSS only</u> Full suite	OA-RW-08-G-M-20170218	
1300	24	B	7.8	8.0	33.2	14.9	Y	↓	<u>TSS only</u> Full suite	OA-RW-08-G-B-20170218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: 0/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							Lab dup TSS @ M		<u>TSS only</u> Full suite
Comments (include photographs taken, if any):											

- Notes:
1. Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 2. Description should include suspended or floating material, color, odor, or sheen.

DQO Measurements

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.02			
Station ID: 0A12W-08		Time: 1250		Date: 2/18/07			
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
1250	S	1.0	8.7	8.0	25.3	14.6	
1251	S	1.0	8.7	8.0	25.3	14.7	
1252	S	1.0	8.6	8.0	25.4	14.8	
Average		1.0	8.7	8.0	25.3	14.7	
Difference between max and min		∅	0.1	∅	0.1	0.2	
RPD		∅	1.1%	∅	0.3%	1.4%	
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²		Y	Y	Y	Y	Y	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 2/18/17	Time: 1305
Station ID: RW-09	Latitude/Northing: 33.71201	Longitude/Easting: 118.20328		Water Depth (ft):	(m): 6.7
Weather Conditions: cloudy; light wind				Field Personnel: Nil CC	
Wind Speed and Direction (see Beaufort Scale): 1 knot west				Recorded By: NJR	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): W/A					
Description of In-water activities (e.g., recreational boating, active discharges): W/A					

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1305	1	S	8.46	7.94	29.87	14.83	Y	Clear No Sheen	TSS only Full suite	RW-09-01-S-20170218
1307	3	M	8.46	8.03	29.21	14.73	Y	↓	TSS only Full suite	RW-09-01-M-20170218
1310	4	B	8.09	8.02	32.30	14.67	Y	↓	TSS only Full suite	RW-09-01-B-20170218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): Lab duplicate mg/4g (back check times on field dup)										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17			Time: 1335			
Station ID: RW-10		Latitude/Northing: 33.71929		Longitude/Easting: 118.27914		Water Depth (ft): (m): 11.5			Field Personnel: NIK CC.			
Weather Conditions: cloudy; slight wind						Wind Speed and Direction (see Beaufort Scale): 1 knot west			Recorded By: NIK			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): N/A												
Description of In-water activities (e.g., recreational boating, active discharges): N/A												
In Situ Field Parameters ¹ and Water Sample Collection												
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID	
1335	1	S	8.37	7.94	29.61	14.46	Y	Clear, No sheen	<input checked="" type="radio"/> TSS only	<input checked="" type="radio"/> Full suite	RW-10-07-S-2017-0216	
1337	5.25	m	8.00	8.00	30.34	14.54	Y	↓	<input checked="" type="radio"/> TSS only	<input type="radio"/> Full suite	RW-10-07-m-2017-0216	
1346	10.0	B	7.68	8.00	31.77	14.74	Y	↓	<input checked="" type="radio"/> TSS only	<input type="radio"/> Full suite	RW-10-07-B-2017-0216	
									<input type="radio"/> TSS only	<input type="radio"/> Full suite		
									<input type="radio"/> TSS only	<input type="radio"/> Full suite		
									<input type="radio"/> TSS only	<input type="radio"/> Full suite		
									<input type="radio"/> TSS only	<input type="radio"/> Full suite		
QA/QC Samples Collected: Y / <input checked="" type="radio"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)								<input type="radio"/> TSS only	<input type="radio"/> Full suite	
Comments (include photographs taken, if any): N/A												

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling				Project Number: 141205-01.02				Date: 2/13/17		Time: 1:55	
Station ID: RW-11		Latitude/Northing: 33.71198			Longitude/Easting: 118.28088			Water Depth (ft): (m): 4.1			
Weather Conditions: cloudy; slight breeze								Field Personnel: NRC			
Wind Speed and Direction (see Beaufort Scale): 4-5 knots								Recorded By: NK			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton):											
Description of In-water activities (e.g., recreational boating, active discharges):											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID
1355	1	B	8.41	7.94	27.98	15.01	Y	clear (NO sheen)	<input checked="" type="radio"/> TSS only <input checked="" type="radio"/> Full suite	RW-11-01-S-20170218	
1357	1.5	M	8.41	8.04	27.98	15.00	Y	↓	<input checked="" type="radio"/> TSS only <input checked="" type="radio"/> Full suite	RW-11-01-M-20170218	
1400	3	B	8.38	8.07	28.85	14.87	Y	↓	<input checked="" type="radio"/> TSS only <input checked="" type="radio"/> Full suite	RW-11-01-B-20170218	
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
									<input type="radio"/> TSS only <input type="radio"/> Full suite		
QA/QC Samples Collected: Y <input checked="" type="radio"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						N/A		<input type="radio"/> TSS only <input type="radio"/> Full suite	
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 1:20			
Station ID: IB-RW12		Latitude/Northing: 33 76844		Longitude/Easting: -118.22810		Water Depth (ft): 60 (m): 18.3					
Weather Conditions: rainy overcast							Field Personnel: CS/MVA				
Wind Speed and Direction (see Beaufort Scale): W @ 2 knots							Recorded By: CS				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a											
Description of In-water activities (e.g., recreational boating, active discharges): 2 container ships offloading											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1120	1	S	7.6	6.3	23.9	12.8	Y	clear	TSS only <u>Full suite</u>	IB-RW12-G-S-20170218	
1125	9	M	7.5	6.7	32.3	14.9	Y	clear	TSS only <u>Full suite</u>	IB-RW12-G-M-20170218	
1130	17.3	B	7.4	6.9	33.1	14.9	Y	clear	TSS only <u>Full suite</u>	IB-RW12-G-B-20170218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

1215

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 1145			
Station ID: IB-RW-13		Latitude/Northing: 33.75390		Longitude/Easting: -118.21621		Water Depth (ft): 81 (m): 24.5					
Weather Conditions: raining						Field Personnel: CO/MA					
Wind Speed and Direction (see Beaufort Scale): SE @ 2 knots						Recorded By: CW					
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a											
Description of In-water activities (e.g., recreational boating, active discharges): 3 tugs guiding container ship down channel											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1015 1145	1	S	8.4	7.9	29.9	14.9	Y	clear	TSS only Full suite	IB-RW-13-G-S-20170215	
1230 1155	12	M	7.8	7.9	32.8	14.9	Y	↓	TSS only Full suite	IB-RW-13-G-M-20170218	
1225 1155	23.5	B	7.7	7.9	33.1	14.9	Y	↓	TSS only Full suite	IB-RW-13-G-B-20170218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						Lab dup TSS @ S		<input checked="" type="checkbox"/> TSS only Full suite	IB-RW-13-G-S-20170218
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling		Project Number: 141205-01.02		Date: 2/18/17		Time: 1:50	
Station ID: IB-RW-14		Latitude/Northing: 33.74900		Longitude/Easting: -118.23117		Water Depth (ft): (m): 16	
Weather Conditions: Raining, overcast						Field Personnel: C/M	
Wind Speed and Direction (see Beaufort Scale): SE @ 6 knots						Recorded By: C	
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a							
Description of In-water activities (e.g., recreational boating, active discharges): n/a							

In Situ Field Parameters¹ and Water Sample Collection

Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1:50	1	S	8.2	7.5	29.0	14.8	Y	Clear	TSS only Full suite	IB-RW-14-G-S-20170218	
1:55	8	M	7.8	7.6	32.7	14.8	Y	Clear	TSS only Full suite	IB-RW-14-G-M-20170218	
1:00	15	B	7.9	7.6	33.2	14.9	Y	Clear	TSS only Full suite	IB-RW-14-G-B-20170218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y <input checked="" type="checkbox"/>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		

Comments (include photographs taken, if any):

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 9:00		
Station ID: 15		Latitude/Northing: 33.78214303		Longitude/Easting: -118.19948		Water Depth (ft): 57 (m): 17.5				
Weather Conditions: Overcast light rain						Field Personnel: ND / TVG / RW				
Wind Speed and Direction (see Beaufort Scale): 9.4 mph from SE						Recorded By: ND				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): none, sea lion Cetecees										
Description of In-water activities (e.g., recreational boating, active discharges): loading/unloading cargo vessels, tug traffic										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
9:05	1	S	8.16	7.25	26.78	57.97	Y	clear from particles	TSS only <u>Full suite</u>	1B-RW-15-G-S-20170218
9:05	25	M	7.56	7.67	31.26	58.63	Y	clear from particles	TSS only <u>Full suite</u>	1B-RW-15-G-M-20170218
9:05	14	B	7.31	7.63	31.77	58.61	Y	clear	TSS only <u>Full suite</u>	1B-RW-15-G-B-20170218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any): Triplicate measurements taken										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

DQO Measurements

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02				
Station ID: 15		Time: 8:55			Date: 2/18/17		
In Situ Field Parameters ¹							
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH (units)	Salinity (ppt)	Temp (°C)	Comments
8:57	S	1	8.07	7.11	26.55	57.97	
8:58	S	1	8.13	7.12	26.55	57.94	
8:59	S	1	8.15	7.11	26.55	57.97	
Average		1	8.116	7.1133	26.533	57.96	✓
Difference between max and min		∅	0.08	0.01	0.05	0.03	
RPD		∅	0.98%	0.14	0.18	0.05	
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²		Y	Y	Y	Y	Y	
Time	Surface (S), Mid-depth (M), or Bottom (B)	Depth (m)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Comments
Average							
Difference between max and min							
RPD							
Precision		± 0.1	5 percent	± 0.2	± 0.2	± 0.5 °C	
DQO Met? (Y/N) ²							
Comments:							

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. Each result will be recorded along with the average of the three results, the difference between the largest and smallest result, and the percent difference between the largest and smallest result. The percent difference will be calculated as follows:

$$\text{Percent difference} = 100 * (\text{largest} - \text{smallest}) / \text{average}$$

Triplicate measurements, the average of the results, and percent difference will be recorded on the field data sheet. The percent difference, as appropriate, will be compared against the precision criteria established for field measurements in Table 7.

- If no, write corrective actions taken in the comments box (e.g., re-calibrated instrument, etc.) and re-measure.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 1330		
Station ID: DB-RW-16		Latitude/Northing: 33.73120		Longitude/Easting: -118.02119		Water Depth (ft): 60 (m): 18.2				
Weather Conditions: overcast							Field Personnel: CO/MA			
Wind Speed and Direction (see Beaufort Scale): SE ~ 3 knots							Recorded By: CO			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): n/a										
Description of In-water activities (e.g., recreational boating, active discharges): 2 container ships anchored										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
1330	1	S	8.7	8.2	24.3	14.8	Y	Clear	TSS only <u>Full suite</u>	DB-RW-16-G-S-20170218
1335	9	M	8.1	8.1	32.6	15.0	Y	Clear	TSS only Full suite	DB-RW-16-G-M-20170218
1340	17	B	7.9	8.1	33.2	15.0	Y	↓	TSS only Full suite	DB-RW-16-G-B-20170218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y / N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only Full suite		
Comments (include photographs taken, if any):										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/19		Time: 9:40		
Station ID: 17		Latitude/Northing: 33.727593179		Longitude/Easting: -113.1860575		Water Depth (ft): 78 (m): 29				
Weather Conditions: overcast, light rain							Field Personnel: ND/MS/RW			
Wind Speed and Direction (see Beaufort Scale): 11.2 mph from SE							Recorded By: ND			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls										
Description of In-water activities (e.g., recreational boating, active discharges): sailboat + tug traffic, cargo ship leaving										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
9:45	1	S	8.13	7.59	31.47	17.61	Y	Brown	TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	OB-RW-17-S-20170218
9:44	11.59	M	7.53	7.48	31.59	18.73	Y	clear	TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	OB-RW-17-M-20170218
9:43	23.4	B	7.56	7.41	31.50	18.71	Y	clear	TSS only <input type="radio"/> Full suite <input checked="" type="radio"/>	OB-RW-17-B-20170218
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
QA/QC Samples Collected <input checked="" type="radio"/> Y <input type="radio"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <input type="radio"/> Full suite <input type="radio"/>		
Comments (include photographs taken, if any): MS/MSD → 6 extra PCB/Pesticides bottled filled @ J										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.



Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 1450			
Station ID: SP-RW18		Latitude/Northing: 33.75301		Longitude/Easting: -118.18125		Water Depth (ft): (m): 13.5					
Weather Conditions: Overcast							Field Personnel: CDMIA				
Wind Speed and Direction (see Beaufort Scale): 4-5 knots SE							Recorded By: CO				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton):											
Description of In-water activities (e.g., recreational boating, active discharges):											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
1450	1	S	9.2	8.0	13.5	13.9	Y	Brown	TSS only Full suite	SP-RW-18-G-S-20170218	
1455	7	M	7.9	7.9	32.7	15.0	Y	↓	TSS only Full suite	SP-RW-18-G-M-20170218	
1500	12.5	B	7.4	8.0	33.0	15.1	Y	↓	TSS only Full suite	SP-RW-18-G-B-20170218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						Field dup TSS @ 1453		TSS only Full suite	SP-RW-1218-G-M-20170218
Comments (include photographs taken, if any): Brown water w/ moderate organic debris											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 11:15		
Station ID: 19		Latitude/Northing: 33.73667149		Longitude/Easting: -118.1315908		Water Depth (ft): 29 (m): 88				
Weather Conditions: overcast, light rain						Field Personnel: NO, TVG, RW				
Wind Speed and Direction (see Beaufort Scale): 3.9 mph from SE						Recorded By: ND				
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): NONE										
Description of In-water activities (e.g., recreational boating, active discharges): sail boat races/set up										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
11:15	1	S	8.41	7.48	35.14	58.41	Y	cloudy	TSS only <input checked="" type="radio"/> Full suite	SP-RW-19-G-S-20170218
11:17	15	M	7.96	7.38	31.27	58.58	Y	clear	TSS only <input checked="" type="radio"/> Full suite	SP-RW-19-G-M-20170218
11:18	20	B	7.33	7.29	31.47	58.6	Y	clear	TSS only <input checked="" type="radio"/> Full suite	SP-RW-19-G-B-20170218
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
									TSS only <input type="radio"/> Full suite <input type="radio"/>	
QA/QC Samples Collected: <input checked="" type="radio"/> Y / <input type="radio"/> N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						TSS only <input type="radio"/> Full suite <input type="radio"/>		
Comments (include photographs taken, if any):										

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/10/17		Time: 10:30			
Station ID: 20		Latitude/Northing: 33.72547772		Longitude/Easting: -118.1573319		Water Depth (ft): 62 (m): 16					
Weather Conditions: Overcast, light rain						Field Personnel: ND/TG/RW					
Wind Speed and Direction (see Beaufort Scale): 10 mph from SE						Recorded By: ND					
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, pelican											
Description of In-water activities (e.g., recreational boating, active discharges): none											
In Situ Field Parameters ¹ and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID	
10:31	1	S	8.70	7.54	29.75	58.08	Y	cloudy	TSS only <u>Full suite</u>	SP-RW-5-S-20170218	
10:30	7.625	M	8.26	7.42	30.15	58.51	Y	clear	<u>TSS only</u> Full suite	SP-RW-5-M-20170218	
10:29	15.86	B	8.04	7.23	31.77	58.56	Y	clear	<u>TSS only</u> Full suite	SP-RW-5-B-20170218	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y, N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)						no dupe		TSS only Full suite	
Comments (include photographs taken, if any):											

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: <i>GWMA TMDL / IMP WB</i>			Project Number: <i>M1205-01.03</i>			Date: <i>2/18/17</i>			Time: <i>16:00</i>		
Station ID: <i>LE-RW-21</i>		Latitude/Northing: <i>33.75639</i>			Longitude/Easting: <i>-118.19314</i>			Water Depth (m): <i>2.0</i>			
Weather Conditions: <i>overcast, drizzle</i>								Field Personnel: <i>CO/ROA</i>			
Wind Speed and Direction (see Beaufort Scale): <i>SE ~ 8 knots</i>											
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): <i>gulls</i>											
Description of In-water activities (e.g., recreational boating, active discharges): <i>Moderate debris - organic + anthropogenic</i>											
In Situ Field Parameters and Water Sample Collection											
Time	Depth (m)	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C)	Chemistry Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)		Sample ID
<i>16:00</i>	<i>1</i>	<i>S</i>	<i>8.9</i>	<i>8.0</i>	<i>13.9</i>	<i>14.2</i>	<i>Bottom</i>	<i>Brown</i>	TSS only <u>Full suite</u>	<i>LE-RW-21-G-S-20170218</i>	
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
									TSS only Full suite		
QA/QC Samples Collected: Y/ <u>N</u>		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event)							TSS only Full suite		
Comments (include photographs taken, if any):											

- Notes:
- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
 - Description should include suspended or floating material, color, odor, or sheen.

Water Quality Sample Form

Project Name: GWMA TMDL WQ Sampling			Project Number: 141205-01.02			Date: 2/18/17		Time: 8:00		
Station ID: 22		Latitude/Northing: 33.761013		Longitude/Easting: -118.202111		Water Depth (ft): 5.5 (m): 1.6				
Weather Conditions: overcast, light drizzle							Field Personnel: NDTVG/RD			
Wind Speed and Direction (see Beaufort Scale): 6.2 mph from SE							Recorded By: ND			
Biological Activity (e.g., presence of fish, birds, macrophytes, phytoplankton): gulls, geese, floating detritus, harbor seal										
Description of In-water activities (e.g., recreational boating, active discharges): Catalina Express leaving dock										
In Situ Field Parameters ¹ and Water Sample Collection										
Time	Depth (m) ±	Surface (S), Mid-depth (M), or Bottom (B)	DO (mg/L)	pH	Salinity (ppt)	Temp (°C) F	Sample Collected? (Y/N)	Physical Description of Sample ²	Analytes (circle one)	Sample ID
3:00	.5	S	10.23	7.99	2.42	58.16	Y	6 rows, cloudy	TSS only <u>Full suite</u>	CE-RW-22-G-S-20170218
8:00	2.5	M	10.19	8.34	1.5	54.75	Y	brown cloudy	TSS only <u>Full suite</u>	CE-RW-22-G-M-20170218
8:00	4.5	B	8.13	7.87	26.38	58.16	Y	brown cloudy	TSS only <u>Full suite</u>	CE-RW-22-G-B-20170218
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
									TSS only Full suite	
QA/QC Samples Collected: Y/N		Field duplicate (5% of project) / Field blank (1 during monitoring event) / Rinsate blank (1 during monitoring event) N1/M3D						TSS only Full suite		
Comments (include photographs taken, if any): 2 Hg / 2 dissolved metals QA/QC @S										

Notes:

- Field measurements will be made in triplicate on 5 percent of measurements to ensure project DQOs are met. These measurements will be recorded on the next page.
- Description should include suspended or floating material, color, odor, or sheen.

Appendix C-2

Sediment Sampling Field Forms

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM CDKM</u>	Sample ID: <u>CM-SS-10</u>
Sample Date: <u>8/16/16</u>	Sampling Method: <u>Van Veen</u>
Sampling Vessel: <u>Early Bird II</u>	Station Coordinates: <u>33° 42.9642 / -118° 16.8240</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>5.1 M</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.8 Ft</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD83 / WGS 84</u>	Zone: <u>0</u>

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0807
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>overpenetration</u>
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0814
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>full penetration</u>
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u> <u>Ave silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 3 Grab Recovery: 10 cm Sample Interval: 0-5 cm Time: 0850
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>full penetration</u>
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u> <u>Ave silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): western gulls

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes:

3 No. Photos Taken Recorded By: A. Daphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>CB-SS-11</u>
Sample Date: <u>2/16/16</u>	Sampling Method: <u>Van Veen</u>
Sampling Vessel: <u>Early Bird II</u>	Station Coordinates: <u>33° 42.9225' / -118° 16.8727</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>3.9 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.1</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0.5 cm Time: 0935

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay <u>fine silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: _____ cm Time: 1002

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>full penetration</u>
gravel <u>JILT with</u>	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):

Description of in-water activities (e.g. recreational boating, active discharges):

Other Notes:

2 No. Photos Taken

Recorded By: C. Dolan

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>OA-SS-09</u>
Sample Date: <u>8/16/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 43.2928' / -118° 15.6747'</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>25.8 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.8</u>
Weather: <u>Bunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1036
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry (toxicity) benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay <u>fine silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1106
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay <u>fine silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): _____

Description of in-water activities (e.g. recreational boating, active discharges): _____

Other Notes: _____

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>FM-SS-07</u>
Sample Date: <u>8/16/16</u>	Sampling Method: <u>Van Veen Grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°43.8351 / -118°15.9550</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (#): <u>6.7m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.1</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1146

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay <u>fine silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 15 cm Sample Interval: 0-5 cm Time: 1210

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay <u>fine silt</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):
western gulls

Description of in-water activities (e.g. recreational boating, active discharges):
none

Other Notes: _____

1 No. Photos Taken Recorded By: C. Delpian

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>IA-SS-05</u>
Sample Date: <u>8/16/10</u>	Sampling Method: <u>33 Van Veen Grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 43.8456 / -118° 15.4391</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>18.1 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>2.1</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 11 cm Sample Interval: 0-5 cm Time: 1323

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel <u>silt w/</u>	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 10 cm Sample Interval: 0-5 cm Time: 1339

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 3 Grab Recovery: 10 cm Sample Interval: 0-5 cm Time: 1346

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

3 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>CO, AM, RM</u>	Sample ID: <u>JA-SS-06</u>
Sample Date: <u>2/16/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Eberly Blvd II</u>	Station Coordinates: <u>33°44.010 / -118°16.4494</u>
Subcontractor(s): <u>SEA Ventures</u>	Water Depth (ft): <u>18.5 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>1.8</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1417
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry toxicity benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>Field dup @ 432</u>
gravel	gray	slight petroleum	slight	
<u>SILTY</u> sand C M F	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1430
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry toxicity benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>SILTY</u> sand C M F	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 3 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1441
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry toxicity benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry toxicity benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

3 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CO/KM</u>	Sample ID: <u>FA-SS-03</u>
Sample Date: <u>3/10/10</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 45.6561 / -118° 16.4537</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>17.7m</u>
Wind Speed and Direction: _____	Tide (ft): <u>2.1</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0.5 cm Time: 1525
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0.5 cm Time: 1540
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

2 No. Photos Taken

Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>JA-SS-04</u>
Sample Date: <u>8/17/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 45.0450 / -118° 15.997</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>17.0 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>+ 3.7</u>
Weather: <u>Sunny / light breeze</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 14 cm Sample Interval: 0-5 cm Time: 8:10
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>overlying water</u>
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0825
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):
Western gull

Description of in-water activities (e.g. recreational boating, active discharges):
1 barge offloading

Other Notes: no sample name in photos

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>FA-55-02</u>
Sample Date: <u>8/17/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°46.2064'N 118°15.0040'W</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>13.5 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.3</u>
Weather: <u>Sunny, calm air</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 085909

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	moderate oil slick on surface of water
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 14 cm Sample Interval: 0-5 cm Time: 0915

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	<u>brown surface</u> ¹ cm	overwhelming		

Grab Number: 3 Grab Recovery: 14 cm Sample Interval: 0-5 cm Time: 0927

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	one grab didn't fully close, kept only one
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u> ^{dark} / <u>gray</u>	strong	heavy	
organic matter	<u>brown surface</u> ² cm	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none - H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

3 No. Photos Taken Recorded By: A. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>CJ-5J-01</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 46.3862 / -118° 14.9197</u>
Subcontractor(s): <u>Pea Ventures</u>	Water Depth (ft): <u>8.3 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.4</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0950
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none <u>H2S</u>	<u>none</u>	
gravel	gray	<u>slight</u> petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1008
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none <u>H2S</u>	<u>none</u>	
gravel	gray	<u>slight</u> petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>dark brown/gray</u>	strong	heavy	
organic matter	<u>brown surface</u> 1cm	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

2 No. Photos Taken

Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, EM</u>	Sample ID: <u>JB-SS-12</u>
Sample Date: <u>8/17/16</u>	Sampling Method: <u>Van Veen Grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33-46.4104 / -118-13.0975</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>16.1 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3-8</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1110
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1123
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	<u>dark gray</u>	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	<u>brown surface</u>	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):
na

Description of in-water activities (e.g. recreational boating, active discharges):
barge offloading

Other Notes:
Slightly off station due to large vessel berthed

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>IB-23-13</u>
Sample Date: <u>5/17/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°45.4649/-118°12.8766</u>
Subcontractor(s): <u>Seaventures</u>	Water Depth (ft): <u>26.2 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>2.7</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: _____ cm Sample Interval: _____ cm Time: 1244 1241
 Accepted (Y/N)? (Y) Analysis (circle applicable): chemistry / (C) toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	one side didn't trigger, no recovery
gravel	gray	slight petroleum	slight	
sand C M <u>(E)</u>	black	moderate other:	moderate	
<u>(C)</u> silt/clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 15 cm Sample Interval: 0-5 cm Time: 1244
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / (C) toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>(none)</u> H2S	<u>(none)</u>	
gravel	gray	slight petroleum	slight	
sand C M <u>(E)</u>	black	moderate other:	moderate	
<u>(C)</u> silt/clay	<u>(brown)</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 3 Grab Recovery: 15.5 cm Sample Interval: 0-5 cm Time: 1300
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / (C) toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>(none)</u> H2S	<u>(none)</u>	
gravel	gray	slight petroleum	slight	
sand C M <u>(E)</u>	black	moderate other:	moderate	
<u>(C)</u> silt/clay	<u>(brown)</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / (C) toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

0/2 No. Photos Taken

Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM, CD, KM</u>	Sample ID: <u>IB 55-14</u>
Sample Date: <u>8/17/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V EARLY BIRD II</u>	Station Coordinates: <u>33°44.947'N / 118°14.40'W</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>16.0m</u>
Wind Speed and Direction: _____	Tide (ft): <u>1.7</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1415
 Accepted (Y/N): _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1438
 Accepted (Y/N): _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N): _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N): _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):
Western gulls

Description of in-water activities (e.g. recreational boating, active discharges):
n/a

Other Notes: _____

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>08-55-17</u>
Sample Date: <u>8/18/10</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°45.5613' / -118°11.9520</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>20.3 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.9</u>
Weather: <u>overcast</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 08:50
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>Tox: SWF sample</u>
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 09:08
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>Tox: amphipod</u>
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: formalin added to benthic @ 1030

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>08-58-55-20</u>
Sample Date: <u>8/18/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°44.207 / -118°09.9075</u>
Subcontractor(s): <u>SEA Ventures</u>	Water Depth (ft): <u>14.4 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.5</u>
Weather: <u>overcast</u>	Depth MLLW: _____
Datum: <u>MAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0940
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>Tox: SWF</u>
gravel	<u>gray</u>	slight petroleum	slight	
sand C M F	black	<u>moderate</u> other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0958
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>Tox: amphipod</u>
gravel	<u>gray</u>	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): anchored barge

Other Notes: - foramin added at 1140

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>SP-SS-19</u>
Sample Date: <u>8/12/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 44.5352 / -118° 07.6139</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>6.9 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.6</u>
Weather: <u>Overcast</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 5 cm Sample Interval: _____ cm Time: 10:31
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	Sample discarded low recovery
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 7 cm Sample Interval: 05 cm Time: 10:38
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	one grab used for 2 - SWI, one grab used for some amphipod
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 3 Grab Recovery: 8 cm Sample Interval: _____ cm Time: 11:00
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 4 Grab Recovery: 8 cm Sample Interval: 5 cm Time: 11:10
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	tox: amphipod
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): Western Gulls

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: use 1031 for all tox samples

4 No. Photos Taken

Recorded By: C. Dalphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM / CO / CO</u>	Sample ID: <u>SP-SS-19</u>
Sample Date: <u>2/12/10</u>	Sampling Method: <u>Van Veen Grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°47.5352 / -118°07.6139</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>6.9m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.4</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 5 Grab Recovery: _____ cm Sample Interval: _____ cm Time: 1120

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
silt clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: transfer benthic to formalin at 1250

1 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>SP-55-18</u>
Sample Date: <u>8/18/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 44.852' N / -118° 11.110' W</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>11.9 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.7</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 160 cm Sample Interval: 0.5 cm Time: 1203
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	Tox: SWI
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 160 cm Sample Interval: 0.5 cm Time: 1222
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): N/A

Description of in-water activities (e.g. recreational boating, active discharges): N/A

Other Notes: transfer benthic to formalin @ 1430

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>LE-SS-21</u>
Sample Date: <u>5/18/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°45.537#/-118°11.7893</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>4.0m</u>
Wind Speed and Direction: _____	Tide (ft): <u>2.3</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD-83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0.5 cm Time: 1346
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none <u>H2S</u>	<u>none</u>	<u>Tox: SWI</u>
gravel	<u>dark gray</u>	<u>slight</u> petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>dark brown surface</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0.5 cm Time: 1460
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none <u>H2S</u>	<u>none</u>	
gravel	<u>gray</u>	<u>slight</u> petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>dark brown</u>	strong	heavy	
organic matter	<u>brown surface</u>	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): gulls

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: slightly off station due to depth and safety

No. Photos Taken _____ Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: AM/CD/CO Sample ID: LE-SS-22
 Sample Date: 8/18/16 Sampling Method: Van Veen grab
 Sampling Vessel: R/V Early Bird II Station Coordinates: 33°45.6527-110°11.9780
 Subcontractor(s): Sea Ventures Water Depth (ft): 6.6m
 Wind Speed and Direction: _____ Tide (ft): 1.7
 Weather: Sunny, light breeze Depth MLLW: _____
 Datum: NAD 83/WGS 84 Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1435
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none <u>H2S</u>	<u>none</u>	<u>Tox: SWF</u>
gravel	<u>dark gray</u>	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	brown	<u>strong</u>	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: _____ cm Sample Interval: 0-5 cm Time: 1455
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none <u>H2S</u>	<u>none</u>	<u>Tox: Amplified</u>
gravel	<u>dark gray</u>	<u>slight</u> petroleum	slight	
sand C M F	<u>black</u>	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):
western gulls

Description of in-water activities (e.g. recreational boating, active discharges):
n/a

Other Notes:
Station used alt #2 station due to depth & vessel navigation

2 No. Photos Taken Recorded By: C. Delphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: AM/CD/CO Sample ID: 7 E-55-15
 Sample Date: 2/12/10 Sampling Method: _____
 Sampling Vessel: Sea Ventures Station Coordinates: 33°44.5532 / -118°12.0586
 Subcontractor(s): R/V Early Bird II Water Depth (ft): 17.5 m
 Wind Speed and Direction: _____ Tide (ft): 1.3
 Weather: Sunny, light breeze Depth MLLW: _____
 Datum: NAD 83 / WGS 84 Zone: _____

Grab Number: 1 Grab Recovery: 89 cm Sample Interval: 0-5 cm Time: 1535
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	1 grab benthic 1 to begin chem
gravel	gray	slight petroleum	slight	
<u>sand</u> C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 1550
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	Both for samples
gravel	gray	slight petroleum	slight	
<u>sand</u> C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):
n/a

Description of in-water activities (e.g. recreational boating, active discharges):
buoys out loading

Other Notes:

2 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CO/CO</u>	Sample ID: <u>OB-SS-16</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°44.3948 / -118°12.9557</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>26.6m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.1</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0805

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	TOX: SW7
gravel	gray	slight petroleum	slight	
^{trace} sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0-5 cm Time: 0808

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	Chem field dup OB-SS-16 @0824
gravel	gray	slight petroleum	slight	
^{trace} sand C M F	black	moderate other:	moderate	
<u>silt</u> clay	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 3 Grab Recovery: _____ cm Sample Interval: _____ cm Time: 0833

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	grabs didn't trigger SW7
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 4 Grab Recovery: _____ cm Sample Interval: _____ cm Time: 0835

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	Tox: amphipod @ 0833
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): 2-3 cormorants, gulls

Description of in-water activities (e.g. recreational boating, active discharges): Passing barge & pilot

Other Notes: _____

3 No. Photos Taken

Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>0A-55-08</u>
Sample Date: <u>2/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird</u>	Station Coordinates: <u>33°42.9871/-118°14.4530</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>24.0m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.1</u>
Weather: <u>Sunny, calm air</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 1 Grab Recovery: 110 cm Sample Interval: 0.5 cm Time: 0910
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>TOX: SWF</u>
gravel <u>Trace</u>	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: 2 Grab Recovery: 16 cm Sample Interval: 0.5 cm Time: 0932
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>TOX: Amphipod</u>
gravel <u>Trace</u>	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): Gulls

Description of in-water activities (e.g. recreational boating, active discharges):

Other Notes:

2 No. Photos Taken Recorded By: C. Volphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>UA-SS-09</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Folly Bird II</u>	Station Coordinates: <u>33°43'30.3"/-110°15'16.85"</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>25.7</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.6</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 300 Grab Recovery: 16 cm Sample Interval: 0-16 cm Time: 1005
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	<u>none</u>	re sample from 8/10/16
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____
 Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

1 No. Photos Taken

Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>FA 55-05</u>
Sample Date: <u>2/19/16</u>	Sampling Method: <u>Van Veen</u>
Sampling Vessel: <u>R/V Early Bird</u>	Station Coordinates: <u>33°43.8471/118° 15.445 3</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>19.0 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.7</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83</u> WGS 84	Zone: _____

Grab Number: 3 Grab Recovery: 8 cm Sample Interval: 0-8 cm Time: 1000

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>re sample from 2/16/16</u>
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

1 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name: _____

Station ID: _____

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>FH-SS-07</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°43.8352 / -118°15.9509</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>7.2 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.8</u>
Weather: <u>Sunny, light breeze</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 3 Grab Recovery: 16 cm Sample Interval: 0-16 cm Time: 1040

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	Re-sample from 8/16/16
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton):

na

Description of in-water activities (e.g. recreational boating, active discharges):

1 recreational boater

Other Notes: _____

1 No. Photos Taken

Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>CB-55-11</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 42.9239' / -118° 16.8778'</u>
Subcontractor(s): <u>Re Ventures</u>	Water Depth (ft): <u>4.2</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.8</u>
Weather: <u>Sunny, light breeze</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: 3 Grab Recovery: 16 cm Sample Interval: 0-16 cm Time: 1057

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	re sample from 8/16/16 2 jars used
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)? _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes:

1 No. Photos Taken

Recorded By: E. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CO/CO</u>	Sample ID: <u>CM EP 55-10</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°42.9665 / -118°16.213</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>5.4 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.8</u>
Weather: <u>Sunny, light breeze</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: <u>3</u>	Grab Recovery: <u>16</u> cm	Sample Interval: <u>P-16</u> cm	Time: <u>1110</u>
Accepted (Y/N)?:	Analysis (circle applicable): chemistry / toxicity / benthic community		

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	<u>re sample from 8/19/16</u>
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____	Grab Recovery: _____ cm	Sample Interval: _____ cm	Time: _____
Accepted (Y/N)?:	Analysis (circle applicable): chemistry / toxicity / benthic community		

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____	Grab Recovery: _____ cm	Sample Interval: _____ cm	Time: _____
Accepted (Y/N)?:	Analysis (circle applicable): chemistry / toxicity / benthic community		

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____	Grab Recovery: _____ cm	Sample Interval: _____ cm	Time: _____
Accepted (Y/N)?:	Analysis (circle applicable): chemistry / toxicity / benthic community		

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/CD/CO</u>	Sample ID: <u>JA-SS-06</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33°44.000/-118°16.4477</u>
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>19.4 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>4.7</u>
Weather: <u>Sunny, light breeze</u>	Depth MLLW: _____
Datum: <u>NAD 83-TWGS 84</u>	Zone: _____

Grab Number: 4 Grab Recovery: 16 cm Sample Interval: 1216 cm Time: 1140

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>	Re sample from 8/16/16
gravel	gray	slight petroleum	slight	
<u>sand C M F</u>	black	moderate other:	moderate	
<u>silt clay</u>	<u>brown</u>	strong	heavy	
organic matter	brown surface	overwhelming		

relaxant at
1157
1340

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Grab Number: _____ Grab Recovery: _____ cm Sample Interval: _____ cm Time: _____

Accepted (Y/N)?: _____ Analysis (circle applicable): chemistry / toxicity / benthic community

Sediment Type:	Sediment Color:	Sediment Odor:	Sheen:	Comments:
cobble	D.O.	none H2S	none	
gravel	gray	slight petroleum	slight	
sand C M F	black	moderate other:	moderate	
silt clay	brown	strong	heavy	
organic matter	brown surface	overwhelming		

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: n/a

1 No. Photos Taken Recorded By: C. Dolphin

Surface Sediment Field Sample Record



Project Name:

Station ID:

Field Personnel: <u>AM/ED/CO</u>	Sample ID: <u>JA-SS-03</u>
Sample Date: <u>8/19/16</u>	Sampling Method: <u>Van Veen Grab</u>
Sampling Vessel: <u>R/V Early Bird II</u>	Station Coordinates: <u>33° 45.6528' N / 116° 16.4494' W</u> 4521
Subcontractor(s): <u>Sea Ventures</u>	Water Depth (ft): <u>18.3 m 17.8 m</u>
Wind Speed and Direction: _____	Tide (ft): <u>3.2</u>
Weather: <u>Sunny</u>	Depth MLLW: _____
Datum: <u>NAD 83 / WGS 84</u>	Zone: _____

Grab Number: <u>3</u>	Grab Recovery: <u>0</u> cm	Sample Interval: _____ cm	Time: <u>13:27</u>
Accepted (Y/N)? <u>Y</u>	Analysis (circle applicable): chemistry / toxicity / <u>benthic</u> community		
Sediment Type:	Sediment Color:	Sediment Odor:	Sheen: Comments:
cobble	D.O.	none H2S	none
gravel	gray	slight petroleum	slight
sand C M F	black	moderate other:	moderate
silt clay	brown	strong	heavy
organic matter	brown surface	overwhelming	
Re sample from 2/16/16 - NO recovery			

Grab Number: <u>4</u>	Grab Recovery: <u>16</u> cm	Sample Interval: <u>0-16</u> cm	Time: <u>13:30</u>
Accepted (Y/N)? _____	Analysis (circle applicable): chemistry / toxicity / <u>benthic</u> community		
Sediment Type:	Sediment Color:	Sediment Odor:	Sheen: Comments:
cobble	D.O.	<u>none</u> H2S	<u>none</u>
gravel	gray	slight petroleum	slight
<u>sand C M F</u>	black	moderate other:	moderate
<u>silt clay</u>	<u>brown</u>	strong	heavy
organic matter	brown surface	overwhelming	
Re sample attempt			

Grab Number: _____	Grab Recovery: _____ cm	Sample Interval: _____ cm	Time: _____
Accepted (Y/N)? _____	Analysis (circle applicable): chemistry / toxicity / benthic community		
Sediment Type:	Sediment Color:	Sediment Odor:	Sheen: Comments:
cobble	D.O.	none H2S	none
gravel	gray	slight petroleum	slight
sand C M F	black	moderate other:	moderate
silt clay	brown	strong	heavy
organic matter	brown surface	overwhelming	

Grab Number: _____	Grab Recovery: _____ cm	Sample Interval: _____ cm	Time: _____
Accepted (Y/N)? _____	Analysis (circle applicable): chemistry / toxicity / benthic community		
Sediment Type:	Sediment Color:	Sediment Odor:	Sheen: Comments:
cobble	D.O.	none H2S	none
gravel	gray	slight petroleum	slight
sand C M F	black	moderate other:	moderate
silt clay	brown	strong	heavy
organic matter	brown surface	overwhelming	

Biological activity (e.g. presence of fish, birds, macrophytes, phytoplankton): n/a

Description of in-water activities (e.g. recreational boating, active discharges): n/a

Other Notes: _____

2 No. Photos Taken Recorded By: A. Dolphin

Appendix C-3

Fish Sampling Field Forms



Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring

Job No: 141205-01.01

Waterbody: Outer LA: Cabrillo Pier

Collection Date: 8/20/14

Field Staff: L. Robinson, A. Martin, C. Dolphin, W. Havel

Collection Start Time: _____

Collection Method

Collection End Time: _____

Method Trawl Longline Other: _____

Start Coordinates: _____

Weather: _____

Start Coordinates: See Trawl log

Wind Speed and Direction (see Beaufort scale): _____

End Coordinates: _____

Total # of fish collected at station: _____

Fish #	Time	Species	Fish Length (mm)		Whole fish wet weight (blotted; g)	Composite # ¹	Notes
			Standard	Fork			
1	0800	WC	22.2 cm 29.5 cm		215g		Trawl 1 parasite on left pectoral pic # 315
2		WC	22.0 cm		140g		Trawl 1 pic # 317
3		WC	21.7 cm		140g		Trawl 1 pic # 313
4		WC	20.3 cm		110g		Trawl 1 pic # 318
5		WC	20.2 cm		150g		1 pic # 317
6		WC	21.0 cm		129g		1 pic # 317
1	815	CH	29.5 cm		250g		1
2	815	CH	27.2 cm		215g		1 pic # 319
3	0830	CH	34.5 cm		345g		Trawl 2
24	0830	CH	30.7 cm		275g		Trawl 2 pic # 316
1	0800	SS	9.5 cm		15g		Trawl 1
2	0900	SS	11.2 cm		22g		Trawl 3 pic # 298
3	0900	SS	9.2 cm		13g		3
4	0900	SS	9.0 cm		12g		3 net injury
5	0900	SS	9.0 cm		11g		3 net injury
6	0900	SS	8.7 cm		13g		3 pic 293
7	0900	SS	9.1 cm		9g		3 pic 291
8	0900	SS	8.0 cm		8g		3
9	0900	SS	8.8 cm		11g		3 net injury pic # 290
7	0900	WC	19.8 cm		102g		3 pic # 296

Containers: _____

perch 1-9 Fork length Trawl 3 - caught large rock in small net ripped

Analyses: _____

All perch should be WU - change labels ✓



Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring

Job No: 141205-01.01

Waterbody: OA

Collection Date: 08/20/10

Field Staff: L. Rohrbach, A. Mastin, C. Dolphin, W. Howell

Collection Start Time: _____

Collection Method

Collection End Time: _____

Trawl Longline Other:

Start Coordinates: _____

See Trawl log

Weather: _____

End Coordinates: _____

Wind Speed and Direction (see Beaufort scale): _____

Total # of fish collected at station: _____

Fish #	Time	Species	Fish Length (mm/cm)		Whole fish wet weight (blotted; g)	Composite # ¹	Notes
			Standard	Fork			
2	0900	WC	20.0 cm		111g		Trawl 3 pic 285
5	0830	CH	28.5		225g		Trawl 2 pic 284
6	0830	CH	28.5		210g		Trawl 2 pic 283
7	0900	CH	29.6		245g		Trawl 3 pic 280
8	0900	CH	28.2		210g		Trawl 3 pic 281
Batch 1	1015	NA	4.1		70g	113 ml	Trawl 5 pic 270
Batch 2	1015	NA	6.4				↓ pic 271
Batch 3	1015	NA	9.3				
Batch 1	0830	NA	4.9		9g	113 ml	Trawl 2
Batch 2	0830	NA	6.7				↓
Batch 3	0830	NA	7.9				↓
9	0900	CH	26.0		155g		Trawl 3 pic 268
10	0815	CH	24.5		140g		Trawl 1 pic 267
11	0815	CH	23.8		125g		Trawl 1 pic 266 net injury
12	0830	CH	23.7		137g		Trawl 2 pic 265
9	1015	WC	15.2		43g		Trawl 5
10	1015	WC	14.0		30g		pic 262
11	1015	WC	15.2		40g		pic 261
12	1015	WC	13.5		30g		pic 260
13	1015	WC	14.2		33g		✓

Sample Containers:

OA-WD-NA-01-2100826 @ 1015
-02- @ 0830

Analyses: _____



37 rows

Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring

Job No: 141205-01.01

Waterbody: _____

Collection Date: 8/20/16

DB - Deer J Shallow Water Habitat

Collection Start Time: _____

Field Staff: LR / AM / CD / WH

Collection End Time: _____

Collection

Start Coordinates: _____

See Trawl log

Method Trawl Longline Other: _____

Weather: _____

End Coordinates: _____

Wind Speed and Direction (see Beaufort scale): _____

Total # of fish collected at station: _____

Fish #	Time	Species	Fish Length (mm) cm		Whole fish wet weight (blotted; g)	Composite # ¹	Notes
			Standard	Fork			
1	1145	WC	20.0		90.0g		Fossil Co Trawl 7
2	1145	WC	21.4		112.0g		
3	1145	WC	20.6		98.0g		pic 244
4	1145	WC	20.3		91.0g		pic 243
5	1145	WC	18.0		77.0g		pic 242
6	1145	WC	19.5		84.0g		pic 241
7	1145	WC	20.0		99.0g		pic 240
8	1145	WC	21.3		106.0g		
9	1145	WC	19.6		78.0g		pic 238
10	1145	WC	20.0		86.0g		pic 237
11	1145	WC	20.1		88.0g		pic 236
12	1145	WC	20.0		86.0g		pic 235 234
13	1145	WC	19.5		82.0g		pic 233
14			19.8		82.0g		pic 232
15			19.0		74.0g		pic 231
16			22.0		140g	7	pic 230
17			24.0cm		177g	7	pic
18			23.3cm		154g	7	pic 229

Sample Containers: _____

Analyses: _____



Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring
 Waterbody: OB
 Field Staff: LR/AM/CD/WH
 Collection Method: Trawl Longline Other:
 Weather:
 Wind Speed and Direction (see Beaufort scale):

Job No: 141205-01.01
 Collection Date: 8/20/2016
 Collection Start Time:
 Collection End Time:
 Start Coordinates: see Trawl log
 End Coordinates:

Total # of fish collected at station:

Fish #	Time	Species	Fish Length (mm)		Whole fish wet weight (blotted; g)	Composite # ¹	Notes
			Standard	Fork			
1	1210	CH	20.9		170g		Trawl 9 pic # 233
2	1210	CH	22.2		205g		8 pic # 222
3	1320	CH	24.2		126g		Trawl 9 pic # 281
4	1210	CH NA	7.6		[250g]		8 pic #
2	1210	NA	7.2				8
3	1210	NA	7.4				8
4	1210	NA	6.7		[250g]		
5	1210	NA	5.8				
6	1210	NA	5.3				
7	1210	NA	4.4		[255g]		
8	1210	NA	4.8				
9	1210	NA	4.4				
4	1410	CH	25.8		160g		Trawl 10 pic # 143
5	1410	CH	26.3		183g		10 pic # 210
6	1410	CH	25.9		110g		10
7	1410	CH	23.5		125g		10
8	1410	CH	22.3 ^{22.3} (cm)		100g		10
9	1410	CH	20.5		80g		10 pic # 208
10	1320	CH	22.6		110g		Trawl 9
11	1320	CH	21.2		93g		9

Sample Containers: Trawl 9 1210 Trawl 10 1410
Trawl 9 1320
 Analyses: ~~OB-WO-NA-01-2016-0820~~ @ 1210
~~OB-WO-NA-01-2016-0820~~

02
03



Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring
 Waterbody: ESPB
 Field Staff: L. Robinson, A. Martin, C. Dolphin
 Collection Method: Trawl Longline Other:
 Weather:
 Wind Speed and Direction (see Beaufort scale):

Job No: 141205-01.01
 Collection Date: 8/21/10
 Collection Start Time:
 Collection End Time:
 Start Coordinates: See Trawl log
 End Coordinates:

Total # of fish collected at station:

Fish #	Time	Species	Fish Length (mm) cm		Whole fish wet weight (blotted; g)	Composite # ¹	Notes
			Standard	Fork			
1	0800	CH	82cm		7.2kg (7200g)		Trawl #11 clear p.c.
2	0800	CH	31.2		268g		Trawl #11 p.c. CAM 2
3	0800	CH	26.5		163g		Trawl #11 p.c. CAM 3
4	0800	CH	24.7		130g		Trawl #11 CAM 4
5	0800	CH	23.3		102g		11 CAM 5
6	0830	CH	27.3		183g		Trawl #12 CAM 6
7	0830	CH	22.4		95g		12 p.c. CAM 7
1	0800	WC	23.9		154g		Trawl #11 p.c. CAM 8
2	0800	WC	24.2		150g		11 p.c. CAM 9
3	0800	WC	21.9		129g		11 p.c. CAM 10
4	0830	WC	23.3		150g		12 CAM 11
5	0830	WC	23.8		152g		12 CAM 12
6	0830	WC	23.0		157g		12 CAM 13
7	0830	WC	23.4		146g		12 CAM 14
8	0830	WC	22.1		120g		12 CAM 15
9	0800	WC	22.4		138g		11 CAM 16
10	0800	WC	22.8		128g		11 CAM 17
11	0800	WC	24.0		175g		11 CAM 18
12	0800	WC	22.1		124g		11 CAM 19
13	0800	WC	20.8		115g		

Sample Containers: Trawl #11 (SP-1) 0800
 Trawl #12 (SP-2) 0830
 Trawl #13 (SP-3)

Analyses:
 Archived



Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring
 Waterbody: _____
 Field Staff: EJPB
LR/AM/CD
 Collection Method: Trawl Longline Other:
 Weather: _____
 Wind Speed and Direction (see Beaufort scale): _____

Job No: 141205-01.01
 Collection Date: 8/21/14
 Collection Start Time: _____
 Collection End Time: _____
 Start Coordinates: see Trawl log
 End Coordinates: _____

Total # of fish collected at station: _____

Fish #	Time	Species	Fish Length (mm) cm		Whole fish wet weight (blotted; g)	Composite # ¹	Notes TRAWL # / PICT
			Standard	Fork			
14 13	800	WC	22.2		116g		Trawl 11 CAM 21
15 14	800	WC	21.2		130g		Trawl 11 CAM 22 Damaged Tail
Batch 1	0930	NA	6.9		[304g]	1	Trawl 13
"		NA	7.4			1	13
"		NA	6.6			1	13 pic of all
Batch 2			5.8		[244g]	2	3 batches of CAM #23
"			5.6			2	
"			5.1			2	
Batch 3			4.3		[295g]	3	
"			4.6			3	
"	0930	NA	4.7			3	13
8	0930	CH	32.7		430		Trawl 13 CAM 24
9	0930	CH	25.5		290g		13 CAM 25
10	930	CH	25.5		75g		13 CAM 26
11	930	CH	23.0		55g		13 CAM 27
12	930	CH	22.4		62g		13 CAM 28
13	930	CH	24.5		56g		13 29
14	930	CH	21.8		41g		13 30
15	930	CH	20.2		33g		13 31

Ice Containers: Trawl 13 (SP-3) 0930
Trawl 11 (SP-1) 800
Trawl 12 (SP-2) 800
 Analyses: _____



Fish Processing Log

Job: GWMA-TMDL Compliance Monitoring

Job No: 141205-01.01

Waterbody: Consolidated Slp

Collection Date: 2/21/16

Field Staff: LR/AM/CO

Collection Start Time: _____

Collection End Time: _____

Collection Method

Trawl Longline Other: _____

Start Coordinates: see Trawl log

Weather: _____

End Coordinates: _____

Wind Speed and Direction (see Beaufort scale): _____

Trawl 17 - zipper open in 8 in

Total # of fish collected at station: _____

Fish #	Time	Species	Fish Length (mm)		Whole fish wet weight (blotted; g)	Composite #1	Trawl #	Notes / p.c.#
			Standard	Fork				
1	1330	WC	23.2		164g		Trawl 15	LR#4
2	1330	WC	20.7		97g		15	LR#2
3	1345	WC	23.4		171g		16	LR3
4	1345	WC	24.2		173g		16	LR4
5	1405	WC	24.5		179g		17	LR5
6	1405	WC	22.9		134g		17	LR6
7	1440	WC	17.9		63g		18	LR7
8	1535	WC	27.3		235g		19	LR8
9	1535	WC	25.5		198g		19	LR9
10	1535	WC	21.2		118g		19	LR10
11	1535	WC	22.6		142g		19	LR11
12	1535	WC	21.1		118g		19	LR12
13	1535	WC	22.9		152g		19	LR13
14	1535	WC	21.4		125g		19	LR14
15	1535	WC	20.0		89g		19	LR15

Sample Containers:

CS Trawl 14 (CS-1) @ 1255
15 CS-2 @ 1330

Trawl 16 (CS-3) @ 1345
17 @ 1405

Trawl 18 @ 1440
Trawl 19 @ 1535

Analyses: Caught large sleeping bag + walrus trash on trawl 1

Trawl 18: caught a small skiff, 1 croaker

Job: GWMA TMDL Compliance Monitoring - Tissue

Date: 8/20/16

Job No. 141205-01.01

Processing Staff: L. Rohr, C. Dolphin, A. Martin, W. Hovel

Wind Speed and Direction (See Beaufort Scale):

 OA = Cabrillo Pier ^(Outer LA Harb) OB = Outer LB Harbor

Trawl No.	Target Area	Station ID	Collection Method	Start Date/Time	Stop Date/Time	Start Coordinates Long/Lat	End Coordinates Long/Lat
1	Cabrillo pier	OA	otter trawl	8/20/16 7:43	8/20/16 7:51	33° 42.4694 N 118° 16.4276 W	33° 42.5819 N 118° 16.6845 W
2	"	"	"	8/20/16 8:11	8/20/16 8:18	33° 42.3751 N 118° 16.0105 W	33° 42.3766 N 118° 16.2499 W
3	Cabrillo pier	OA	"	8/20/16 8:20	8/20/16 8:38	33° 42.4506 N 118° 16.3536 W	33° 42.5955 N 118° 16.6044 W
4	"	"	"	8/20/16 9:55	8/20/16 9:57	33° 42.4305 N 118° 16.3867 W	33° 42.4454 N 118° 16.3853 W
5	"	"	"	8/20/16 9:59	8/20/16 10:02	33° 42.4742 N 118° 16.4481 W	33° 42.5700 N 118° 16.5716 W
6	Outer LB Harbor - New Pier 40	OA (with)	"	8/20/16 11:06	8/20/16 11:16	33° 43.1856 N 118° 14.1409 W	33° 43.1810 N 118° 14.3360 W
7	Outer LB	OB	"	8/20/16 11:27	8/20/16 11:35	33° 42.8100 N 118° 14.2953 W	33° 42.8930 N 118° 14.0950 W
8	"	"	"	8/20/16 12:03	8/20/16 12:11	33° 44.3048 N 118° 14.4468 W	33° 44.0610 N 118° 14.3609 W
9	"	"	"	8/20/16 13:17	8/20/16 13:27	33° 43.7012 N 118° 14.1800 W	33° 44.0317 N 118° 14.1874 W
10	"	OB	"	8/20/16 13:57	8/20/16 14:05	33° 44.1736 N 118° 14.3751 W	33° 44.2682 N 118° 14.4101 W
							118° 14.4944 W

 ROCKS
NO FISH

Notes:

No Fish in trawl #4 - Stopped ^{early} to avoid rocks
 Trawl #7 ~~might~~ ^{coordinates} might be off - same OB trawl by breakwater as in 2014 (basically)

Job: GWMA TMDL Compliance Monitoring - Tissue

Date: 8/21/16

Job No. 141205-01.0103

Processing Staff: L. Rohrbach, A. Martin, C. Dolphin

Wind Speed and Direction (See Beaufort Scale):

SP = San Pedro Bay

Trawl No.	Target Area	Station ID	Collection Method	Start Date/Time	Stop Date/Time	Start Coordinates Long/Lat	End Coordinates Long/Lat	
11	SP Pier 5	SP	OTK Trawl	8/21/16 7:57	8/21/16 8:07	33° 44.7779 -118° 11.0569	33° 44.9179 -118° 11.0348	N W
12	SP Pier 5	SP		8:28	8:38	33° 44.909 -118° 11.1190	33° 45.5991 -118° 11.0225	N W
13	SP Beach N of Belmont Pier	SP		9:33	9:44	33° 45.573 -118° 10.572	33° 45.516 -118° 10.127	N W
14	Consolidated Slip	CS		12:55	13:05	33° 46.572 -118° 14.729	33° 46.3129 -118° 14.945	N W
15	Consolidated Slip	CS		13:20	13:28	33° 46.0294 -118° 15.1713	33° 46.0294 -118° 15.1713	N W
16	"	CS		13:44	13:54	33° 46.0773 -118° 15.1750	33° 46.2563 -118° 15.19231	N W
17	"	CS		14:05	14:18 14:05	33° 46.0619 -118° 14.9796	33° 45.9835 -118° 15.2029	N W
18	"	CS		14:38	14:50	33° 46.0108 -118° 15.1728	33° 46.2839 -118° 14.9200	N W
19	"	CS		15:35	15:47	33° 46.0070 -118° 15.1939	33° 46.3065 -118° 14.9748	N W

Notes:

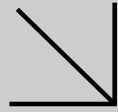
SP= Relocated several times around SPB for prey fish, starting at day location
 CS= Trawl 14 mostly trash, no fish kept, trawl 19 = small swat

Appendix D-1

Water Sample Chemistry Reports



Calscience



WORK ORDER NUMBER: 16-09-1973

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA - TMDL Compliance Monitoring

Attention: Andy Martin
27201 Puerta Real
Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 10/18/2016 by:
Carla Hollowell
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA - TMDL Compliance Monitoring
 Work Order Number: 16-09-1973

1	16-09-1973 Anchor GWMA TMDL water.	3
2	Work Order Narrative.	5
3	Sample Summary.	6
4	Client Sample Data.	7
	4.1 SM 2540 D Total Suspended Solids (Aqueous).	7
	4.2 EPA 1631E Low Level Hg, Total (Aqueous).	12
	4.3 EPA 1631E Low Level Hg, Filtered (Aqueous).	14
	4.4 EPA 1640 ICP/MS Metals (Aqueous).	16
	4.5 EPA 1640 ICP/MS Metals (Aqueous).	20
	4.6 EPA 8081A Organochlorine Pesticides (Aqueous).	24
	4.7 EPA 8270C SIM PCB Congeners (Aqueous).	33
5	Quality Control Sample Data.	51
	5.1 MS/MSD.	51
	5.2 Sample Duplicate.	56
	5.3 LCS/LCSD.	58
6	Glossary of Terms and Qualifiers.	66
7	Chain-of-Custody/Sample Receipt Form.	67

CASE NARRATIVE

Calscience Work Order No.: 16-09-1973
Project ID: GWMA-TMDL Compliance Monitoring

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the seawater samples.

Sample Condition on Receipt

Twenty-six (26) seawater samples were received for this project on September 27, 2016. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 3.2-3.7°C. All samples were assigned laboratory identification numbers, logged into the Laboratory Information Management System (LIMS), and subsequently stored under refrigeration pending analytical testing.

Tests Performed

Total Suspended Solids by SM 2540B (M)
Total and Dissolved Metals by EPA 1640/1631
OC Pesticides by EPA 8081A
PCB Congeners by EPA 8270C SIM

Data Summary

Samples were filtered in the laboratory for the dissolved metals analyses.

Holding times

All holding times were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Reporting Limits

All Method Detection Limits were met. The results were evaluated to the MDL, and where applicable, "J" flags were reported.

Blanks

Concentrations of target analytes in the Method Blank samples were found to be below reporting limits for all testing.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed at the required frequencies and all parameters were within the established control limits.

Matrix Spikes and QC Duplicates

Matrix spike analyses and/or QC Duplicates were performed for each applicable analysis as sample volume allowed. All parameters were within the established control limits with the following exception: (non-project spike/duplicate samples, if any, are not discussed).

The EPA 1640 Total Zinc MS/MSD has been flagged as the percent recoveries were outside of the control limits due to suspected matrix interference. The corresponding LCS/LCSDs are in control and the results are provided with no further action required.

Surrogates

Surrogate recoveries for all applicable tests and samples were within the established control limits.

Acronyms

LCS - Laboratory Control Sample
MS/MSD- Matrix Spike/Matrix Spike Duplicate
PDS - Post Digestion Spike
RPD- Relative Percent Difference

Work Order Narrative

Work Order: 16-09-1973

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/27/16. They were assigned to Work Order 16-09-1973.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Client: ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Work Order: 16-09-1973
Project Name: GWMA - TMDL Compliance Monitoring
PO Number:
Date/Time Received: 09/27/16 17:12
Number of Containers: 95

Attn: Andy Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
LE-RW-22-G-S-160927	16-09-1973-1	09/27/16 10:26	8	Sea Water
LE-RW-22-G-M-160927	16-09-1973-2	09/27/16 10:26	1	Sea Water
LE-RW-22-G-B-160927	16-09-1973-3	09/27/16 10:26	1	Sea Water
LE-RW-21-G-S-160927	16-09-1973-4	09/27/16 10:53	8	Sea Water
LE-RW-21-G-M-160927	16-09-1973-5	09/27/16 10:53	1	Sea Water
LE-RW-21-G-B-160927	16-09-1973-6	09/27/16 10:53	1	Sea Water
LE-RW-1021-G-B-160927	16-09-1973-7	09/27/16 10:53	1	Sea Water
SP-RW-18-G-S-160927	16-09-1973-8	09/27/16 11:17	8	Sea Water
SP-RW-18-G-M-160927	16-09-1973-9	09/27/16 11:17	1	Sea Water
SP-RW-18-G-B-160927	16-09-1973-10	09/27/16 11:17	1	Sea Water
SP-RW-19-G-S-160927	16-09-1973-11	09/27/16 12:09	9	Sea Water
SP-RW-19-G-M-160927	16-09-1973-12	09/27/16 12:09	1	Sea Water
SP-RW-19-G-B-160927	16-09-1973-13	09/27/16 12:09	1	Sea Water
SP-RW-20-G-S-160927	16-09-1973-14	09/27/16 09:32	8	Sea Water
SP-RW-20-G-M-160927	16-09-1973-15	09/27/16 09:32	1	Sea Water
SP-RW-20-G-B-160927	16-09-1973-16	09/27/16 09:32	1	Sea Water
IB-RW-17-G-S-160927	16-09-1973-17	09/27/16 09:00	12	Sea Water
OB-RW-17-G-M-160927	16-09-1973-18	09/27/16 09:00	1	Sea Water
OB-RW-17-G-B-160927	16-09-1973-19	09/27/16 09:00	1	Sea Water
FB-160927	16-09-1973-20	09/27/16 13:00	4	Sea Water
IA-RW-15-G-S-160927	16-09-1973-21	09/27/16 07:20	11	Sea Water
IA-RW-15-G-M-160927	16-09-1973-22	09/27/16 07:20	1	Sea Water
IA-RW-15-G-B-160927	16-09-1973-23	09/27/16 07:20	1	Sea Water
IB-RW-16-G-S-160927	16-09-1973-24	09/27/16 08:15	8	Sea Water
OB-RW-16-G-M-160927	16-09-1973-25	09/27/16 08:15	1	Sea Water
OB-RW-16-G-B-160927	16-09-1973-26	09/27/16 08:15	1	Sea Water
SP-RW-19-G-S-160927-LAB DUP	16-09-1973-27	09/27/16 12:09	1	Sea Water
IB-RW-17-G-S-160927-LAB DUP	16-09-1973-28	09/27/16 09:00	1	Sea Water



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-A	09/27/16 10:26	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.6	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-M-160927	16-09-1973-2-A	09/27/16 10:26	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-B-160927	16-09-1973-3-A	09/27/16 10:26	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	9.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-A	09/27/16 10:53	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-M-160927	16-09-1973-5-A	09/27/16 10:53	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-B-160927	16-09-1973-6-A	09/27/16 10:53	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	8.4	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-1021-G-B-160927	16-09-1973-7-A	09/27/16 10:53	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	8.8	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-A	09/27/16 11:17	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-M-160927	16-09-1973-9-A	09/27/16 11:17	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-B-160927	16-09-1973-10-A	09/27/16 11:17	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.5	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-A	09/27/16 12:09	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-M-160927	16-09-1973-12-A	09/27/16 12:09	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-B-160927	16-09-1973-13-A	09/27/16 12:09	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-A	09/27/16 09:32	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-M-160927	16-09-1973-15-A	09/27/16 09:32	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-B-160927	16-09-1973-16-A	09/27/16 09:32	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	29	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-A	09/27/16 09:00	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.1	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-M-160927	16-09-1973-18-A	09/27/16 09:00	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.0	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-B-160927	16-09-1973-19-A	09/27/16 09:00	Sea Water	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	28	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-A	09/27/16 07:20	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-M-160927	16-09-1973-22-A	09/27/16 07:20	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-B-160927	16-09-1973-23-A	09/27/16 07:20	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-A	09/27/16 08:15	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-M-160927	16-09-1973-25-A	09/27/16 08:15	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-B-160927	16-09-1973-26-A	09/27/16 08:15	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927-LAB DUP	16-09-1973-27-B	09/27/16 12:09	Sea Water	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-7896	N/A	Aqueous	N/A	10/01/16	10/01/16 14:00	G1001TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-7894	N/A	Aqueous	N/A	10/03/16	10/03/16 21:30	G1003TSSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-H	09/27/16 10:26	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00181	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-H	09/27/16 10:53	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00149	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-H	09/27/16 11:17	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00159	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-I	09/27/16 12:09	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00126	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-H	09/27/16 09:32	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00138	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-I	09/27/16 09:00	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000879	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-160927	16-09-1973-20-C	09/27/16 13:00	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000180	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-K	09/27/16 07:20	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000810	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-H	09/27/16 08:15	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000870	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927-LAB DUP	16-09-1973-28-I	09/27/16 09:00	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000777	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-143	N/A	Aqueous	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-G	09/27/16 10:26	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000393	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-G	09/27/16 10:53	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000480	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-G	09/27/16 11:17	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000616	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-H	09/27/16 12:09	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000851	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-G	09/27/16 09:32	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000615	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-J	09/27/16 09:00	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000235	0.000500	0.000113	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-160927	16-09-1973-20-D	09/27/16 13:00	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-J	09/27/16 07:20	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000546	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-G	09/27/16 08:15	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000519	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927-LAB DUP	16-09-1973-28-J	09/27/16 09:00	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000307	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-101	N/A	Aqueous	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-E	09/27/16 10:26	Sea Water	ICP/MS 05	10/05/16	10/05/16 18:10	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0521	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.81	0.0300	0.00898	1.00	
Lead	0.404	0.0300	0.0135	1.00	
Zinc	11.6	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-E	09/27/16 10:53	Sea Water	ICP/MS 05	10/05/16	10/05/16 18:18	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0523	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.74	0.0300	0.00898	1.00	
Lead	0.428	0.0300	0.0135	1.00	
Zinc	8.51	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-E	09/27/16 11:17	Sea Water	ICP/MS 05	10/05/16	10/05/16 18:25	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0451	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.82	0.0300	0.00898	1.00	
Lead	0.361	0.0300	0.0135	1.00	
Zinc	5.67	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-G	09/27/16 12:09	Sea Water	ICP/MS 05	10/05/16	10/05/16 18:33	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0334	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.806	0.0300	0.00898	1.00	
Lead	0.0811	0.0300	0.0135	1.00	
Zinc	3.79	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-E	09/27/16 09:32	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:12	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0322	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.621	0.0300	0.00898	1.00	
Lead	0.0727	0.0300	0.0135	1.00	
Zinc	3.61	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-E	09/27/16 09:00	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:43	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0339	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.562	0.0300	0.00898	1.00	
Lead	0.0722	0.0300	0.0135	1.00	
Zinc	4.25	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-160927	16-09-1973-20-A	09/27/16 13:00	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:20	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	8.73	0.0300	0.00898	1.00	
Lead	0.0944	0.0300	0.0135	1.00	
Zinc	3.18	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-I	09/27/16 07:20	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:28	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0452	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.26	0.0300	0.00898	1.00	
Lead	0.0851	0.0300	0.0135	1.00	
Zinc	5.89	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-E	09/27/16 08:15	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:36	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0319	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.868	0.0300	0.00898	1.00	
Lead	0.0711	0.0300	0.0135	1.00	
Zinc	6.34	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927-LAB DUP	16-09-1973-28-E	09/27/16 09:00	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:51	161005L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0337	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.545	0.0300	0.00898	1.00	
Lead	0.0632	0.0300	0.0135	1.00	
Zinc	4.37	0.500	0.0736	1.00	

Method Blank	099-13-067-640	N/A	Aqueous	ICP/MS 05	10/05/16	10/05/16 13:44	161005L02
--------------	----------------	-----	---------	-----------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.0736	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-F	09/27/16 10:26	Sea Water	ICP/MS 05	10/05/16	10/05/16 19:59	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0540	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.35	0.0300	0.00898	1.00	
Lead	0.166	0.0300	0.0135	1.00	
Zinc	8.44	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-F	09/27/16 10:53	Sea Water	ICP/MS 05	10/05/16	10/05/16 20:07	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0559	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.42	0.0300	0.00898	1.00	
Lead	0.211	0.0300	0.0135	1.00	
Zinc	7.07	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-F	09/27/16 11:17	Sea Water	ICP/MS 05	10/05/16	10/05/16 20:14	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0456	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.21	0.0300	0.00898	1.00	
Lead	0.194	0.0300	0.0135	1.00	
Zinc	5.17	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-F	09/27/16 12:09	Sea Water	ICP/MS 05	10/05/16	10/05/16 20:53	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0298	0.0300	0.00567	1.00	J
Chromium	ND	0.500	0.164	1.00	
Copper	0.880	0.0300	0.00898	1.00	
Lead	0.102	0.0300	0.0135	1.00	
Zinc	3.55	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-F	09/27/16 09:32	Sea Water	ICP/MS 05	10/05/16	10/05/16 21:01	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0319	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.623	0.0300	0.00898	1.00	
Lead	0.0908	0.0300	0.0135	1.00	
Zinc	3.21	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-F	09/27/16 09:00	Sea Water	ICP/MS 05	10/05/16	10/05/16 21:32	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0271	0.0300	0.00567	1.00	J
Chromium	ND	0.500	0.164	1.00	
Copper	0.654	0.0300	0.00898	1.00	
Lead	0.0897	0.0300	0.0135	1.00	
Zinc	3.44	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-160927	16-09-1973-20-B	09/27/16 13:00	Sea Water	ICP/MS 05	10/05/16	10/05/16 21:09	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	6.85	0.0300	0.00898	1.00	
Lead	0.0264	0.0300	0.0135	1.00	J
Zinc	2.01	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-H	09/27/16 07:20	Sea Water	ICP/MS 05	10/05/16	10/05/16 21:17	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0383	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.21	0.0300	0.00898	1.00	
Lead	0.0954	0.0300	0.0135	1.00	
Zinc	6.10	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-F	09/27/16 08:15	Sea Water	ICP/MS 05	10/05/16	10/05/16 21:24	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0340	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.771	0.0300	0.00898	1.00	
Lead	0.0909	0.0300	0.0135	1.00	
Zinc	5.45	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927-LAB DUP	16-09-1973-28-F	09/27/16 09:00	Sea Water	ICP/MS 05	10/05/16	10/05/16 21:40	161005L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0309	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.627	0.0300	0.00898	1.00	
Lead	0.0728	0.0300	0.0135	1.00	
Zinc	3.16	0.500	0.0736	1.00	

Method Blank	099-15-823-233	N/A	Aqueous	ICP/MS 05	10/05/16	10/05/16 13:51	161005L02F
--------------	----------------	-----	---------	-----------	----------	-------------------	------------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.0736	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-CD	09/27/16 10:26	Sea Water	GC 44	10/03/16	10/06/16 16:13	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	79	50-150			
2,4,5,6-Tetrachloro-m-Xylene	65	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-CD	09/27/16 10:53	Sea Water	GC 44	10/03/16	10/06/16 16:27	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	71	50-150			
2,4,5,6-Tetrachloro-m-Xylene	55	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8081A
 Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-CD	09/27/16 11:17	Sea Water	GC 44	10/03/16	10/06/16 16:41	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	78	50-150			
2,4,5,6-Tetrachloro-m-Xylene	90	50-150			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-DE	09/27/16 12:09	Sea Water	GC 44	10/03/16	10/06/16 16:56	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	79	50-150			
2,4,5,6-Tetrachloro-m-Xylene	95	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-CD	09/27/16 09:32	Sea Water	GC 44	10/03/16	10/06/16 17:10	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	76	50-150			
2,4,5,6-Tetrachloro-m-Xylene	95	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-CD	09/27/16 09:00	Sea Water	GC 44	10/03/16	10/06/16 17:24	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	79	50-150			
2,4,5,6-Tetrachloro-m-Xylene	97	50-150			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-BG	09/27/16 07:20	Sea Water	GC 44	10/03/16	10/06/16 17:38	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	71	50-150			
2,4,5,6-Tetrachloro-m-Xylene	67	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-CD	09/27/16 08:15	Sea Water	GC 44	10/03/16	10/06/16 17:52	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	78	50-150			
2,4,5,6-Tetrachloro-m-Xylene	91	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-704-10	N/A	Aqueous	GC 44	10/03/16	10/06/16 15:30	161003L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	79	50-150			
2,4,5,6-Tetrachloro-m-Xylene	81	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-160927	16-09-1973-1-B	09/27/16 10:26	Sea Water	GC/MS HHH	09/29/16	10/03/16 13:27	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00064	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00075	1.00	
PCB049	ND	0.0019	0.00075	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00037	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00063	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00056	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00074	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00068	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00049	1.00	
PCB151	ND	0.0019	0.00059	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00032	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00055	1.00	
PCB180	ND	0.0019	0.00069	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00054	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB201	ND	0.0019	0.00070	1.00	
PCB206	ND	0.0019	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	63	50-150			
p-Terphenyl-d14	83	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-160927	16-09-1973-4-B	09/27/16 10:53	Sea Water	GC/MS HHH	09/29/16	10/03/16 13:50	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00041	1.00	
PCB028	ND	0.0020	0.00065	1.00	
PCB037	ND	0.0020	0.00047	1.00	
PCB044	ND	0.0020	0.00076	1.00	
PCB049	ND	0.0020	0.00077	1.00	
PCB052	ND	0.0020	0.00050	1.00	
PCB066	ND	0.0020	0.00056	1.00	
PCB070	ND	0.0020	0.00037	1.00	
PCB074	ND	0.0020	0.00042	1.00	
PCB077	ND	0.0020	0.00064	1.00	
PCB081	ND	0.0020	0.00047	1.00	
PCB087	ND	0.0020	0.00049	1.00	
PCB099	ND	0.0020	0.00059	1.00	
PCB101	ND	0.0020	0.00057	1.00	
PCB105	ND	0.0020	0.00037	1.00	
PCB110	ND	0.0020	0.00049	1.00	
PCB114	ND	0.0020	0.00043	1.00	
PCB118	ND	0.0020	0.00048	1.00	
PCB119	ND	0.0020	0.00042	1.00	
PCB123	ND	0.0020	0.00075	1.00	
PCB126	ND	0.0020	0.00053	1.00	
PCB128	ND	0.0020	0.00069	1.00	
PCB132/153	ND	0.0039	0.0012	1.00	
PCB138/158	ND	0.0039	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00060	1.00	
PCB156	ND	0.0020	0.00050	1.00	
PCB157	ND	0.0020	0.00074	1.00	
PCB167	ND	0.0020	0.00085	1.00	
PCB168	ND	0.0020	0.00032	1.00	
PCB169	ND	0.0020	0.00055	1.00	
PCB170	ND	0.0020	0.00055	1.00	
PCB177	ND	0.0020	0.00056	1.00	
PCB180	ND	0.0020	0.00070	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00055	1.00	
PCB189	ND	0.0020	0.00039	1.00	
PCB194	ND	0.0020	0.00041	1.00	
PCB201	ND	0.0020	0.00071	1.00	
PCB206	ND	0.0020	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	62	50-150			
p-Terphenyl-d14	87	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-160927	16-09-1973-8-B	09/27/16 11:17	Sea Water	GC/MS HHH	09/29/16	10/03/16 14:14	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00064	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00076	1.00	
PCB049	ND	0.0019	0.00076	1.00	
PCB052	ND	0.0019	0.00050	1.00	
PCB066	ND	0.0019	0.00056	1.00	
PCB070	ND	0.0019	0.00037	1.00	
PCB074	ND	0.0019	0.00042	1.00	
PCB077	ND	0.0019	0.00063	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00056	1.00	
PCB105	ND	0.0019	0.00037	1.00	
PCB110	ND	0.0019	0.00049	1.00	
PCB114	ND	0.0019	0.00043	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00042	1.00	
PCB123	ND	0.0019	0.00074	1.00	
PCB126	ND	0.0019	0.00053	1.00	
PCB128	ND	0.0019	0.00068	1.00	
PCB132/153	ND	0.0039	0.0011	1.00	
PCB138/158	ND	0.0039	0.0011	1.00	
PCB149	ND	0.0019	0.00049	1.00	
PCB151	ND	0.0019	0.00059	1.00	
PCB156	ND	0.0019	0.00050	1.00	
PCB157	ND	0.0019	0.00073	1.00	
PCB167	ND	0.0019	0.00084	1.00	
PCB168	ND	0.0019	0.00032	1.00	
PCB169	ND	0.0019	0.00055	1.00	
PCB170	ND	0.0019	0.00055	1.00	
PCB177	ND	0.0019	0.00055	1.00	
PCB180	ND	0.0019	0.00070	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00052	1.00	
PCB187	ND	0.0019	0.00054	1.00	
PCB189	ND	0.0019	0.00039	1.00	
PCB194	ND	0.0019	0.00041	1.00	
PCB201	ND	0.0019	0.00070	1.00	
PCB206	ND	0.0019	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	59	50-150			
p-Terphenyl-d14	87	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-160927	16-09-1973-11-C	09/27/16 12:09	Sea Water	GC/MS HHH	09/29/16	10/03/16 14:37	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00041	1.00	
PCB028	ND	0.0020	0.00065	1.00	
PCB037	ND	0.0020	0.00047	1.00	
PCB044	ND	0.0020	0.00076	1.00	
PCB049	ND	0.0020	0.00077	1.00	
PCB052	ND	0.0020	0.00050	1.00	
PCB066	ND	0.0020	0.00056	1.00	
PCB070	ND	0.0020	0.00037	1.00	
PCB074	ND	0.0020	0.00042	1.00	
PCB077	ND	0.0020	0.00064	1.00	
PCB081	ND	0.0020	0.00047	1.00	
PCB087	ND	0.0020	0.00049	1.00	
PCB099	ND	0.0020	0.00059	1.00	
PCB101	ND	0.0020	0.00057	1.00	
PCB105	ND	0.0020	0.00037	1.00	
PCB110	ND	0.0020	0.00049	1.00	
PCB114	ND	0.0020	0.00043	1.00	
PCB118	ND	0.0020	0.00048	1.00	
PCB119	ND	0.0020	0.00042	1.00	
PCB123	ND	0.0020	0.00075	1.00	
PCB126	ND	0.0020	0.00053	1.00	
PCB128	ND	0.0020	0.00069	1.00	
PCB132/153	ND	0.0039	0.0012	1.00	
PCB138/158	ND	0.0039	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00060	1.00	
PCB156	ND	0.0020	0.00050	1.00	
PCB157	ND	0.0020	0.00074	1.00	
PCB167	ND	0.0020	0.00085	1.00	
PCB168	ND	0.0020	0.00032	1.00	
PCB169	ND	0.0020	0.00055	1.00	
PCB170	ND	0.0020	0.00055	1.00	
PCB177	ND	0.0020	0.00056	1.00	
PCB180	ND	0.0020	0.00070	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00055	1.00	
PCB189	ND	0.0020	0.00039	1.00	
PCB194	ND	0.0020	0.00041	1.00	
PCB201	ND	0.0020	0.00071	1.00	
PCB206	ND	0.0020	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	54	50-150			
p-Terphenyl-d14	78	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-160927	16-09-1973-14-B	09/27/16 09:32	Sea Water	GC/MS HHH	09/29/16	10/03/16 15:01	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00041	1.00	
PCB028	ND	0.0020	0.00065	1.00	
PCB037	ND	0.0020	0.00047	1.00	
PCB044	ND	0.0020	0.00076	1.00	
PCB049	ND	0.0020	0.00077	1.00	
PCB052	ND	0.0020	0.00050	1.00	
PCB066	ND	0.0020	0.00056	1.00	
PCB070	ND	0.0020	0.00037	1.00	
PCB074	ND	0.0020	0.00042	1.00	
PCB077	ND	0.0020	0.00064	1.00	
PCB081	ND	0.0020	0.00047	1.00	
PCB087	ND	0.0020	0.00049	1.00	
PCB099	ND	0.0020	0.00059	1.00	
PCB101	ND	0.0020	0.00057	1.00	
PCB105	ND	0.0020	0.00037	1.00	
PCB110	ND	0.0020	0.00049	1.00	
PCB114	ND	0.0020	0.00043	1.00	
PCB118	ND	0.0020	0.00048	1.00	
PCB119	ND	0.0020	0.00042	1.00	
PCB123	ND	0.0020	0.00075	1.00	
PCB126	ND	0.0020	0.00053	1.00	
PCB128	ND	0.0020	0.00069	1.00	
PCB132/153	ND	0.0039	0.0012	1.00	
PCB138/158	ND	0.0039	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00060	1.00	
PCB156	ND	0.0020	0.00050	1.00	
PCB157	ND	0.0020	0.00074	1.00	
PCB167	ND	0.0020	0.00085	1.00	
PCB168	ND	0.0020	0.00032	1.00	
PCB169	ND	0.0020	0.00055	1.00	
PCB170	ND	0.0020	0.00055	1.00	
PCB177	ND	0.0020	0.00056	1.00	
PCB180	ND	0.0020	0.00070	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00055	1.00	
PCB189	ND	0.0020	0.00039	1.00	
PCB194	ND	0.0020	0.00041	1.00	
PCB201	ND	0.0020	0.00071	1.00	
PCB206	ND	0.0020	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	58	50-150			
p-Terphenyl-d14	80	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-17-G-S-160927	16-09-1973-17-B	09/27/16 09:00	Sea Water	GC/MS HHH	09/29/16	10/03/16 15:24	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	64	50-150			
p-Terphenyl-d14	89	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-15-G-S-160927	16-09-1973-21-C	09/27/16 07:20	Sea Water	GC/MS HHH	09/29/16	10/03/16 15:47	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00041	1.00	
PCB028	ND	0.0020	0.00065	1.00	
PCB037	ND	0.0020	0.00047	1.00	
PCB044	ND	0.0020	0.00077	1.00	
PCB049	ND	0.0020	0.00077	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00042	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00049	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00057	1.00	
PCB105	ND	0.0020	0.00037	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00076	1.00	
PCB126	ND	0.0020	0.00054	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00074	1.00	
PCB167	ND	0.0020	0.00086	1.00	
PCB168	ND	0.0020	0.00032	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00071	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00055	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	67	50-150			
p-Terphenyl-d14	86	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-16-G-S-160927	16-09-1973-24-B	09/27/16 08:15	Sea Water	GC/MS HHH	09/29/16	10/03/16 16:11	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00041	1.00	
PCB028	ND	0.0020	0.00065	1.00	
PCB037	ND	0.0020	0.00047	1.00	
PCB044	ND	0.0020	0.00076	1.00	
PCB049	ND	0.0020	0.00077	1.00	
PCB052	ND	0.0020	0.00050	1.00	
PCB066	ND	0.0020	0.00056	1.00	
PCB070	ND	0.0020	0.00037	1.00	
PCB074	ND	0.0020	0.00042	1.00	
PCB077	ND	0.0020	0.00064	1.00	
PCB081	ND	0.0020	0.00047	1.00	
PCB087	ND	0.0020	0.00049	1.00	
PCB099	ND	0.0020	0.00059	1.00	
PCB101	ND	0.0020	0.00057	1.00	
PCB105	ND	0.0020	0.00037	1.00	
PCB110	ND	0.0020	0.00049	1.00	
PCB114	ND	0.0020	0.00043	1.00	
PCB118	ND	0.0020	0.00048	1.00	
PCB119	ND	0.0020	0.00042	1.00	
PCB123	ND	0.0020	0.00075	1.00	
PCB126	ND	0.0020	0.00053	1.00	
PCB128	ND	0.0020	0.00069	1.00	
PCB132/153	ND	0.0039	0.0012	1.00	
PCB138/158	ND	0.0039	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00060	1.00	
PCB156	ND	0.0020	0.00050	1.00	
PCB157	ND	0.0020	0.00074	1.00	
PCB167	ND	0.0020	0.00085	1.00	
PCB168	ND	0.0020	0.00032	1.00	
PCB169	ND	0.0020	0.00055	1.00	
PCB170	ND	0.0020	0.00055	1.00	
PCB177	ND	0.0020	0.00056	1.00	
PCB180	ND	0.0020	0.00070	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00055	1.00	
PCB189	ND	0.0020	0.00039	1.00	
PCB194	ND	0.0020	0.00041	1.00	
PCB201	ND	0.0020	0.00071	1.00	
PCB206	ND	0.0020	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	62	50-150			
p-Terphenyl-d14	86	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-414-81	N/A	Aqueous	GC/MS HHH	09/29/16	10/03/16 12:17	160929L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	56	50-150			
p-Terphenyl-d14	80	50-150			



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 1631E Total
 Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IA-RW-15-G-S-160927	Sample	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006S01
IA-RW-15-G-S-160927	Matrix Spike	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006S01
IA-RW-15-G-S-160927	Matrix Spike Duplicate	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.0008100	0.02000	0.02331	112	0.02341	113	71-125	0	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: Filtered
 Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IA-RW-15-G-S-160927	Sample	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006S01A
IA-RW-15-G-S-160927	Matrix Spike	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006S01A
IA-RW-15-G-S-160927	Matrix Spike Duplicate	Sea Water	Hg/AF 1	10/06/16	10/06/16 00:00	161006S01A

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.0005459	0.02000	0.02194	107	0.02205	108	71-125	0	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
LE-RW-22-G-S-160927	Sample	Sea Water	ICP/MS 05	10/05/16	10/05/16 18:10	161005S02				
LE-RW-22-G-S-160927	Matrix Spike	Sea Water	ICP/MS 05	10/05/16	10/05/16 15:25	161005S02				
LE-RW-22-G-S-160927	Matrix Spike Duplicate	Sea Water	ICP/MS 05	10/05/16	10/05/16 15:32	161005S02				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.05214	0.5000	0.5196	93	0.5153	93	50-150	1	0-20	
Chromium	ND	5.000	4.212	84	4.286	86	50-150	2	0-20	
Copper	1.810	0.5000	2.443	127	2.422	123	50-150	1	0-20	
Lead	0.4043	0.5000	0.8160	82	0.7888	77	50-150	3	0-20	
Zinc	11.61	5.000	13.81	44	13.49	38	50-150	2	0-20	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IA-RW-15-G-S-160927	Sample	Sea Water	GC 44	10/03/16	10/06/16 17:38	161003S05
IA-RW-15-G-S-160927	Matrix Spike	Sea Water	GC 44	10/03/16	10/06/16 15:45	161003S05
IA-RW-15-G-S-160927	Matrix Spike Duplicate	Sea Water	GC 44	10/03/16	10/06/16 15:59	161003S05

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
4,4'-DDD	ND	33.35	26.65	80	26.75	80	50-150	0	0-25	
4,4'-DDE	ND	33.35	26.88	81	27.85	84	50-150	4	0-25	
4,4'-DDT	ND	33.35	29.97	90	30.40	91	50-150	1	0-25	
Alpha Chlordane	ND	33.35	26.07	78	26.53	80	50-150	2	0-25	
Dieldrin	ND	33.35	28.25	85	28.73	86	50-150	2	0-25	
Gamma Chlordane	ND	33.35	27.92	84	27.74	83	50-150	1	0-25	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-09-2006-2	Sample	Aqueous	GC/MS HHH	09/29/16	10/03/16 16:58	160929S10
16-09-2006-2	Matrix Spike	Aqueous	GC/MS HHH	09/29/16	10/03/16 17:21	160929S10
16-09-2006-2	Matrix Spike Duplicate	Aqueous	GC/MS HHH	09/29/16	10/03/16 17:45	160929S10

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	0.5000	0.4159	83	0.3929	79	50-150	6	0-25	
PCB028	ND	0.5000	0.4565	91	0.4309	86	50-150	6	0-25	
PCB044	ND	0.5000	0.4235	85	0.4074	81	50-150	4	0-25	
PCB052	ND	0.5000	0.4163	83	0.4018	80	50-150	4	0-25	
PCB066	ND	0.5000	0.5276	106	0.5103	102	50-150	3	0-25	
PCB077	ND	0.5000	0.4985	100	0.4906	98	50-150	2	0-25	
PCB101	ND	0.5000	0.4442	89	0.4334	87	50-150	2	0-25	
PCB105	ND	0.5000	0.5209	104	0.5226	105	50-150	0	0-25	
PCB118	ND	0.5000	0.5042	101	0.4972	99	50-150	1	0-25	
PCB126	ND	0.5000	0.5109	102	0.5048	101	50-150	1	0-25	
PCB128	ND	0.5000	0.4949	99	0.4914	98	50-150	1	0-25	
PCB170	ND	0.5000	0.4843	97	0.4710	94	50-150	3	0-25	
PCB180	ND	0.5000	0.5467	109	0.5408	108	50-150	1	0-25	
PCB187	ND	0.5000	0.4970	99	0.4934	99	50-150	1	0-25	
PCB206	ND	0.5000	0.4717	94	0.4481	90	50-150	5	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
16-09-1872-2	Sample	Aqueous	N/A	10/01/16 00:00	10/01/16 14:00	G1001TSSD1
16-09-1872-2	Sample Duplicate	Aqueous	N/A	10/01/16 00:00	10/01/16 14:00	G1001TSSD1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Suspended	588.0	584.0	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
16-09-1941-2	Sample	Aqueous	N/A	10/03/16 00:00	10/03/16 21:30	G1003TSSD1
16-09-1941-2	Sample Duplicate	Aqueous	N/A	10/03/16 00:00	10/03/16 21:30	G1003TSSD1
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Suspended		828.0	800.0	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-7896	LCS	Aqueous	N/A	10/01/16	10/01/16 14:00	G1001TSSL1			
099-09-010-7896	LCSD	Aqueous	N/A	10/01/16	10/01/16 14:00	G1001TSSL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	98.00	98	95.00	95	80-120	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-7894	LCS	Aqueous	N/A	10/03/16	10/03/16 21:30	G1003TSSL1			
099-09-010-7894	LCSD	Aqueous	N/A	10/03/16	10/03/16 21:30	G1003TSSL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	97.00	97	99.00	99	80-120	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-143	LCS	Aqueous	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01			
099-15-224-143	LCSD	Aqueous	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01993	100	0.01935	97	71-125	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-226-101	LCS	Aqueous	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F			
099-15-226-101	LCSD	Aqueous	Hg/AF 1	10/06/16	10/06/16 00:00	161006L01F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01993	100	0.01935	97	71-125	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-13-067-640	LCS	Aqueous	ICP/MS 05	10/05/16	10/05/16 14:54	161005L02			
099-13-067-640	LCSD	Aqueous	ICP/MS 05	10/05/16	10/05/16 15:01	161005L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.4774	95	0.4588	92	70-130	4	0-20	
Chromium	5.000	5.105	102	5.156	103	70-130	1	0-20	
Copper	0.5000	0.4827	97	0.4590	92	70-130	5	0-20	
Lead	0.5000	0.4587	92	0.4630	93	70-130	1	0-20	
Zinc	5.000	4.956	99	4.732	95	70-130	5	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-823-233	LCS	Aqueous	ICP/MS 05	10/05/16	10/05/16 14:54	161005L02F			
099-15-823-233	LCSD	Aqueous	ICP/MS 05	10/05/16	10/05/16 15:01	161005L02F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.4774	95	0.4588	92	70-130	4	0-20	
Chromium	5.000	5.105	102	5.156	103	70-130	1	0-20	
Copper	0.5000	0.4827	97	0.4590	92	70-130	5	0-20	
Lead	0.5000	0.4587	92	0.4630	93	70-130	1	0-20	
Zinc	5.000	4.956	99	4.732	95	70-130	5	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/27/16
 Work Order: 16-09-1973
 Preparation: EPA 3510C
 Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-704-10	LCS	Aqueous	GC 44	10/03/16	10/06/16 18:40	161003L05
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
4,4'-DDD		33.35	24.17	72	50-150	
4,4'-DDE		33.35	24.05	72	50-150	
4,4'-DDT		33.35	23.76	71	50-150	
Alpha Chlordane		33.35	23.57	71	50-150	
Dieldrin		33.35	26.31	79	50-150	
Gamma Chlordane		33.35	23.01	69	50-150	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/27/16
Work Order: 16-09-1973
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-414-81	LCS	Aqueous	GC/MS HHH	09/29/16	10/07/16 13:41	160929L10				
099-16-414-81	LCSD	Aqueous	GC/MS HHH	09/29/16	10/07/16 14:42	160929L10				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	0.5000	0.4275	85	0.3953	79	50-150	33-167	8	0-25	
PCB028	0.5000	0.4678	94	0.4313	86	50-150	33-167	8	0-25	
PCB044	0.5000	0.4193	84	0.3887	78	50-150	33-167	8	0-25	
PCB052	0.5000	0.4206	84	0.3961	79	50-150	33-167	6	0-25	
PCB066	0.5000	0.5074	101	0.4667	93	50-150	33-167	8	0-25	
PCB077	0.5000	0.4848	97	0.4496	90	50-150	33-167	8	0-25	
PCB101	0.5000	0.4337	87	0.3963	79	50-150	33-167	9	0-25	
PCB105	0.5000	0.5123	102	0.4741	95	50-150	33-167	8	0-25	
PCB118	0.5000	0.4875	97	0.4508	90	50-150	33-167	8	0-25	
PCB126	0.5000	0.4994	100	0.4575	91	50-150	33-167	9	0-25	
PCB128	0.5000	0.4788	96	0.4567	91	50-150	33-167	5	0-25	
PCB170	0.5000	0.4722	94	0.4394	88	50-150	33-167	7	0-25	
PCB180	0.5000	0.5369	107	0.4982	100	50-150	33-167	7	0-25	
PCB187	0.5000	0.4856	97	0.4475	90	50-150	33-167	8	0-25	
PCB206	0.5000	0.4751	95	0.4542	91	50-150	33-167	4	0-25	

Total number of LCS compounds: 15

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 16-09-1973

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:				<div style="float: right; border: 1px solid black; border-radius: 50%; padding: 10px; width: 100px; text-align: center;">1973</div>														
Date: 9/27/2016																		
Project Name: GWMA-TMDL Compliance Monitoring																		
Project Number: 141205-01.01																		
Project Manager: Andy Martin																		
Phone Number: (949) 334-9630																		
Shipment Method: Courier																		
Field Team: LB Harbor/San Pedro Bay																		

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters															Comments/Preservation			
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD													
1	SP-RW-20-G-B-160927	9/27/16 9:32	Water	1	X																		
2	IB-RW-17-G-S-160927	9/27/16 9:00	Water	12	X	X	X	X	X														Lab Dup metals and Mercury
3	IB-RW-17-G-M-160927	9/27/16 9:00	Water	1	X																		
4	IB-RW-17-G-B-160927	9/27/16 9:00	Water	1	X																		
5	FB-160927	9/27/16 13:00	Water	4		X	X																Field Blank
6	IA-RW-15-G-S-160927	9/27/16 7:20	Water	11	X	X	X	X	X	X													Organics, PCBs MS/MSD
7	IA-RW-15-G-M-160927	9/27/16 7:20	Water	1	X																		
8	IA-RW-15-G-B-160927	9/27/16 7:20	Water	1	X																		
9	IB-RW-16-G-S-160927	9/27/16 8:15	Water	8	X	X	X	X	X														
10	IB-RW-16-G-M-160927	9/27/16 8:15	Water	1	X																		
11	IB-RW-16-G-B-160927	9/27/16 8:15	Water	1	X																		
12			Water																				
13			Water																				
14			Water																				
15			Water																				

Notes:

Relinquished By: Nicholas DaSilva Company: Costal Resources
 Signature/Printed Name: [Signature] Date/Time: 9/27/16

Received By: Jeff Chadd Company: Calscience
 Signature/Printed Name: [Signature] Date/Time: 9-27-16/1357

Relinquished By: Jeff Chadd Company: Calscience
 Signature/Printed Name: [Signature] Date/Time: 9-27-16 1712

Received By: PREGY SORIANO Company: ca
 Signature/Printed Name: [Signature] Date/Time: 9/27/16 1712

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 4

CLIENT: Anchor 2 EA

DATE: 09/27/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3-4 °C (w/ CF): 3-4 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 836

CUSTODY SEAL:

Cooler	<input type="checkbox"/> Present and Intact	<input type="checkbox"/> Present but Not Intact	<input checked="" type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Checked by: <u>836</u>
Sample(s)	<input type="checkbox"/> Present and Intact	<input type="checkbox"/> Present but Not Intact	<input checked="" type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Checked by: <u>1053</u>

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB 125PBz_zna 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs 500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag
 Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053
 s = H₂SO₄, u = ultra-pure, zna = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 659

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 4

CLIENT: Anchor 2EA

DATE: 09/27/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3 - 2 °C (w/ CF): 3 - 2 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 826

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 826

Checked by: 1053

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
 125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
 500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,

Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 826

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 3 OF 4

CLIENT: Anchor 2EA

DATE: 09/27/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.7 °C; [x] Blank [] Sample

[] Sample(s) outside temperature criteria (PM/APM contacted by: _____)

[] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

[] Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: [] Air [] Filter

Checked by: 836

CUSTODY SEAL:

Cooler [] Present and Intact [] Present but Not Intact [x] Not Present [] N/A Checked by: 836

Sample(s) [] Present and Intact [] Present but Not Intact [x] Not Present [] N/A Checked by: 1053

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples [x] Yes [] No [] N/A

COC document(s) received complete [x] Yes [] No [] N/A

[] Sampling date [] Sampling time [] Matrix [] Number of containers

[] No analysis requested [] Not relinquished [] No relinquished date [] No relinquished time

Sampler's name indicated on COC [x] Yes [] No [] N/A

Sample container label(s) consistent with COC [x] Yes [] No [] N/A

Sample container(s) intact and in good condition [x] Yes [] No [] N/A

Proper containers for analyses requested [x] Yes [] No [] N/A

Sufficient volume/mass for analyses requested [x] Yes [] No [] N/A

Samples received within holding time [x] Yes [] No [] N/A

Aqueous samples for certain analyses received within 15-minute holding time

[] pH [] Residual Chlorine [] Dissolved Sulfide [] Dissolved Oxygen [] Yes [] No [x] N/A

Proper preservation chemical(s) noted on COC and/or sample container [x] Yes [] No [] N/A

Unpreserved aqueous sample(s) received for certain analyses

[] Volatile Organics [] Total Metals [] Dissolved Metals

Container(s) for certain analysis free of headspace [] Yes [] No [x] N/A

[] Volatile Organics [] Dissolved Gases (RSK-175) [] Dissolved Oxygen (SM 4500)

[] Carbon Dioxide (SM 4500) [] Ferrous Iron (SM 3500) [] Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation [] Yes [] No [x] N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: [] VOA [] VOA_h [] VOA_{na2} [] 100PJ [] 100PJ_{na2} [] 125AGB [] 125AGB_h [] 125AGB_p [] 125PB

[] 125PB_{z_{na}} [] 250AGB [x] 250CGB [] 250CGB_s [x] 250PB [] 250PB_n [] 500AGB [] 500AGJ [] 500AGJ_s

[] 500PB [x] 1AGB [] 1AGB_{na2} [] 1AGB_s [x] 1PB [] 1PB_{na} [] _____ [] _____ [] _____

Solid: [] 4ozCGJ [] 8ozCGJ [] 16ozCGJ [] Sleeve (_____) [] EnCores® (_____) [] TerraCores® (_____) [] _____

Air: [] Tedlar™ [] Canister [] Sorbent Tube [] PUF [] _____ Other Matrix (_____) [] _____ [] _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 659

SAMPLE RECEIPT CHECKLIST

COOLER 4 OF 4

CLIENT: Anchor 2EA

DATE: 09/27/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3-5 °C (w/ CF): 3-5 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 836

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A

Checked by: 836

Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 1053

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples Yes No N/A

COC document(s) received complete Yes No N/A

Sampling date Sampling time Matrix Number of containers

No analysis requested Not relinquished No relinquished date No relinquished time

Sampler's name indicated on COC Yes No N/A

Sample container label(s) consistent with COC Yes No N/A

Sample container(s) intact and in good condition Yes No N/A

Proper containers for analyses requested Yes No N/A

Sufficient volume/mass for analyses requested Yes No N/A

Samples received within holding time Yes No N/A

Aqueous samples for certain analyses received within 15-minute holding time

pH Residual Chlorine Dissolved Sulfide Dissolved Oxygen Yes No N/A

Proper preservation chemical(s) noted on COC and/or sample container Yes No N/A

Unpreserved aqueous sample(s) received for certain analyses

Volatile Organics Total Metals Dissolved Metals

Container(s) for certain analysis free of headspace Yes No N/A

Volatile Organics Dissolved Gases (RSK-175) Dissolved Oxygen (SM 4500)

Carbon Dioxide (SM 4500) Ferrous Iron (SM 3500) Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation Yes No N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_{znna} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, znna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 619



SAMPLE ANOMALY REPORT

DATE: 09/27/2016

SAMPLES, CONTAINERS, AND LABELS:

- Sample(s) NOT RECEIVED but listed on COC
- Sample(s) received but NOT LISTED on COC
- Holding time expired (list client or ECI sample ID and analysis)
- Insufficient sample amount for requested analysis (list analysis)
- Improper container(s) used (list analysis)
- Improper preservative used (list analysis)
- No preservative noted on COC or label (list analysis and notify lab)
- Sample container(s) not labeled
- Client sample label(s) illegible (list container type and analysis)
- Client sample label(s) do not match COC (comment)
 - Project information
 - Client sample ID
 - Sampling date and/or time
 - Number of container(s)
 - Requested analysis
- Sample container(s) compromised (comment)
 - Broken
 - Water present in sample container
- Air sample container(s) compromised (comment)
 - Flat
 - Very low in volume
 - Leaking (not transferred; duplicate bag submitted)
 - Leaking (transferred into ECI Tedlar™ bags*)
 - Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

MISCELLANEOUS: (Describe)

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

Comments

labeled as

(-9) SP - RW - 18 - G - M - 160927

(-18) OB - RW - 17 - G - M - 160927

(-19) OB - RW - 17 - G - B - 160927

(-22) IB - RW - 15 - G - M - 160927

(-23) IB - RW - 15 - G - B - 160927

(25) OB - RW - 16 - G - M - 160927

(-26) OB - RW - 16 - G - B - 160927

Collection date & time matched.

Comments

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

Reported by: 1053

Reviewed by: 659

Return to Contents

From: Claire Dolphin [mailto:cdolphin@anchorqea.com]
Sent: Thursday, September 29, 2016 12:25 PM
To: Kathleen Burney; Carla Hollowell; Cindy Fields; Andy Martin
Subject: RE: GWMA - TMDL Compliance Monitoring - 16-09-1973 - Sample Receipt Confirmation & COC Document

Hi Kathy,

For the samples on the anomaly form here please log as follows:

- (-9) Use label
- (-18) Use label
- (-19) Use label
- (-22) Use COC
- (-23) Use COC
- (-25) Use label
- (-26) Use label

Let me know of any further questions.

Thank you,
Claire

Claire Dolphin
Environmental Scientist

ANCHOR QEA, LLC
cdolphin@anchorqea.com
D 949.334.9615

From: Kathleen Burney [mailto:KathleenBurney@eurofinsUS.com]
Sent: Thursday, September 29, 2016 11:44 AM
To: Andy Martin <amartin@anchorqea.com>
Cc: Cindy Fields <cfields@anchorqea.com>; Lab Data Attachments <LabDataAttachments@anchorqea.com>; Carla Hollowell <CarlaHollowell@eurofinsUS.com>
Subject: GWMA - TMDL Compliance Monitoring - 16-09-1973 - Sample Receipt Confirmation & COC Document

Thank you for submitting samples to Eurofins Calscience.

A sample receipt confirmation and copy of your COC are attached. Please review the attached document and let us know if you need to make revisions to the scope of work.

- **We noted that the sample IDs indicated on the COC for several samples do not match those on the labels (see Sample Anomaly Report, last page of attachment). We logged in the samples using the IDs from the COC; please let me know if that is correct, or we should use those from the labels. (One exception: based on the ID pattern for the other samples, we did include the "G" for SP-RW-18-M-160927.)**

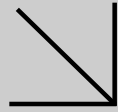
Please let me know if you need anything else.
Thank you.

Kathy Burney
Project Manager Assistant *on behalf of*

Carla Lee Hollowell
Environmental Project Manager



Calscience



WORK ORDER NUMBER: 16-11-2102

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA - TMDL Compliance Monitoring

Attention: Andy Martin
27201 Puerta Real
Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 12/20/2016 by:
Carla Hollowell
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA - TMDL Compliance Monitoring
 Work Order Number: 16-11-2102

1	Work Order Narrative.	3
2	16-11-2102 Anchor GWMA TMDL water.	4
3	Sample Summary.	6
4	Client Sample Data.	7
	4.1 SM 2540 D Total Suspended Solids (Aqueous).	7
	4.2 EPA 1631E Low Level Hg, Total (Aqueous).	14
	4.3 EPA 1631E Low Level Hg, Filtered (Aqueous).	17
	4.4 EPA 1640 ICP/MS Metals (Aqueous).	20
	4.5 EPA 1640 ICP/MS Metals (Aqueous).	26
	4.6 EPA 8081A Organochlorine Pesticides (Aqueous).	32
	4.7 EPA 8270C SIM PCB Congeners (Aqueous).	47
5	Quality Control Sample Data.	77
	5.1 MS/MSD.	77
	5.2 Sample Duplicate.	85
	5.3 LCS/LCSD.	87
6	Glossary of Terms and Qualifiers.	100
7	Chain-of-Custody/Sample Receipt Form.	101

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/22/16. They were assigned to Work Order 16-11-2102.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

CASE NARRATIVE

Calscience Work Order No.: 16-11-2102
Project ID: GWMA-TMDL Compliance Monitoring

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the seawater samples.

Sample Condition on Receipt

Forty (40) seawater samples were received for this project on November 22, 2016. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 3.0 – 3.9°C. All samples were assigned laboratory identification numbers, logged into the Laboratory Information Management System (LIMS), and subsequently stored under refrigeration pending analytical testing.

Tests Performed

Total Suspended Solids by SM 2540B (M)
Total and Dissolved Metals by EPA 1640/1631
OC Pesticides by EPA 8081A
PCB Congeners by EPA 8270C SIM

Data Summary

Samples were filtered in the laboratory for the dissolved metals analyses.

Holding times

All holding times were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Reporting Limits

All Method Detection Limits were met. The results were evaluated to the MDL, and where applicable, “J” flags were reported.

Blanks

Concentrations of target analytes in the Method Blank samples were found to be below reporting limits for all testing.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed at the required frequencies and all parameters were within the established control limits.

Matrix Spikes and QC Duplicates

Matrix spike analyses and/or QC Duplicates were performed for each applicable analysis as sample volume allowed. All parameters were within the established control limits with the following exception: (non-project spike/duplicate samples, if any, are not discussed).

The EPA 1640 Total Copper MS/MSD has been flagged in each of the spike results as recovery limits do not apply because the sample concentration exceeds the spike concentration by the factor of 4 or greater. The corresponding LCS/LCSDs are in control and the results are provided with no further action required.

Surrogates

Surrogate recoveries for all applicable tests and samples were within the established control limits.

Acronyms

LCS - Laboratory Control Sample
MS/MSD- Matrix Spike/Matrix Spike Duplicate
PDS - Post Digestion Spike
RPD- Relative Percent Difference



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 16-11-2102
27201 Puerta Real, Suite 350	Project Name: GWMA - TMDL Compliance Monitoring
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 11/22/16 19:44
	Number of Containers: 152

Attn: Andy Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
CS-RW-01-G-S-20161122	16-11-2102-1	11/22/16 10:05	8	Sea Water
CS-RW-01-G-M-20161122	16-11-2102-2	11/22/16 10:15	1	Sea Water
CS-RW-01-G-B-20161122	16-11-2102-3	11/22/16 10:20	1	Sea Water
IA-RW-02-G-S-20161122	16-11-2102-4	11/22/16 10:42	8	Sea Water
IA-RW-02-G-M-20161122	16-11-2102-5	11/22/16 10:50	1	Sea Water
IA-RW-02-G-B-20161122	16-11-2102-6	11/22/16 10:54	1	Sea Water
IA-RW-03-G-S-20161122	16-11-2102-7	11/22/16 11:12	9	Sea Water
IA-RW-03-G-M-20161122	16-11-2102-8	11/22/16 11:29	1	Sea Water
IA-RW-03-G-B-20161122	16-11-2102-9	11/22/16 11:33	1	Sea Water
IA-RW-04-G-S-20161122	16-11-2102-10	11/22/16 11:51	14	Sea Water
IA-RW-04-G-M-20161122	16-11-2102-11	11/22/16 12:03	1	Sea Water
IA-RW-04-G-B-20161122	16-11-2102-12	11/22/16 12:07	1	Sea Water
IA-RW-1006-G-S-20161122	16-11-2102-13	11/22/16 13:25	7	Sea Water
IA-RW-05-G-S-20161122	16-11-2102-14	11/22/16 14:40	9	Sea Water
IA-RW-05-G-M-20161122	16-11-2102-15	11/22/16 14:50	1	Sea Water
IA-RW-05-G-B-20161122	16-11-2102-16	11/22/16 14:54	1	Sea Water
IA-RW-06-G-S-20161122	16-11-2102-17	11/22/16 13:25	8	Sea Water
IA-RW-06-G-M-20161122	16-11-2102-18	11/22/16 13:50	1	Sea Water
IA-RW-06-G-B-20161122	16-11-2102-19	11/22/16 13:55	1	Sea Water
FH-RW-07-G-S-20161122	16-11-2102-20	11/22/16 14:20	8	Sea Water
FH-RW-07-G-M-20161122	16-11-2102-21	11/22/16 14:23	1	Sea Water
FH-RW-07-G-B-20161122	16-11-2102-22	11/22/16 14:25	1	Sea Water
CM-RW-10-G-S-20161122	16-11-2102-23	11/22/16 13:05	12	Sea Water
CM-RW-10-G-M-20161122	16-11-2102-24	11/22/16 13:10	1	Sea Water
CM-RW-10-G-B-20161122	16-11-2102-25	11/22/16 13:15	1	Sea Water
OA-RW-08-G-S-20161122	16-11-2102-26	11/22/16 14:30	8	Sea Water
OA-RW-08-G-M-20161122	16-11-2102-27	11/22/16 14:35	1	Sea Water
OA-RW-08-G-B-20161122	16-11-2102-28	11/22/16 14:40	1	Sea Water
OA-RW-09-G-S-20161122	16-11-2102-29	11/22/16 14:10	8	Sea Water
OA-RW-09-G-M-20161122	16-11-2102-30	11/22/16 14:15	1	Sea Water
OA-RW-09-G-B-20161122	16-11-2102-31	11/22/16 14:20	1	Sea Water
CB-RW-11-G-S-20161122	16-11-2102-32	11/22/16 13:35	8	Sea Water
CB-RW-11-G-M-20161122	16-11-2102-33	11/22/16 13:40	1	Sea Water
CB-RW-11-G-B-20161122	16-11-2102-34	11/22/16 13:45	1	Sea Water
OA-RW-1009-G-S-20161122	16-11-2102-35	11/22/16 14:12	1	Sea Water
EB-20161122	16-11-2102-36	11/22/16 15:10	7	Sea Water
IB-RW-12-G-S-20161122	16-11-2102-37	11/22/16 09:10	12	Sea Water
IB-RW-12-G-M-20161122	16-11-2102-38	11/22/16 09:30	1	Sea Water
IB-RW-12-G-B-20161122	16-11-2102-39	11/22/16 09:35	1	Sea Water
CM-RW-1010-G-B-20161122	16-11-2102-40	11/22/16 13:20	1	Sea Water

Return to Contents 



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-D	11/22/16 10:05	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-M-20161122	16-11-2102-2-A	11/22/16 10:15	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.8	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-B-20161122	16-11-2102-3-A	11/22/16 10:20	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.5	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-D	11/22/16 10:42	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-M-20161122	16-11-2102-5-A	11/22/16 10:50	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-B-20161122	16-11-2102-6-A	11/22/16 10:54	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-E	11/22/16 11:12	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-M-20161122	16-11-2102-8-A	11/22/16 11:29	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-B-20161122	16-11-2102-9-A	11/22/16 11:33	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-J	11/22/16 11:51	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-M-20161122	16-11-2102-11-A	11/22/16 12:03	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-B-20161122	16-11-2102-12-A	11/22/16 12:07	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-E	11/22/16 14:40	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-M-20161122	16-11-2102-15-A	11/22/16 14:50	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-B-20161122	16-11-2102-16-A	11/22/16 14:54	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-D	11/22/16 13:25	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-M-20161122	16-11-2102-18-A	11/22/16 13:50	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.1	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-B-20161122	16-11-2102-19-A	11/22/16 13:55	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.2	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-D	11/22/16 14:20	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-M-20161122	16-11-2102-21-A	11/22/16 14:23	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.6	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-B-20161122	16-11-2102-22-A	11/22/16 14:25	Sea Water	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-D	11/22/16 13:05	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-M-20161122	16-11-2102-24-A	11/22/16 13:10	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-B-20161122	16-11-2102-25-A	11/22/16 13:15	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-D	11/22/16 14:30	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-M-20161122	16-11-2102-27-A	11/22/16 14:35	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-B-20161122	16-11-2102-28-A	11/22/16 14:40	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-D	11/22/16 14:10	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-M-20161122	16-11-2102-30-A	11/22/16 14:15	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-B-20161122	16-11-2102-31-A	11/22/16 14:20	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.0	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-D	11/22/16 13:35	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-M-20161122	16-11-2102-33-A	11/22/16 13:40	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-B-20161122	16-11-2102-34-A	11/22/16 13:45	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-1009-G-S-20161122	16-11-2102-35-A	11/22/16 14:12	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-D	11/22/16 09:10	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-M-20161122	16-11-2102-38-A	11/22/16 09:30	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	7.7	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-B-20161122	16-11-2102-39-A	11/22/16 09:35	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	8.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-1010-G-B-20161122	16-11-2102-40-A	11/22/16 13:20	Sea Water	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-7992	N/A	Aqueous	N/A	11/26/16	11/26/16 17:00	G1126TSSL7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-7993	N/A	Aqueous	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-H	11/22/16 10:05	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00349	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-G	11/22/16 10:42	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00122	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-F	11/22/16 11:12	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000801	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-K	11/22/16 11:51	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00267	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-S-20161122	16-11-2102-13-G	11/22/16 13:25	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00200	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-H	11/22/16 14:40	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00217	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-H	11/22/16 13:25	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00223	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-G	11/22/16 14:20	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00391	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-H	11/22/16 13:05	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00165	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-E	11/22/16 14:30	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00168	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-H	11/22/16 14:10	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00123	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-E	11/22/16 13:35	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00160	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20161122	16-11-2102-36-E	11/22/16 15:10	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000466	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-G	11/22/16 09:10	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00326	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-147	N/A	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-150	N/A	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-151	N/A	Aqueous	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-F	11/22/16 10:05	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000665	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-F	11/22/16 10:42	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000447	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-H	11/22/16 11:12	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000593	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-N	11/22/16 11:51	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000658	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-S-20161122	16-11-2102-13-F	11/22/16 13:25	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00115	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-I	11/22/16 14:40	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-G	11/22/16 13:25	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000122	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-H	11/22/16 14:20	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000595	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-I	11/22/16 13:05	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000292	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-H	11/22/16 14:30	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000176	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-F	11/22/16 14:10	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000113	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-F	11/22/16 13:35	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000392	0.000500	0.000113	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20161122	16-11-2102-36-F	11/22/16 15:10	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-I	11/22/16 09:10	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00100	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-111	N/A	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-112	N/A	Aqueous	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-G	11/22/16 10:05	Sea Water	ICP/MS 05	12/02/16	12/02/16 21:39	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0868	0.0300	0.00567	1.00	
Chromium	0.889	0.500	0.164	1.00	
Copper	6.75	0.0300	0.00898	1.00	
Lead	0.765	0.0300	0.0135	1.00	
Zinc	40.1	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-H	11/22/16 10:42	Sea Water	ICP/MS 05	12/02/16	12/02/16 21:47	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0797	0.0300	0.00567	1.00	
Chromium	0.538	0.500	0.164	1.00	
Copper	5.36	0.0300	0.00898	1.00	
Lead	0.218	0.0300	0.0135	1.00	
Zinc	24.5	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-G	11/22/16 11:12	Sea Water	ICP/MS 05	12/02/16	12/02/16 21:55	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0682	0.0300	0.00567	1.00	
Chromium	0.451	0.500	0.164	1.00	J
Copper	3.92	0.0300	0.00898	1.00	
Lead	0.134	0.0300	0.0135	1.00	
Zinc	17.6	0.500	0.176	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3005A Total
 Method: EPA 1640
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-L	11/22/16 11:51	Sea Water	ICP/MS 05	12/02/16	12/02/16 23:44	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0660	0.0300	0.00567	1.00	
Chromium	0.351	0.500	0.164	1.00	J
Copper	3.78	0.0300	0.00898	1.00	
Lead	0.177	0.0300	0.0135	1.00	
Zinc	17.3	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-S-20161122	16-11-2102-13-H	11/22/16 13:25	Sea Water	ICP/MS 05	12/02/16	12/02/16 23:52	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0554	0.0300	0.00567	1.00	
Chromium	0.393	0.500	0.164	1.00	J
Copper	3.17	0.0300	0.00898	1.00	
Lead	0.135	0.0300	0.0135	1.00	
Zinc	13.0	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-G	11/22/16 14:40	Sea Water	ICP/MS 05	12/02/16	12/02/16 23:59	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0375	0.0300	0.00567	1.00	
Chromium	0.334	0.500	0.164	1.00	J
Copper	1.42	0.0300	0.00898	1.00	
Lead	0.0848	0.0300	0.0135	1.00	
Zinc	3.57	0.500	0.176	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-F	11/22/16 13:25	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:07	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0537	0.0300	0.00567	1.00	
Chromium	0.317	0.500	0.164	1.00	J
Copper	2.81	0.0300	0.00898	1.00	
Lead	0.112	0.0300	0.0135	1.00	
Zinc	9.75	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-F	11/22/16 14:20	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:15	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0560	0.0300	0.00567	1.00	
Chromium	0.327	0.500	0.164	1.00	J
Copper	4.20	0.0300	0.00898	1.00	
Lead	0.181	0.0300	0.0135	1.00	
Zinc	16.2	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-G	11/22/16 13:05	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:23	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0507	0.0300	0.00567	1.00	
Chromium	0.337	0.500	0.164	1.00	J
Copper	3.16	0.0300	0.00898	1.00	
Lead	0.0987	0.0300	0.0135	1.00	
Zinc	11.3	0.500	0.176	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-G	11/22/16 14:30	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:31	161202L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0316	0.0300	0.00567	1.00	
Chromium	0.258	0.500	0.164	1.00	J
Copper	1.19	0.0300	0.00898	1.00	
Lead	0.0810	0.0300	0.0135	1.00	
Zinc	3.86	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-G	11/22/16 14:10	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:38	161202L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0478	0.0300	0.00567	1.00	
Chromium	0.365	0.500	0.164	1.00	J
Copper	2.24	0.0300	0.00898	1.00	
Lead	0.128	0.0300	0.0135	1.00	
Zinc	8.39	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-G	11/22/16 13:35	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:46	161202L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0510	0.0300	0.00567	1.00	
Chromium	0.306	0.500	0.164	1.00	J
Copper	2.63	0.0300	0.00898	1.00	
Lead	0.116	0.0300	0.0135	1.00	
Zinc	10.2	0.500	0.176	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20161122	16-11-2102-36-G	11/22/16 15:10	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:25	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	10.2	0.0300	0.00898	1.00	
Lead	0.106	0.0300	0.0135	1.00	
Zinc	0.322	0.500	0.176	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-L	11/22/16 09:10	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:33	161202L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0543	0.0300	0.00567	1.00	
Chromium	0.350	0.500	0.164	1.00	J
Copper	2.88	0.0300	0.00898	1.00	
Lead	0.333	0.0300	0.0135	1.00	
Zinc	12.1	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-13-067-656	N/A	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:01	161202L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.176	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-13-067-657	N/A	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:17	161202L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.176	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-E	11/22/16 10:05	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:41	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0930	0.0300	0.00567	1.00	
Chromium	0.452	0.500	0.164	1.00	J
Copper	5.70	0.0300	0.00898	1.00	
Lead	0.173	0.0300	0.0135	1.00	
Zinc	42.7	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-E	11/22/16 10:42	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:48	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0804	0.0300	0.00567	1.00	
Chromium	0.357	0.500	0.164	1.00	J
Copper	5.10	0.0300	0.00898	1.00	
Lead	0.128	0.0300	0.0135	1.00	
Zinc	24.7	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-I	11/22/16 11:12	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:56	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0669	0.0300	0.00567	1.00	
Chromium	0.340	0.500	0.164	1.00	J
Copper	3.71	0.0300	0.00898	1.00	
Lead	0.0883	0.0300	0.0135	1.00	
Zinc	16.9	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-M	11/22/16 11:51	Sea Water	ICP/MS 05	12/02/16	12/03/16 02:04	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0710	0.0300	0.00567	1.00	
Chromium	0.348	0.500	0.164	1.00	J
Copper	4.41	0.0300	0.00898	1.00	
Lead	0.110	0.0300	0.0135	1.00	
Zinc	19.4	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-S-20161122	16-11-2102-13-E	11/22/16 13:25	Sea Water	ICP/MS 05	12/02/16	12/03/16 02:12	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0524	0.0300	0.00567	1.00	
Chromium	0.311	0.500	0.164	1.00	J
Copper	2.75	0.0300	0.00898	1.00	
Lead	0.0656	0.0300	0.0135	1.00	
Zinc	10.1	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-F	11/22/16 14:40	Sea Water	ICP/MS 05	12/02/16	12/03/16 02:19	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0367	0.0300	0.00567	1.00	
Chromium	0.262	0.500	0.164	1.00	J
Copper	1.36	0.0300	0.00898	1.00	
Lead	0.0387	0.0300	0.0135	1.00	
Zinc	3.96	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-E	11/22/16 13:25	Sea Water	ICP/MS 05	12/02/16	12/03/16 02:27	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0563	0.0300	0.00567	1.00	
Chromium	0.279	0.500	0.164	1.00	J
Copper	2.88	0.0300	0.00898	1.00	
Lead	0.0761	0.0300	0.0135	1.00	
Zinc	9.76	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-E	11/22/16 14:20	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:06	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0586	0.0300	0.00567	1.00	
Chromium	0.239	0.500	0.164	1.00	J
Copper	4.07	0.0300	0.00898	1.00	
Lead	0.107	0.0300	0.0135	1.00	
Zinc	15.5	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-E	11/22/16 13:05	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:14	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0490	0.0300	0.00567	1.00	
Chromium	0.247	0.500	0.164	1.00	J
Copper	3.01	0.0300	0.00898	1.00	
Lead	0.0614	0.0300	0.0135	1.00	
Zinc	10.8	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-F	11/22/16 14:30	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:22	161202L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0325	0.0300	0.00567	1.00	
Chromium	0.245	0.500	0.164	1.00	J
Copper	1.07	0.0300	0.00898	1.00	
Lead	0.0512	0.0300	0.0135	1.00	
Zinc	2.21	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-E	11/22/16 14:10	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:29	161202L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0476	0.0300	0.00567	1.00	
Chromium	0.288	0.500	0.164	1.00	J
Copper	2.16	0.0300	0.00898	1.00	
Lead	0.0613	0.0300	0.0135	1.00	
Zinc	8.33	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-H	11/22/16 13:35	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:37	161202L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0509	0.0300	0.00567	1.00	
Chromium	0.268	0.500	0.164	1.00	J
Copper	2.57	0.0300	0.00898	1.00	
Lead	0.0736	0.0300	0.0135	1.00	
Zinc	9.73	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20161122	16-11-2102-36-D	11/22/16 15:10	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:45	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	9.33	0.0300	0.00898	1.00	
Lead	0.109	0.0300	0.0135	1.00	
Zinc	0.324	0.500	0.0736	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-F	11/22/16 09:10	Sea Water	ICP/MS 05	12/02/16	12/03/16 03:53	161202L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0545	0.0300	0.00567	1.00	
Chromium	0.232	0.500	0.164	1.00	J
Copper	2.32	0.0300	0.00898	1.00	
Lead	0.0930	0.0300	0.0135	1.00	
Zinc	10.9	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-823-242	N/A	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:09	161202L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-823-243	N/A	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:25	161202L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.0736	1.00	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	11/22/16
27201 Puerta Real, Suite 350	Work Order:	16-11-2102
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-AB	11/22/16 10:05	Sea Water	GC 44	11/29/16	12/07/16 13:11	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
Decachlorobiphenyl	109	50-150			
2,4,5,6-Tetrachloro-m-Xylene	71	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-AB	11/22/16 10:42	Sea Water	GC 44	11/29/16	12/07/16 13:25	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	121	50-150			
2,4,5,6-Tetrachloro-m-Xylene	77	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-AB	11/22/16 11:12	Sea Water	GC 44	11/29/16	12/07/16 13:39	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	108	50-150			
2,4,5,6-Tetrachloro-m-Xylene	72	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-BF	11/22/16 11:51	Sea Water	GC 44	11/29/16	12/07/16 13:54	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	129	50-150			
2,4,5,6-Tetrachloro-m-Xylene	87	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-S-20161122	16-11-2102-13-AB	11/22/16 13:25	Sea Water	GC 44	11/29/16	12/07/16 14:08	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	139	50-150			
2,4,5,6-Tetrachloro-m-Xylene	95	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-AB	11/22/16 14:40	Sea Water	GC 44	11/29/16	12/07/16 14:22	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	115	50-150			
2,4,5,6-Tetrachloro-m-Xylene	77	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-AB	11/22/16 13:25	Sea Water	GC 44	11/29/16	12/07/16 14:36	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	129	50-150			
2,4,5,6-Tetrachloro-m-Xylene	96	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-AB	11/22/16 14:20	Sea Water	GC 44	11/29/16	12/07/16 14:50	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	128	50-150			
2,4,5,6-Tetrachloro-m-Xylene	108	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	11/22/16
27201 Puerta Real, Suite 350	Work Order:	16-11-2102
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-AB	11/22/16 13:05	Sea Water	GC 44	11/29/16	12/07/16 15:05	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	115	50-150			
2,4,5,6-Tetrachloro-m-Xylene	98	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-BC	11/22/16 14:30	Sea Water	GC 44	11/29/16	12/07/16 15:19	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	119	50-150			
2,4,5,6-Tetrachloro-m-Xylene	108	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	11/22/16
27201 Puerta Real, Suite 350	Work Order:	16-11-2102
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-AC	11/22/16 14:10	Sea Water	GC 44	11/29/16	12/07/16 15:33	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	104	50-150			
2,4,5,6-Tetrachloro-m-Xylene	107	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-AB	11/22/16 13:35	Sea Water	GC 44	11/29/16	12/07/16 15:47	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	122	50-150			
2,4,5,6-Tetrachloro-m-Xylene	122	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20161122	16-11-2102-36-AC	11/22/16 15:10	Sea Water	GC 44	11/29/16	12/07/16 16:01	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	107	50-150			
2,4,5,6-Tetrachloro-m-Xylene	91	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-AB	11/22/16 09:10	Sea Water	GC 44	11/29/16	12/07/16 16:16	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	109	50-150			
2,4,5,6-Tetrachloro-m-Xylene	75	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 15

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-704-12	N/A	Aqueous	GC 44	11/29/16	12/07/16 12:28	161129L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	93	50-150			
2,4,5,6-Tetrachloro-m-Xylene	64	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20161122	16-11-2102-1-C	11/22/16 10:05	Sea Water	GC/MS HHH	11/29/16	12/02/16 18:23	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00064	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00075	1.00	
PCB049	ND	0.0019	0.00075	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00037	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00063	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00056	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00074	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00068	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00049	1.00	
PCB151	ND	0.0019	0.00059	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00032	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00055	1.00	
PCB180	ND	0.0019	0.00069	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00054	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00070	1.00	
PCB206	ND	0.0019	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	75	50-150			
p-Terphenyl-d14	97	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20161122	16-11-2102-4-C	11/22/16 10:42	Sea Water	GC/MS HHH	11/29/16	12/02/16 18:46	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00063	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00074	1.00	
PCB049	ND	0.0019	0.00074	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00036	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00062	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00055	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00073	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00067	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00048	1.00	
PCB151	ND	0.0019	0.00058	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00031	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00054	1.00	
PCB180	ND	0.0019	0.00068	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00053	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00069	1.00	
PCB206	ND	0.0019	0.00024	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	78	50-150			
p-Terphenyl-d14	101	50-150			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20161122	16-11-2102-7-C	11/22/16 11:12	Sea Water	GC/MS HHH	11/29/16	12/02/16 19:08	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00063	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00074	1.00	
PCB049	ND	0.0019	0.00074	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00036	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00062	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00055	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00073	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00067	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00048	1.00	
PCB151	ND	0.0019	0.00058	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00031	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00054	1.00	
PCB180	ND	0.0019	0.00068	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00053	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00069	1.00	
PCB206	ND	0.0019	0.00024	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	69	50-150			
p-Terphenyl-d14	88	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20161122	16-11-2102-10-I	11/22/16 11:51	Sea Water	GC/MS HHH	11/29/16	12/02/16 19:30	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00063	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00074	1.00	
PCB049	ND	0.0019	0.00074	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00036	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00062	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00055	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00073	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00067	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00048	1.00	
PCB151	ND	0.0019	0.00058	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00031	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00054	1.00	
PCB180	ND	0.0019	0.00068	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00053	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00069	1.00	
PCB206	ND	0.0019	0.00024	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	83	50-150			
p-Terphenyl-d14	106	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-S-20161122	16-11-2102-13-C	11/22/16 13:25	Sea Water	GC/MS HHH	11/29/16	12/05/16 16:13	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00063	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00074	1.00	
PCB049	ND	0.0019	0.00074	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00036	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00062	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00055	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00073	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00067	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00048	1.00	
PCB151	ND	0.0019	0.00058	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00031	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00054	1.00	
PCB180	ND	0.0019	0.00068	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00053	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00069	1.00	
PCB206	ND	0.0019	0.00024	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	76	50-150			
p-Terphenyl-d14	93	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20161122	16-11-2102-14-C	11/22/16 14:40	Sea Water	GC/MS HHH	11/29/16	12/02/16 20:15	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	79	50-150			
p-Terphenyl-d14	93	50-150			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20161122	16-11-2102-17-C	11/22/16 13:25	Sea Water	GC/MS HHH	11/29/16	12/02/16 20:38	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00041	1.00	
PCB028	ND	0.0020	0.00065	1.00	
PCB037	ND	0.0020	0.00047	1.00	
PCB044	ND	0.0020	0.00077	1.00	
PCB049	ND	0.0020	0.00077	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00042	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00049	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00057	1.00	
PCB105	ND	0.0020	0.00037	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00076	1.00	
PCB126	ND	0.0020	0.00054	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00074	1.00	
PCB167	ND	0.0020	0.00086	1.00	
PCB168	ND	0.0020	0.00032	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00071	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00055	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	77	50-150			
p-Terphenyl-d14	92	50-150			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20161122	16-11-2102-20-C	11/22/16 14:20	Sea Water	GC/MS HHH	11/29/16	12/02/16 21:00	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00064	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00076	1.00	
PCB049	ND	0.0019	0.00076	1.00	
PCB052	ND	0.0019	0.00050	1.00	
PCB066	ND	0.0019	0.00056	1.00	
PCB070	ND	0.0019	0.00037	1.00	
PCB074	ND	0.0019	0.00042	1.00	
PCB077	ND	0.0019	0.00063	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00056	1.00	
PCB105	ND	0.0019	0.00037	1.00	
PCB110	ND	0.0019	0.00049	1.00	
PCB114	ND	0.0019	0.00043	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00042	1.00	
PCB123	ND	0.0019	0.00074	1.00	
PCB126	ND	0.0019	0.00053	1.00	
PCB128	ND	0.0019	0.00068	1.00	
PCB132/153	ND	0.0039	0.0011	1.00	
PCB138/158	ND	0.0039	0.0011	1.00	
PCB149	ND	0.0019	0.00049	1.00	
PCB151	ND	0.0019	0.00059	1.00	
PCB156	ND	0.0019	0.00050	1.00	
PCB157	ND	0.0019	0.00073	1.00	
PCB167	ND	0.0019	0.00084	1.00	
PCB168	ND	0.0019	0.00032	1.00	
PCB169	ND	0.0019	0.00055	1.00	
PCB170	ND	0.0019	0.00055	1.00	
PCB177	ND	0.0019	0.00055	1.00	
PCB180	ND	0.0019	0.00070	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00052	1.00	
PCB187	ND	0.0019	0.00054	1.00	
PCB189	ND	0.0019	0.00039	1.00	
PCB194	ND	0.0019	0.00041	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00070	1.00	
PCB206	ND	0.0019	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	72	50-150			
p-Terphenyl-d14	84	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20161122	16-11-2102-23-C	11/22/16 13:05	Sea Water	GC/MS HHH	11/29/16	12/02/16 21:22	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	50-150			
p-Terphenyl-d14	89	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 19 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20161122	16-11-2102-26-A	11/22/16 14:30	Sea Water	GC/MS HHH	11/29/16	12/02/16 21:45	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 20 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	85	50-150			
p-Terphenyl-d14	101	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	11/22/16
27201 Puerta Real, Suite 350	Work Order:	16-11-2102
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 21 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20161122	16-11-2102-29-B	11/22/16 14:10	Sea Water	GC/MS HHH	11/29/16	12/02/16 22:07	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 22 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	84	50-150			
p-Terphenyl-d14	100	50-150			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 23 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20161122	16-11-2102-32-C	11/22/16 13:35	Sea Water	GC/MS HHH	11/29/16	12/02/16 22:30	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 24 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	78	50-150			
p-Terphenyl-d14	91	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 25 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20161122	16-11-2102-36-B	11/22/16 15:10	Sea Water	GC/MS HHH	11/29/16	12/02/16 22:52	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00040	1.00	
PCB028	ND	0.0019	0.00064	1.00	
PCB037	ND	0.0019	0.00046	1.00	
PCB044	ND	0.0019	0.00075	1.00	
PCB049	ND	0.0019	0.00075	1.00	
PCB052	ND	0.0019	0.00049	1.00	
PCB066	ND	0.0019	0.00055	1.00	
PCB070	ND	0.0019	0.00037	1.00	
PCB074	ND	0.0019	0.00041	1.00	
PCB077	ND	0.0019	0.00063	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00048	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00056	1.00	
PCB105	ND	0.0019	0.00036	1.00	
PCB110	ND	0.0019	0.00048	1.00	
PCB114	ND	0.0019	0.00042	1.00	
PCB118	ND	0.0019	0.00047	1.00	
PCB119	ND	0.0019	0.00041	1.00	
PCB123	ND	0.0019	0.00074	1.00	
PCB126	ND	0.0019	0.00052	1.00	
PCB128	ND	0.0019	0.00068	1.00	
PCB132/153	ND	0.0038	0.0011	1.00	
PCB138/158	ND	0.0038	0.0011	1.00	
PCB149	ND	0.0019	0.00049	1.00	
PCB151	ND	0.0019	0.00059	1.00	
PCB156	ND	0.0019	0.00049	1.00	
PCB157	ND	0.0019	0.00072	1.00	
PCB167	ND	0.0019	0.00083	1.00	
PCB168	ND	0.0019	0.00032	1.00	
PCB169	ND	0.0019	0.00054	1.00	
PCB170	ND	0.0019	0.00054	1.00	
PCB177	ND	0.0019	0.00055	1.00	
PCB180	ND	0.0019	0.00069	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 26 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00054	1.00	
PCB189	ND	0.0019	0.00038	1.00	
PCB194	ND	0.0019	0.00040	1.00	
PCB195	ND	0.0019	0.00034	1.00	
PCB201	ND	0.0019	0.00070	1.00	
PCB206	ND	0.0019	0.00025	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	79	50-150			
p-Terphenyl-d14	89	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 27 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20161122	16-11-2102-37-C	11/22/16 09:10	Sea Water	GC/MS HHH	11/29/16	12/02/16 23:14	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 28 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	70	50-150			
p-Terphenyl-d14	82	50-150			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 29 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-414-86	N/A	Aqueous	GC/MS HHH	11/29/16	12/02/16 16:31	161129L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00042	1.00	
PCB028	ND	0.0020	0.00066	1.00	
PCB037	ND	0.0020	0.00048	1.00	
PCB044	ND	0.0020	0.00078	1.00	
PCB049	ND	0.0020	0.00078	1.00	
PCB052	ND	0.0020	0.00051	1.00	
PCB066	ND	0.0020	0.00057	1.00	
PCB070	ND	0.0020	0.00038	1.00	
PCB074	ND	0.0020	0.00043	1.00	
PCB077	ND	0.0020	0.00065	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00050	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00058	1.00	
PCB105	ND	0.0020	0.00038	1.00	
PCB110	ND	0.0020	0.00050	1.00	
PCB114	ND	0.0020	0.00044	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00043	1.00	
PCB123	ND	0.0020	0.00077	1.00	
PCB126	ND	0.0020	0.00055	1.00	
PCB128	ND	0.0020	0.00070	1.00	
PCB132/153	ND	0.0040	0.0012	1.00	
PCB138/158	ND	0.0040	0.0011	1.00	
PCB149	ND	0.0020	0.00050	1.00	
PCB151	ND	0.0020	0.00061	1.00	
PCB156	ND	0.0020	0.00051	1.00	
PCB157	ND	0.0020	0.00075	1.00	
PCB167	ND	0.0020	0.00087	1.00	
PCB168	ND	0.0020	0.00033	1.00	
PCB169	ND	0.0020	0.00056	1.00	
PCB170	ND	0.0020	0.00056	1.00	
PCB177	ND	0.0020	0.00057	1.00	
PCB180	ND	0.0020	0.00072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 30 of 30

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00053	1.00	
PCB187	ND	0.0020	0.00056	1.00	
PCB189	ND	0.0020	0.00040	1.00	
PCB194	ND	0.0020	0.00042	1.00	
PCB195	ND	0.0020	0.00035	1.00	
PCB201	ND	0.0020	0.00072	1.00	
PCB206	ND	0.0020	0.00026	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	83	50-150			
p-Terphenyl-d14	109	50-150			

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: Filtered
 Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CM-RW-10-G-S-20161122	Sample	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128S02
CM-RW-10-G-S-20161122	Matrix Spike	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128S02
CM-RW-10-G-S-20161122	Matrix Spike Duplicate	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.02000	0.02045	102	0.02060	103	71-125	1	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CM-RW-10-G-S-20161122	Sample	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128S01A
CM-RW-10-G-S-20161122	Matrix Spike	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128S01A
CM-RW-10-G-S-20161122	Matrix Spike Duplicate	Sea Water	Hg/AF 1	11/28/16	11/28/16 00:00	161128S01A

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.001655	0.02000	0.02226	103	0.02190	101	71-125	2	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
EB-20161122	Sample	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206S02
EB-20161122	Matrix Spike	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206S02
EB-20161122	Matrix Spike Duplicate	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.02000	0.01910	95	0.01957	98	71-125	2	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IB-RW-12-G-S-20161122	Sample	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206S02A
IB-RW-12-G-S-20161122	Matrix Spike	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206S02A
IB-RW-12-G-S-20161122	Matrix Spike Duplicate	Sea Water	Hg/AF 1	12/06/16	12/06/16 00:00	161206S02A

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.003258	0.02000	0.02499	109	0.02454	106	71-125	2	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CM-RW-10-G-S-20161122	Sample	Sea Water	ICP/MS 05	12/02/16	12/03/16 00:23	161202S01
CM-RW-10-G-S-20161122	Matrix Spike	Sea Water	ICP/MS 05	12/02/16	12/02/16 19:58	161202S01
CM-RW-10-G-S-20161122	Matrix Spike Duplicate	Sea Water	ICP/MS 05	12/02/16	12/02/16 20:06	161202S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.05073	0.5000	0.5738	105	0.5782	105	50-150	1	0-20	
Chromium	ND	5.000	6.917	138	6.902	138	50-150	0	0-20	
Copper	3.165	0.5000	3.394	4X	3.458	4X	50-150	4X	0-20	Q
Lead	0.09871	0.5000	0.5432	89	0.5302	86	50-150	2	0-20	
Zinc	11.32	5.000	16.05	95	16.03	94	50-150	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
EB-20161122	Sample	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:25	161202S01A				
EB-20161122	Matrix Spike	Sea Water	ICP/MS 05	12/02/16	12/02/16 20:14	161202S01A				
EB-20161122	Matrix Spike Duplicate	Sea Water	ICP/MS 05	12/02/16	12/02/16 20:53	161202S01A				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	ND	0.5000	0.5331	107	0.5158	103	50-150	3	0-20	
Chromium	ND	5.000	6.131	123	6.027	121	50-150	2	0-20	
Copper	10.22	0.5000	10.78	4X	10.12	4X	50-150	4X	0-20	Q
Lead	0.1059	0.5000	0.5374	86	0.5291	85	50-150	2	0-20	
Zinc	ND	5.000	6.060	121	5.811	116	50-150	4	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
IB-RW-12-G-S-20161122	Sample	Sea Water	ICP/MS 05	12/02/16	12/03/16 01:33	161202S02				
IB-RW-12-G-S-20161122	Matrix Spike	Sea Water	ICP/MS 05	12/02/16	12/02/16 21:00	161202S02				
IB-RW-12-G-S-20161122	Matrix Spike Duplicate	Sea Water	ICP/MS 05	12/02/16	12/02/16 21:08	161202S02				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.05429	0.5000	0.5932	108	0.6096	111	50-150	3	0-20	
Chromium	ND	5.000	7.058	141	7.327	147	50-150	4	0-20	
Copper	2.883	0.5000	3.402	4X	3.601	4X	50-150	4X	0-20	Q
Lead	0.3329	0.5000	0.7437	82	0.7708	88	50-150	4	0-20	
Zinc	12.06	5.000	17.36	106	18.16	122	50-150	5	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IA-RW-04-G-S-20161122	Sample	Sea Water	GC/MS HHH	11/29/16	12/02/16 19:30	161129S13
IA-RW-04-G-S-20161122	Matrix Spike	Sea Water	GC/MS HHH	11/29/16	12/02/16 17:39	161129S13
IA-RW-04-G-S-20161122	Matrix Spike Duplicate	Sea Water	GC/MS HHH	11/29/16	12/02/16 18:01	161129S13

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	0.5000	0.4145	83	0.4226	85	50-150	2	0-25	
PCB028	ND	0.5000	0.4662	93	0.4930	99	50-150	6	0-25	
PCB044	ND	0.5000	0.4271	85	0.4590	92	50-150	7	0-25	
PCB052	ND	0.5000	0.4292	86	0.4532	91	50-150	5	0-25	
PCB066	ND	0.5000	0.5121	102	0.5367	107	50-150	5	0-25	
PCB077	ND	0.5000	0.4661	93	0.4873	97	50-150	4	0-25	
PCB101	ND	0.5000	0.4353	87	0.4544	91	50-150	4	0-25	
PCB105	ND	0.5000	0.5052	101	0.5271	105	50-150	4	0-25	
PCB118	ND	0.5000	0.4782	96	0.5019	100	50-150	5	0-25	
PCB126	ND	0.5000	0.4538	91	0.4869	97	50-150	7	0-25	
PCB128	ND	0.5000	0.4534	91	0.4892	98	50-150	8	0-25	
PCB170	ND	0.5000	0.4819	96	0.4458	89	50-150	8	0-25	
PCB180	ND	0.5000	0.4987	100	0.5395	108	50-150	8	0-25	
PCB187	ND	0.5000	0.4631	93	0.4798	96	50-150	4	0-25	
PCB195	ND	0.5000	0.5348	107	0.5138	103	50-150	4	0-25	
PCB206	ND	0.5000	0.4889	98	0.4330	87	50-150	12	0-25	
PCB209	ND	0.5000	0.5146	103	0.4691	94	50-150	9	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
IA-RW-03-G-S-20161122	Sample	Sea Water	N/A	11/26/16 00:00	11/26/16 17:00	G1126TSSD7
IA-RW-03-G-S-20161122	Sample Duplicate	Sea Water	N/A	11/26/16 00:00	11/26/16 17:00	G1126TSSD7

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Suspended	ND	ND	N/A	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: N/A
 Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
IA-RW-05-G-S-20161122	Sample	Sea Water	N/A	11/26/16 00:00	11/26/16 18:00	G1126TSSD8
IA-RW-05-G-S-20161122	Sample Duplicate	Sea Water	N/A	11/26/16 00:00	11/26/16 18:00	G1126TSSD8

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Suspended	ND	ND	N/A	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-7992	LCS	Aqueous	N/A	11/26/16	11/26/16 17:00	G1126TSSL7			
099-09-010-7992	LCSD	Aqueous	N/A	11/26/16	11/26/16 17:00	G1126TSSL7			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	97.00	97	102.0	102	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: N/A
 Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-09-010-7993	LCS	Aqueous	N/A	11/26/16	11/26/16 18:00	G1126TSSL8
099-09-010-7993	LCSD	Aqueous	N/A	11/26/16	11/26/16 18:00	G1126TSSL8

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	106.0	106	100.0	100	80-120	6	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-147	LCS	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L01			
099-15-224-147	LCSD	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01958	98	0.01942	97	71-125	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-150	LCS	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02			
099-15-224-150	LCSD	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01902	95	0.01915	96	71-125	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-151	LCS	Aqueous	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02			
099-15-224-151	LCSD	Aqueous	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01970	99	0.01913	96	71-125	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: Filtered
 Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-226-111	LCS	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F
099-15-226-111	LCSD	Aqueous	Hg/AF 1	11/28/16	11/28/16 00:00	161128L02F

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01902	95	0.01915	96	71-125	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 11/22/16
 Work Order: 16-11-2102
 Preparation: Filtered
 Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-226-112	LCS	Aqueous	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F
099-15-226-112	LCSD	Aqueous	Hg/AF 1	12/06/16	12/06/16 00:00	161206L02F

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01970	99	0.01913	96	71-125	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-13-067-656	LCS	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:32	161202L01			
099-13-067-656	LCSD	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:40	161202L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5171	103	0.5197	104	70-130	0	0-20	
Chromium	5.000	5.341	107	5.475	109	70-130	2	0-20	
Copper	0.5000	0.5294	106	0.5341	107	70-130	1	0-20	
Lead	0.5000	0.4851	97	0.4944	99	70-130	2	0-20	
Zinc	5.000	5.355	107	5.244	105	70-130	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-13-067-657	LCS	Aqueous	ICP/MS 05	12/02/16	12/05/16 18:02	161202L02			
099-13-067-657	LCSD	Aqueous	ICP/MS 05	12/02/16	12/02/16 19:19	161202L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5344	107	0.5175	103	70-130	3	0-20	
Chromium	5.000	5.183	104	5.446	109	70-130	5	0-20	
Copper	0.5000	0.5396	108	0.5346	107	70-130	1	0-20	
Lead	0.5000	0.5265	105	0.4856	97	70-130	8	0-20	
Zinc	5.000	5.116	102	5.527	111	70-130	8	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-823-242	LCS	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:32	161202L01F			
099-15-823-242	LCSD	Aqueous	ICP/MS 05	12/02/16	12/02/16 18:40	161202L01F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5171	103	0.5197	104	70-130	0	0-20	
Chromium	5.000	5.341	107	5.475	109	70-130	2	0-20	
Copper	0.5000	0.5294	106	0.5341	107	70-130	1	0-20	
Lead	0.5000	0.4851	97	0.4944	99	70-130	2	0-20	
Zinc	5.000	5.355	107	5.244	105	70-130	2	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-823-243	LCS	Aqueous	ICP/MS 05	12/02/16	12/05/16 18:02	161202L02F			
099-15-823-243	LCSD	Aqueous	ICP/MS 05	12/02/16	12/02/16 19:19	161202L02F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5344	107	0.5175	103	70-130	3	0-20	
Chromium	5.000	5.183	104	5.446	109	70-130	5	0-20	
Copper	0.5000	0.5396	108	0.5346	107	70-130	1	0-20	
Lead	0.5000	0.5265	105	0.4856	97	70-130	8	0-20	
Zinc	5.000	5.116	102	5.527	111	70-130	8	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-704-12	LCS	Aqueous	GC 44	11/29/16	12/07/16 12:00	161129L02				
099-16-704-12	LCSD	Aqueous	GC 44	11/29/16	12/07/16 12:14	161129L02				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	33.35	19.38	58	18.84	56	50-150	33-167	3	0-25	
4,4'-DDD	33.35	40.57	122	43.17	129	50-150	33-167	6	0-25	
4,4'-DDE	33.35	36.32	109	37.05	111	50-150	33-167	2	0-25	
4,4'-DDT	33.35	42.55	128	46.39	139	50-150	33-167	9	0-25	
Alpha Chlordane	33.35	35.13	105	36.72	110	50-150	33-167	4	0-25	
Dieldrin	33.35	44.58	134	47.98	144	50-150	33-167	7	0-25	
Gamma Chlordane	33.35	29.71	89	29.14	87	50-150	33-167	2	0-25	
Endrin	33.35	42.26	127	44.70	134	50-150	33-167	6	0-25	
Gamma-BHC	33.35	42.67	128	45.81	137	50-150	33-167	7	0-25	
Heptachlor	33.35	24.08	72	24.69	74	50-150	33-167	3	0-25	
Heptachlor Epoxide	33.35	41.70	125	44.90	135	50-150	33-167	7	0-25	

Total number of LCS compounds: 11

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 11/22/16
Work Order: 16-11-2102
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 13

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-414-86	LCS	Aqueous	GC/MS HHH	11/29/16	12/02/16 16:54	161129L13				
099-16-414-86	LCSD	Aqueous	GC/MS HHH	11/29/16	12/02/16 17:16	161129L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	0.5000	0.4236	85	0.4284	86	50-150	33-167	1	0-25	
PCB028	0.5000	0.4854	97	0.4916	98	50-150	33-167	1	0-25	
PCB044	0.5000	0.4088	82	0.4348	87	50-150	33-167	6	0-25	
PCB052	0.5000	0.4533	91	0.4726	95	50-150	33-167	4	0-25	
PCB066	0.5000	0.5185	104	0.4925	98	50-150	33-167	5	0-25	
PCB077	0.5000	0.4791	96	0.4975	100	50-150	33-167	4	0-25	
PCB101	0.5000	0.4507	90	0.4532	91	50-150	33-167	1	0-25	
PCB105	0.5000	0.5082	102	0.5262	105	50-150	33-167	3	0-25	
PCB118	0.5000	0.4879	98	0.4870	97	50-150	33-167	0	0-25	
PCB126	0.5000	0.4460	89	0.4973	99	50-150	33-167	11	0-25	
PCB128	0.5000	0.4499	90	0.5021	100	50-150	33-167	11	0-25	
PCB170	0.5000	0.4596	92	0.4737	95	50-150	33-167	3	0-25	
PCB180	0.5000	0.5123	102	0.5536	111	50-150	33-167	8	0-25	
PCB187	0.5000	0.4544	91	0.4972	99	50-150	33-167	9	0-25	
PCB195	0.5000	0.5479	110	0.5030	101	50-150	33-167	9	0-25	
PCB206	0.5000	0.4526	91	0.4183	84	50-150	33-167	8	0-25	
PCB209	0.5000	0.4742	95	0.4330	87	50-150	33-167	9	0-25	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 16-11-2102

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____
 Date: _____
 Project Name: **GWMA-TMDL Compliance Monitoring**
 Project Number: **141205-01.01**
 Project Manager: **Andy Martin**
 Phone Number: **(949) 334-9630**
 Shipment Method: **Courier**
 Field Team: **LA Harbor**



2102

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters																	Comments/Preservation				
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD																
16 1	IA-RW-05-G-B-20161122	11/22/16 1954	Water	1	X																			16		
2			Water	1	X																					
17 3	IA-RW-06-G-S-2016122	1325	Water	8	X	X	X	X	X															17		
18 4	IA-RW-06-G-M-20161122	1350	Water	1	X																			18		
19 5	IA-RW-06-G-B-20161122	1355	Water	1	X																			19		
20 6	FH-RW-07-G-S-20161122	1420	Water	8	X	X	X	X	X															20		
21 7	FH-RW-07-G-M-20161122	1423	Water	1	X																			21		
22 8	FH-RW-07-G-B-20161122	1425	Water	2	X																			22		
23 9	CM-RW-10-G-S-20161122	11/22/16 1305	Water	12	X	X	X	X	X	X														23		
24 10	CM-RW-10-G-M-20161122	1310	Water	1																				24		
25 11	CM-RW-10-G-B-20161122	1315	Water	1																				25		
12																										
13																										
14																										
15																										

Notes:


Relinquished By: _____
 Signature/Printed Name: _____
 Company: **Anchor OEA**
 Date/Time: **11/22/16 18:10**

Received By: _____
 Signature/Printed Name: **D. WALKER**
 Company: **ECI**
 Date/Time: **11/22/16 18:00**

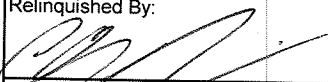
Relinquished By: _____
 Signature/Printed Name: **D. WALKER**
 Company: **ECI**
 Date/Time: **11/22/16 19:44**

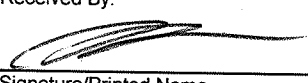
Received By: _____
 Signature/Printed Name: **Sunny Lee**
 Company: **ECI**
 Date/Time: **11/22/16 19:44**

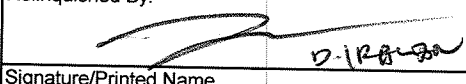
Chain of Custody Record & Laboratory Analysis Request

Laboratory number:				Test Parameters														 2102						
Date:				No. of Containers	TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD													Comments/Preservation	
Project Name: GWMA-TMDL Compliance Monitoring																								
Project Number: 141205-01.01																								
Project Manager: Andy Martin																								
Phone Number: (949) 334-9630																								
Shipment Method: Courier																								
Field Team: LB Harbor/San Pedro Bay																								
Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD													Comments/Preservation	
26	1 OA-RW-08-G-S-20161122	11/22/16 1430	Water	8	X	X	X	X	X														26	
27	2 OA-RW-08-G-M-20161122	1435	Water	1	X																		27	
28	3 OA-RW-08-G-B-20161122	1440	Water	1	X																		28	
29	4 OA-RW-09-G-S-20161122	1460	Water	8	X	X	X	X	X														29	
30	5 OA-RW-09-G-M-20161122	1415	Water	1	X																		30	
31	6 OA-RW-09-G-B-20161122	1420	Water	1	X																		31	
32	7 CB-RW-11-G-S-20161122	1335	Water	8	X	X	X	X	X														32	
33	8 CB-RW-11-G-M-20161122	1340	Water	1	X																		33	
34	9 CB-RW-11-B-20161122	1345	Water	1	X																		34	
	10 FB-20161122		Water	4	X	X																	Field blank	
35	11 OA-RW-1009-G-S-20161122	1412	Water	1	X																		35	
	12		Water																					
	13		Water																					
	14		Water																					
	15		Water																					

Notes:

Relinquished By:  Company: Anchor OEA
 Signature/Printed Name: _____ Date/Time: 11/22/16 16:40

Received By:  Company: _____
 Signature/Printed Name: _____ Date/Time: 11/22/16 18:00

Relinquished By:  Company: OCU
 Signature/Printed Name: _____ Date/Time: 11/22/16

Received By: _____ Company: _____
 Signature/Printed Name: _____ Date/Time: _____

Page 103 of 115

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:
Date:
Project Name: GWMA-TMDL Compliance Monitoring
Project Number: 141205-01.01
Project Manager: Andy Martin
Phone Number: (949) 334-9630
Shipment Method: Courier
Field Team:



2102

No. of Containers

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters												Comments/Preservation		
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD									
1	EB-20161102	11/22/16 1510	Water	7	X	X	X	X	X	X									
2	IB-RW-12-G-S-20161122	0910	Water	12	X	X	X	X	X	X									Metals, Hg MS/MSD 36
3	IB-RW-12-G-M-20161122	0930	Water	1	X														37
4	IB-RW-12-G-B-20161122	0935	Water	1	X														38
5			Water																39
6			Water																
7			Water																
8			Water																
9			Water																
10			Water																
11			Water																
12			Water																
13			Water																
14			Water																
15			Water																

Notes:

Relinquished By: _____
 Signature/Printed Name
 Company: Anchor OEA
 Date/Time: 11/22/16 1810

Received By: _____
 Signature/Printed Name
 Company: ECI
 Date/Time: 11/22/16 1810

Relinquished By: _____
 Signature/Printed Name
 Company: ECI
 Date/Time: 11/22/16 1944

Received By: _____
 Signature/Printed Name
 Company: ECI
 Date/Time: 11/22/16 1944

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 9

CLIENT: ANCHOR OEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.1 °C (w/ CF): 3.1 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 804

CUSTODY SEAL:
 Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 804
 Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: SR

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOA_h VOA_{na} 100PJ 100PJ_{na} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJs
 500PB 1AGB 1AGB_{na} 1AGBs 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____
 Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag
 Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: SR
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: IS

Return to Contents: ↑

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 9

CLIENT: ANCHOR PEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.2 °C (w/ CF): 3.2 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804

Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{znna} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, znna = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: 802

Reviewed by: IS

SAMPLE RECEIPT CHECKLIST

COOLER 3 OF 9

CLIENT: ANCHOR PEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.4 °C (w/ CF): 3.4 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804
Checked by: SR

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
 125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
 500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: SR
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: IS

SAMPLE RECEIPT CHECKLIST

COOLER 4 OF 9

CLIENT: ANCHOR OEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.8 °C (w/ CF): 3.8 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804
Checked by: 802

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (____) EnCores® (____) TerraCores® (____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: 802
Reviewed by: 15

SAMPLE RECEIPT CHECKLIST

COOLER 5 OF 9

CLIENT: ANCHOR PEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.5 °C (w/ CF): 3.5 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804

Checked by: 804

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: 804

Reviewed by: 15

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 6 OF 9

CLIENT: ANCHOR PEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.7 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter
 Checked by: 804

CUSTODY SEAL:
 Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A
 Checked by: 804
 Checked by: [Signature]

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
 125PBz_{nna} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
 500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____
 Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag
 Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{nna} = Zn (CH₃CO₂)₂ + NaOH
 Labeled/Checked by: [Signature]
 Reviewed by: IS

Return to Contents

SAMPLE RECEIPT CHECKLIST

CLIENT: ANCHOR QEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.8 °C (w/ CF): 3.8 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804
Checked by: SR

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
 125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
 500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: SR

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: IS

SAMPLE RECEIPT CHECKLIST

COOLER 8 OF 9

CLIENT: ANCHOR PEA

DATE: 11 / 22 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.9 °C (w/ CF): 3.9 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804
Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: 802
Reviewed by: 15

SAMPLE RECEIPT CHECKLIST

COOLER 9 OF 9

CLIENT: ANCHOR PEA

DATE: 11/22/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.0 °C (w/ CF): 3.0 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 804

CUSTODY SEAL:
 Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 804
 Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: [Signature]

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOA_h VOA_{na} 100PJ 100PJ_{na} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_z 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na} 1AGB_s 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____
 Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag
 Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: [Signature]
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: [Signature]

SAMPLE ANOMALY REPORT

DATE: 11/22/2016
11/22/16

SAMPLES, CONTAINERS, AND LABELS:

Comments

- Sample(s) NOT RECEIVED but listed on COC
 - Sample(s) received but NOT LISTED on COC
 - Holding time expired (list client or ECI sample ID and analysis)
 - Insufficient sample amount for requested analysis (list analysis)
 - Improper container(s) used (list analysis)
 - Improper preservative used (list analysis)
 - No preservative noted on COC or label (list analysis and notify lab)
 - Sample container(s) not labeled
 - Client sample label(s) illegible (list container type and analysis)
 - Client sample label(s) do not match COC (comment)
 - Project information
 - Client sample ID
 - Sampling date and/or time
 - Number of container(s)
 - Requested analysis
 - Sample container(s) compromised (comment)
 - Broken
 - Water present in sample container
 - Air sample container(s) compromised (comment)
 - Flat
 - Very low in volume
 - Leaking (not transferred; duplicate bag submitted)
 - Leaking (transferred into ECI Tedlar™ bags*)
 - Leaking (transferred into client's Tedlar™ bags*)
- * Transferred at client's request.

(-13) Received 7 Containers instead of 8.
TSS Bottle not Received

(-22) Received 1 container instead of 2

(-25) Received 1 container instead of 2

(-40) Receive 1 x 1 L plastic Bottle Labeled as
CM-RW-1010-G-B-20161122
9/27/16 TSS

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

Reported by: 802

Reviewed by: 15

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

From: Claire Dolphin [mailto:cdolphin@anchorage.com]
Sent: Monday, November 28, 2016 12:46 PM
To: Kathleen Burney
Cc: Andy Martin; Cindy Fields
Subject: RE: GWMA - TMDL Compliance Monitoring - 16-11-2102 - Sample Receipt Confirmation & COC Document

Hi,
Please see below answers in red
Thank you,
Claire

Claire Dolphin
Environmental Scientist

ANCHOR QEA, LLC
cdolphin@anchorage.com
D 949.334.9615

From: Kathleen Burney [mailto:KathleenBurney@eurofinsUS.com]
Sent: Monday, November 28, 2016 12:26 PM
To: Andy Martin <amartin@anchorage.com>
Cc: Cindy Fields <cfields@anchorage.com>; Lab Data Attachments <LabDataAttachments@anchorage.com>; Carla Hollowell <CarlaHollowell@eurofinsUS.com>
Subject: GWMA - TMDL Compliance Monitoring - 16-11-2102 - Sample Receipt Confirmation & COC Document

Thank you for submitting samples to Eurofins Calscience.
A sample receipt confirmation and copy of your COC are attached. Please review the attached document and let us know if you need to make revisions to the scope of work.

Please note the following items (see Sample Anomaly Report, last page of attachment):

- **No TSS bottle was received for ECI sample #13 (page 1 of the COC) There should not be a TSS bottle for this sample, incorrectly marked on COC**
- **Only one TSS bottle (not two, as noted on the COC) was received for ECI samples #22 and #25 (page 2 of the COC) Both samples should only be 1 bottle, incorrectly noted on COC**
- **One additional TSS bottle was received, labeled "CM-RW-1010-G-B-20161122" but not indicated on the COC; please let me know if I should log it in as a new sample for TSS analysis. Yes please log this in for analysis for TSS**

Also, is the sample ID "CB-RW-11-B-20161122" (page 3 of the COC) correct, or should it be "CB-RW-11-G-B-20161122"?

Sample should be "CB-RW-11-G-B-20161122"

Please let me know if you need anything else.
Thank you.

Kathy Burney
Project Manager Assistant *on behalf of*

Carla Lee Hollowell
Environmental Project Manager



Environmental
Calscience

Supplemental Report 1

The original report has been revised/corrected.



WORK ORDER NUMBER: 17-02-1758

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA - TMDL Compliance Monitoring

Attention: Andy Martin
 27201 Puerta Real
 Suite 350
 Mission Viejo, CA 92691-8306

Approved for release on 03/14/2017 by:
 Carla Hollowell
 Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA - TMDL Compliance Monitoring
 Work Order Number: 17-02-1758

1	Work Order Narrative.	3
2	Case Narrative - 17-02-1758.	4
3	Sample Summary.	6
4	Client Sample Data.	8
	4.1 SM 2540 D Total Suspended Solids (Aqueous).	8
	4.2 EPA 1631E Low Level Hg, Total (Aqueous).	21
	4.3 EPA 1631E Low Level Hg, Filtered (Aqueous).	26
	4.4 EPA 1640 ICP/MS Metals (Aqueous).	31
	4.5 EPA 1640 ICP/MS Metals (Aqueous).	41
	4.6 EPA 8081A Organochlorine Pesticides (Aqueous).	51
	4.7 EPA 8270C SIM PCB Congeners (Aqueous).	77
5	Quality Control Sample Data.	129
	5.1 MS/MSD.	129
	5.2 Sample Duplicate.	141
	5.3 LCS/LCSD.	145
6	Glossary of Terms and Qualifiers.	165
7	Chain-of-Custody/Sample Receipt Form.	166

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 02/18/17. They were assigned to Work Order 17-02-1758.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

CASE NARRATIVE

Eurofins Calscience Work Order No.: 17-02-1758
Project ID: GWMA-TMDL Compliance Monitoring

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the associated samples.

Sample Condition on Receipt

Seventy (70) seawater samples were received for this project on February 18, 2017. The samples were transferred to the laboratory in ice chests following strict chain-of-custody (COC) procedures. The temperatures of the samples upon receipt at the laboratory ranged from 2.9°C to 5.0°C. All samples were assigned laboratory identification numbers, logged into the Laboratory Information Management System (LIMS), and subsequently stored refrigerated pending analytical chemistry testing.

Sample receiving anomalies (if any) are noted in the attached Sample Anomaly Report.

Tests Performed

Total Suspended Solids by SM 2540B (M)
Total and Dissolved Metals by EPA 1640/1631
OC Pesticides by EPA 8081A
PCB Congeners by EPA 8270C SIM

Data Summary

Samples were filtered in the laboratory for the dissolved metals analysis.

Holding times

All holding times were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Reporting Limits

All Reporting Limits were met. Results were evaluated to the MDL, and if detections were found below the RL the results were flagged with a "J" qualifier.

Blanks

Concentrations of target analytes in the method blanks were found to be non-detect (ND) for all tests, with the following exceptions:

In the Method Blanks for EPA 1631E, batches 170301L01, 170301L01F, and 170302L01F, mercury was detected at a concentration below the Reporting Limit. The results have been flagged with the appropriate qualifier and are released with no further action.

In the Method Blanks for EPA 1640, batch 170227L02, chromium and zinc were detected at concentrations below the Reporting Limit; batch 170227L01F, chromium, copper, and zinc were detected at concentrations below the Reporting Limit. The results have been flagged with the appropriate qualifier and are released with no further action.

Laboratory Control Samples

Laboratory Control Sample (LCS) analyses were performed at the required frequencies for all applicable tests; all parameters were within the established control limits.

Matrix Spikes and QC Duplicates

Matrix spike (MS) analyses and/or QC Duplicates were performed for each applicable analysis as sample volume allowed. All parameters were within the established control limits with the following exceptions (non-project spike/duplicate samples, if any, are not discussed):

For EPA 1640, batch 170227S01, the MS recovery was outside of established control limits for zinc due to matrix interference. The results have been flagged with the appropriate qualifiers and are released with no further action.

For EPA 1640, batch 170227S02, the MS and MSD recoveries were outside of established control limits for chromium due to matrix interference. Concentrations of copper, lead, and zinc detected in the parent sample were four times or greater than that of the matrix spike concentration; therefore the control limits do not apply. The results have been flagged with the appropriate qualifiers and are released with no further action.

For EPA 1640, batch 170227S03, concentrations of copper and zinc detected in the parent sample were four times or greater than that of the matrix spike concentration; therefore the control limits do not apply. The results have been flagged with the appropriate qualifier and are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within the established control limits.



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 17-02-1758
27201 Puerta Real, Suite 350	Project Name: GWMA - TMDL Compliance Monitoring
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 02/18/17 18:22
	Number of Containers: 258

Attn: Andy Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
LE-RW-22-G-S-20170218	17-02-1758-1	02/18/17 08:15	12	Sea Water
LE-RW-22-G-M-20170218	17-02-1758-2	02/18/17 08:15	1	Sea Water
LE-RW-22-G-B-20170218	17-02-1758-3	02/18/17 08:15	1	Sea Water
SP-RW-20-G-S-20170218	17-02-1758-4	02/18/17 10:35	8	Sea Water
SP-RW-20-G-M-20170218	17-02-1758-5	02/18/17 10:35	1	Sea Water
SP-RW-20-G-B-20170218	17-02-1758-6	02/18/17 10:35	1	Sea Water
SP-RW-19-G-S-20170218	17-02-1758-7	02/18/17 11:15	8	Sea Water
SP-RW-19-G-M-20170218	17-02-1758-8	02/18/17 11:15	1	Sea Water
SP-RW-19-G-B-20170218	17-02-1758-9	02/18/17 11:15	1	Sea Water
OB-RW-17-G-S-20170218	17-02-1758-10	02/18/17 09:40	14	Sea Water
OB-RW-17-G-M-20170218	17-02-1758-11	02/18/17 09:40	1	Sea Water
OB-RW-17-G-B-20170218	17-02-1758-12	02/18/17 09:40	1	Sea Water
IB-RW-15-G-S-20170218	17-02-1758-13	02/18/17 09:10	8	Sea Water
IB-RW-15-G-M-20170218	17-02-1758-14	02/18/17 09:10	1	Sea Water
IB-RW-15-G-B-20170218	17-02-1758-15	02/18/17 09:10	1	Sea Water
EB-20170218	17-02-1758-16	02/18/17 12:00	7	Sea Water
SP-RW-1019-G-S-20170218	17-02-1758-17	02/18/17 11:25	7	Sea Water
CS-RW-01-G-S-20170218	17-02-1758-18	02/18/17 09:30	8	Sea Water
CS-RW-01-G-M-20170218	17-02-1758-19	02/18/17 09:32	1	Sea Water
CS-RW-01-G-B-20170218	17-02-1758-20	02/18/17 09:35	1	Sea Water
IA-RW-02-G-S-20170218	17-02-1758-21	02/18/17 09:55	8	Sea Water
IA-RW-02-G-M-20170218	17-02-1758-22	02/18/17 09:57	1	Sea Water
IA-RW-02-G-B-20170218	17-02-1758-23	02/18/17 10:00	1	Sea Water
IA-RW-03-G-S-20170218	17-02-1758-24	02/18/17 10:20	8	Sea Water
IA-RW-03-G-M-20170218	17-02-1758-25	02/18/17 10:22	1	Sea Water
IA-RW-03-G-B-20170218	17-02-1758-26	02/18/17 10:24	1	Sea Water
IA-RW-04-G-S-20170218	17-02-1758-27	02/18/17 10:55	8	Sea Water
IA-RW-04-G-M-20170218	17-02-1758-28	02/18/17 10:57	1	Sea Water
IA-RW-04-G-B-20170218	17-02-1758-29	02/18/17 11:00	1	Sea Water
IA-RW-05-G-S-20170218	17-02-1758-30	02/18/17 12:30	8	Sea Water
IA-RW-05-G-M-20170218	17-02-1758-31	02/18/17 12:32	1	Sea Water
IA-RW-05-G-B-20170218	17-02-1758-32	02/18/17 12:34	1	Sea Water
IA-RW-06-G-S-20170218	17-02-1758-33	02/18/17 11:40	8	Sea Water
IA-RW-06-G-M-20170218	17-02-1758-34	02/18/17 11:42	1	Sea Water
IA-RW-06-G-B-20170218	17-02-1758-35	02/18/17 11:44	1	Sea Water
FH-RW-07-G-S-20170218	17-02-1758-36	02/18/17 12:10	8	Sea Water
FH-RW-07-G-M-20170218	17-02-1758-37	02/18/17 12:12	1	Sea Water
FH-RW-07-G-B-20170218	17-02-1758-38	02/18/17 12:15	1	Sea Water
OA-RW-09-G-S-20170218	17-02-1758-39	02/18/17 13:05	12	Sea Water
OA-RW-09-G-M-20170218	17-02-1758-40	02/18/17 13:07	1	Sea Water
OA-RW-09-G-B-20170218	17-02-1758-41	02/18/17 13:10	1	Sea Water
CM-RW-10-G-S-20170218	17-02-1758-42	02/18/17 13:35	8	Sea Water

Return to Contents 



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 17-02-1758
27201 Puerta Real, Suite 350	Project Name: GWMA - TMDL Compliance Monitoring
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 02/18/17 18:22
	Number of Containers: 258

Attn: Andy Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
CM-RW-10-G-M-20170218	17-02-1758-43	02/18/17 13:37	1	Sea Water
CM-RW-10-G-B-20170218	17-02-1758-44	02/18/17 13:40	1	Sea Water
CB-RW-11-G-S-20170218	17-02-1758-45	02/18/17 13:55	8	Sea Water
CB-RW-11-G-M-20170218	17-02-1758-46	02/18/17 13:57	1	Sea Water
CB-RW-11-G-B-20170218	17-02-1758-47	02/18/17 14:00	1	Sea Water
CS-RW-1001-G-M-20170218	17-02-1758-48	02/18/17 09:32	1	Sea Water
IA-RW-1006-G-B-20170218	17-02-1758-49	02/18/17 11:48	1	Sea Water
IB-RW-12-G-S-20170218	17-02-1758-50	02/18/17 11:20	8	Sea Water
IB-RW-12-G-M-20170218	17-02-1758-51	02/18/17 11:25	1	Sea Water
IB-RW-12-G-B-20170218	17-02-1758-52	02/18/17 11:30	1	Sea Water
IB-RW-13-G-S-20170218	17-02-1758-53	02/18/17 12:15	9	Sea Water
IB-RW-13-G-M-20170218	17-02-1758-54	02/18/17 12:20	1	Sea Water
IB-RW-13-G-B-20170218	17-02-1758-55	02/18/17 12:25	1	Sea Water
IB-RW-14-G-S-20170218	17-02-1758-56	02/18/17 11:50	8	Sea Water
IB-RW-14-G-M-20170218	17-02-1758-57	02/18/17 11:55	1	Sea Water
IB-RW-14-G-B-20170218	17-02-1758-58	02/18/17 12:00	1	Sea Water
OA-RW-08-G-S-20170218	17-02-1758-59	02/18/17 12:50	8	Sea Water
OA-RW-08-G-M-20170218	17-02-1758-60	02/18/17 12:55	2	Sea Water
OA-RW-08-G-B-20170218	17-02-1758-61	02/18/17 13:00	1	Sea Water
OB-RW-16-G-S-20170218	17-02-1758-62	02/18/17 13:30	8	Sea Water
OB-RW-16-G-M-20170218	17-02-1758-63	02/18/17 13:35	1	Sea Water
OB-RW-16-G-B-20170218	17-02-1758-64	02/18/17 13:40	1	Sea Water
SP-RW-18-G-S-20170218	17-02-1758-65	02/18/17 14:50	8	Sea Water
SP-RW-18-G-M-20170218	17-02-1758-66	02/18/17 14:55	1	Sea Water
SP-RW-18-G-B-20170218	17-02-1758-67	02/18/17 15:00	1	Sea Water
SP-RW-1018-G-M-20170218	17-02-1758-68	02/18/17 14:53	1	Sea Water
LE-RW-21-G-S-20170218	17-02-1758-69	02/18/17 16:00	8	Sea Water
FB-20170218	17-02-1758-70	02/18/17 17:00	4	Sea Water
OA-RW-09-G-S-20170218-LAB DUP	17-02-1758-71	02/18/17 13:05	1	Sea Water
IB-RW-13-G-S-20170218-LAB DUP	17-02-1758-72	02/18/17 12:15	1	Sea Water
OA-RW-08-G-M-20170218-LAB DUP	17-02-1758-73	02/18/17 12:55	1	Sea Water


 Return to Contents



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-L	02/18/17 08:15	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	519	1.00	0.829	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-M-20170218	17-02-1758-2-A	02/18/17 08:15	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	499	1.00	0.829	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-B-20170218	17-02-1758-3-A	02/18/17 08:15	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	521	1.00	0.829	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-H	02/18/17 10:35	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	7.7	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-M-20170218	17-02-1758-5-A	02/18/17 10:35	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-B-20170218	17-02-1758-6-A	02/18/17 10:35	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	24	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-H	02/18/17 11:15	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	10	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-M-20170218	17-02-1758-8-A	02/18/17 11:15	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	9.8	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-B-20170218	17-02-1758-9-A	02/18/17 11:15	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	34	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-N	02/18/17 09:40	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	12	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-M-20170218	17-02-1758-11-A	02/18/17 09:40	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-B-20170218	17-02-1758-12-A	02/18/17 09:40	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	15	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-H	02/18/17 09:10	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-M-20170218	17-02-1758-14-A	02/18/17 09:10	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-B-20170218	17-02-1758-15-A	02/18/17 09:10	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	9.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-F	02/18/17 09:30	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	54	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-M-20170218	17-02-1758-19-A	02/18/17 09:32	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	49	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-B-20170218	17-02-1758-20-A	02/18/17 09:35	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	36	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-F	02/18/17 09:55	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	9.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-M-20170218	17-02-1758-22-A	02/18/17 09:57	Sea Water	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	8.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-B-20170218	17-02-1758-23-A	02/18/17 10:00	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.5	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-F	02/18/17 10:20	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	14	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-M-20170218	17-02-1758-25-A	02/18/17 10:22	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	8.1	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-B-20170218	17-02-1758-26-A	02/18/17 10:24	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.5	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-F	02/18/17 10:55	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.6	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-M-20170218	17-02-1758-28-A	02/18/17 10:57	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-B-20170218	17-02-1758-29-A	02/18/17 11:00	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-F	02/18/17 12:30	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-M-20170218	17-02-1758-31-A	02/18/17 12:32	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-B-20170218	17-02-1758-32-A	02/18/17 12:34	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.1	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-F	02/18/17 11:40	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-M-20170218	17-02-1758-34-A	02/18/17 11:42	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-B-20170218	17-02-1758-35-A	02/18/17 11:44	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.8	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-F	02/18/17 12:10	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-M-20170218	17-02-1758-37-A	02/18/17 12:12	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.5	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-B-20170218	17-02-1758-38-A	02/18/17 12:15	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	1.4	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-F	02/18/17 13:05	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-M-20170218	17-02-1758-40-A	02/18/17 13:07	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.8	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-B-20170218	17-02-1758-41-A	02/18/17 13:10	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-F	02/18/17 13:35	Sea Water	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-M-20170218	17-02-1758-43-A	02/18/17 13:37	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	6.6	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-B-20170218	17-02-1758-44-A	02/18/17 13:40	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.6	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-D	02/18/17 13:55	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-M-20170218	17-02-1758-46-A	02/18/17 13:57	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-B-20170218	17-02-1758-47-A	02/18/17 14:00	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	7.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-1001-G-M-20170218	17-02-1758-48-A	02/18/17 09:32	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	38	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-1006-G-B-20170218	17-02-1758-49-A	02/18/17 11:48	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-F	02/18/17 11:20	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.5	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-M-20170218	17-02-1758-51-A	02/18/17 11:25	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.5	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-B-20170218	17-02-1758-52-A	02/18/17 11:30	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.1	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-F	02/18/17 12:15	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.6	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-M-20170218	17-02-1758-54-A	02/18/17 12:20	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-B-20170218	17-02-1758-55-A	02/18/17 12:25	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.0	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-F	02/18/17 11:50	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.8	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-M-20170218	17-02-1758-57-A	02/18/17 11:55	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	2.4	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-B-20170218	17-02-1758-58-A	02/18/17 12:00	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-F	02/18/17 12:50	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	7.5	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-M-20170218	17-02-1758-60-A	02/18/17 12:55	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.3	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-B-20170218	17-02-1758-61-A	02/18/17 13:00	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	10	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-F	02/18/17 13:30	Sea Water	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	9.5	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-M-20170218	17-02-1758-63-A	02/18/17 13:35	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	4.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-B-20170218	17-02-1758-64-A	02/18/17 13:40	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	7.2	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-F	02/18/17 14:50	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	59	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-M-20170218	17-02-1758-66-A	02/18/17 14:55	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	17	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-B-20170218	17-02-1758-67-A	02/18/17 15:00	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	15	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1018-G-M-20170218	17-02-1758-68-A	02/18/17 14:53	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	16	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-C	02/18/17 16:00	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	677	1.00	0.829	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218-LAB DUP	17-02-1758-72-G	02/18/17 12:15	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	3.9	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-M-20170218-LAB DUP	17-02-1758-73-B	02/18/17 12:55	Sea Water	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	5.1	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-8185	N/A	Aqueous	N/A	02/25/17	02/25/17 14:00	H0225TSSL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-8186	N/A	Aqueous	N/A	02/25/17	02/25/17 15:00	H0225TSSL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-8187	N/A	Aqueous	N/A	02/25/17	02/25/17 16:00	H0225TSSL4

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: N/A
 Method: SM 2540 D
 Units: mg/L

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 13

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-09-010-8188	N/A	Aqueous	N/A	02/25/17	02/25/17 17:00	H0225TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Solids, Total Suspended	ND	1.0	0.83	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-B	02/18/17 08:15	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.0379	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-B	02/18/17 10:35	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00159	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-B	02/18/17 11:15	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00167	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-B	02/18/17 09:40	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00355	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-B	02/18/17 09:10	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00250	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20170218	17-02-1758-16-B	02/18/17 12:00	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000670	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1019-G-S-20170218	17-02-1758-17-B	02/18/17 11:25	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00133	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-H	02/18/17 09:30	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00750	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-H	02/18/17 09:55	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00126	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-H	02/18/17 10:20	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00566	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-H	02/18/17 10:55	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00361	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-H	02/18/17 12:30	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00391	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-H	02/18/17 11:40	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00386	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-H	02/18/17 12:10	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.0678	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-H	02/18/17 13:05	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00168	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-H	02/18/17 13:35	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.0202	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-H	02/18/17 13:55	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00271	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-H	02/18/17 11:20	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00145	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-H	02/18/17 12:15	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00102	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-H	02/18/17 11:50	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00140	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-H	02/18/17 12:50	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00140	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-H	02/18/17 13:30	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00337	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-H	02/18/17 14:50	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00524	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-H	02/18/17 16:00	Sea Water	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.0270	0.000500	0.000113	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-20170218	17-02-1758-70-D	02/18/17 17:00	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218-LAB DUP	17-02-1758-71-H	02/18/17 13:05	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00249	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-165	N/A	Aqueous	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-163	N/A	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000139	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-166	N/A	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-167	N/A	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-A	02/18/17 08:15	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00865	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-A	02/18/17 10:35	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000163	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-A	02/18/17 11:15	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00126	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-A	02/18/17 09:40	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000799	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-A	02/18/17 09:10	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000299	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20170218	17-02-1758-16-A	02/18/17 12:00	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000296	0.000500	0.000113	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1019-G-S-20170218	17-02-1758-17-A	02/18/17 11:25	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000747	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-G	02/18/17 09:30	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00225	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-G	02/18/17 09:55	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000313	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-G	02/18/17 10:20	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00168	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-G	02/18/17 10:55	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00196	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-G	02/18/17 12:30	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000810	0.000500	0.000113	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-G	02/18/17 11:40	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00535	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-G	02/18/17 12:10	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00109	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-G	02/18/17 13:05	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00319	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-G	02/18/17 13:35	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00168	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-G	02/18/17 13:55	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00215	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-G	02/18/17 11:20	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000464	0.000500	0.000113	1.00	B,J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-G	02/18/17 12:15	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00286	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-G	02/18/17 11:50	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00137	0.000500	0.000113	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-G	02/18/17 12:50	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00114	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-G	02/18/17 13:30	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00355	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-G	02/18/17 14:50	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00131	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-G	02/18/17 16:00	Sea Water	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00358	0.000500	0.000113	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-20170218	17-02-1758-70-C	02/18/17 17:00	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218-LAB DUP	17-02-1758-71-G	02/18/17 13:05	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.00532	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-124	N/A	Aqueous	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-123	N/A	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000139	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-125	N/A	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	0.000324	0.000500	0.000113	1.00	J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-226-126	N/A	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.000500	0.000113	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-H	02/18/17 08:15	Sea Water	ICP/MS 06	02/27/17	02/28/17 15:35	170227L02

Comment(s): - -

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.901	0.0300	0.00567	1.00	
Chromium	6.29	0.500	0.164	1.00	B
Copper	25.9	0.300	0.0898	10.0	
Lead	36.2	0.300	0.135	10.0	
Zinc	79.8	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-C	02/18/17 10:35	Sea Water	ICP/MS 06	02/27/17	02/27/17 23:15	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0768	0.0300	0.00567	1.00	
Chromium	0.341	0.500	0.164	1.00	B,J
Copper	1.90	0.0300	0.00898	1.00	
Lead	1.35	0.0300	0.0135	1.00	
Zinc	7.42	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-C	02/18/17 11:15	Sea Water	ICP/MS 06	02/27/17	02/27/17 23:23	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0490	0.0300	0.00567	1.00	
Chromium	0.182	0.500	0.164	1.00	B,J
Copper	1.41	0.0300	0.00898	1.00	
Lead	0.994	0.0300	0.0135	1.00	
Zinc	6.87	0.500	0.176	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-C	02/18/17 09:40	Sea Water	ICP/MS 06	02/27/17	02/28/17 19:04	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.204	0.0300	0.00567	1.00	
Chromium	1.27	0.500	0.164	1.00	B
Copper	3.57	0.0300	0.00898	1.00	
Lead	4.32	0.0300	0.0135	1.00	
Zinc	9.61	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-C	02/18/17 09:10	Sea Water	ICP/MS 06	02/27/17	02/27/17 23:39	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0495	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.19	0.0300	0.00898	1.00	
Lead	1.01	0.0300	0.0135	1.00	
Zinc	7.15	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20170218	17-02-1758-16-C	02/18/17 12:00	Sea Water	ICP/MS 06	02/27/17	02/28/17 19:12	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.209	0.0300	0.00898	1.00	
Lead	0.167	0.0300	0.0135	1.00	
Zinc	0.641	0.500	0.176	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1019-G-S-20170218	17-02-1758-17-C	02/18/17 11:25	Sea Water	ICP/MS 06	02/27/17	02/27/17 23:55	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0527	0.0300	0.00567	1.00	
Chromium	0.279	0.500	0.164	1.00	B,J
Copper	1.54	0.0300	0.00898	1.00	
Lead	2.36	0.0300	0.0135	1.00	
Zinc	7.66	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-A	02/18/17 09:30	Sea Water	ICP/MS 06	02/27/17	02/28/17 19:52	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.133	0.0300	0.00567	1.00	
Chromium	2.30	0.500	0.164	1.00	B
Copper	15.5	0.0300	0.00898	1.00	
Lead	11.2	0.0300	0.0135	1.00	
Zinc	91.6	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-A	02/18/17 09:55	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:00	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0796	0.0300	0.00567	1.00	
Chromium	1.65	0.500	0.164	1.00	B
Copper	5.05	0.0300	0.00898	1.00	
Lead	4.49	0.0300	0.0135	1.00	
Zinc	49.7	0.500	0.176	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-A	02/18/17 10:20	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:08	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.182	0.0300	0.00567	1.00	
Chromium	3.09	0.500	0.164	1.00	B
Copper	5.96	0.0300	0.00898	1.00	
Lead	1.76	0.0300	0.0135	1.00	
Zinc	19.6	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-A	02/18/17 10:55	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:16	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0916	0.0300	0.00567	1.00	
Chromium	1.38	0.500	0.164	1.00	B
Copper	4.49	0.0300	0.00898	1.00	
Lead	1.31	0.0300	0.0135	1.00	
Zinc	41.6	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-A	02/18/17 12:30	Sea Water	ICP/MS 06	02/27/17	02/28/17 01:07	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0440	0.0300	0.00567	1.00	
Chromium	0.290	0.500	0.164	1.00	B,J
Copper	1.49	0.0300	0.00898	1.00	
Lead	0.468	0.0300	0.0135	1.00	
Zinc	5.85	0.500	0.176	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-A	02/18/17 11:40	Sea Water	ICP/MS 06	02/27/17	02/28/17 01:15	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0611	0.0300	0.00567	1.00	
Chromium	0.399	0.500	0.164	1.00	B,J
Copper	4.19	0.0300	0.00898	1.00	
Lead	0.965	0.0300	0.0135	1.00	
Zinc	21.1	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-A	02/18/17 12:10	Sea Water	ICP/MS 06	02/27/17	02/28/17 01:23	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0396	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	2.02	0.0300	0.00898	1.00	
Lead	0.247	0.0300	0.0135	1.00	
Zinc	9.79	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-A	02/18/17 13:05	Sea Water	ICP/MS 06	02/27/17	02/28/17 01:31	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0440	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	1.36	0.0300	0.00898	1.00	
Lead	0.457	0.0300	0.0135	1.00	
Zinc	4.42	0.500	0.176	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-A	02/18/17 13:35	Sea Water	ICP/MS 06	02/27/17	02/28/17 01:47	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0760	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	5.37	0.0300	0.00898	1.00	
Lead	0.310	0.0300	0.0135	1.00	
Zinc	33.8	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-E	02/18/17 13:55	Sea Water	ICP/MS 06	02/27/17	02/28/17 03:31	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0656	0.0300	0.00567	1.00	
Chromium	0.322	0.500	0.164	1.00	B,J
Copper	1.61	0.0300	0.00898	1.00	
Lead	0.557	0.0300	0.0135	1.00	
Zinc	7.76	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-A	02/18/17 11:20	Sea Water	ICP/MS 06	02/27/17	02/28/17 03:55	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0700	0.0300	0.00567	1.00	
Chromium	0.456	0.500	0.164	1.00	J
Copper	2.44	0.0300	0.00898	1.00	
Lead	1.02	0.0300	0.0135	1.00	
Zinc	21.5	0.500	0.176	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-A	02/18/17 12:15	Sea Water	ICP/MS 06	02/27/17	02/28/17 03:39	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0613	0.0300	0.00567	1.00	
Chromium	0.242	0.500	0.164	1.00	B,J
Copper	0.997	0.0300	0.00898	1.00	
Lead	0.372	0.0300	0.0135	1.00	
Zinc	4.97	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-A	02/18/17 11:50	Sea Water	ICP/MS 06	02/27/17	02/28/17 03:47	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0668	0.0300	0.00567	1.00	
Chromium	0.273	0.500	0.164	1.00	B,J
Copper	1.17	0.0300	0.00898	1.00	
Lead	0.527	0.0300	0.0135	1.00	
Zinc	5.29	0.500	0.176	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-A	02/18/17 12:50	Sea Water	ICP/MS 06	02/27/17	03/01/17 17:43	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0621	0.0300	0.00567	1.00	
Chromium	0.576	0.500	0.164	1.00	B
Copper	2.25	0.0300	0.00898	1.00	
Lead	0.822	0.0300	0.0135	1.00	
Zinc	8.45	0.500	0.176	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-A	02/18/17 13:30	Sea Water	ICP/MS 06	02/27/17	03/01/17 17:51	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.103	0.0300	0.00567	1.00	
Chromium	0.593	0.500	0.164	1.00	
Copper	2.70	0.0300	0.00898	1.00	
Lead	0.816	0.0300	0.0135	1.00	
Zinc	7.88	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-A	02/18/17 14:50	Sea Water	ICP/MS 06	02/27/17	03/01/17 17:59	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.320	0.0300	0.00567	1.00	
Chromium	4.08	0.500	0.164	1.00	
Lead	17.7	0.0300	0.0135	1.00	
Zinc	35.4	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-A	02/18/17 14:50	Sea Water	ICP/MS 06	02/27/17	03/02/17 19:00	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	17.1	0.300	0.0898	10.0	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-A	02/18/17 16:00	Sea Water	ICP/MS 06	02/27/17	03/01/17 18:07	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	1.03	0.0300	0.00567	1.00	
Chromium	10.4	0.500	0.164	1.00	
Zinc	84.3	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-A	02/18/17 16:00	Sea Water	ICP/MS 06	02/27/17	03/02/17 19:16	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	34.6	0.300	0.0898	10.0	
Lead	45.1	0.300	0.135	10.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-20170218	17-02-1758-70-B	02/18/17 17:00	Sea Water	ICP/MS 06	02/27/17	03/02/17 19:08	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.00639	0.0300	0.00567	1.00	J
Chromium	ND	0.500	0.164	1.00	
Copper	0.0558	0.0300	0.00898	1.00	
Lead	0.0175	0.0300	0.0135	1.00	J
Zinc	ND	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218-LAB DUP	17-02-1758-71-A	02/18/17 13:05	Sea Water	ICP/MS 06	02/27/17	02/28/17 01:39	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0465	0.0300	0.00567	1.00	
Chromium	0.205	0.500	0.164	1.00	J
Copper	1.95	0.0300	0.00898	1.00	
Lead	0.470	0.0300	0.0135	1.00	
Zinc	4.44	0.500	0.176	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-13-067-681	N/A	Aqueous	ICP/MS 06	02/27/17	02/27/17 20:28	170227L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	0.187	0.500	0.164	1.00	J
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	0.197	0.500	0.176	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3005A Total
	Method:	EPA 1640
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring Page 10 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-13-067-682	N/A	Aqueous	ICP/MS 06	02/27/17	03/01/17 16:47	170227L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.176	1.00	



Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-H	02/18/17 08:15	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:24	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0969	0.0300	0.00567	1.00	
Chromium	0.650	0.500	0.164	1.00	B
Copper	3.67	0.0300	0.00898	1.00	B
Lead	0.252	0.0300	0.0135	1.00	
Zinc	7.86	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-D	02/18/17 10:35	Sea Water	ICP/MS 06	02/27/17	02/28/17 04:27	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0868	0.0300	0.00567	1.00	
Chromium	0.169	0.500	0.164	1.00	B,J
Copper	0.930	0.0300	0.00898	1.00	B
Lead	0.170	0.0300	0.0135	1.00	
Zinc	5.96	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-D	02/18/17 11:15	Sea Water	ICP/MS 06	02/27/17	02/28/17 04:35	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0562	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.790	0.0300	0.00898	1.00	B
Lead	0.0895	0.0300	0.0135	1.00	
Zinc	5.44	0.500	0.0736	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-D	02/18/17 09:40	Sea Water	ICP/MS 06	02/27/17	03/01/17 19:35	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.155	0.0300	0.00567	1.00	
Chromium	0.392	0.500	0.164	1.00	B,J
Copper	1.85	0.0300	0.00898	1.00	B
Lead	0.0209	0.0300	0.0135	1.00	J
Zinc	17.3	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-D	02/18/17 09:10	Sea Water	ICP/MS 06	02/27/17	02/28/17 05:23	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0657	0.0300	0.00567	1.00	
Chromium	0.166	0.500	0.164	1.00	B,J
Copper	1.06	0.0300	0.00898	1.00	B
Lead	0.233	0.0300	0.0135	1.00	
Zinc	9.60	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20170218	17-02-1758-16-D	02/18/17 12:00	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:40	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.163	0.0300	0.00898	1.00	B
Lead	0.197	0.0300	0.0135	1.00	
Zinc	0.830	0.500	0.0736	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1019-G-S-20170218	17-02-1758-17-D	02/18/17 11:25	Sea Water	ICP/MS 06	02/27/17	02/28/17 05:39	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0648	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.821	0.0300	0.00898	1.00	B
Lead	0.214	0.0300	0.0135	1.00	
Zinc	5.89	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-B	02/18/17 09:30	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:48	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0923	0.0300	0.00567	1.00	
Chromium	1.18	0.500	0.164	1.00	B
Copper	5.19	0.0300	0.00898	1.00	B
Lead	0.266	0.0300	0.0135	1.00	
Zinc	65.3	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-B	02/18/17 09:55	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:56	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0675	0.0300	0.00567	1.00	
Chromium	0.835	0.500	0.164	1.00	B
Copper	2.50	0.0300	0.00898	1.00	B
Lead	0.122	0.0300	0.0135	1.00	
Zinc	39.4	0.500	0.0736	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-B	02/18/17 10:20	Sea Water	ICP/MS 06	02/27/17	02/28/17 21:36	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.119	0.0300	0.00567	1.00	
Chromium	0.767	0.500	0.164	1.00	B
Copper	2.27	0.0300	0.00898	1.00	B
Lead	0.0245	0.0300	0.0135	1.00	J
Zinc	11.1	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-B	02/18/17 10:55	Sea Water	ICP/MS 06	02/27/17	02/28/17 21:44	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0775	0.0300	0.00567	1.00	
Chromium	0.798	0.500	0.164	1.00	B
Copper	2.50	0.0300	0.00898	1.00	B
Lead	0.0726	0.0300	0.0135	1.00	
Zinc	30.3	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-B	02/18/17 12:30	Sea Water	ICP/MS 06	02/27/17	02/28/17 06:19	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0607	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.831	0.0300	0.00898	1.00	B
Lead	0.0979	0.0300	0.0135	1.00	
Zinc	4.15	0.500	0.0736	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-B	02/18/17 11:40	Sea Water	ICP/MS 06	02/27/17	02/28/17 06:59	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0709	0.0300	0.00567	1.00	
Chromium	0.288	0.500	0.164	1.00	B,J
Copper	1.72	0.0300	0.00898	1.00	B
Lead	0.165	0.0300	0.0135	1.00	
Zinc	14.6	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-B	02/18/17 12:10	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:07	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0592	0.0300	0.00567	1.00	
Chromium	0.176	0.500	0.164	1.00	B,J
Copper	1.66	0.0300	0.00898	1.00	B
Lead	0.0933	0.0300	0.0135	1.00	
Zinc	9.86	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-B	02/18/17 13:05	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:15	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0615	0.0300	0.00567	1.00	
Chromium	0.195	0.500	0.164	1.00	B,J
Copper	0.775	0.0300	0.00898	1.00	B
Lead	0.0821	0.0300	0.0135	1.00	
Zinc	3.63	0.500	0.0736	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-B	02/18/17 13:35	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:31	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0986	0.0300	0.00567	1.00	
Chromium	0.232	0.500	0.164	1.00	B,J
Copper	5.54	0.0300	0.00898	1.00	B
Lead	0.140	0.0300	0.0135	1.00	
Zinc	41.6	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-F	02/18/17 13:55	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:39	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0633	0.0300	0.00567	1.00	
Chromium	0.204	0.500	0.164	1.00	B,J
Copper	0.989	0.0300	0.00898	1.00	B
Lead	0.0930	0.0300	0.0135	1.00	
Zinc	6.41	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-B	02/18/17 11:20	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:47	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0670	0.0300	0.00567	1.00	
Chromium	0.274	0.500	0.164	1.00	J
Copper	1.70	0.0300	0.00898	1.00	
Lead	0.121	0.0300	0.0135	1.00	
Zinc	15.2	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-B	02/18/17 12:15	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:55	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0618	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	0.726	0.0300	0.00898	1.00	B
Lead	0.0803	0.0300	0.0135	1.00	
Zinc	4.20	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-B	02/18/17 11:50	Sea Water	ICP/MS 06	02/27/17	02/28/17 08:03	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0652	0.0300	0.00567	1.00	
Chromium	0.195	0.500	0.164	1.00	B,J
Copper	0.734	0.0300	0.00898	1.00	B
Lead	0.104	0.0300	0.0135	1.00	
Zinc	4.27	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-B	02/18/17 12:50	Sea Water	ICP/MS 06	02/27/17	03/01/17 18:23	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0640	0.0300	0.00567	1.00	
Chromium	0.261	0.500	0.164	1.00	B,J
Copper	1.25	0.0300	0.00898	1.00	B
Lead	0.0350	0.0300	0.0135	1.00	
Zinc	7.02	0.500	0.0736	1.00	B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-B	02/18/17 13:30	Sea Water	ICP/MS 06	02/27/17	03/01/17 18:31	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0816	0.0300	0.00567	1.00	
Chromium	0.270	0.500	0.164	1.00	J
Copper	1.24	0.0300	0.00898	1.00	
Lead	0.0235	0.0300	0.0135	1.00	J
Zinc	4.16	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-B	02/18/17 14:50	Sea Water	ICP/MS 06	02/27/17	03/01/17 19:11	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.163	0.0300	0.00567	1.00	
Chromium	0.355	0.500	0.164	1.00	J
Copper	2.32	0.0300	0.00898	1.00	
Lead	0.0480	0.0300	0.0135	1.00	
Zinc	4.22	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-B	02/18/17 16:00	Sea Water	ICP/MS 06	02/27/17	03/02/17 19:32	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.398	0.0300	0.00567	1.00	
Chromium	0.807	0.500	0.164	1.00	
Copper	2.72	0.0300	0.00898	1.00	
Lead	0.112	0.0300	0.0135	1.00	
Zinc	5.17	0.500	0.0736	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-20170218	17-02-1758-70-B	02/18/17 17:00	Sea Water	ICP/MS 06	02/27/17	03/02/17 19:24	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.00644	0.0300	0.00567	1.00	J
Chromium	ND	0.500	0.164	1.00	
Copper	0.0875	0.0300	0.00898	1.00	
Lead	0.0274	0.0300	0.0135	1.00	J
Zinc	ND	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218-LAB DUP	17-02-1758-71-B	02/18/17 13:05	Sea Water	ICP/MS 06	02/27/17	02/28/17 07:23	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0612	0.0300	0.00567	1.00	
Chromium	0.199	0.500	0.164	1.00	J
Copper	0.901	0.0300	0.00898	1.00	
Lead	0.142	0.0300	0.0135	1.00	
Zinc	3.70	0.500	0.0736	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-823-258	N/A	Aqueous	ICP/MS 06	02/27/17	02/27/17 20:36	170227L01F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	0.176	0.500	0.164	1.00	J
Copper	0.00976	0.0300	0.00898	1.00	J
Lead	ND	0.0300	0.0135	1.00	
Zinc	0.208	0.500	0.0736	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-823-259	N/A	Aqueous	ICP/MS 06	02/27/17	03/01/17 16:39	170227L03F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Cadmium	ND	0.0300	0.00567	1.00	
Chromium	ND	0.500	0.164	1.00	
Copper	ND	0.0300	0.00898	1.00	
Lead	ND	0.0300	0.0135	1.00	
Zinc	ND	0.500	0.0736	1.00	



Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-IJ	02/18/17 08:15	Sea Water	GC 44	02/25/17	03/02/17 14:01	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	87	50-150			
2,4,5,6-Tetrachloro-m-Xylene	86	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-EF	02/18/17 10:35	Sea Water	GC 44	02/25/17	03/02/17 14:15	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	85	50-150			
2,4,5,6-Tetrachloro-m-Xylene	87	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-EF	02/18/17 11:15	Sea Water	GC 44	02/25/17	03/02/17 14:29	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	102	50-150			
2,4,5,6-Tetrachloro-m-Xylene	103	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-GH	02/18/17 09:40	Sea Water	GC 44	02/25/17	03/02/17 14:43	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	99	50-150			
2,4,5,6-Tetrachloro-m-Xylene	92	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-EF	02/18/17 09:10	Sea Water	GC 44	02/25/17	03/02/17 14:58	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	99	50-150			
2,4,5,6-Tetrachloro-m-Xylene	109	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20170218	17-02-1758-16-EF	02/18/17 12:00	Sea Water	GC 44	02/25/17	03/02/17 15:12	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	107	50-150			
2,4,5,6-Tetrachloro-m-Xylene	108	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1019-G-S-20170218	17-02-1758-17-EF	02/18/17 11:25	Sea Water	GC 44	02/25/17	03/02/17 15:26	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	97	50-150			
2,4,5,6-Tetrachloro-m-Xylene	97	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-DE	02/18/17 09:30	Sea Water	GC 44	02/25/17	03/02/17 15:40	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	83	50-150			
2,4,5,6-Tetrachloro-m-Xylene	74	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-DE	02/18/17 09:55	Sea Water	GC 44	02/25/17	03/02/17 15:54	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	106	50-150			
2,4,5,6-Tetrachloro-m-Xylene	100	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-DE	02/18/17 10:20	Sea Water	GC 44	02/25/17	03/02/17 16:08	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	2.0	0.98	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.3	1.6	1.00	
Cis-nonachlor	ND	3.3	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.3	1.6	1.00	
Oxychlordane	ND	3.3	1.6	1.00	
Toxaphene	ND	49	25	1.00	
Trans-nonachlor	ND	3.3	1.6	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	86	50-150	
2,4,5,6-Tetrachloro-m-Xylene	78	50-150	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-DE	02/18/17 10:55	Sea Water	GC 44	02/25/17	03/02/17 16:23	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	2.0	0.98	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.3	1.6	1.00	
Cis-nonachlor	ND	3.3	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.3	1.6	1.00	
Oxychlordane	ND	3.3	1.6	1.00	
Toxaphene	ND	49	25	1.00	
Trans-nonachlor	ND	3.3	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	107	50-150			
2,4,5,6-Tetrachloro-m-Xylene	97	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-DE	02/18/17 12:30	Sea Water	GC 44	02/25/17	03/02/17 16:37	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	2.0	0.99	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.3	1.6	1.00	
Cis-nonachlor	ND	3.3	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.3	1.6	1.00	
Oxychlordane	ND	3.3	1.6	1.00	
Toxaphene	ND	49	25	1.00	
Trans-nonachlor	ND	3.3	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	79	50-150			
2,4,5,6-Tetrachloro-m-Xylene	85	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-DE	02/18/17 11:40	Sea Water	GC 44	02/25/17	03/02/17 16:51	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	90	50-150			
2,4,5,6-Tetrachloro-m-Xylene	83	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-DE	02/18/17 12:10	Sea Water	GC 44	02/25/17	03/02/17 18:04	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	101	50-150			
2,4,5,6-Tetrachloro-m-Xylene	99	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-DE	02/18/17 13:05	Sea Water	GC 44	02/25/17	03/02/17 18:18	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	100	50-150			
2,4,5,6-Tetrachloro-m-Xylene	115	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-DE	02/18/17 13:35	Sea Water	GC 44	02/25/17	03/02/17 18:32	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	82	50-150			
2,4,5,6-Tetrachloro-m-Xylene	85	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-BC	02/18/17 13:55	Sea Water	GC 44	02/25/17	03/02/17 18:46	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	103	50-150			
2,4,5,6-Tetrachloro-m-Xylene	109	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-DE	02/18/17 11:20	Sea Water	GC 44	02/25/17	03/02/17 19:00	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	96	50-150			
2,4,5,6-Tetrachloro-m-Xylene	93	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 19 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-DE	02/18/17 12:15	Sea Water	GC 44	02/25/17	03/02/17 20:30	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	75	50-150			
2,4,5,6-Tetrachloro-m-Xylene	74	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 20 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-DE	02/18/17 11:50	Sea Water	GC 44	02/25/17	03/02/17 20:44	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	1.9	0.97	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.2	1.6	1.00	
Cis-nonachlor	ND	3.2	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.2	1.6	1.00	
Oxychlordane	ND	3.2	1.6	1.00	
Toxaphene	ND	49	24	1.00	
Trans-nonachlor	ND	3.2	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	107	50-150			
2,4,5,6-Tetrachloro-m-Xylene	108	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 21 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-DE	02/18/17 12:50	Sea Water	GC 44	02/25/17	03/02/17 20:59	170225L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	2.0	0.99	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.3	1.6	1.00	
Cis-nonachlor	ND	3.3	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.3	1.6	1.00	
Oxychlordane	ND	3.3	1.6	1.00	
Toxaphene	ND	49	25	1.00	
Trans-nonachlor	ND	3.3	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	100	50-150			
2,4,5,6-Tetrachloro-m-Xylene	99	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8081A
	Units:	ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 22 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-DE	02/18/17 13:30	Sea Water	GC 44	02/25/17	03/02/17 21:13	170225L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	2.0	0.98	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.3	1.6	1.00	
Cis-nonachlor	ND	3.3	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.3	1.6	1.00	
Oxychlordane	ND	3.3	1.6	1.00	
Toxaphene	ND	49	25	1.00	
Trans-nonachlor	ND	3.3	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	87	50-150			
2,4,5,6-Tetrachloro-m-Xylene	83	50-150			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 23 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-DE	02/18/17 14:50	Sea Water	GC 44	02/25/17	03/02/17 21:27	170225L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.3	0.49	1.00	
2,4'-DDE	ND	1.3	0.49	1.00	
2,4'-DDT	ND	2.0	0.98	1.00	
4,4'-DDD	ND	1.3	0.49	1.00	
4,4'-DDE	ND	1.3	0.49	1.00	
4,4'-DDT	ND	1.3	0.49	1.00	
Alpha Chlordane	ND	3.3	1.6	1.00	
Cis-nonachlor	ND	3.3	1.6	1.00	
Dieldrin	ND	1.3	0.49	1.00	
Gamma Chlordane	ND	3.3	1.6	1.00	
Oxychlordane	ND	3.3	1.6	1.00	
Toxaphene	ND	49	25	1.00	
Trans-nonachlor	ND	3.3	1.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	68	50-150			
2,4,5,6-Tetrachloro-m-Xylene	67	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 24 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-EF	02/18/17 16:00	Sea Water	GC 44	02/25/17	03/02/17 21:41	170225L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDD	ND	1.9	0.72	1.00	
2,4'-DDE	ND	1.9	0.72	1.00	
2,4'-DDT	ND	2.9	1.4	1.00	
4,4'-DDD	ND	1.9	0.72	1.00	
4,4'-DDE	ND	1.9	0.72	1.00	
4,4'-DDT	ND	1.9	0.72	1.00	
Alpha Chlordane	ND	4.8	2.4	1.00	
Cis-nonachlor	ND	4.8	2.4	1.00	
Dieldrin	ND	1.9	0.72	1.00	
Gamma Chlordane	ND	4.8	2.4	1.00	
Oxychlordane	ND	4.8	2.4	1.00	
Toxaphene	ND	72	36	1.00	
Trans-nonachlor	ND	4.8	2.4	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	117	50-150			
2,4,5,6-Tetrachloro-m-Xylene	109	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 25 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-704-14	N/A	Aqueous	GC 44	02/25/17	03/02/17 13:32	170225L04

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
Decachlorobiphenyl	91	50-150			
2,4,5,6-Tetrachloro-m-Xylene	86	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A
Units: ng/L

Project: GWMA - TMDL Compliance Monitoring

Page 26 of 26

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-704-15	N/A	Aqueous	GC 44	02/25/17	03/02/17 13:47	170225L05

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
2,4'-DDD	ND	1.3	0.50	1.00	
2,4'-DDE	ND	1.3	0.50	1.00	
2,4'-DDT	ND	2.0	1.0	1.00	
4,4'-DDD	ND	1.3	0.50	1.00	
4,4'-DDE	ND	1.3	0.50	1.00	
4,4'-DDT	ND	1.3	0.50	1.00	
Alpha Chlordane	ND	3.3	1.7	1.00	
Cis-nonachlor	ND	3.3	1.7	1.00	
Dieldrin	ND	1.3	0.50	1.00	
Gamma Chlordane	ND	3.3	1.7	1.00	
Oxychlordane	ND	3.3	1.7	1.00	
Toxaphene	ND	50	25	1.00	
Trans-nonachlor	ND	3.3	1.7	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
Decachlorobiphenyl	90	50-150			
2,4,5,6-Tetrachloro-m-Xylene	81	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-22-G-S-20170218	17-02-1758-1-K	02/18/17 08:15	Sea Water	GC/MS HHH	02/25/17	03/02/17 12:32	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00052	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00052	1.00	
PCB052	ND	0.0020	0.00055	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00048	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00070	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00049	1.00	
PCB105	ND	0.0020	0.00046	1.00	
PCB110	ND	0.0020	0.00033	1.00	
PCB114	ND	0.0020	0.00046	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00082	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00059	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00040	1.00	
PCB167	ND	0.0020	0.00080	1.00	
PCB168	ND	0.0020	0.00051	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00027	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00048	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00074	1.00	
PCB201	ND	0.0020	0.00046	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	77	50-150			
p-Terphenyl-d14	106	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-20-G-S-20170218	17-02-1758-4-G	02/18/17 10:35	Sea Water	GC/MS HHH	02/25/17	03/01/17 20:15	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00053	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00053	1.00	
PCB052	ND	0.0020	0.00056	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00049	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00071	1.00	
PCB099	ND	0.0020	0.00061	1.00	
PCB101	ND	0.0020	0.00050	1.00	
PCB105	ND	0.0020	0.00047	1.00	
PCB110	ND	0.0020	0.00034	1.00	
PCB114	ND	0.0020	0.00047	1.00	
PCB118	ND	0.0020	0.00050	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00083	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00060	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00041	1.00	
PCB167	ND	0.0020	0.00081	1.00	
PCB168	ND	0.0020	0.00052	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00028	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00049	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00075	1.00	
PCB201	ND	0.0020	0.00047	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	50-150			
p-Terphenyl-d14	97	50-150			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-19-G-S-20170218	17-02-1758-7-G	02/18/17 11:15	Sea Water	GC/MS HHH	02/25/17	03/01/17 20:38	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00052	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00052	1.00	
PCB052	ND	0.0020	0.00055	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00048	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00070	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00049	1.00	
PCB105	ND	0.0020	0.00046	1.00	
PCB110	ND	0.0020	0.00033	1.00	
PCB114	ND	0.0020	0.00046	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00082	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00059	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00040	1.00	
PCB167	ND	0.0020	0.00080	1.00	
PCB168	ND	0.0020	0.00051	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00027	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00048	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00074	1.00	
PCB201	ND	0.0020	0.00046	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	69	50-150			
p-Terphenyl-d14	93	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-17-G-S-20170218	17-02-1758-10-L	02/18/17 09:40	Sea Water	GC/MS HHH	02/25/17	03/01/17 21:01	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00053	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00053	1.00	
PCB052	ND	0.0020	0.00056	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00049	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00071	1.00	
PCB099	ND	0.0020	0.00061	1.00	
PCB101	ND	0.0020	0.00050	1.00	
PCB105	ND	0.0020	0.00047	1.00	
PCB110	ND	0.0020	0.00034	1.00	
PCB114	ND	0.0020	0.00047	1.00	
PCB118	ND	0.0020	0.00050	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00083	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00060	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00041	1.00	
PCB167	ND	0.0020	0.00081	1.00	
PCB168	ND	0.0020	0.00052	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00028	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00049	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00075	1.00	
PCB201	ND	0.0020	0.00047	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	75	50-150			
p-Terphenyl-d14	100	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-15-G-S-20170218	17-02-1758-13-G	02/18/17 09:10	Sea Water	GC/MS HHH	02/25/17	03/01/17 21:25	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00045	1.00	
PCB028	ND	0.0020	0.00052	1.00	
PCB037	ND	0.0020	0.00029	1.00	
PCB044	ND	0.0020	0.00070	1.00	
PCB049	ND	0.0020	0.00052	1.00	
PCB052	ND	0.0020	0.00055	1.00	
PCB066	ND	0.0020	0.00039	1.00	
PCB070	ND	0.0020	0.00040	1.00	
PCB074	ND	0.0020	0.00048	1.00	
PCB077	ND	0.0020	0.00061	1.00	
PCB081	ND	0.0020	0.00047	1.00	
PCB087	ND	0.0020	0.00070	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00049	1.00	
PCB105	ND	0.0020	0.00046	1.00	
PCB110	ND	0.0020	0.00033	1.00	
PCB114	ND	0.0020	0.00046	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00082	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00042	1.00	
PCB132/153	ND	0.0039	0.00068	1.00	
PCB138/158	ND	0.0039	0.00058	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00039	1.00	
PCB157	ND	0.0020	0.00040	1.00	
PCB167	ND	0.0020	0.00079	1.00	
PCB168	ND	0.0020	0.00051	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00041	1.00	
PCB177	ND	0.0020	0.00027	1.00	
PCB180	ND	0.0020	0.00059	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00051	1.00	
PCB187	ND	0.0020	0.00042	1.00	
PCB189	ND	0.0020	0.00048	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00073	1.00	
PCB201	ND	0.0020	0.00046	1.00	
PCB206	ND	0.0020	0.00042	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	50-150			
p-Terphenyl-d14	97	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20170218	17-02-1758-16-G	02/18/17 12:00	Sea Water	GC/MS HHH	02/25/17	03/01/17 21:48	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00052	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00052	1.00	
PCB052	ND	0.0020	0.00055	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00048	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00070	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00049	1.00	
PCB105	ND	0.0020	0.00046	1.00	
PCB110	ND	0.0020	0.00033	1.00	
PCB114	ND	0.0020	0.00046	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00082	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00059	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00040	1.00	
PCB167	ND	0.0020	0.00080	1.00	
PCB168	ND	0.0020	0.00051	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00027	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00048	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00074	1.00	
PCB201	ND	0.0020	0.00046	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	50-150			
p-Terphenyl-d14	95	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-1019-G-S-20170218	17-02-1758-17-G	02/18/17 11:25	Sea Water	GC/MS HHH	02/25/17	03/01/17 22:11	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00052	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00052	1.00	
PCB052	ND	0.0020	0.00055	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00048	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00070	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00049	1.00	
PCB105	ND	0.0020	0.00046	1.00	
PCB110	ND	0.0020	0.00033	1.00	
PCB114	ND	0.0020	0.00046	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00082	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00059	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00040	1.00	
PCB167	ND	0.0020	0.00080	1.00	
PCB168	ND	0.0020	0.00051	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00027	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00048	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00074	1.00	
PCB201	ND	0.0020	0.00046	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	76	50-150			
p-Terphenyl-d14	98	50-150			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-RW-01-G-S-20170218	17-02-1758-18-C	02/18/17 09:30	Sea Water	GC/MS HHH	02/25/17	03/01/17 22:34	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00045	1.00	
PCB028	ND	0.0020	0.00052	1.00	
PCB037	ND	0.0020	0.00029	1.00	
PCB044	ND	0.0020	0.00070	1.00	
PCB049	ND	0.0020	0.00052	1.00	
PCB052	ND	0.0020	0.00055	1.00	
PCB066	ND	0.0020	0.00039	1.00	
PCB070	ND	0.0020	0.00040	1.00	
PCB074	ND	0.0020	0.00048	1.00	
PCB077	ND	0.0020	0.00061	1.00	
PCB081	ND	0.0020	0.00047	1.00	
PCB087	ND	0.0020	0.00070	1.00	
PCB099	ND	0.0020	0.00060	1.00	
PCB101	ND	0.0020	0.00049	1.00	
PCB105	ND	0.0020	0.00046	1.00	
PCB110	ND	0.0020	0.00033	1.00	
PCB114	ND	0.0020	0.00046	1.00	
PCB118	ND	0.0020	0.00049	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00082	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00042	1.00	
PCB132/153	ND	0.0039	0.00068	1.00	
PCB138/158	ND	0.0039	0.00058	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00039	1.00	
PCB157	ND	0.0020	0.00040	1.00	
PCB167	ND	0.0020	0.00079	1.00	
PCB168	ND	0.0020	0.00051	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00041	1.00	
PCB177	ND	0.0020	0.00027	1.00	
PCB180	ND	0.0020	0.00059	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00051	1.00	
PCB187	ND	0.0020	0.00042	1.00	
PCB189	ND	0.0020	0.00048	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00073	1.00	
PCB201	ND	0.0020	0.00046	1.00	
PCB206	ND	0.0020	0.00042	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	75	50-150			
p-Terphenyl-d14	90	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-02-G-S-20170218	17-02-1758-21-C	02/18/17 09:55	Sea Water	GC/MS HHH	02/25/17	03/01/17 22:58	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	50-150			
p-Terphenyl-d14	92	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 19 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-03-G-S-20170218	17-02-1758-24-C	02/18/17 10:20	Sea Water	GC/MS HHH	02/25/17	03/01/17 23:21	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00051	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00051	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00039	1.00	
PCB070	ND	0.0019	0.00040	1.00	
PCB074	ND	0.0019	0.00047	1.00	
PCB077	ND	0.0019	0.00060	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00048	1.00	
PCB105	ND	0.0019	0.00045	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00045	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00017	1.00	
PCB123	ND	0.0019	0.00080	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00042	1.00	
PCB132/153	ND	0.0038	0.00067	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00039	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00078	1.00	
PCB168	ND	0.0019	0.00050	1.00	
PCB169	ND	0.0019	0.00039	1.00	
PCB170	ND	0.0019	0.00041	1.00	
PCB177	ND	0.0019	0.00027	1.00	
PCB180	ND	0.0019	0.00058	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 20 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00047	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00072	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	62	50-150			
p-Terphenyl-d14	106	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 21 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-04-G-S-20170218	17-02-1758-27-C	02/18/17 10:55	Sea Water	GC/MS HHH	02/25/17	03/01/17 23:45	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00051	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00051	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00039	1.00	
PCB070	ND	0.0019	0.00040	1.00	
PCB074	ND	0.0019	0.00047	1.00	
PCB077	ND	0.0019	0.00060	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00048	1.00	
PCB105	ND	0.0019	0.00045	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00045	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00017	1.00	
PCB123	ND	0.0019	0.00080	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00042	1.00	
PCB132/153	ND	0.0038	0.00067	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00039	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00078	1.00	
PCB168	ND	0.0019	0.00050	1.00	
PCB169	ND	0.0019	0.00039	1.00	
PCB170	ND	0.0019	0.00041	1.00	
PCB177	ND	0.0019	0.00027	1.00	
PCB180	ND	0.0019	0.00058	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 22 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00047	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00072	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	83	50-150			
p-Terphenyl-d14	106	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 23 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-05-G-S-20170218	17-02-1758-30-C	02/18/17 12:30	Sea Water	GC/MS HHH	02/25/17	03/02/17 00:08	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00045	1.00	
PCB028	ND	0.0019	0.00051	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00069	1.00	
PCB049	ND	0.0019	0.00051	1.00	
PCB052	ND	0.0019	0.00054	1.00	
PCB066	ND	0.0019	0.00039	1.00	
PCB070	ND	0.0019	0.00040	1.00	
PCB074	ND	0.0019	0.00047	1.00	
PCB077	ND	0.0019	0.00060	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00069	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00048	1.00	
PCB105	ND	0.0019	0.00045	1.00	
PCB110	ND	0.0019	0.00033	1.00	
PCB114	ND	0.0019	0.00045	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00017	1.00	
PCB123	ND	0.0019	0.00081	1.00	
PCB126	ND	0.0019	0.00025	1.00	
PCB128	ND	0.0019	0.00042	1.00	
PCB132/153	ND	0.0039	0.00067	1.00	
PCB138/158	ND	0.0039	0.00058	1.00	
PCB149	ND	0.0019	0.00023	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00039	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00078	1.00	
PCB168	ND	0.0019	0.00050	1.00	
PCB169	ND	0.0019	0.00039	1.00	
PCB170	ND	0.0019	0.00041	1.00	
PCB177	ND	0.0019	0.00027	1.00	
PCB180	ND	0.0019	0.00058	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 24 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00042	1.00	
PCB189	ND	0.0019	0.00047	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00073	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00042	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	50-150			
p-Terphenyl-d14	98	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 25 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-RW-06-G-S-20170218	17-02-1758-33-C	02/18/17 11:40	Sea Water	GC/MS HHH	02/25/17	03/02/17 00:32	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00051	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00051	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00039	1.00	
PCB070	ND	0.0019	0.00040	1.00	
PCB074	ND	0.0019	0.00047	1.00	
PCB077	ND	0.0019	0.00060	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00048	1.00	
PCB105	ND	0.0019	0.00045	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00045	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00017	1.00	
PCB123	ND	0.0019	0.00080	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00042	1.00	
PCB132/153	ND	0.0038	0.00067	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00039	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00078	1.00	
PCB168	ND	0.0019	0.00050	1.00	
PCB169	ND	0.0019	0.00039	1.00	
PCB170	ND	0.0019	0.00041	1.00	
PCB177	ND	0.0019	0.00027	1.00	
PCB180	ND	0.0019	0.00058	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 26 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00047	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00072	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	62	50-150			
p-Terphenyl-d14	80	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 27 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-RW-07-G-S-20170218	17-02-1758-36-C	02/18/17 12:10	Sea Water	GC/MS HHH	02/25/17	03/02/17 00:54	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 28 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	66	50-150			
p-Terphenyl-d14	87	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 29 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-09-G-S-20170218	17-02-1758-39-C	02/18/17 13:05	Sea Water	GC/MS HHH	02/25/17	03/02/17 01:18	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 30 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	69	50-150			
p-Terphenyl-d14	91	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 31 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-RW-10-G-S-20170218	17-02-1758-42-C	02/18/17 13:35	Sea Water	GC/MS HHH	02/25/17	03/02/17 01:42	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 32 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	84	50-150			
p-Terphenyl-d14	111	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 33 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-RW-11-G-S-20170218	17-02-1758-45-A	02/18/17 13:55	Sea Water	GC/MS HHH	02/25/17	03/02/17 02:05	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00045	1.00	
PCB028	ND	0.0019	0.00051	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00069	1.00	
PCB049	ND	0.0019	0.00051	1.00	
PCB052	ND	0.0019	0.00054	1.00	
PCB066	ND	0.0019	0.00039	1.00	
PCB070	ND	0.0019	0.00040	1.00	
PCB074	ND	0.0019	0.00047	1.00	
PCB077	ND	0.0019	0.00060	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00069	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00048	1.00	
PCB105	ND	0.0019	0.00045	1.00	
PCB110	ND	0.0019	0.00033	1.00	
PCB114	ND	0.0019	0.00045	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00017	1.00	
PCB123	ND	0.0019	0.00081	1.00	
PCB126	ND	0.0019	0.00025	1.00	
PCB128	ND	0.0019	0.00042	1.00	
PCB132/153	ND	0.0039	0.00067	1.00	
PCB138/158	ND	0.0039	0.00058	1.00	
PCB149	ND	0.0019	0.00023	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00039	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00078	1.00	
PCB168	ND	0.0019	0.00050	1.00	
PCB169	ND	0.0019	0.00039	1.00	
PCB170	ND	0.0019	0.00041	1.00	
PCB177	ND	0.0019	0.00027	1.00	
PCB180	ND	0.0019	0.00058	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 34 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00051	1.00	
PCB187	ND	0.0019	0.00042	1.00	
PCB189	ND	0.0019	0.00047	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00073	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00042	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	77	50-150			
p-Terphenyl-d14	103	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 35 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-12-G-S-20170218	17-02-1758-50-C	02/18/17 11:20	Sea Water	GC/MS HHH	02/25/17	03/02/17 02:29	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 36 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	73	50-150			
p-Terphenyl-d14	100	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 37 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-13-G-S-20170218	17-02-1758-53-C	02/18/17 12:15	Sea Water	GC/MS HHH	02/25/17	03/02/17 02:51	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 38 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	50-150			
p-Terphenyl-d14	96	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 39 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-RW-14-G-S-20170218	17-02-1758-56-C	02/18/17 11:50	Sea Water	GC/MS HHH	02/25/17	03/02/17 03:15	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 40 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	72	50-150			
p-Terphenyl-d14	98	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 41 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-RW-08-G-S-20170218	17-02-1758-59-C	02/18/17 12:50	Sea Water	GC/MS HHH	02/25/17	03/02/17 03:38	170225L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 42 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	50-150			
p-Terphenyl-d14	104	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 43 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-RW-16-G-S-20170218	17-02-1758-62-C	02/18/17 13:30	Sea Water	GC/MS HHH	02/25/17	03/02/17 04:01	170225L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 44 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	50-150			
p-Terphenyl-d14	98	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 45 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-RW-18-G-S-20170218	17-02-1758-65-C	02/18/17 14:50	Sea Water	GC/MS HHH	02/25/17	03/02/17 04:25	170225L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00050	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00050	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00038	1.00	
PCB070	ND	0.0019	0.00039	1.00	
PCB074	ND	0.0019	0.00046	1.00	
PCB077	ND	0.0019	0.00059	1.00	
PCB081	ND	0.0019	0.00046	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00058	1.00	
PCB101	ND	0.0019	0.00047	1.00	
PCB105	ND	0.0019	0.00044	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00044	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00016	1.00	
PCB123	ND	0.0019	0.00079	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00041	1.00	
PCB132/153	ND	0.0038	0.00066	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00038	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00077	1.00	
PCB168	ND	0.0019	0.00049	1.00	
PCB169	ND	0.0019	0.00038	1.00	
PCB170	ND	0.0019	0.00040	1.00	
PCB177	ND	0.0019	0.00026	1.00	
PCB180	ND	0.0019	0.00057	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 46 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00046	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00071	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	73	50-150			
p-Terphenyl-d14	98	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 47 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-RW-21-G-S-20170218	17-02-1758-69-D	02/18/17 16:00	Sea Water	GC/MS HHH	02/25/17	03/02/17 04:49	170225L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0019	0.00044	1.00	
PCB028	ND	0.0019	0.00051	1.00	
PCB037	ND	0.0019	0.00029	1.00	
PCB044	ND	0.0019	0.00068	1.00	
PCB049	ND	0.0019	0.00051	1.00	
PCB052	ND	0.0019	0.00053	1.00	
PCB066	ND	0.0019	0.00039	1.00	
PCB070	ND	0.0019	0.00040	1.00	
PCB074	ND	0.0019	0.00047	1.00	
PCB077	ND	0.0019	0.00060	1.00	
PCB081	ND	0.0019	0.00047	1.00	
PCB087	ND	0.0019	0.00068	1.00	
PCB099	ND	0.0019	0.00059	1.00	
PCB101	ND	0.0019	0.00048	1.00	
PCB105	ND	0.0019	0.00045	1.00	
PCB110	ND	0.0019	0.00032	1.00	
PCB114	ND	0.0019	0.00045	1.00	
PCB118	ND	0.0019	0.00048	1.00	
PCB119	ND	0.0019	0.00017	1.00	
PCB123	ND	0.0019	0.00080	1.00	
PCB126	ND	0.0019	0.00024	1.00	
PCB128	ND	0.0019	0.00042	1.00	
PCB132/153	ND	0.0038	0.00067	1.00	
PCB138/158	ND	0.0038	0.00057	1.00	
PCB149	ND	0.0019	0.00022	1.00	
PCB151	ND	0.0019	0.00039	1.00	
PCB156	ND	0.0019	0.00039	1.00	
PCB157	ND	0.0019	0.00039	1.00	
PCB167	ND	0.0019	0.00078	1.00	
PCB168	ND	0.0019	0.00050	1.00	
PCB169	ND	0.0019	0.00039	1.00	
PCB170	ND	0.0019	0.00041	1.00	
PCB177	ND	0.0019	0.00027	1.00	
PCB180	ND	0.0019	0.00058	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 48 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0019	0.00050	1.00	
PCB187	ND	0.0019	0.00041	1.00	
PCB189	ND	0.0019	0.00047	1.00	
PCB194	ND	0.0019	0.00024	1.00	
PCB195	ND	0.0019	0.00072	1.00	
PCB201	ND	0.0019	0.00045	1.00	
PCB206	ND	0.0019	0.00041	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	76	50-150			
p-Terphenyl-d14	98	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners
Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 49 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-414-93	N/A	Aqueous	GC/MS HHH	02/25/17	03/01/17 12:55	170225L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00053	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00053	1.00	
PCB052	ND	0.0020	0.00056	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00049	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00071	1.00	
PCB099	ND	0.0020	0.00061	1.00	
PCB101	ND	0.0020	0.00050	1.00	
PCB105	ND	0.0020	0.00047	1.00	
PCB110	ND	0.0020	0.00034	1.00	
PCB114	ND	0.0020	0.00047	1.00	
PCB118	ND	0.0020	0.00050	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00083	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00060	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00041	1.00	
PCB167	ND	0.0020	0.00081	1.00	
PCB168	ND	0.0020	0.00052	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00028	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 50 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00049	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00075	1.00	
PCB201	ND	0.0020	0.00047	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	72	50-150			
p-Terphenyl-d14	102	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 51 of 52

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-414-94	N/A	Aqueous	GC/MS HHH	02/25/17	03/01/17 14:04	170225L03

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.0020	0.00046	1.00	
PCB028	ND	0.0020	0.00053	1.00	
PCB037	ND	0.0020	0.00030	1.00	
PCB044	ND	0.0020	0.00071	1.00	
PCB049	ND	0.0020	0.00053	1.00	
PCB052	ND	0.0020	0.00056	1.00	
PCB066	ND	0.0020	0.00040	1.00	
PCB070	ND	0.0020	0.00041	1.00	
PCB074	ND	0.0020	0.00049	1.00	
PCB077	ND	0.0020	0.00062	1.00	
PCB081	ND	0.0020	0.00048	1.00	
PCB087	ND	0.0020	0.00071	1.00	
PCB099	ND	0.0020	0.00061	1.00	
PCB101	ND	0.0020	0.00050	1.00	
PCB105	ND	0.0020	0.00047	1.00	
PCB110	ND	0.0020	0.00034	1.00	
PCB114	ND	0.0020	0.00047	1.00	
PCB118	ND	0.0020	0.00050	1.00	
PCB119	ND	0.0020	0.00017	1.00	
PCB123	ND	0.0020	0.00083	1.00	
PCB126	ND	0.0020	0.00025	1.00	
PCB128	ND	0.0020	0.00043	1.00	
PCB132/153	ND	0.0040	0.00069	1.00	
PCB138/158	ND	0.0040	0.00060	1.00	
PCB149	ND	0.0020	0.00023	1.00	
PCB151	ND	0.0020	0.00040	1.00	
PCB156	ND	0.0020	0.00040	1.00	
PCB157	ND	0.0020	0.00041	1.00	
PCB167	ND	0.0020	0.00081	1.00	
PCB168	ND	0.0020	0.00052	1.00	
PCB169	ND	0.0020	0.00040	1.00	
PCB170	ND	0.0020	0.00042	1.00	
PCB177	ND	0.0020	0.00028	1.00	
PCB180	ND	0.0020	0.00060	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/L

Project: GWMA - TMDL Compliance Monitoring

Page 52 of 52

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.0020	0.00052	1.00	
PCB187	ND	0.0020	0.00043	1.00	
PCB189	ND	0.0020	0.00049	1.00	
PCB194	ND	0.0020	0.00025	1.00	
PCB195	ND	0.0020	0.00075	1.00	
PCB201	ND	0.0020	0.00047	1.00	
PCB206	ND	0.0020	0.00043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	65	50-150			
p-Terphenyl-d14	90	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
LE-RW-22-G-S-20170218	Sample	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227S01T
LE-RW-22-G-S-20170218	Matrix Spike	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227S01T
LE-RW-22-G-S-20170218	Matrix Spike Duplicate	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227S01T

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.03795	0.02000	0.05504	85	0.05685	95	71-125	3	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
17-02-1274-4	Sample	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301S01A
17-02-1274-4	Matrix Spike	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301S01A
17-02-1274-4	Matrix Spike Duplicate	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301S01A

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.008556	0.02000	0.02650	90	0.02639	89	71-125	0	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IA-RW-05-G-S-20170218	Sample	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S01T
IA-RW-05-G-S-20170218	Matrix Spike	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S01T
IA-RW-05-G-S-20170218	Matrix Spike Duplicate	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S01T

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.003909	0.02000	0.02198	90	0.02228	92	71-125	1	0-24	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: EPA 1631E Total
 Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
FB-20170218	Sample	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S02T
FB-20170218	Matrix Spike	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S02T
FB-20170218	Matrix Spike Duplicate	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S02T

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.02000	0.01552	78	0.01622	81	71-125	4	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
LE-RW-22-G-S-20170218	Sample	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227S01F
LE-RW-22-G-S-20170218	Matrix Spike	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227S01F
LE-RW-22-G-S-20170218	Matrix Spike Duplicate	Sea Water	Hg/AF 1	02/27/17	02/27/17 00:00	170227S01F

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.008648	0.02000	0.02637	89	0.02691	91	71-125	2	0-24	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IA-RW-05-G-S-20170218	Sample	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S01F
IA-RW-05-G-S-20170218	Matrix Spike	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S01F
IA-RW-05-G-S-20170218	Matrix Spike Duplicate	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S01F

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.0008103	0.02000	0.02042	98	0.02008	96	71-125	2	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
FB-20170218	Sample	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S02F				
FB-20170218	Matrix Spike	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S02F				
FB-20170218	Matrix Spike Duplicate	Sea Water	Hg/AF 1	03/02/17	03/02/17 00:00	170302S02F				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.02000	0.01662	83	0.01658	83	71-125	0	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
LE-RW-22-G-S-20170218	Sample	Sea Water	ICP/MS 06	02/27/17	02/28/17 15:35	170227S02				
LE-RW-22-G-S-20170218	Matrix Spike	Sea Water	ICP/MS 06	02/27/17	02/28/17 18:40	170227S02				
LE-RW-22-G-S-20170218	Matrix Spike Duplicate	Sea Water	ICP/MS 06	02/27/17	02/28/17 15:03	170227S02				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.9012	0.5000	1.303	80	1.270	74	50-150	3	0-20	
Chromium	6.285	5.000	14.85	171	15.90	192	50-150	7	0-20	3
Copper	25.86	0.5000	47.64	4X	48.47	4X	50-150	4X	0-20	Q
Lead	36.24	0.5000	51.11	4X	30.53	4X	50-150	4X	0-20	Q
Zinc	79.82	5.000	86.23	4X	89.22	4X	50-150	4X	0-20	Q

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
IB-RW-12-G-S-20170218	Sample	Sea Water	ICP/MS 06	02/27/17	02/28/17 03:55	170227S03				
IB-RW-12-G-S-20170218	Matrix Spike	Sea Water	ICP/MS 06	02/27/17	02/28/17 04:03	170227S03				
IB-RW-12-G-S-20170218	Matrix Spike Duplicate	Sea Water	ICP/MS 06	02/27/17	02/28/17 04:11	170227S03				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.07000	0.5000	0.5491	96	0.5414	94	50-150	1	0-20	
Chromium	ND	5.000	5.584	112	5.540	111	50-150	1	0-20	
Copper	2.444	0.5000	2.942	4X	2.999	4X	50-150	4X	0-20	Q
Lead	1.015	0.5000	1.435	84	1.366	70	50-150	5	0-20	
Zinc	21.48	5.000	28.63	4X	27.19	4X	50-150	4X	0-20	Q

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
LE-RW-22-G-S-20170218	Sample	Sea Water	ICP/MS 06	02/27/17	02/28/17 20:24	170227S01				
LE-RW-22-G-S-20170218	Matrix Spike	Sea Water	ICP/MS 06	02/27/17	02/28/17 15:11	170227S01				
LE-RW-22-G-S-20170218	Matrix Spike Duplicate	Sea Water	ICP/MS 06	02/27/17	02/28/17 15:19	170227S01				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.09685	0.5000	0.6180	104	0.6109	103	50-150	1	0-20	
Chromium	0.6495	5.000	6.344	114	6.054	108	50-150	5	0-20	
Copper	3.670	0.5000	4.904	4X	4.617	4X	50-150	4X	0-20	Q
Lead	0.2522	0.5000	0.6482	79	0.6009	70	50-150	8	0-20	
Zinc	7.861	5.000	15.65	156	14.16	126	50-150	10	0-20	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-RW-17-G-S-20170218	Sample	Sea Water	GC 44	02/25/17	03/02/17 14:43	170225S04
OB-RW-17-G-S-20170218	Matrix Spike	Sea Water	GC 44	02/25/17	03/03/17 17:24	170225S04
OB-RW-17-G-S-20170218	Matrix Spike Duplicate	Sea Water	GC 44	02/25/17	03/03/17 17:38	170225S04

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	33.35	25.55	77	26.89	81	50-150	5	0-25	
4,4'-DDD	ND	33.35	29.99	90	31.96	96	50-150	6	0-25	
4,4'-DDE	ND	33.35	27.88	84	29.98	90	50-150	7	0-25	
4,4'-DDT	ND	33.35	27.76	83	29.55	89	50-150	6	0-25	
Alpha Chlordane	ND	33.35	25.27	76	27.10	81	50-150	7	0-25	
Dieldrin	ND	33.35	29.27	88	31.11	93	50-150	6	0-25	
Gamma Chlordane	ND	33.35	24.81	74	26.68	80	50-150	7	0-25	
Endrin	ND	33.35	27.90	84	29.68	89	50-150	6	0-25	
Gamma-BHC	ND	33.35	27.08	81	28.30	85	50-150	4	0-25	
Heptachlor	ND	33.35	26.65	80	28.33	85	50-150	6	0-25	
Heptachlor Epoxide	ND	33.35	26.43	79	27.71	83	50-150	5	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-RW-17-G-S-20170218	Sample	Sea Water	GC/MS HHH	02/25/17	03/01/17 21:01	170225S02
OB-RW-17-G-S-20170218	Matrix Spike	Sea Water	GC/MS HHH	02/25/17	03/01/17 17:31	170225S02
OB-RW-17-G-S-20170218	Matrix Spike Duplicate	Sea Water	GC/MS HHH	02/25/17	03/01/17 17:54	170225S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	0.5000	0.5201	104	0.5862	117	50-150	12	0-25	
PCB028	ND	0.5000	0.5563	111	0.6350	127	50-150	13	0-25	
PCB044	ND	0.5000	0.5625	112	0.6463	129	50-150	14	0-25	
PCB052	ND	0.5000	0.5218	104	0.5905	118	50-150	12	0-25	
PCB066	ND	0.5000	0.5914	118	0.6786	136	50-150	14	0-25	
PCB077	ND	0.5000	0.5650	113	0.6437	129	50-150	13	0-25	
PCB101	ND	0.5000	0.5856	117	0.6602	132	50-150	12	0-25	
PCB105	ND	0.5000	0.5946	119	0.6733	135	50-150	12	0-25	
PCB118	ND	0.5000	0.5956	119	0.6734	135	50-150	12	0-25	
PCB126	ND	0.5000	0.5533	111	0.6236	125	50-150	12	0-25	
PCB128	ND	0.5000	0.5422	108	0.6263	125	50-150	14	0-25	
PCB170	ND	0.5000	0.5896	118	0.6725	135	50-150	13	0-25	
PCB180	ND	0.5000	0.6445	129	0.7321	146	50-150	13	0-25	
PCB187	ND	0.5000	0.5671	113	0.6396	128	50-150	12	0-25	
PCB195	ND	0.5000	0.5586	112	0.6485	130	50-150	15	0-25	
PCB206	ND	0.5000	0.5208	104	0.5997	120	50-150	14	0-25	
PCB209	ND	0.5000	0.4717	94	0.5388	108	50-150	13	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: N/A
 Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
LE-RW-22-G-S-20170218	Sample	Sea Water	N/A	02/25/17 00:00	02/25/17 14:00	H0225TSSD2
LE-RW-22-G-S-20170218	Sample Duplicate	Sea Water	N/A	02/25/17 00:00	02/25/17 14:00	H0225TSSD2

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Suspended	519.0	504.0	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: N/A
 Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
IA-RW-03-G-S-20170218	Sample	Sea Water	N/A	02/25/17 00:00	02/25/17 15:00	H0225TSSD3
IA-RW-03-G-S-20170218	Sample Duplicate	Sea Water	N/A	02/25/17 00:00	02/25/17 15:00	H0225TSSD3

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Suspended	14.20	14.80	4	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 02/18/17
 Work Order: 17-02-1758
 Preparation: N/A
 Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
CS-RW-1001-G-M-20170218	Sample	Sea Water	N/A	02/25/17 00:00	02/25/17 16:00	H0225TSSD4
CS-RW-1001-G-M-20170218	Sample Duplicate	Sea Water	N/A	02/25/17 00:00	02/25/17 16:00	H0225TSSD4

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Suspended	38.00	40.00	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC	Date Received:	02/18/17
27201 Puerta Real, Suite 350	Work Order:	17-02-1758
Mission Viejo, CA 92691-8306	Preparation:	N/A
	Method:	SM 2540 D
Project: GWMA - TMDL Compliance Monitoring		Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
SP-RW-18-G-S-20170218	Sample	Sea Water	N/A	02/25/17 00:00	02/25/17 17:00	H0225TSSD5
SP-RW-18-G-S-20170218	Sample Duplicate	Sea Water	N/A	02/25/17 00:00	02/25/17 17:00	H0225TSSD5
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Suspended		59.00	60.20	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-8185	LCS	Aqueous	N/A	02/25/17	02/25/17 14:00	H0225TSSL2			
099-09-010-8185	LCSD	Aqueous	N/A	02/25/17	02/25/17 14:00	H0225TSSL2			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	96.00	96	96.00	96	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-8186	LCS	Aqueous	N/A	02/25/17	02/25/17 15:00	H0225TSSL3			
099-09-010-8186	LCSD	Aqueous	N/A	02/25/17	02/25/17 15:00	H0225TSSL3			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	96.00	96	97.00	97	80-120	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-8187	LCS	Aqueous	N/A	02/25/17	02/25/17 16:00	H0225TSSL4			
099-09-010-8187	LCSD	Aqueous	N/A	02/25/17	02/25/17 16:00	H0225TSSL4			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	106.0	106	105.0	105	80-120	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: N/A
Method: SM 2540 D

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-8188	LCS	Aqueous	N/A	02/25/17	02/25/17 17:00	H0225TSSL5			
099-09-010-8188	LCSD	Aqueous	N/A	02/25/17	02/25/17 17:00	H0225TSSL5			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	98.00	98	99.00	99	80-120	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-165	LCS	Aqueous	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01			
099-15-224-165	LCSD	Aqueous	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01913	96	0.01788	89	71-125	7	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-163	LCS	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01			
099-15-224-163	LCSD	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01812	91	0.01780	89	71-125	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-166	LCS	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T			
099-15-224-166	LCSD	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01T			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01947	97	0.01706	85	71-125	13	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-167	LCS	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T			
099-15-224-167	LCSD	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02T			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01811	91	0.01755	88	71-125	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-226-124	LCS	Aqueous	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F			
099-15-226-124	LCSD	Aqueous	Hg/AF 1	02/27/17	02/27/17 00:00	170227L01F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01913	96	0.01788	89	71-125	7	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-226-123	LCS	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01F			
099-15-226-123	LCSD	Aqueous	Hg/AF 1	03/01/17	03/01/17 00:00	170301L01F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01812	91	0.01780	89	71-125	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-226-125	LCS	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F			
099-15-226-125	LCSD	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L01F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01947	97	0.01706	85	71-125	13	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: Filtered
Method: EPA 1631E

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-226-126	LCS	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F			
099-15-226-126	LCSD	Aqueous	Hg/AF 1	03/02/17	03/02/17 00:00	170302L02F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.02000	0.01811	91	0.01755	88	71-125	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-13-067-681	LCS	Aqueous	ICP/MS 06	02/27/17	02/27/17 21:24	170227L02			
099-13-067-681	LCSD	Aqueous	ICP/MS 06	02/27/17	02/27/17 21:32	170227L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5198	104	0.5015	100	70-130	4	0-20	
Chromium	5.000	5.143	103	4.995	100	70-130	3	0-20	
Copper	0.5000	0.5497	110	0.5597	112	70-130	2	0-20	
Lead	0.5000	0.5697	114	0.5636	113	70-130	1	0-20	
Zinc	5.000	5.223	104	5.262	105	70-130	1	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-13-067-682	LCS	Aqueous	ICP/MS 06	02/27/17	03/01/17 16:55	170227L03			
099-13-067-682	LCSD	Aqueous	ICP/MS 06	02/27/17	03/01/17 17:27	170227L03			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5059	101	0.5361	107	70-130	6	0-20	
Chromium	5.000	5.151	103	4.998	100	70-130	3	0-20	
Copper	0.5000	0.5684	114	0.6021	120	70-130	6	0-20	
Lead	0.5000	0.4988	100	0.5169	103	70-130	4	0-20	
Zinc	5.000	5.779	116	6.392	128	70-130	10	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-823-258	LCS	Aqueous	ICP/MS 06	02/27/17	02/27/17 20:44	170227L01F			
099-15-823-258	LCSD	Aqueous	ICP/MS 06	02/27/17	02/27/17 21:16	170227L01F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.4937	99	0.4821	96	70-130	2	0-20	
Chromium	5.000	5.350	107	5.335	107	70-130	0	0-20	
Copper	0.5000	0.5241	105	0.5000	100	70-130	5	0-20	
Lead	0.5000	0.5582	112	0.5182	104	70-130	7	0-20	
Zinc	5.000	4.819	96	4.675	93	70-130	3	0-20	


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-823-259	LCS	Aqueous	ICP/MS 06	02/27/17	03/01/17 16:55	170227L03F			
099-15-823-259	LCSD	Aqueous	ICP/MS 06	02/27/17	03/01/17 17:27	170227L03F			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5059	101	0.5361	107	70-130	6	0-20	
Chromium	5.000	5.151	103	4.998	100	70-130	3	0-20	
Copper	0.5000	0.5684	114	0.6021	120	70-130	6	0-20	
Lead	0.5000	0.4988	100	0.5169	103	70-130	4	0-20	
Zinc	5.000	5.779	116	6.392	128	70-130	10	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-704-14	LCS	Aqueous	GC 44	02/25/17	03/03/17 17:52	170225L04				
099-16-704-14	LCSD	Aqueous	GC 44	02/25/17	03/03/17 18:05	170225L04				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	33.35	26.47	79	27.93	84	50-150	33-167	5	0-25	
4,4'-DDD	33.35	37.79	113	34.90	105	50-150	33-167	8	0-25	
4,4'-DDE	33.35	35.98	108	34.64	104	50-150	33-167	4	0-25	
4,4'-DDT	33.35	33.75	101	32.16	96	50-150	33-167	5	0-25	
Alpha Chlordane	33.35	32.62	98	31.01	93	50-150	33-167	5	0-25	
Dieldrin	33.35	37.70	113	34.99	105	50-150	33-167	7	0-25	
Gamma Chlordane	33.35	31.96	96	31.34	94	50-150	33-167	2	0-25	
Endrin	33.35	36.38	109	33.34	100	50-150	33-167	9	0-25	
Gamma-BHC	33.35	35.17	105	33.01	99	50-150	33-167	6	0-25	
Heptachlor	33.35	27.44	82	27.42	82	50-150	33-167	0	0-25	
Heptachlor Epoxide	33.35	35.24	106	32.68	98	50-150	33-167	8	0-25	

Total number of LCS compounds: 11

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-704-15	LCS	Aqueous	GC 44	02/25/17	03/03/17 18:19	170225L05				
099-16-704-15	LCSD	Aqueous	GC 44	02/25/17	03/03/17 18:33	170225L05				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	33.35	32.62	98	30.16	90	50-150	33-167	8	0-25	
4,4'-DDD	33.35	34.56	104	32.52	98	50-150	33-167	6	0-25	
4,4'-DDE	33.35	34.22	103	31.84	95	50-150	33-167	7	0-25	
4,4'-DDT	33.35	29.59	89	27.45	82	50-150	33-167	8	0-25	
Alpha Chlordane	33.35	31.63	95	29.48	88	50-150	33-167	7	0-25	
Dieldrin	33.35	35.38	106	32.94	99	50-150	33-167	7	0-25	
Gamma Chlordane	33.35	32.45	97	30.16	90	50-150	33-167	7	0-25	
Endrin	33.35	32.04	96	29.54	89	50-150	33-167	8	0-25	
Gamma-BHC	33.35	32.93	99	30.39	91	50-150	33-167	8	0-25	
Heptachlor	33.35	29.74	89	27.31	82	50-150	33-167	9	0-25	
Heptachlor Epoxide	33.35	33.14	99	30.81	92	50-150	33-167	7	0-25	

Total number of LCS compounds: 11

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 19 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-414-93	LCS	Aqueous	GC/MS HHH	02/25/17	03/01/17 13:18	170225L02				
099-16-414-93	LCSD	Aqueous	GC/MS HHH	02/25/17	03/01/17 13:41	170225L02				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	0.5000	0.3790	76	0.4383	88	50-150	33-167	15	0-25	
PCB028	0.5000	0.4077	82	0.4597	92	50-150	33-167	12	0-25	
PCB044	0.5000	0.4167	83	0.4757	95	50-150	33-167	13	0-25	
PCB052	0.5000	0.3842	77	0.4361	87	50-150	33-167	13	0-25	
PCB066	0.5000	0.4448	89	0.4949	99	50-150	33-167	11	0-25	
PCB077	0.5000	0.4266	85	0.4754	95	50-150	33-167	11	0-25	
PCB101	0.5000	0.4405	88	0.4941	99	50-150	33-167	11	0-25	
PCB105	0.5000	0.4474	89	0.4971	99	50-150	33-167	11	0-25	
PCB118	0.5000	0.4429	89	0.4961	99	50-150	33-167	11	0-25	
PCB126	0.5000	0.4151	83	0.4583	92	50-150	33-167	10	0-25	
PCB128	0.5000	0.4118	82	0.4505	90	50-150	33-167	9	0-25	
PCB170	0.5000	0.4633	93	0.5006	100	50-150	33-167	8	0-25	
PCB180	0.5000	0.4867	97	0.5293	106	50-150	33-167	8	0-25	
PCB187	0.5000	0.4310	86	0.4759	95	50-150	33-167	10	0-25	
PCB195	0.5000	0.4225	85	0.4355	87	50-150	33-167	3	0-25	
PCB206	0.5000	0.3281	66	0.3278	66	50-150	33-167	0	0-25	
PCB209	0.5000	0.2540	51	0.2566	51	50-150	33-167	1	0-25	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/18/17
Work Order: 17-02-1758
Preparation: EPA 3510C
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 20 of 20

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-414-94	LCS	Aqueous	GC/MS HHH	02/25/17	03/01/17 16:45	170225L03				
099-16-414-94	LCSD	Aqueous	GC/MS HHH	02/25/17	03/01/17 14:50	170225L03				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	0.5000	0.4756	95	0.4710	94	50-150	33-167	1	0-25	
PCB028	0.5000	0.5012	100	0.4926	99	50-150	33-167	2	0-25	
PCB044	0.5000	0.5180	104	0.5062	101	50-150	33-167	2	0-25	
PCB052	0.5000	0.4724	94	0.4727	95	50-150	33-167	0	0-25	
PCB066	0.5000	0.5480	110	0.5452	109	50-150	33-167	1	0-25	
PCB077	0.5000	0.5184	104	0.5246	105	50-150	33-167	1	0-25	
PCB101	0.5000	0.5453	109	0.5370	107	50-150	33-167	2	0-25	
PCB105	0.5000	0.5606	112	0.5521	110	50-150	33-167	2	0-25	
PCB118	0.5000	0.5522	110	0.5482	110	50-150	33-167	1	0-25	
PCB126	0.5000	0.5220	104	0.5078	102	50-150	33-167	3	0-25	
PCB128	0.5000	0.5153	103	0.5033	101	50-150	33-167	2	0-25	
PCB170	0.5000	0.5510	110	0.5369	107	50-150	33-167	3	0-25	
PCB180	0.5000	0.6098	122	0.5965	119	50-150	33-167	2	0-25	
PCB187	0.5000	0.5314	106	0.5157	103	50-150	33-167	3	0-25	
PCB195	0.5000	0.4966	99	0.4743	95	50-150	33-167	5	0-25	
PCB206	0.5000	0.3732	75	0.3587	72	50-150	33-167	4	0-25	
PCB209	0.5000	0.2944	59	0.2772	55	50-150	33-167	6	0-25	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 17-02-1758

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:

Date: 2/18/2017

Project Name: **GWMA-TMDL Compliance Monitoring**

Project Number: **141205-01.03**

Project Manager: **Andy Martin**

Phone Number: **(949) 334-9630**

Shipment Method: **Courier**

Field Team: **LB Harbor/San Pedro Bay**

Test Parameters



17-02-1758

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters												Comments/Preservation	
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD								
1	LE-RW-22-G-S-20170218	2/18/17 8:15	Water	8	X	X	X	X	X									MS/MSD metals/mercury
2	LE-RW-22-G-M-20170218	2/18/17 8:15	Water	1	X													
3	LE-RW-22-G-B-20170218	2/18/17 8:15	Water	1	X													
4	SP-RW-20-G-S-20170218	2/18/17 10:35	Water	8	X	X	X	X	X									
5	SP-RW-20-G-M-20170218	2/18/17 10:35	Water	1	X													
6	SP-RW-20-G-B-20170218	2/18/17 10:35	Water	1	X													
7	SP-RW-19-G-S-20170218	2/18/17 11:15	Water	2	X	X	X	X	X	X								MS/MSD metals/mercury
8	SP-RW-19-G-M-20170218	2/18/17 11:15	Water	1	X													
9	SP-RW-19-G-B-20170218	2/18/17 11:15	Water	1	X													
10	OB-RW-17-G-S-20170218	2/18/17 9:40	Water	14	X	X	X	X	X	X								MS/MSD organics/PCBs
11	OB-RW-17-G-M-20170218	2/18/17 9:40	Water	1	X													
12	OB-RW-17-G-B-20170218	2/18/17 9:40	Water	1	X													
13	IB-RW-15-G-S-20170218	2/18/17 9:10	Water	8	X	X	X	X	X									
14	IB-RW-15-G-M-20170218	2/18/17 9:10	Water	1	X													
15	IB-RW-15-G-B-20170218	2/18/17 9:10	Water	1	X													

Notes:

Relinquished By: Nickolas Dasilva Company: Coastal Research Group
 Signature/Printed Name: Nickolas Dasilva Date/Time: 2/18/17 12:40

Received By: [Signature] Company: ECI
 Signature/Printed Name: [Signature] Date/Time: 02/18/17 12:40

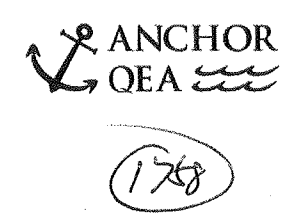
Relinquished By: [Signature] Company: ECI
 Signature/Printed Name: [Signature] Date/Time: 02/18/17 13:15

Received By: [Signature] Company: ECI
 Signature/Printed Name: [Signature] Date/Time: 02/18/17 13:15

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____
 Date: 2/18/2017
 Project Name: **GWMA-TMDL Compliance Monitoring**
 Project Number: **141205-01.03**
 Project Manager: **Andy Martin**
 Phone Number: **(949) 334-9630**
 Shipment Method: **Courier**
 Field Team: **LB Harbor/San Pedro Bay**

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters												Comments/Preservation		
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD									
1	EB-20170218	2/18/17 12:00	Water	7		X	X	X	X										Equipment Blank
2	LE-RW-1022-G-S-20170218	2/18/17 11:25	Water	7		X	X	X	X										
3	SP 1019		Water																
4			Water																
5			Water																
6			Water																
7			Water																
8			Water																
9			Water																
10			Water																
11			Water																
12			Water																
13			Water																
14			Water																
15			Water																



Notes: _____

Relinquished By: _____ Company: Coastal Resources, Inc
 Signature/Printed Name: Nicholas DeSilva Date/Time: 2/18/17 12:40

Received By: _____ Company: ECI
 Signature/Printed Name: _____ Date/Time: 02/18/17 12:40

Relinquished By: _____ Company: ECI
 Signature/Printed Name: _____ Date/Time: 02/18/17 13:15

Received By: _____ Company: ECI
 Signature/Printed Name: _____ Date/Time: 02/18/17 13:15

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:

Date: 2/18/2017

Project Name: GWMA-TMDL Compliance Monitoring

Project Number: 141205-01.03

Project Manager: Andy Martin

Phone Number: (949) 334-9630

Shipment Method: Courier

Field Team: LA Harbor

Test Parameters



1748

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters										Comments/Preservation									
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD														
1	CS-RW-01-G-S-20170218	2/15/17 0930	Water	8	X	X	X	X	X															
2	CS-RW-01-G-M-20170218	2/15/17 0930	Water	1	X																			
3	CS-RW-01-G-B-20170218	2/16/17 0935	Water	1	X																			
4	IA-RW-02-G-S-20170218	0955	Water	8	X	X	X	X	X															
5	IA-RW-02-G-M-20170218	0957	Water	1	X																			
6	IA-RW-02-G-B-20170218	1000	Water	1	X																			
7	IA-RW-03-G-S-20170218	1020	Water	8	X	X	X	X	X															
8	IA-RW-03-G-M-20170218	1022	Water	1	X																			
9	IA-RW-03-G-B-20170218	1024	Water	8	X	X	X	X	X															
10	IA-RW-04-G-S-20170218	1055	Water	1	X	X	X	X	X															
11	IA-RW-04-G-M-20170218	1057	Water	1	X																			
12	IA-RW-04-G-B-20170218	1100	Water	1	X																			
13	IA-RW-05-G-S-20170218	1230-1140	Water	8	X	X	X	X	X															
14	IA-RW-05-G-M-20170218	1232-1142	Water	1	X																			
15	IA-RW-05-G-B-20170218	1234-1144	Water	1	X																			
16	IA-RW-06-G-S-20170218	1140	Water	8	X	X	X	X	X															

Notes:

Relinquished By: McEnney Company: AO
 Signature/Printed Name: _____ Date/Time: 2/18/17 18:22

Received By: _____ Company: _____
 Signature/Printed Name: _____ Date/Time: 02/18/17 18:22

Relinquished By: _____ Company: _____
 Signature/Printed Name: _____ Date/Time: _____

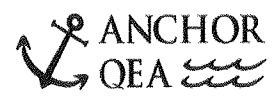
Received By: _____ Company: _____
 Signature/Printed Name: _____ Date/Time: _____

Page 168 of 176

Chain of Custody / Record & Laboratory Analysis Request

Laboratory Number: _____
 Date: 2/18/2017
 Project Name: **GWMA-TMDL Compliance Monitoring**
 Project Number: **141205-01.01**
 Project Manager: **Andy Martin**
 Phone Number: **(949) 334-9630**
 Shipment Method: **Courier**
 Field Team: **LA Harbor**

Test Parameters



1758

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters										Comments/Preservation						
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD											
1	IA-RW-06-G-M-20170218	2/18/17 1142	Water	1	X	X															
2	IA-RW-06-G-B-20170218	1144	Water	1	X																
3	FH-RW-07-G-S-20170218	1210	Water	8	X	X	X	X	X												
4	FH-RW-07-G-M-20170218	1212	Water	1	X																
5	FH-RW-07-G-B-20170218	1215	Water	1	X																
6	OA-RW-09-G-S-20170218	1305	Water	12	X	X	X	X	X												Lab dup metals and mercury
7	OA-RW-09-G-M-20170218	1307	Water	1	X																
8	OA-RW-09-G-B-20170218	1310	Water	1	X																
9	CM-RW-10-G-S-20170218	1335	Water	8	X	X	X	X	X												
10	CM-RW-10-G-M-20170218	1337	Water	1	X																
11	CM-RW-10-G-B-20170218	1340	Water	1	X																
12	CB-RW-11-G-S-20170218	1355	Water	8	X	X	X	X	X												
13	CB-RW-11-G-M-20170218	1357	Water	1	X																
14	CB-RW-11-G-B-20170218	1400	Water	1	X																
15	CS-RW-1001-G-M-20170218	0932	Water	1	X																
16	IA-RW-1006-G-B-20170218	1148	Water	1	X																

Notes:

Relinquished By: M. Lenny Company: AQ
 Signature/Printed Name: _____ Date/Time: 2/18/17 18:22

Received By: _____ Company: _____
 Signature/Printed Name: [Signature] Date/Time: 02/18/17 1822

Relinquished By: _____ Company: _____

Received By: _____ Company: _____

Page 169 of 187

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____

Date: 2/18/2017

Project Name: GWMA-TMDL Compliance Monitoring

Project Number: 141205-01.01

Project Manager: Andy Martin

Phone Number: (949) 334-9630

Shipment Method: Courier

Field Team: LB Harbor/Outer LA Harbor



1758

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters															Comments/Preservation																			
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD																													
1	IB-RW-12-G-S-20170218	<u>2/18/17 1120</u>	Water	8	X	X	X	X	X																														
2	IB-RW-12-G-M-20170218	<u>1125</u>	Water	1	X																																		
3	IB-RW-12-G-B-20170218	<u>1130</u>	Water	1	X																																		
4	IB-RW-13-G-S-20170218	<u>1215</u>	Water	9	X	X	X	X	X																														Lab dup TSS
5	IB-RW-13-G-M-20170218	<u>1220</u>	Water	1	X																																		
6	IB-RW-13-G-B-20170218	<u>1225</u>	Water	1	X																																		
7	IB-RW-14-G-S-20170218	<u>1150</u>	Water	8	X	X	X	X	X																														
8	IB-RW-14-G-M-20170218	<u>1155</u>	Water	1	X																																		
9	IB-RW-14-G-B-20170218	<u>1200</u>	Water	1	X																																		
10	OA-RW-08-G-S-20170218	<u>1230</u>	Water	8	X	X	X	X	X																														
11	OA-RW-08-G-M-20170218	<u>1255</u>	Water	2	X																																		Lab dup TSS
12	OA-RW-08-G-B-20170218	<u>1300</u>	Water	1	X																																		
13	IB-RW-16-G-S-20170218	<u>1320</u>	Water	8	X	X	X	X	X																														
14	IB-RW-16-G-M-20170218	<u>1335</u>	Water	1	X																																		
15	IB-RW-16-G-B-20170218	<u>1340</u>	Water	1	X																																		

Notes:

Relinquished By: [Signature] Company: Anchor QEA

Clare Dolphin 2/18/17 18:22

Signature/Printed Name Date/Time

Received By: [Signature] Company: _____

[Signature] 2/18/17 18:22

Signature/Printed Name Date/Time

Relinquished By: _____ Company: _____

Signature/Printed Name Date/Time

Received By: _____ Company: _____

Signature/Printed Name Date/Time

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____

Date: 2/18/2017

Project Name: **GWMA-TMDL Compliance Monitoring**

Project Number: **141205-01.01**

Project Manager: **Andy Martin**

Phone Number: **(949) 334-9630**

Shipment Method: **Courier**

Field Team: **LB Harbor/San Pedro Bay**

Test Parameters



1758

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters												Comments/Preservation																						
					TSS	Total and dissolved metals	Total and dissolved mercury	Organochlorine pesticides	PCB Congeners	MS/MSD																													
1	SP-RW-18-G-S-20170218	2/18/17 1450	Water	8	X	X	X	X	X																														
2	SP-RW-18-G-M-20170218	1455	Water	1	X																																		
3	SP-RW-18-G-B-20170218	1500	Water	1	X																																		
4	SP-RW-1018-G-M-20170218	1453	Water	1	X																																		
5	LE-RW-21-G-S-20170218	1600	Water	8	X	X	X	X	X																														
6	LE-RW-21-G-M-20170218		Water	1	X																																		
7	LE-RW-21-G-B-20170218		Water	1	X																																		
8	FB-20170218	1700	Water	4		X	X																																
9			Water																																				
10			Water																																				
11			Water																																				
12			Water																																				
13			Water																																				
14			Water																																				
15			Water																																				

Notes:

Relinquished By: Clare Dolphin Company: Anchor OEA
 Signature/Printed Name: Clare Dolphin Date/Time: 2/18/17 18:22

Received By: [Signature] Company: _____
 Signature/Printed Name: [Signature] Date/Time: 2/18/17 1822

Relinquished By: _____ Company: _____
 Signature/Printed Name: _____ Date/Time: _____

Received By: _____ Company: _____
 Signature/Printed Name: _____ Date/Time: _____

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 4

CLIENT: ANCHOR . QEA

DATE: 02 / 18 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) C1315

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.2 °C (w/ CF): 3.2 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 671

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 671

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) : _____ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO₃, **na** = NaOH, **na₂** = Na₂S₂O₃, **p** = H₃PO₄, **s** = H₂SO₄, **u** = ultra-pure, **x** = Na₂SO₃+NaHSO₄.H₂O, **z_{na}** = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: 1053
Reviewed by: 836

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 4

CLIENT: ANCHOR QEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.1 °C (w/ CF): 3.1 °C; [x] Blank [] Sample

[] Sample(s) outside temperature criteria (PM/APM contacted by: _____)

[] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

[] Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: [] Air [] Filter

Checked by: 671

CUSTODY SEAL:

Cooler [] Present and Intact [] Present but Not Intact [x] Not Present [] N/A

Checked by: 671

Sample(s) [] Present and Intact [] Present but Not Intact [x] Not Present [] N/A

Checked by: 1053

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples [x] Yes [] No [] N/A

COC document(s) received complete [x] Yes [] No [] N/A

[] Sampling date [] Sampling time [] Matrix [] Number of containers

[] No analysis requested [] Not relinquished [] No relinquished date [] No relinquished time

Sampler's name indicated on COC [x] Yes [] No [] N/A

Sample container label(s) consistent with COC [x] Yes [] No [] N/A

Sample container(s) intact and in good condition [x] Yes [] No [] N/A

Proper containers for analyses requested [x] Yes [] No [] N/A

Sufficient volume/mass for analyses requested [x] Yes [] No [] N/A

Samples received within holding time [x] Yes [] No [] N/A

Aqueous samples for certain analyses received within 15-minute holding time

[] pH [] Residual Chlorine [] Dissolved Sulfide [] Dissolved Oxygen [] Yes [] No [x] N/A

Proper preservation chemical(s) noted on COC and/or sample container [x] Yes [] No [] N/A

Unpreserved aqueous sample(s) received for certain analyses

[] Volatile Organics [] Total Metals [] Dissolved Metals

Container(s) for certain analysis free of headspace [] Yes [] No [x] N/A

[] Volatile Organics [] Dissolved Gases (RSK-175) [] Dissolved Oxygen (SM 4500)

[] Carbon Dioxide (SM 4500) [] Ferrous Iron (SM 3500) [] Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation [] Yes [] No [x] N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: [] VOA [] VOAh [] VOAna2 [] 100PJ [] 100PJna2 [] 125AGB [] 125AGBh [] 125AGBp [] 125PB

[] 125PBzanna [] 250AGB [x] 250CGB [] 250CGBs [x] 250PB [] 250PBn [] 500AGB [] 500AGJ [] 500AGJs

[] 500PB [x] 1AGB [] 1AGBna2 [] 1AGBs [x] 1PB [] 1PBna [] _____ [] _____ [] _____ [] _____

Solid: [] 4ozCGJ [] 8ozCGJ [] 16ozCGJ [] Sleeve (_____) [] EnCores® (_____) [] TerraCores® (_____) [] _____

Air: [] Tedlar™ [] Canister [] Sorbent Tube [] PUF [] _____ Other Matrix (____): [] _____ [] _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO3, na = NaOH, na2 = Na2S2O3, p = H3PO4, Labeled/Checked by: 1053

s = H2SO4, u = ultra-pure, x = Na2SO3+NaHSO4.H2O, zanna = Zn (CH3CO2)2 + NaOH Reviewed by: 836

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 3 OF 4

CLIENT: ANCHOR QEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.1 °C (w/ CF): 3.1 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 671

CUSTODY SEAL:

Cooler	<input type="checkbox"/> Present and Intact	<input type="checkbox"/> Present but Not Intact	<input checked="" type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Checked by: <u>671</u>
Sample(s)	<input type="checkbox"/> Present and Intact	<input type="checkbox"/> Present but Not Intact	<input checked="" type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Checked by: <u>1053</u>

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag
 Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO₃, **na** = NaOH, **na₂** = Na₂S₂O₃, **p** = H₃PO₄, Labeled/Checked by: 1053
s = H₂SO₄, **u** = ultra-pure, **x** = Na₂SO₃+NaHSO₄.H₂O, **z_{na}** = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 836

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 4 OF 4

CLIENT: ANCHOR QEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.0 °C (w/ CF): 3.0 °C; [x] Blank [] Sample

[] Sample(s) outside temperature criteria (PM/APM contacted by: _____)

[] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

[] Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: [] Air [] Filter

Checked by: 671

CUSTODY SEAL:

Cooler [] Present and Intact [] Present but Not Intact [x] Not Present [] N/A

Checked by: 671

Sample(s) [] Present and Intact [] Present but Not Intact [x] Not Present [] N/A

Checked by: 1057

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples [x] Yes [] No [] N/A

COC document(s) received complete [x] Yes [] No [] N/A

[] Sampling date [] Sampling time [] Matrix [] Number of containers

[] No analysis requested [] Not relinquished [] No relinquished date [] No relinquished time

Sampler's name indicated on COC [x] Yes [] No [] N/A

Sample container label(s) consistent with COC [x] Yes [] No [] N/A

Sample container(s) intact and in good condition [x] Yes [] No [] N/A

Proper containers for analyses requested [x] Yes [] No [] N/A

Sufficient volume/mass for analyses requested [x] Yes [] No [] N/A

Samples received within holding time [x] Yes [] No [] N/A

Aqueous samples for certain analyses received within 15-minute holding time

[] pH [] Residual Chlorine [] Dissolved Sulfide [] Dissolved Oxygen [] Yes [] No [x] N/A

Proper preservation chemical(s) noted on COC and/or sample container [x] Yes [] No [] N/A

Unpreserved aqueous sample(s) received for certain analyses

[] Volatile Organics [] Total Metals [] Dissolved Metals

Container(s) for certain analysis free of headspace [] Yes [] No [x] N/A

[] Volatile Organics [] Dissolved Gases (RSK-175) [] Dissolved Oxygen (SM 4500)

[] Carbon Dioxide (SM 4500) [] Ferrous Iron (SM 3500) [] Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation [] Yes [] No [x] N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: [] VOA [] VOAh [] VOAna2 [] 100PJ [] 100PJna2 [] 125AGB [] 125AGBh [] 125AGBp [] 125PB

[] 125PBzanna [] 250AGB [x] 250CGB [] 250CGBs [x] 250PB [] 250PBn [] 500AGB [] 500AGJ [] 500AGJs

[] 500PB [x] 1AGB [] 1AGBna2 [] 1AGBs [x] 1PB [] 1PBna [] _____ [] _____ [] _____ [] _____

Solid: [] 4ozCGJ [] 8ozCGJ [] 16ozCGJ [] Sleeve (_____) [] EnCores® (_____) [] TerraCores® (_____) [] _____

Air: [] Tedlar™ [] Canister [] Sorbent Tube [] PUF [] _____ Other Matrix (_____) [] _____ [] _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO3, na = NaOH, na2 = Na2S2O3, p = H3PO4, Labeled/Checked by: 1057

s = H2SO4, u = ultra-pure, x = Na2SO3+NaHSO4.H2O, zanna = Zn (CH3CO2)2 + NaOH Reviewed by: 826

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 9

CLIENT: Anchor QEA

DATE: 02 / 18 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 4.1 °C (w/ CF): 4.1 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A

Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 1053

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples Yes No N/A

COC document(s) received complete Yes No N/A

Sampling date Sampling time Matrix Number of containers

No analysis requested Not relinquished No relinquished date No relinquished time

Sampler's name indicated on COC Yes No N/A

Sample container label(s) consistent with COC Yes No N/A

Sample container(s) intact and in good condition Yes No N/A

Proper containers for analyses requested Yes No N/A

Sufficient volume/mass for analyses requested Yes No N/A

Samples received within holding time Yes No N/A

Aqueous samples for certain analyses received within 15-minute holding time

pH Residual Chlorine Dissolved Sulfide Dissolved Oxygen Yes No N/A

Proper preservation chemical(s) noted on COC and/or sample container Yes No N/A

Unpreserved aqueous sample(s) received for certain analyses

Volatile Organics Total Metals Dissolved Metals

Container(s) for certain analysis free of headspace Yes No N/A

Volatile Organics Dissolved Gases (RSK-175) Dissolved Oxygen (SM 4500)

Carbon Dioxide (SM 4500) Ferrous Iron (SM 3500) Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation Yes No N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna2 100PJ 100PJna2 125AGB 125AGBh 125AGBp 125PB

125PBznnna 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna2 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO3, na = NaOH, na2 = Na2S2O3, p = H3PO4, Labeled/Checked by: 826

s = H2SO4, u = ultra-pure, x = Na2SO3+NaHSO4.H2O, znnna = Zn (CH3CO2)2 + NaOH Reviewed by: 1053

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 9

CLIENT: Anchor AEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) C1822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3-7 °C (w/ CF): 3-7 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 826

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500) <input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100Pjna₂ 125AGB 125AGBh 125AGBp 125PB
 125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBh 500AGB 500AGJ 500AGJs
 500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 826
 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 3 OF 9

CLIENT: Anchor QEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) 01822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 4.7 °C (w/ CF): 4.7 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 826

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{anna} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 826

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{anna} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 4 OF 9

CLIENT: Anchor DEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) C1822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 5-0 °C (w/ CF): 5-0 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A

Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 826

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples Yes No N/A

COC document(s) received complete Yes No N/A

Sampling date Sampling time Matrix Number of containers

No analysis requested Not relinquished No relinquished date No relinquished time

Sampler's name indicated on COC Yes No N/A

Sample container label(s) consistent with COC Yes No N/A

Sample container(s) intact and in good condition Yes No N/A

Proper containers for analyses requested Yes No N/A

Sufficient volume/mass for analyses requested Yes No N/A

Samples received within holding time Yes No N/A

Aqueous samples for certain analyses received within 15-minute holding time

pH Residual Chlorine Dissolved Sulfide Dissolved Oxygen Yes No N/A

Proper preservation chemical(s) noted on COC and/or sample container Yes No N/A

Unpreserved aqueous sample(s) received for certain analyses

Volatile Organics Total Metals Dissolved Metals

Container(s) for certain analysis free of headspace Yes No N/A

Volatile Organics Dissolved Gases (RSK-175) Dissolved Oxygen (SM 4500)

Carbon Dioxide (SM 4500) Ferrous Iron (SM 3500) Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation Yes No N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 826

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053



SAMPLE RECEIPT CHECKLIST

COOLER 5 OF 9

CLIENT: Anchor AEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) C1822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 2.9 °C (w/ CF): 2.9 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 826

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 826

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 6 OF 9

CLIENT: Anchor DEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) 01822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.0 °C (w/ CF): 3.0 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 876

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBh 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 876

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 7 OF 9

CLIENT: Anchor QEA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) 01822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.2 °C (w/ CF): 3.2 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 826

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 826

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 8 OF 9

CLIENT: Anchor REA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) 01822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.2 °C (w/ CF): 3.2 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 846

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500) <input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBm 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 846

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE RECEIPT CHECKLIST

COOLER 9 OF 9

CLIENT: Anchor REA

DATE: 02/18/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) C 1822

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 2.9 °C (w/ CF): 2.9 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 778

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 778

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 826

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_h 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 826

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1053

Return to Contents

SAMPLE ANOMALY REPORT

DATE: 02/18/2017

SAMPLES, CONTAINERS, AND LABELS:

- Sample(s) NOT RECEIVED but listed on COC
- Sample(s) received but NOT LISTED on COC
- Holding time expired (list client or ECI sample ID and analysis)
- Insufficient sample amount for requested analysis (list analysis)
- Improper container(s) used (list analysis)
- Improper preservative used (list analysis)
- No preservative noted on COC or label (list analysis and notify lab)
- Sample container(s) not labeled
- Client sample label(s) illegible (list container type and analysis)
- Client sample label(s) do not match COC (comment)
 - Project information
 - Client sample ID
 - Sampling date and/or time
 - Number of container(s)
 - Requested analysis
- Sample container(s) compromised (comment)
 - Broken
 - Water present in sample container
- Air sample container(s) compromised (comment)
 - Flat
 - Very low in volume
 - Leaking (not transferred; duplicate bag submitted)
 - Leaking (transferred into ECI Tedlar™ bags*)
 - Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

MISCELLANEOUS: (Describe)

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

Comments

(-26) Received 1 container instead of 8
1 - 1 liter plastic container, unpreserved

(-10) 6 of 9 1 Liter amber glass bottles labeled as
OR-RW-17-G-S-20170218

(-10), (-11), (-12) collection time per label 9:50

(-27) Received 8 containers instead of 1
1 - 1 liter plastic container, unpreserved
3 - 1 liter amber glass " , "
2 - 250 ml plastic " , "
2 - 250 ml glass " , "

Comments

Comments: _____

Reported by: 1053
Reviewed by: 300

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

Return to Contents

SAMPLE ANOMALY REPORT

DATE: 02 / 18 / 2017

SAMPLES, CONTAINERS, AND LABELS:

- Sample(s) NOT RECEIVED but listed on COC
- Sample(s) received but NOT LISTED on COC
- Holding time expired (list client or ECI sample ID and analysis)
- Insufficient sample amount for requested analysis (list analysis)
- Improper container(s) used (list analysis)
- Improper preservative used (list analysis)
- No preservative noted on COC or label (list analysis and notify lab)
- Sample container(s) not labeled
- Client sample label(s) illegible (list container type and analysis)
- Client sample label(s) do not match COC (comment)
 - Project information
 - Client sample ID
 - Sampling date and/or time
 - Number of container(s)
 - Requested analysis
- Sample container(s) compromised (comment)
 - Broken
 - Water present in sample container
- Air sample container(s) compromised (comment)
 - Flat
 - Very low in volume
 - Leaking (not transferred; duplicate bag submitted)
 - Leaking (transferred into ECI Tedlar™ bags*)
 - Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

Labeled as: date/time matched
 (-62) OB-RW-16-G-S-20170218
 (-63) OB-RW-16-G-M-20170218
 (-64) OB-RW-16-G-B-20170218

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

Reported by: 826
 Reviewed by: 1053

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

Kathleen Burney

From: Claire Dolphin <cdolphin@anchorqea.com>
Sent: Tuesday, February 21, 2017 2:05 PM
To: Kathleen Burney; Cindy Fields; Andy Martin
Cc: Carla Hollowell; Michele Castro
Subject: RE: GWMA-TMDL Compliance Monitoring / 17-02-1758

Hi Kathy,
 IA-RW-06-G-M-20170218 should be marked for **TSS ONLY**, the 1 L HDPE bottle is the only container for that sample.
 Thank you!

Claire Dolphin

Environmental Scientist

ANCHOR QEA, LLC

cdolphin@anchorqea.com

D 949.334.9615

 Please consider the environment before printing this email.

This electronic message transmission contains information that may be confidential and/or privileged work product prepared in anticipation of litigation. The information is intended for the use of the individual or entity named above. If you are not the intended recipient, please be aware that any disclosure, copying distribution or use of the contents of this information is prohibited. If you have received this electronic transmission in error, please notify us by telephone at (206) 287-9130.


Return to Contents

From: Kathleen Burney [mailto:KathleenBurney@eurofinsUS.com]
Sent: Tuesday, February 21, 2017 1:53 PM
To: Claire Dolphin <cdolphin@anchorqea.com>; Cindy Fields <cfields@anchorqea.com>; Andy Martin <amartin@anchorqea.com>
Cc: Carla Hollowell <CarlaHollowell@eurofinsUS.com>; Michele Castro <MicheleCastro@eurofinsUS.com>
Subject: GWMA-TMDL Compliance Monitoring / 17-02-1758
Importance: High

Hi, Claire –

I believe Carla already sent a Sample Confirmation Receipt for this event, but it looks like the Anomaly Report did not include any remarks about sample IA-RW-06-G-M-20170218 (see Line 1, on page 4 of the COC, attached). The sample is marked for TSS, plus total and dissolved metals, but it appears we only received one bottle (the 1L plastic for TSS).

Please let me know whether or not the metals by 1640 are required for this sample. Thanks very much!

Regards,

Kathy

Kathy Burney
 Project Manager Assistant

Appendix D-2

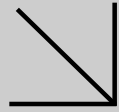
Sediment Sample Chemistry Reports



Calscience

Supplemental Report 2

The original report has been revised/corrected.



WORK ORDER NUMBER: 16-08-1268

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA Sediment Sampling

Attention: Andrew Martin
27201 Puerta Real
Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 12/16/2016 by:
Carla Hollowell
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA Sediment Sampling
 Work Order Number: 16-08-1268

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 9060A Total Organic Carbon (Solid).	5
	3.2 SM 2540 B (M) Total Solids (Solid).	7
	3.3 ASTM D4464 (M) Particle Size Laser (Solid).	9
	3.4 EPA 8081A Organochlorine Pesticides (Solid).	11
	3.5 EPA 8270C SIM OC Pesticides (Solid).	14
	3.6 EPA 8270C SIM PAHs (Solid).	21
	3.7 EPA 8270C SIM PCB Congeners (Solid).	29
4	Particle Size Summary - 16-08-1268.	43
5	Quality Control Sample Data.	49
	5.1 MS/MSD.	49
	5.2 Sample Duplicate.	54
	5.3 LCS/LCSD.	55
6	Glossary of Terms and Qualifiers.	60
7	Chain-of-Custody/Sample Receipt Form.	61
8	Subcontract Narrative.	66
9	Subcontract Report (EFGS) - 16-08-1268.	67

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/17/16. They were assigned to Work Order 16-08-1268.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 16-08-1268
27201 Puerta Real, Suite 350	Project Name: GWMA Sediment Sampling
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 08/17/16 19:00
	Number of Containers: 36

Attn: Andrew Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
IA-SS-04-0-5-20160817	16-08-1268-1	08/17/16 08:25	6	Sediment
IA-SS-02-0-5-20160817	16-08-1268-2	08/17/16 09:15	6	Sediment
CS-SS-01-0-5-20160817	16-08-1268-3	08/17/16 10:08	6	Sediment
IB-SS-12-0-5-20160817	16-08-1268-4	08/17/16 11:23	6	Sediment
IB-SS-13-0-5-20160817	16-08-1268-5	08/17/16 13:00	6	Sediment
IB-SS-14-0-5-20160817	16-08-1268-6	08/17/16 14:38	6	Sediment

Return to Contents

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: N/A
Method: EPA 9060A
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-EE	08/17/16 08:25	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.39	0.080	0.028	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.37	0.12	0.043	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.62	0.13	0.044	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.4	0.10	0.036	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-13-0-5-20160817	16-08-1268-5-EE	08/17/16 13:00	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.0	0.10	0.035	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: N/A
 Method: EPA 9060A
 Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-14-0-5-20160817	16-08-1268-6-EE	08/17/16 14:38	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
 - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.52	0.082	0.028	1.00	

Method Blank	099-06-013-1599	N/A	Solid	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1
--------------	-----------------	-----	-------	-------	----------	----------------	------------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	0.050	0.017	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-EE	08/17/16 08:25	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	62.5	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	40.6	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	39.4	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	48.5	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-13-0-5-20160817	16-08-1268-5-EE	08/17/16 13:00	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	49.7	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-14-0-5-20160817	16-08-1268-6-EE	08/17/16 14:38	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	61.0	0.100	0.100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-05-019-3381	N/A	Solid	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Solids, Total	ND	0.100	0.100	1.00	



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-A	08/17/16 08:25	Sediment	LPSA 1	N/A	08/19/16 09:44	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	7.70	
Silt (0.00391 to 0.0625mm)	36.01	
Total Silt and Clay (0 to 0.0625mm)	43.72	
Very Fine Sand (0.0625 to 0.125mm)	17.61	
Fine Sand (0.125 to 0.25mm)	28.01	
Medium Sand (0.25 to 0.5mm)	8.59	
Coarse Sand (0.5 to 1mm)	2.07	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-A	08/17/16 09:15	Sediment	LPSA 1	N/A	08/19/16 09:53	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	10.11	
Silt (0.00391 to 0.0625mm)	49.51	
Total Silt and Clay (0 to 0.0625mm)	59.61	
Very Fine Sand (0.0625 to 0.125mm)	16.50	
Fine Sand (0.125 to 0.25mm)	14.60	
Medium Sand (0.25 to 0.5mm)	8.15	
Coarse Sand (0.5 to 1mm)	1.13	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-A	08/17/16 10:08	Sediment	LPSA 1	N/A	08/19/16 10:01	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	9.12	
Silt (0.00391 to 0.0625mm)	58.89	
Total Silt and Clay (0 to 0.0625mm)	68.01	
Very Fine Sand (0.0625 to 0.125mm)	16.00	
Fine Sand (0.125 to 0.25mm)	14.50	
Medium Sand (0.25 to 0.5mm)	1.49	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-A	08/17/16 11:23	Sediment	LPSA 1	N/A	08/19/16 10:09	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	18.30	
Silt (0.00391 to 0.0625mm)	70.90	
Total Silt and Clay (0 to 0.0625mm)	89.20	
Very Fine Sand (0.0625 to 0.125mm)	7.42	
Fine Sand (0.125 to 0.25mm)	3.38	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

IB-SS-13-0-5-20160817	16-08-1268-5-A	08/17/16 13:00	Sediment	LPSA 1	N/A	08/19/16 10:16	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	12.96	
Silt (0.00391 to 0.0625mm)	62.75	
Total Silt and Clay (0 to 0.0625mm)	75.71	
Very Fine Sand (0.0625 to 0.125mm)	15.51	
Fine Sand (0.125 to 0.25mm)	8.71	
Medium Sand (0.25 to 0.5mm)	0.070	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

IB-SS-14-0-5-20160817	16-08-1268-6-A	08/17/16 14:38	Sediment	LPSA 1	N/A	08/19/16 10:23	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	11.52	
Silt (0.00391 to 0.0625mm)	58.96	
Total Silt and Clay (0 to 0.0625mm)	70.48	
Very Fine Sand (0.0625 to 0.125mm)	21.99	
Fine Sand (0.125 to 0.25mm)	7.53	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-EE	08/17/16 08:25	Sediment	GC 44	08/26/16	09/01/16 08:05	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	32	14	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	435	25-145	2,7		
Decachlorobiphenyl	139	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	GC 44	08/26/16	09/01/16 08:19	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	49	22	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	140	25-145			
Decachlorobiphenyl	234	24-168	2,7		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	GC 44	08/26/16	09/01/16 08:34	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	51	23	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	107	25-145			
Decachlorobiphenyl	184	24-168	2,7		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	GC 44	08/26/16	09/01/16 08:48	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	41	18	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	337	25-145	2,7		
Decachlorobiphenyl	173	24-168	2,7		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-13-0-5-20160817	16-08-1268-5-EE	08/17/16 13:00	Sediment	GC 44	08/26/16	09/01/16 09:02	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	40	18	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	195	25-145	2,7		
Decachlorobiphenyl	134	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-14-0-5-20160817	16-08-1268-6-EE	08/17/16 14:38	Sediment	GC 44	08/26/16	09/01/16 09:16	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	32	15	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	388	25-145	2,7		
Decachlorobiphenyl	136	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: EPA 3541
 Method: EPA 8081A
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-858-426	N/A	Solid	GC 44	08/26/16	09/01/16 06:11	160826L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Toxaphene	ND	20	9.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
2,4,5,6-Tetrachloro-m-Xylene	95	25-145	
Decachlorobiphenyl	102	24-168	



RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-EE	08/17/16 08:25	Sediment	GC/MS BBB	08/24/16	08/29/16 19:38	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.32	0.11	1.00	
Cis-nonachlor	ND	0.32	0.080	1.00	
2,4'-DDD	ND	0.32	0.12	1.00	
2,4'-DDE	ND	0.32	0.056	1.00	
2,4'-DDT	ND	0.32	0.098	1.00	
4,4'-DDD	ND	0.32	0.063	1.00	
4,4'-DDE	11	0.32	0.064	1.00	
4,4'-DDT	ND	0.32	0.083	1.00	
Dieldrin	ND	0.32	0.17	1.00	
Gamma Chlordane	ND	0.32	0.085	1.00	
Oxychlordane	ND	0.32	0.12	1.00	
Trans-nonachlor	ND	0.32	0.068	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchlorodane	44	25-200			
2,4,5,6-Tetrachloro-m-Xylene	75	25-200			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	GC/MS BBB	08/24/16	08/29/16 19:54	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	3.3	0.49	0.16	1.00	
Cis-nonachlor	2.1	0.49	0.13	1.00	
2,4'-DDD	ND	0.49	0.19	1.00	
2,4'-DDE	ND	0.49	0.087	1.00	
2,4'-DDT	ND	0.49	0.15	1.00	
4,4'-DDD	19	0.49	0.098	1.00	
4,4'-DDT	ND	0.49	0.13	1.00	
Dieldrin	ND	0.49	0.26	1.00	
Gamma Chlordane	5.7	0.49	0.13	1.00	
Oxychlordane	ND	0.49	0.18	1.00	
Trans-nonachlor	2.7	0.49	0.11	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	112	25-200	
2,4,5,6-Tetrachloro-m-Xylene	60	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	GC/MS BBB	08/24/16	08/30/16 13:13	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	59	2.5	0.50	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	170	25-200	
2,4,5,6-Tetrachloro-m-Xylene	80	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	GC/MS BBB	08/24/16	08/29/16 20:10	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	3.6	0.51	0.17	1.00	
Cis-nonachlor	2.9	0.51	0.13	1.00	
2,4'-DDD	ND	0.51	0.19	1.00	
2,4'-DDE	ND	0.51	0.089	1.00	
2,4'-DDT	ND	0.51	0.16	1.00	
4,4'-DDD	ND	0.51	0.10	1.00	
4,4'-DDT	ND	0.51	0.13	1.00	
Dieldrin	ND	0.51	0.27	1.00	
Gamma Chlordane	8.3	0.51	0.13	1.00	
Oxychlordane	ND	0.51	0.18	1.00	
Trans-nonachlor	5.8	0.51	0.11	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	60	25-200	
2,4,5,6-Tetrachloro-m-Xylene	60	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	GC/MS BBB	08/24/16	08/30/16 13:29	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	50	2.5	0.51	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	113	25-200	
2,4,5,6-Tetrachloro-m-Xylene	68	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	GC/MS BBB	08/24/16	08/29/16 20:26	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.41	0.14	1.00	
Cis-nonachlor	ND	0.41	0.10	1.00	
2,4'-DDD	ND	0.41	0.16	1.00	
2,4'-DDE	ND	0.41	0.072	1.00	
2,4'-DDT	ND	0.41	0.13	1.00	
4,4'-DDD	ND	0.41	0.082	1.00	
4,4'-DDT	ND	0.41	0.11	1.00	
Dieldrin	ND	0.41	0.22	1.00	
Gamma Chlordane	ND	0.41	0.11	1.00	
Oxychlordane	ND	0.41	0.15	1.00	
Trans-nonachlor	ND	0.41	0.089	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	77	25-200	
2,4,5,6-Tetrachloro-m-Xylene	63	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	GC/MS BBB	08/24/16	08/30/16 13:44	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	73	4.1	0.84	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	135	25-200	
2,4,5,6-Tetrachloro-m-Xylene	76	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-13-0-5-20160817	16-08-1268-5-EE	08/17/16 13:00	Sediment	GC/MS BBB	08/24/16	08/29/16 20:42	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.40	0.13	1.00	
Cis-nonachlor	ND	0.40	0.10	1.00	
2,4'-DDD	ND	0.40	0.15	1.00	
2,4'-DDE	ND	0.40	0.070	1.00	
2,4'-DDT	ND	0.40	0.12	1.00	
4,4'-DDD	ND	0.40	0.079	1.00	
4,4'-DDE	15	0.40	0.081	1.00	
4,4'-DDT	ND	0.40	0.10	1.00	
Dieldrin	ND	0.40	0.21	1.00	
Gamma Chlordane	ND	0.40	0.11	1.00	
Oxychlordane	ND	0.40	0.15	1.00	
Trans-nonachlor	ND	0.40	0.086	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	58	25-200			
2,4,5,6-Tetrachloro-m-Xylene	66	25-200			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-14-0-5-20160817	16-08-1268-6-EE	08/17/16 14:38	Sediment	GC/MS BBB	08/24/16	08/29/16 20:58	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.33	0.11	1.00	
Cis-nonachlor	ND	0.33	0.083	1.00	
2,4'-DDD	ND	0.33	0.12	1.00	
2,4'-DDE	2.1	0.33	0.057	1.00	
2,4'-DDT	ND	0.33	0.10	1.00	
4,4'-DDD	ND	0.33	0.065	1.00	
4,4'-DDE	8.1	0.33	0.066	1.00	
4,4'-DDT	ND	0.33	0.086	1.00	
Dieldrin	ND	0.33	0.17	1.00	
Gamma Chlordane	ND	0.33	0.087	1.00	
Oxychlordane	ND	0.33	0.12	1.00	
Trans-nonachlor	ND	0.33	0.070	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloroendate	49	25-200			
2,4,5,6-Tetrachloro-m-Xylene	69	25-200			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: EPA 3541
 Method: EPA 8270C PEST-SIM
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-154-67	N/A	Solid	GC/MS BBB	08/24/16	08/29/16 15:19	160824L11

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.20	0.067	1.00	
Cis-nonachlor	ND	0.20	0.051	1.00	
2,4'-DDD	ND	0.20	0.076	1.00	
2,4'-DDE	ND	0.20	0.035	1.00	
2,4'-DDT	ND	0.20	0.062	1.00	
4,4'-DDD	ND	0.20	0.040	1.00	
4,4'-DDE	ND	0.20	0.040	1.00	
4,4'-DDT	ND	0.20	0.053	1.00	
Dieldrin	ND	0.20	0.11	1.00	
Gamma Chlordane	ND	0.20	0.053	1.00	
Oxychlordane	ND	0.20	0.073	1.00	
Trans-nonachlor	ND	0.20	0.043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
Dibutylchloredate	120	25-200			
2,4,5,6-Tetrachloro-m-Xylene	84	25-200			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-EE	08/17/16 08:25	Sediment	GC/MS AAA	08/30/16	09/01/16 18:12	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	4.3	16	3.7	1.00	J
Anthracene	85	16	5.5	1.00	
Benzo (a) Anthracene	120	16	3.4	1.00	
Benzo (a) Pyrene	160	16	2.9	1.00	
Benzo (e) Pyrene	110	16	3.1	1.00	
Biphenyl	ND	16	3.0	1.00	
Chrysene	220	16	3.6	1.00	
Dibenz (a,h) Anthracene	35	16	3.1	1.00	
2,6-Dimethylnaphthalene	32	16	2.7	1.00	
Fluoranthene	170	16	2.9	1.00	
Fluorene	8.8	16	5.0	1.00	J
2-Methylnaphthalene	ND	16	3.7	1.00	
1-Methylnaphthalene	ND	16	3.7	1.00	
1-Methylphenanthrene	12	16	4.0	1.00	J
Naphthalene	ND	16	5.5	1.00	
Perylene	88	16	3.8	1.00	
Phenanthrene	68	16	3.5	1.00	
Pyrene	130	16	3.6	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	67	14-146	
Nitrobenzene-d5	67	18-162	
p-Terphenyl-d14	89	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	GC/MS AAA	08/30/16	09/01/16 18:32	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	74	250	58	10.0	J
Anthracene	370	250	85	10.0	
Benzo (a) Anthracene	740	250	53	10.0	
Benzo (a) Pyrene	1000	250	45	10.0	
Benzo (e) Pyrene	730	250	48	10.0	
Biphenyl	ND	250	46	10.0	
Chrysene	1200	250	55	10.0	
Dibenz (a,h) Anthracene	160	250	48	10.0	J
2,6-Dimethylnaphthalene	160	250	42	10.0	J
Fluoranthene	1100	250	45	10.0	
Fluorene	86	250	77	10.0	J
2-Methylnaphthalene	ND	250	57	10.0	
1-Methylnaphthalene	ND	250	57	10.0	
1-Methylphenanthrene	140	250	61	10.0	J
Naphthalene	ND	250	85	10.0	
Perylene	520	250	58	10.0	
Phenanthrene	560	250	55	10.0	
Pyrene	1200	250	55	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	67	14-146	
Nitrobenzene-d5	64	18-162	
p-Terphenyl-d14	91	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	GC/MS AAA	08/30/16	09/01/16 18:52	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	250	60	10.0	
Anthracene	280	250	88	10.0	
Benzo (a) Anthracene	620	250	55	10.0	
Benzo (a) Pyrene	750	250	47	10.0	
Benzo (e) Pyrene	700	250	50	10.0	
Biphenyl	ND	250	47	10.0	
Chrysene	1100	250	57	10.0	
Dibenz (a,h) Anthracene	180	250	50	10.0	J
2,6-Dimethylnaphthalene	220	250	43	10.0	J
Fluoranthene	990	250	46	10.0	
Fluorene	ND	250	79	10.0	
2-Methylnaphthalene	ND	250	59	10.0	
1-Methylnaphthalene	ND	250	59	10.0	
1-Methylphenanthrene	ND	250	63	10.0	
Naphthalene	ND	250	88	10.0	
Perylene	260	250	60	10.0	
Phenanthrene	330	250	57	10.0	
Pyrene	1200	250	57	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	68	14-146	
Nitrobenzene-d5	60	18-162	
p-Terphenyl-d14	88	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	GC/MS AAA	08/30/16	09/01/16 19:11	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	30	21	4.9	1.00	
Anthracene	540	21	7.2	1.00	
Benzo (a) Anthracene	290	21	4.4	1.00	
Benzo (e) Pyrene	820	21	4.1	1.00	
Biphenyl	24	21	3.8	1.00	
Chrysene	440	21	4.6	1.00	
Dibenz (a,h) Anthracene	200	21	4.0	1.00	
2,6-Dimethylnaphthalene	160	21	3.5	1.00	
Fluoranthene	430	21	3.8	1.00	
Fluorene	50	21	6.4	1.00	
2-Methylnaphthalene	26	21	4.8	1.00	
1-Methylnaphthalene	17	21	4.8	1.00	J
1-Methylphenanthrene	120	21	5.1	1.00	
Naphthalene	94	21	7.2	1.00	
Perylene	650	21	4.9	1.00	
Phenanthrene	210	21	4.6	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2-Fluorobiphenyl	68	14-146			
Nitrobenzene-d5	61	18-162			
p-Terphenyl-d14	74	34-148			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	GC/MS AAA	08/30/16	09/02/16 12:41	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Benzo (a) Pyrene	1400	100	19	5.00	
Pyrene	2200	100	23	5.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
2-Fluorobiphenyl	74	14-146	
Nitrobenzene-d5	69	18-162	
p-Terphenyl-d14	95	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-13-0-5-20160817	16-08-1268-5-EE	08/17/16 13:00	Sediment	GC/MS AAA	08/30/16	09/01/16 19:31	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	20	4.7	1.00	
Anthracene	42	20	7.0	1.00	
Benzo (a) Anthracene	77	20	4.3	1.00	
Benzo (a) Pyrene	120	20	3.7	1.00	
Benzo (e) Pyrene	74	20	3.9	1.00	
Biphenyl	ND	20	3.7	1.00	
Chrysene	120	20	4.5	1.00	
Dibenz (a,h) Anthracene	26	20	3.9	1.00	
2,6-Dimethylnaphthalene	50	20	3.4	1.00	
Fluoranthene	98	20	3.7	1.00	
Fluorene	6.4	20	6.3	1.00	J
2-Methylnaphthalene	4.9	20	4.7	1.00	J
1-Methylnaphthalene	ND	20	4.7	1.00	
1-Methylphenanthrene	6.8	20	5.0	1.00	J
Naphthalene	7.0	20	7.0	1.00	J
Perylene	42	20	4.8	1.00	
Phenanthrene	46	20	4.5	1.00	
Pyrene	150	20	4.5	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	67	14-146	
Nitrobenzene-d5	57	18-162	
p-Terphenyl-d14	83	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-14-0-5-20160817	16-08-1268-6-EE	08/17/16 14:38	Sediment	GC/MS AAA	08/30/16	09/01/16 19:51	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	16	3.8	1.00	
Anthracene	56	16	5.7	1.00	
Benzo (a) Anthracene	100	16	3.5	1.00	
Benzo (a) Pyrene	210	16	3.0	1.00	
Benzo (e) Pyrene	130	16	3.2	1.00	
Biphenyl	ND	16	3.0	1.00	
Chrysene	160	16	3.6	1.00	
Dibenz (a,h) Anthracene	52	16	3.2	1.00	
2,6-Dimethylnaphthalene	30	16	2.8	1.00	
Fluoranthene	90	16	3.0	1.00	
Fluorene	5.9	16	5.1	1.00	J
2-Methylnaphthalene	ND	16	3.8	1.00	
1-Methylnaphthalene	ND	16	3.8	1.00	
1-Methylphenanthrene	5.1	16	4.1	1.00	J
Naphthalene	ND	16	5.7	1.00	
Perylene	85	16	3.9	1.00	
Phenanthrene	35	16	3.6	1.00	
Pyrene	81	16	3.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	66	14-146	
Nitrobenzene-d5	55	18-162	
p-Terphenyl-d14	85	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-097-217	N/A	Solid	GC/MS AAA	08/30/16	09/01/16 15:36	160830L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	10	2.4	1.00	
Anthracene	ND	10	3.5	1.00	
Benzo (a) Anthracene	ND	10	2.2	1.00	
Benzo (a) Pyrene	ND	10	1.8	1.00	
Benzo (e) Pyrene	ND	10	2.0	1.00	
Biphenyl	ND	10	1.9	1.00	
Chrysene	ND	10	2.2	1.00	
Dibenz (a,h) Anthracene	ND	10	2.0	1.00	
2,6-Dimethylnaphthalene	ND	10	1.7	1.00	
Fluoranthene	ND	10	1.8	1.00	
Fluorene	ND	10	3.1	1.00	
2-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylphenanthrene	ND	10	2.5	1.00	
Naphthalene	ND	10	3.5	1.00	
Perylene	ND	10	2.4	1.00	
Phenanthrene	ND	10	2.2	1.00	
Pyrene	ND	10	2.2	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	78	14-146	
Nitrobenzene-d5	87	18-162	
p-Terphenyl-d14	91	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-04-0-5-20160817	16-08-1268-1-EE	08/17/16 08:25	Sediment	GC/MS HHH	08/23/16	08/25/16 20:37	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.64	0.23	1.00	
PCB018	ND	0.32	0.11	1.00	
PCB028	ND	0.32	0.053	1.00	
PCB037	ND	0.32	0.096	1.00	
PCB044	ND	0.32	0.14	1.00	
PCB049	0.65	0.32	0.18	1.00	
PCB052	0.73	0.32	0.10	1.00	
PCB066	1.1	0.32	0.16	1.00	
PCB070	0.98	0.32	0.095	1.00	
PCB074	ND	0.32	0.14	1.00	
PCB077	ND	0.32	0.12	1.00	
PCB081	ND	0.32	0.19	1.00	
PCB087	0.92	0.32	0.17	1.00	
PCB099	1.2	0.32	0.097	1.00	
PCB101	2.1	0.32	0.16	1.00	
PCB105	1.3	0.32	0.087	1.00	
PCB110	2.1	0.32	0.073	1.00	
PCB114	ND	0.32	0.13	1.00	
PCB118	2.8	0.32	0.13	1.00	
PCB119	ND	0.32	0.15	1.00	
PCB123	ND	0.32	0.17	1.00	
PCB126	ND	0.32	0.13	1.00	
PCB128	ND	0.32	0.16	1.00	
PCB132/153	4.4	0.64	0.28	1.00	
PCB138/158	3.7	0.64	0.15	1.00	
PCB149	2.1	0.32	0.16	1.00	
PCB151	1.2	0.32	0.11	1.00	
PCB156	ND	0.32	0.092	1.00	
PCB157	ND	0.32	0.083	1.00	
PCB167	ND	0.32	0.098	1.00	
PCB168	ND	0.32	0.078	1.00	
PCB169	ND	0.32	0.097	1.00	
PCB170	0.86	0.32	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.32	0.14	1.00	
PCB180	1.9	0.32	0.067	1.00	
PCB183	0.62	0.32	0.18	1.00	
PCB187	1.1	0.32	0.13	1.00	
PCB189	ND	0.32	0.097	1.00	
PCB194	ND	0.32	0.18	1.00	
PCB195	ND	0.32	0.19	1.00	
PCB201	ND	0.32	0.15	1.00	
PCB206	ND	0.32	0.31	1.00	
PCB209	0.55	0.32	0.23	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	50-150			
p-Terphenyl-d14	113	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-02-0-5-20160817	16-08-1268-2-EE	08/17/16 09:15	Sediment	GC/MS HHH	08/23/16	08/25/16 21:00	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.99	0.36	1.00	
PCB018	ND	0.49	0.18	1.00	
PCB028	ND	0.49	0.083	1.00	
PCB037	ND	0.49	0.15	1.00	
PCB044	ND	0.49	0.21	1.00	
PCB049	11	0.49	0.28	1.00	
PCB052	16	0.49	0.15	1.00	
PCB066	6.9	0.49	0.25	1.00	
PCB070	8.4	0.49	0.15	1.00	
PCB074	4.2	0.49	0.21	1.00	
PCB077	8.5	0.49	0.19	1.00	
PCB081	ND	0.49	0.30	1.00	
PCB087	7.7	0.49	0.26	1.00	
PCB099	19	0.49	0.15	1.00	
PCB101	29	0.49	0.24	1.00	
PCB105	13	0.49	0.13	1.00	
PCB110	18	0.49	0.11	1.00	
PCB114	ND	0.49	0.20	1.00	
PCB118	18	0.49	0.21	1.00	
PCB119	3.7	0.49	0.23	1.00	
PCB123	ND	0.49	0.26	1.00	
PCB126	ND	0.49	0.20	1.00	
PCB128	5.7	0.49	0.25	1.00	
PCB132/153	98	0.99	0.43	1.00	
PCB138/158	51	0.99	0.23	1.00	
PCB149	59	0.49	0.24	1.00	
PCB151	20	0.49	0.17	1.00	
PCB156	3.6	0.49	0.14	1.00	
PCB157	ND	0.49	0.13	1.00	
PCB167	ND	0.49	0.15	1.00	
PCB168	ND	0.49	0.12	1.00	
PCB169	2.5	0.49	0.15	1.00	
PCB170	24	0.49	0.16	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	13	0.49	0.21	1.00	
PCB180	63	0.49	0.10	1.00	
PCB183	15	0.49	0.27	1.00	
PCB187	45	0.49	0.21	1.00	
PCB189	ND	0.49	0.15	1.00	
PCB194	12	0.49	0.28	1.00	
PCB195	6.0	0.49	0.29	1.00	
PCB201	2.8	0.49	0.24	1.00	
PCB206	5.1	0.49	0.47	1.00	
PCB209	2.1	0.49	0.36	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	77	50-150			
p-Terphenyl-d14	100	50-150			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-SS-01-0-5-20160817	16-08-1268-3-EE	08/17/16 10:08	Sediment	GC/MS HHH	08/23/16	08/25/16 21:23	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	1.0	0.36	1.00	
PCB018	ND	0.50	0.18	1.00	
PCB028	ND	0.50	0.084	1.00	
PCB037	8.9	0.50	0.15	1.00	
PCB044	16	0.50	0.22	1.00	
PCB049	82	0.50	0.28	1.00	
PCB052	200	0.50	0.16	1.00	
PCB066	5.6	0.50	0.26	1.00	
PCB070	7.8	0.50	0.15	1.00	
PCB074	ND	0.50	0.22	1.00	
PCB077	29	0.50	0.20	1.00	
PCB081	ND	0.50	0.30	1.00	
PCB087	7.3	0.50	0.27	1.00	
PCB099	43	0.50	0.15	1.00	
PCB101	59	0.50	0.25	1.00	
PCB105	13	0.50	0.14	1.00	
PCB110	30	0.50	0.12	1.00	
PCB114	ND	0.50	0.21	1.00	
PCB118	17	0.50	0.21	1.00	
PCB119	13	0.50	0.24	1.00	
PCB123	ND	0.50	0.26	1.00	
PCB126	ND	0.50	0.20	1.00	
PCB128	4.6	0.50	0.26	1.00	
PCB132/153	160	1.0	0.43	1.00	
PCB138/158	91	1.0	0.24	1.00	
PCB149	250	0.50	0.25	1.00	
PCB151	69	0.50	0.17	1.00	
PCB156	ND	0.50	0.14	1.00	
PCB157	ND	0.50	0.13	1.00	
PCB167	ND	0.50	0.15	1.00	
PCB168	ND	0.50	0.12	1.00	
PCB169	8.4	0.50	0.15	1.00	
PCB170	44	0.50	0.16	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	17	0.50	0.22	1.00	
PCB180	90	0.50	0.11	1.00	
PCB183	34	0.50	0.28	1.00	
PCB187	170	0.50	0.21	1.00	
PCB189	ND	0.50	0.15	1.00	
PCB194	40	0.50	0.28	1.00	
PCB195	15	0.50	0.29	1.00	
PCB201	5.5	0.50	0.24	1.00	
PCB206	14	0.50	0.48	1.00	
PCB209	2.6	0.50	0.37	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	51	50-150			
p-Terphenyl-d14	62	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-12-0-5-20160817	16-08-1268-4-EE	08/17/16 11:23	Sediment	GC/MS HHH	08/23/16	08/25/16 21:47	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.82	0.30	1.00	
PCB018	ND	0.41	0.15	1.00	
PCB028	ND	0.41	0.069	1.00	
PCB037	ND	0.41	0.12	1.00	
PCB044	ND	0.41	0.18	1.00	
PCB049	ND	0.41	0.23	1.00	
PCB052	ND	0.41	0.13	1.00	
PCB066	5.3	0.41	0.21	1.00	
PCB070	6.6	0.41	0.12	1.00	
PCB074	3.8	0.41	0.18	1.00	
PCB077	ND	0.41	0.16	1.00	
PCB081	ND	0.41	0.25	1.00	
PCB087	ND	0.41	0.22	1.00	
PCB099	5.2	0.41	0.13	1.00	
PCB101	8.0	0.41	0.20	1.00	
PCB105	ND	0.41	0.11	1.00	
PCB110	10	0.41	0.095	1.00	
PCB114	ND	0.41	0.17	1.00	
PCB118	10	0.41	0.17	1.00	
PCB119	ND	0.41	0.19	1.00	
PCB123	ND	0.41	0.22	1.00	
PCB126	ND	0.41	0.16	1.00	
PCB128	ND	0.41	0.21	1.00	
PCB132/153	24	0.82	0.36	1.00	
PCB138/158	19	0.82	0.19	1.00	
PCB149	12	0.41	0.20	1.00	
PCB151	5.7	0.41	0.14	1.00	
PCB156	ND	0.41	0.12	1.00	
PCB157	ND	0.41	0.11	1.00	
PCB167	ND	0.41	0.13	1.00	
PCB168	18	0.41	0.10	1.00	
PCB169	ND	0.41	0.13	1.00	
PCB170	7.2	0.41	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	3.3	0.41	0.18	1.00	
PCB180	16	0.41	0.087	1.00	
PCB183	3.7	0.41	0.23	1.00	
PCB187	6.5	0.41	0.17	1.00	
PCB189	ND	0.41	0.13	1.00	
PCB194	3.8	0.41	0.23	1.00	
PCB195	ND	0.41	0.24	1.00	
PCB201	ND	0.41	0.20	1.00	
PCB206	2.7	0.41	0.40	1.00	
PCB209	3.7	0.41	0.30	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	66	50-150			
p-Terphenyl-d14	97	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 9 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-13-0-5-20160817	16-08-1268-5-EE	08/17/16 13:00	Sediment	GC/MS HHH	08/23/16	08/25/16 22:10	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.80	0.29	1.00	
PCB018	ND	0.40	0.14	1.00	
PCB028	ND	0.40	0.067	1.00	
PCB037	ND	0.40	0.12	1.00	
PCB044	ND	0.40	0.17	1.00	
PCB049	ND	0.40	0.22	1.00	
PCB052	ND	0.40	0.12	1.00	
PCB066	ND	0.40	0.20	1.00	
PCB070	ND	0.40	0.12	1.00	
PCB074	ND	0.40	0.17	1.00	
PCB077	ND	0.40	0.15	1.00	
PCB081	ND	0.40	0.24	1.00	
PCB087	ND	0.40	0.21	1.00	
PCB099	1.5	0.40	0.12	1.00	
PCB101	2.2	0.40	0.19	1.00	
PCB105	ND	0.40	0.11	1.00	
PCB110	3.3	0.40	0.091	1.00	
PCB114	ND	0.40	0.16	1.00	
PCB118	3.1	0.40	0.17	1.00	
PCB119	ND	0.40	0.19	1.00	
PCB123	ND	0.40	0.21	1.00	
PCB126	ND	0.40	0.16	1.00	
PCB128	ND	0.40	0.20	1.00	
PCB132/153	4.8	0.80	0.34	1.00	
PCB138/158	3.2	0.80	0.19	1.00	
PCB149	2.8	0.40	0.19	1.00	
PCB151	ND	0.40	0.13	1.00	
PCB156	ND	0.40	0.11	1.00	
PCB157	ND	0.40	0.10	1.00	
PCB167	ND	0.40	0.12	1.00	
PCB168	ND	0.40	0.097	1.00	
PCB169	ND	0.40	0.12	1.00	
PCB170	1.5	0.40	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 10 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.40	0.17	1.00	
PCB180	2.4	0.40	0.084	1.00	
PCB183	ND	0.40	0.22	1.00	
PCB187	1.3	0.40	0.17	1.00	
PCB189	ND	0.40	0.12	1.00	
PCB194	ND	0.40	0.22	1.00	
PCB195	ND	0.40	0.23	1.00	
PCB201	ND	0.40	0.19	1.00	
PCB206	ND	0.40	0.38	1.00	
PCB209	1.2	0.40	0.29	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	63	50-150			
p-Terphenyl-d14	94	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 11 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-14-0-5-20160817	16-08-1268-6-EE	08/17/16 14:38	Sediment	GC/MS HHH	08/23/16	08/25/16 22:32	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.65	0.24	1.00	
PCB018	ND	0.33	0.12	1.00	
PCB028	0.41	0.33	0.055	1.00	
PCB037	ND	0.33	0.099	1.00	
PCB044	ND	0.33	0.14	1.00	
PCB049	0.60	0.33	0.18	1.00	
PCB052	1.1	0.33	0.10	1.00	
PCB066	0.98	0.33	0.17	1.00	
PCB070	0.87	0.33	0.097	1.00	
PCB074	ND	0.33	0.14	1.00	
PCB077	ND	0.33	0.13	1.00	
PCB081	ND	0.33	0.20	1.00	
PCB087	1.1	0.33	0.17	1.00	
PCB099	1.4	0.33	0.099	1.00	
PCB101	2.7	0.33	0.16	1.00	
PCB105	1.4	0.33	0.089	1.00	
PCB110	3.1	0.33	0.075	1.00	
PCB114	ND	0.33	0.13	1.00	
PCB118	3.2	0.33	0.14	1.00	
PCB119	ND	0.33	0.15	1.00	
PCB123	ND	0.33	0.17	1.00	
PCB126	ND	0.33	0.13	1.00	
PCB128	1.1	0.33	0.17	1.00	
PCB132/153	7.5	0.65	0.28	1.00	
PCB138/158	5.2	0.65	0.15	1.00	
PCB149	3.7	0.33	0.16	1.00	
PCB151	1.6	0.33	0.11	1.00	
PCB156	ND	0.33	0.094	1.00	
PCB157	ND	0.33	0.085	1.00	
PCB167	ND	0.33	0.10	1.00	
PCB168	ND	0.33	0.079	1.00	
PCB169	ND	0.33	0.099	1.00	
PCB170	2.1	0.33	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 12 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	1.1	0.33	0.14	1.00	
PCB180	4.3	0.33	0.069	1.00	
PCB183	1.2	0.33	0.18	1.00	
PCB187	2.5	0.33	0.14	1.00	
PCB189	ND	0.33	0.10	1.00	
PCB194	ND	0.33	0.18	1.00	
PCB195	ND	0.33	0.19	1.00	
PCB201	ND	0.33	0.16	1.00	
PCB206	ND	0.33	0.31	1.00	
PCB209	1.6	0.33	0.24	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	82	50-150			
p-Terphenyl-d14	98	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 13 of 14

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-418-223	N/A	Solid	GC/MS HHH	08/23/16	08/25/16 11:42	160823L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.40	0.14	1.00	
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	ND	0.20	0.11	1.00	
PCB052	ND	0.20	0.063	1.00	
PCB066	ND	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	ND	0.20	0.11	1.00	
PCB099	ND	0.20	0.061	1.00	
PCB101	ND	0.20	0.098	1.00	
PCB105	ND	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	ND	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	ND	0.40	0.17	1.00	
PCB138/158	ND	0.40	0.094	1.00	
PCB149	ND	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	ND	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 14 of 14

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB180	ND	0.20	0.042	1.00	
PCB183	ND	0.20	0.11	1.00	
PCB187	ND	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB195	ND	0.20	0.12	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
PCB209	ND	0.20	0.15	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	50-150			
p-Terphenyl-d14	84	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

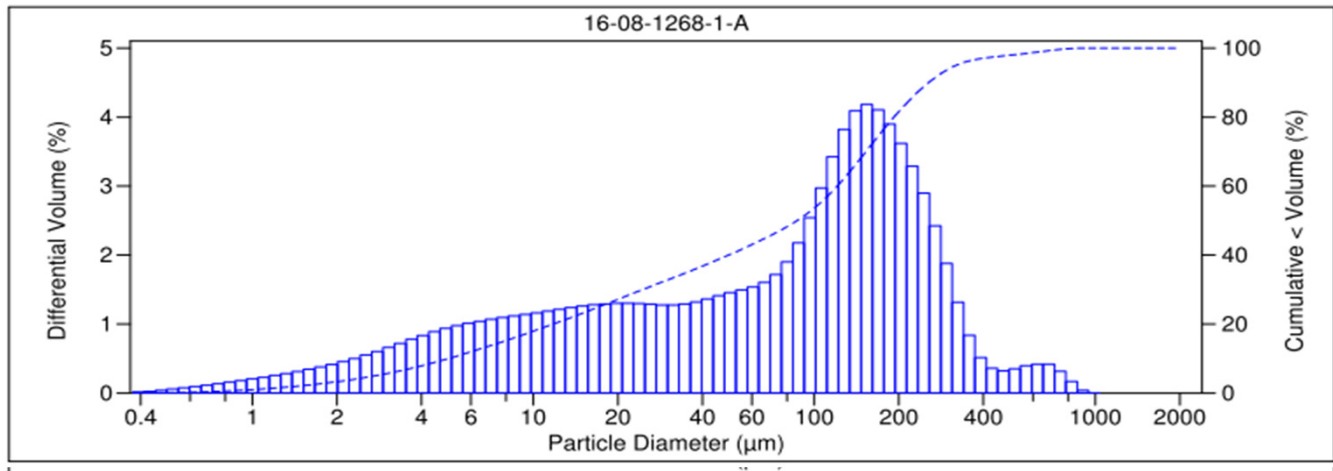
Date Sampled: 08/17/16
 Date Received: 08/17/16
 Work Order No: 16-08-1268
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 1 of 6

Sample ID	Depth ft	Description	Mean Grain Size mm
IA-SS-04-0-5-20160817		Very Fine Sand	0.115

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	2.07	8.59	28.01	17.61	36.01	7.70	43.72



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

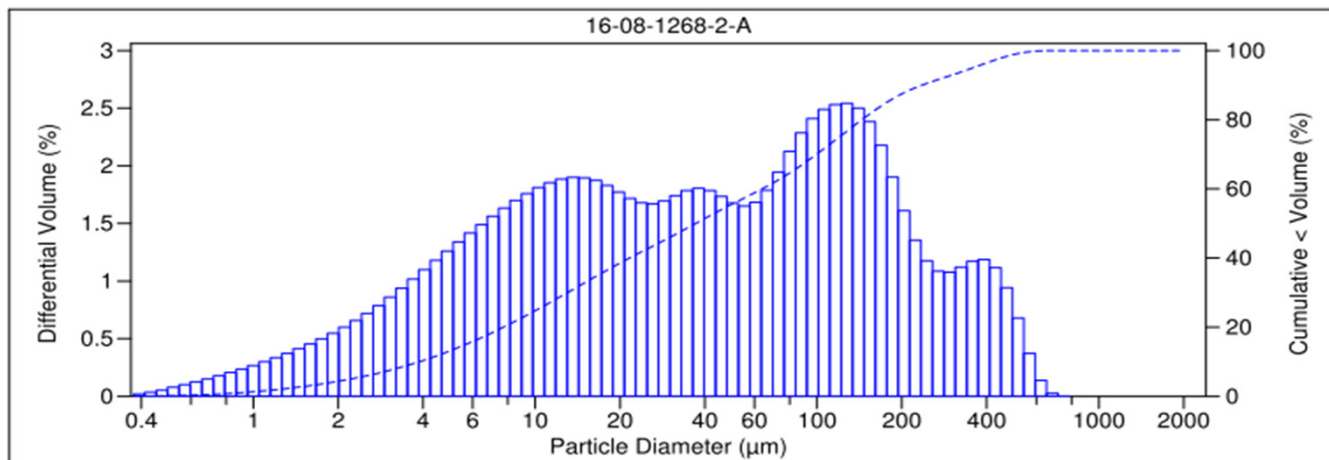
Date Sampled: 08/17/16
 Date Received: 08/17/16
 Work Order No: 16-08-1268
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 2 of 6

Sample ID	Depth ft	Description	Mean Grain Size mm
IA-SS-02-0-5-20160817		Very Fine Sand	0.087

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	1.13	8.15	14.60	16.50	49.51	10.11	59.61



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

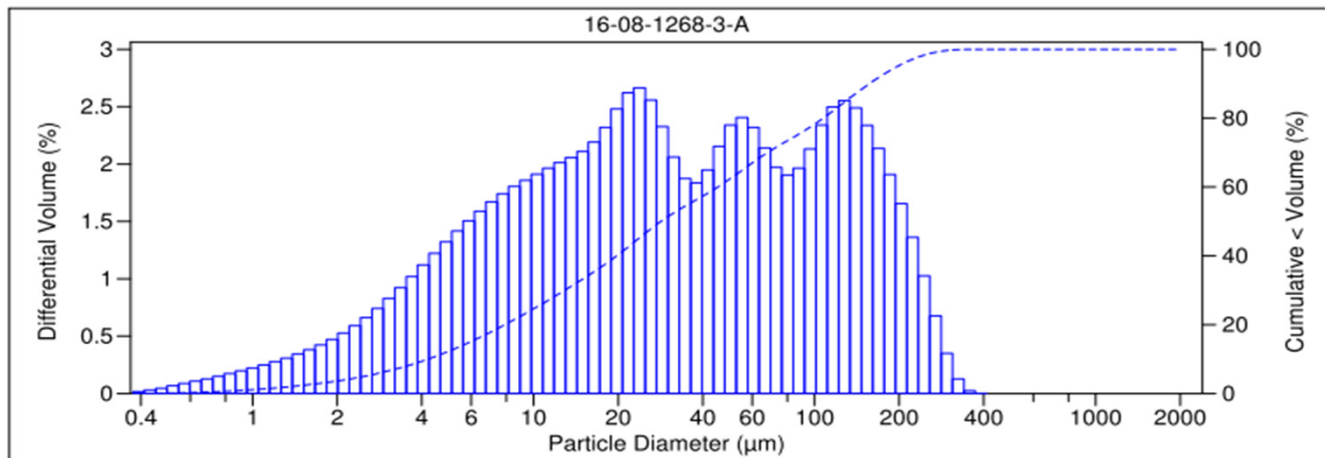
Date Sampled: 08/17/16
 Date Received: 08/17/16
 Work Order No: 16-08-1268
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 3 of 6

Sample ID	Depth ft	Description	Mean Grain Size mm
CS-SS-01-0-5-20160817		Silt	0.057

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	1.49	14.50	16.00	58.89	9.12	68.01



v 3.0

Return to Contents

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

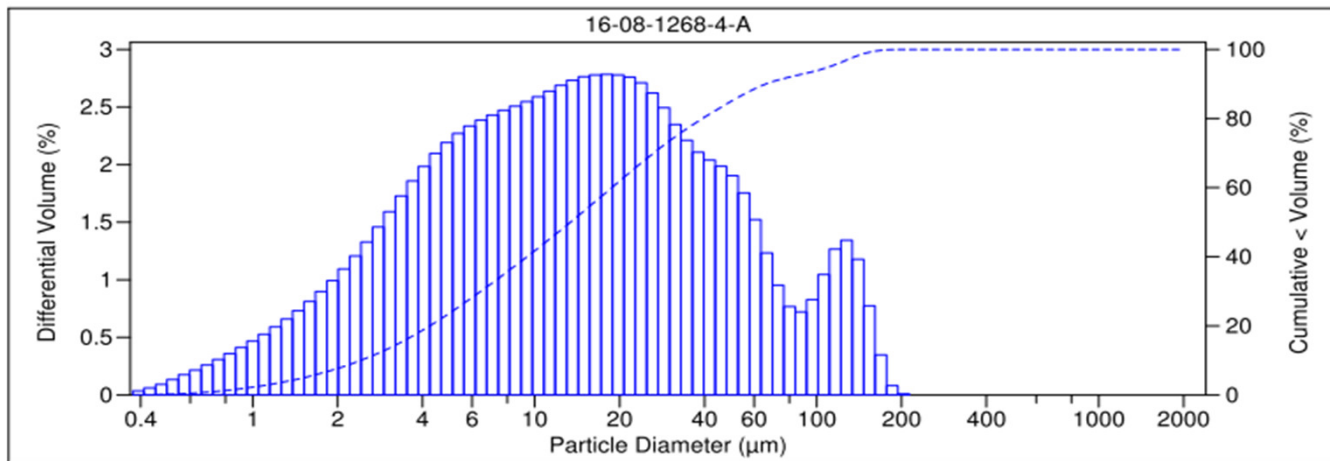
Date Sampled: 08/17/16
 Date Received: 08/17/16
 Work Order No: 16-08-1268
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 4 of 6

Sample ID	Depth ft	Description	Mean Grain Size mm
IB-SS-12-0-5-20160817		Silt	0.026

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	3.38	7.42	70.90	18.30	89.20



v 3.0

Return to Contents

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

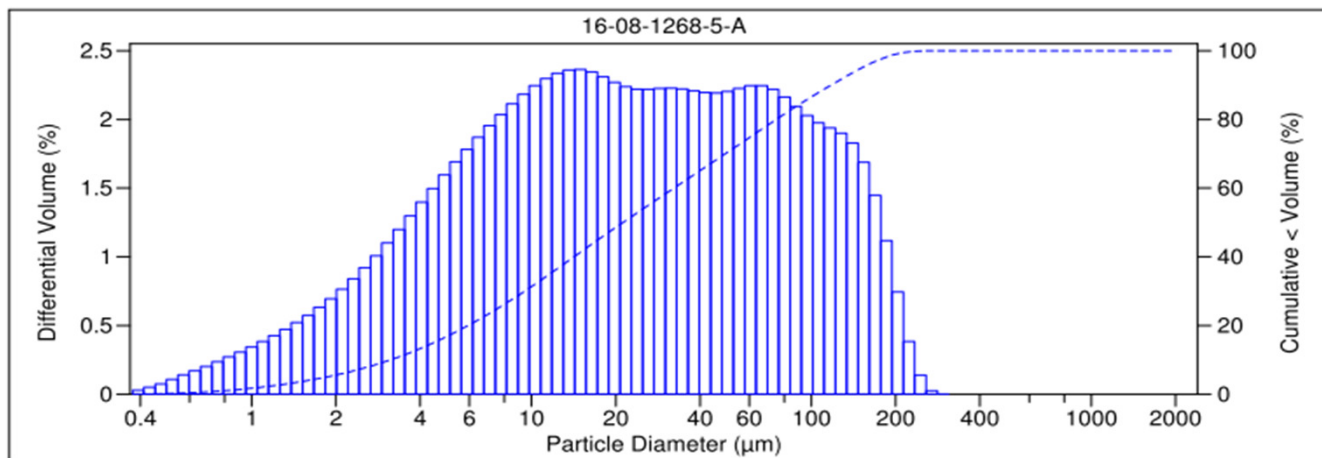
Date Sampled: 08/17/16
 Date Received: 08/17/16
 Work Order No: 16-08-1268
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 5 of 6

Sample ID	Depth ft	Description	Mean Grain Size mm
IB-SS-13-0-5-20160817		Silt	0.042

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.07	8.71	15.51	62.75	12.96	75.71



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

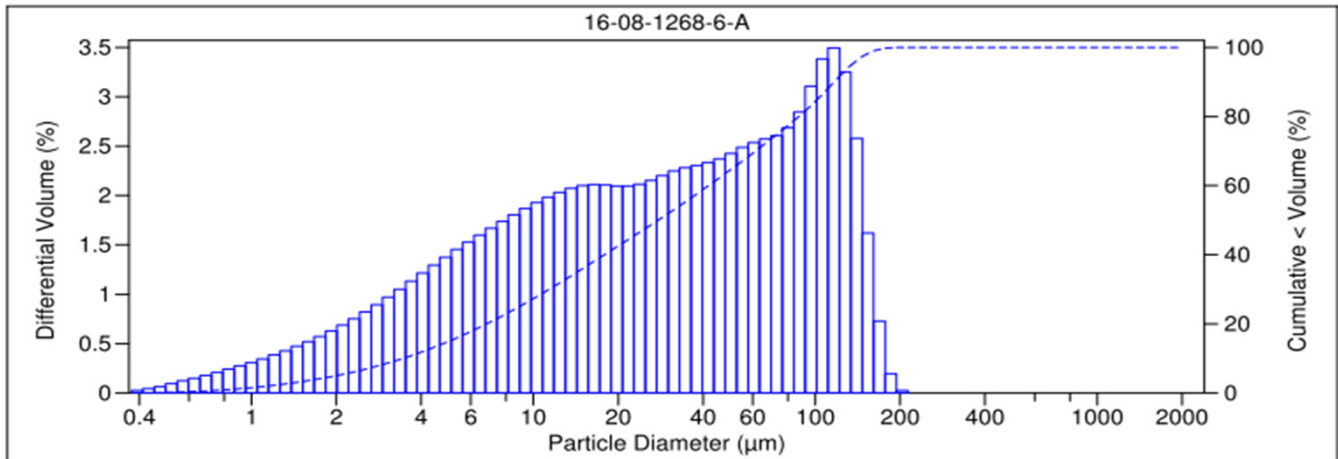
ANCHOR QEA - Mission Viejo	Date Sampled:	08/17/16
	Date Received:	08/17/16
	Work Order No:	16-08-1268
	Date Analyzed:	08/19/16
	Method:	ASTM D4464M

Project: GWMA Sediment Sampling

Page 6 of 6

Sample ID	Depth ft	Description	Mean Grain Size mm
IB-SS-14-0-5-20160817		Silt	0.045

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	7.53	21.99	58.96	11.52	70.48



v 3.0

Return to Contents



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: N/A
 Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IB-SS-13-0-5-20160817	Sample	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCS1
IB-SS-13-0-5-20160817	Matrix Spike	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCS1
IB-SS-13-0-5-20160817	Matrix Spike Duplicate	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCS1

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.5140	3.000	0.5140	0	0.5140	0	75-125	0	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IB-SS-14-0-5-20160817	Sample	Sediment	GC 44	08/26/16	09/01/16 09:16	160826S13
IB-SS-14-0-5-20160817	Matrix Spike	Sediment	GC 44	08/26/16	09/01/16 07:08	160826S13
IB-SS-14-0-5-20160817	Matrix Spike Duplicate	Sediment	GC 44	08/26/16	09/01/16 07:23	160826S13

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	16.80	336	14.68	294	50-135	14	0-25	3
Alpha-BHC	ND	5.000	0	0	24.17	483	50-135	200	0-25	3,4
Beta-BHC	ND	5.000	0	0	0	0	50-135	0	0-25	3
Delta-BHC	ND	5.000	25.40	508	23.47	469	50-135	8	0-25	3
Gamma-BHC	ND	5.000	0	0	11.99	240	50-135	200	0-25	3,4
Dieldrin	ND	5.000	31.29	626	29.97	599	50-135	4	0-25	3
4,4'-DDD	ND	5.000	8.547	171	15.50	310	50-135	58	0-25	3,4
4,4'-DDE	ND	5.000	25.44	509	29.65	593	50-135	15	0-25	3
4,4'-DDT	ND	5.000	10.08	202	9.497	190	50-135	6	0-25	3
Endosulfan I	ND	5.000	9.666	193	13.56	271	50-135	34	0-25	3,4
Endosulfan II	ND	5.000	5.433	109	16.22	324	50-135	100	0-25	3,4
Endosulfan Sulfate	ND	5.000	7.985	160	8.915	178	50-135	11	0-25	3
Endrin	ND	5.000	7.240	145	7.967	159	50-135	10	0-25	3
Endrin Aldehyde	ND	5.000	9.364	187	13.50	270	50-135	36	0-25	3,4
Endrin Ketone	ND	5.000	6.649	133	6.487	130	50-135	2	0-25	3
Heptachlor	ND	5.000	3.276	66	10.80	216	50-135	107	0-25	3,4
Heptachlor Epoxide	ND	5.000	53.45	1069	8.393	168	50-135	146	0-25	3,4
Methoxychlor	ND	5.000	8.343	167	7.617	152	50-135	9	0-25	3
Alpha Chlordane	ND	5.000	0	0	8.294	166	50-135	200	0-25	3,4
Gamma Chlordane	ND	5.000	74.08	1482	57.11	1142	50-135	26	0-25	3,4

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IB-SS-13-0-5-20160817	Sample	Sediment	GC/MS BBB	08/24/16	08/29/16 20:42	160824S11
IB-SS-13-0-5-20160817	Matrix Spike	Sediment	GC/MS BBB	08/24/16	08/29/16 21:14	160824S11
IB-SS-13-0-5-20160817	Matrix Spike Duplicate	Sediment	GC/MS BBB	08/24/16	08/29/16 21:30	160824S11

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	6.816	136	5.285	106	25-200	25	0-25	
Alpha Chlordane	ND	5.000	2.565	51	2.262	45	25-200	13	0-25	
Alpha-BHC	ND	5.000	3.269	65	2.389	48	25-200	31	0-25	4
Beta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
4,4'-DDD	ND	5.000	2.820	56	2.042	41	25-200	32	0-25	4
4,4'-DDE	7.276	5.000	12.41	103	10.04	55	25-200	21	0-25	
4,4'-DDT	ND	5.000	0	0	0	0	25-200	0	0-25	3
Delta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
Dieldrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan I	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan II	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan Sulfate	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Aldehyde	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Ketone	ND	5.000	0	0	0	0	25-200	0	0-25	3
Gamma Chlordane	ND	5.000	2.727	55	2.425	48	25-200	12	0-25	
Gamma-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
Heptachlor	ND	5.000	0	0	0	0	25-200	0	0-25	3
Heptachlor Epoxide	ND	5.000	2.888	58	2.307	46	25-200	22	0-25	
Methoxychlor	ND	5.000	1.593	32	1.642	33	25-200	3	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1269-4	Sample	Sediment	GC/MS AAA	08/30/16	09/01/16 21:50	160830S19
16-08-1269-4	Matrix Spike	Sediment	GC/MS AAA	08/30/16	09/01/16 20:11	160830S19
16-08-1269-4	Matrix Spike Duplicate	Sediment	GC/MS AAA	08/30/16	09/01/16 20:30	160830S19

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acenaphthene	ND	100.0	88.76	89	86.79	87	40-160	2	0-20	
Acenaphthylene	13.81	100.0	97.65	84	97.76	84	40-160	0	0-20	
Anthracene	27.44	100.0	117.8	90	114.1	87	40-160	3	0-20	
Benzo (a) Anthracene	41.66	100.0	144.0	102	149.1	107	40-160	4	0-20	
Benzo (a) Pyrene	63.83	100.0	162.0	98	168.5	105	40-160	4	0-20	
Benzo (b) Fluoranthene	108.3	100.0	207.4	99	209.3	101	40-160	1	0-20	
Benzo (g,h,i) Perylene	34.21	100.0	125.8	92	115.8	82	40-160	8	0-20	
Benzo (k) Fluoranthene	47.91	100.0	141.1	93	154.7	107	40-160	9	0-20	
Chrysene	65.29	100.0	166.9	102	189.0	124	40-160	12	0-20	
Dibenz (a,h) Anthracene	14.07	100.0	111.3	97	96.82	83	40-160	14	0-20	
Fluoranthene	59.13	100.0	162.5	103	174.6	116	40-160	7	0-20	
Fluorene	ND	100.0	90.63	91	88.48	88	40-160	2	0-20	
Indeno (1,2,3-c,d) Pyrene	33.05	100.0	124.0	91	115.8	83	40-160	7	0-20	
2-Methylnaphthalene	ND	100.0	85.71	86	85.04	85	40-160	1	0-20	
1-Methylnaphthalene	ND	100.0	73.61	74	73.50	74	40-160	0	0-20	
Naphthalene	ND	100.0	71.32	71	67.74	68	40-160	5	0-20	
Phenanthrene	32.57	100.0	142.5	110	144.6	112	40-160	1	0-20	
Pyrene	61.80	100.0	183.8	122	211.8	150	40-160	14	0-46	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
IB-SS-13-0-5-20160817	Sample	Sediment	GC/MS HHH	08/23/16	08/25/16 22:10	160823S13
IB-SS-13-0-5-20160817	Matrix Spike	Sediment	GC/MS HHH	08/23/16	08/25/16 14:52	160823S13
IB-SS-13-0-5-20160817	Matrix Spike Duplicate	Sediment	GC/MS HHH	08/23/16	08/25/16 15:15	160823S13

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	41.48	83	39.74	79	50-150	4	0-25	
PCB028	ND	50.00	47.25	95	42.91	86	50-150	10	0-25	
PCB044	ND	50.00	43.70	87	38.23	76	50-150	13	0-25	
PCB052	ND	50.00	40.94	82	36.58	73	50-150	11	0-25	
PCB066	ND	50.00	52.80	106	44.66	89	50-150	17	0-25	
PCB077	ND	50.00	49.09	98	43.63	87	50-150	12	0-25	
PCB101	1.116	50.00	44.77	87	37.96	74	50-150	16	0-25	
PCB105	ND	50.00	52.57	105	46.83	94	50-150	12	0-25	
PCB118	1.550	50.00	54.20	105	49.98	97	50-150	8	0-25	
PCB126	ND	50.00	49.25	98	43.82	88	50-150	12	0-25	
PCB128	ND	50.00	51.12	102	43.98	88	50-150	15	0-25	
PCB170	0.7413	50.00	47.74	94	44.67	88	50-150	7	0-25	
PCB180	1.176	50.00	59.88	117	52.10	102	50-150	14	0-25	
PCB187	0.6676	50.00	50.67	100	45.61	90	50-150	11	0-25	
PCB195	ND	50.00	48.29	97	44.67	89	50-150	8	0-25	
PCB206	ND	50.00	50.23	100	50.49	101	50-150	1	0-25	
PCB209	0.5892	50.00	51.29	101	52.82	104	50-150	3	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: N/A
 Method: SM 2540 B (M)

Project: GWMA Sediment Sampling

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
IA-SS-04-0-5-20160817	Sample	Sediment	N/A	08/23/16 00:00	08/23/16 21:00	G0823TSD1
IA-SS-04-0-5-20160817	Sample Duplicate	Sediment	N/A	08/23/16 00:00	08/23/16 21:00	G0823TSD1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total	62.50	64.40	3	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1268
 Preparation: N/A
 Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-06-013-1599	LCS	Solid	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1			
099-06-013-1599	LCSD	Solid	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.6000	0.6000	100	0.6000	100	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-858-426	LCS	Solid	GC 44	08/26/16	09/01/16 05:43	160826L13				
099-12-858-426	LCSD	Solid	GC 44	08/26/16	09/01/16 05:57	160826L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	5.173	103	5.007	100	50-135	36-149	3	0-25	
Alpha-BHC	5.000	5.192	104	5.068	101	50-135	36-149	2	0-25	
Beta-BHC	5.000	5.512	110	5.315	106	50-135	36-149	4	0-25	
Delta-BHC	5.000	5.816	116	5.711	114	50-135	36-149	2	0-25	
Gamma-BHC	5.000	5.433	109	5.097	102	50-135	36-149	6	0-25	
Dieldrin	5.000	5.903	118	5.593	112	50-135	36-149	5	0-25	
4,4'-DDD	5.000	6.299	126	5.946	119	50-135	36-149	6	0-25	
4,4'-DDE	5.000	5.897	118	5.609	112	50-135	36-149	5	0-25	
4,4'-DDT	5.000	6.510	130	6.117	122	50-135	36-149	6	0-25	
Endosulfan I	5.000	5.692	114	5.372	107	50-135	36-149	6	0-25	
Endosulfan II	5.000	6.378	128	6.026	121	50-135	36-149	6	0-25	
Endosulfan Sulfate	5.000	6.318	126	5.779	116	50-135	36-149	9	0-25	
Endrin	5.000	5.936	119	5.716	114	50-135	36-149	4	0-25	
Endrin Aldehyde	5.000	5.656	113	5.228	105	50-135	36-149	8	0-25	
Endrin Ketone	5.000	6.634	133	6.167	123	50-135	36-149	7	0-25	
Heptachlor	5.000	5.549	111	5.276	106	50-135	36-149	5	0-25	
Heptachlor Epoxide	5.000	5.757	115	5.367	107	50-135	36-149	7	0-25	
Methoxychlor	5.000	6.708	134	6.288	126	50-135	36-149	6	0-25	
Alpha Chlordane	5.000	5.520	110	5.276	106	50-135	36-149	5	0-25	
Gamma Chlordane	5.000	5.515	110	5.314	106	50-135	36-149	4	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-154-67	LCS	Solid	GC/MS BBB	08/24/16	08/29/16 15:35	160824L11				
099-16-154-67	LCSD	Solid	GC/MS BBB	08/24/16	08/29/16 15:51	160824L11				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	4.590	92	4.528	91	25-200	0-229	1	0-25	
Alpha Chlordane	5.000	4.594	92	4.504	90	25-200	0-229	2	0-25	
Alpha-BHC	5.000	4.516	90	4.406	88	25-200	0-229	2	0-25	
Beta-BHC	5.000	4.409	88	4.701	94	25-200	0-229	6	0-25	
4,4'-DDD	5.000	5.268	105	5.113	102	25-200	0-229	3	0-25	
4,4'-DDE	5.000	4.916	98	4.703	94	25-200	0-229	4	0-25	
4,4'-DDT	5.000	5.427	109	5.479	110	25-200	0-229	1	0-25	
Delta-BHC	5.000	6.153	123	5.779	116	25-200	0-229	6	0-25	
Dieldrin	5.000	6.171	123	5.729	115	25-200	0-229	7	0-25	
Endosulfan I	5.000	4.717	94	4.293	86	25-200	0-229	9	0-25	
Endosulfan II	5.000	5.391	108	6.731	135	25-200	0-229	22	0-25	
Endosulfan Sulfate	5.000	6.154	123	6.024	120	25-200	0-229	2	0-25	
Endrin	5.000	9.056	181	9.252	185	25-200	0-229	2	0-25	
Endrin Aldehyde	5.000	5.040	101	4.497	90	25-200	0-229	11	0-25	
Endrin Ketone	5.000	7.138	143	6.608	132	25-200	0-229	8	0-25	
Gamma Chlordane	5.000	4.580	92	4.547	91	25-200	0-229	1	0-25	
Gamma-BHC	5.000	4.648	93	4.746	95	25-200	0-229	2	0-25	
Heptachlor	5.000	5.694	114	5.944	119	25-200	0-229	4	0-25	
Heptachlor Epoxide	5.000	4.930	99	4.767	95	25-200	0-229	3	0-25	
Methoxychlor	5.000	7.367	147	7.213	144	25-200	0-229	2	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-14-097-217	LCS	Solid	GC/MS AAA	08/30/16	09/01/16 15:56	160830L19				
099-14-097-217	LCSD	Solid	GC/MS AAA	08/30/16	09/01/16 16:15	160830L19				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acenaphthene	100.0	88.70	89	84.07	84	48-108	38-118	5	0-11	
Acenaphthylene	100.0	87.91	88	81.21	81	40-160	20-180	8	0-20	
Anthracene	100.0	87.48	87	81.62	82	40-160	20-180	7	0-20	
Benzo (a) Anthracene	100.0	92.03	92	89.51	90	40-160	20-180	3	0-20	
Benzo (a) Pyrene	100.0	90.27	90	89.30	89	40-160	20-180	1	0-20	
Benzo (b) Fluoranthene	100.0	97.36	97	97.14	97	40-160	20-180	0	0-20	
Benzo (g,h,i) Perylene	100.0	99.47	99	95.50	96	40-160	20-180	4	0-20	
Benzo (k) Fluoranthene	100.0	88.69	89	87.65	88	40-160	20-180	1	0-20	
Chrysene	100.0	90.93	91	88.54	89	40-160	20-180	3	0-20	
Dibenz (a,h) Anthracene	100.0	95.05	95	90.55	91	40-160	20-180	5	0-20	
Fluoranthene	100.0	83.09	83	82.14	82	40-160	20-180	1	0-20	
Fluorene	100.0	86.98	87	82.91	83	40-160	20-180	5	0-20	
Indeno (1,2,3-c,d) Pyrene	100.0	90.22	90	87.98	88	40-160	20-180	3	0-20	
2-Methylnaphthalene	100.0	91.96	92	87.13	87	40-160	20-180	5	0-20	
1-Methylnaphthalene	100.0	80.88	81	77.18	77	40-160	20-180	5	0-20	
Naphthalene	100.0	84.48	84	80.37	80	40-160	20-180	5	0-20	
Phenanthrene	100.0	95.65	96	92.27	92	40-160	20-180	4	0-20	
Pyrene	100.0	100.5	101	102.6	103	40-160	20-180	2	0-16	

Total number of LCS compounds: 18

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1268
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-418-223	LCS	Solid	GC/MS HHH	08/23/16	08/25/16 12:06	160823L13				
099-16-418-223	LCSD	Solid	GC/MS HHH	08/23/16	08/25/16 12:29	160823L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	37.88	76	42.12	84	24-132	6-150	11	0-28	
PCB028	50.00	39.75	80	42.64	85	31-133	14-150	7	0-26	
PCB044	50.00	39.76	80	43.82	88	36-120	22-134	10	0-28	
PCB052	50.00	40.78	82	45.37	91	31-121	16-136	11	0-27	
PCB066	50.00	45.63	91	51.13	102	43-139	27-155	11	0-25	
PCB077	50.00	40.93	82	45.60	91	41-131	26-146	11	0-25	
PCB101	50.00	38.92	78	42.73	85	37-121	23-135	9	0-27	
PCB105	50.00	43.24	86	46.00	92	48-132	34-146	6	0-26	
PCB118	50.00	44.76	90	51.04	102	46-136	31-151	13	0-25	
PCB126	50.00	39.74	79	44.66	89	38-134	22-150	12	0-25	
PCB128	50.00	39.27	79	46.10	92	40-130	25-145	16	0-26	
PCB170	50.00	41.11	82	45.62	91	40-124	26-138	10	0-29	
PCB180	50.00	45.47	91	52.95	106	41-143	24-160	15	0-26	
PCB187	50.00	40.18	80	44.60	89	39-129	24-144	10	0-26	
PCB195	50.00	41.16	82	45.63	91	44-128	30-142	10	0-28	
PCB206	50.00	42.66	85	45.53	91	33-135	16-152	7	0-24	
PCB209	50.00	40.41	81	44.11	88	29-137	11-155	9	0-29	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 16-08-1268

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory number: _____
 Date: 2016-08-17
 Project Name: GWMA Sediment Sampling
 Project Number: 141205-01.03
 Project Manager: Andrew Martin
 Phone Number: 949-347-2780
 Shipment Method: courier



Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters											Comments/Preservation	
					Benthic community analysis	TOTAL SOLIDS	GRAIN SIZE	TOC	TOTAL METALS + MERCURY	PAHS, OC PESTICIDES	PCBS						
1	IA-SS-04-0-5-20160817	8/17/2016 0825	SED	6		✓	✓	✓	✓	✓	✓						ice
2	IA-SS-02-0-5-20160817	8/17/2016 0915	SED	6		✓	✓	✓	✓	✓	✓						↓
3	CS-SS-01-0-5-20160817	8/17/2016 1008	SOD	6		✓	✓	✓	✓	✓	✓						
4	IB-SS-12-0-5-20160817	8/17/2016 1123	SOD	6		✓	✓	✓	✓	✓	✓						
5	IR-SS-13-0-5-20160817	8/17/2016 1300	SOD	6		✓	✓	✓	✓	✓	✓						
6	IR-SS-14-0-5-20160817	8/17/2016 1435	SOD	6		✓	✓	✓	✓	✓	✓						
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Notes:
 Metrics of IDI, RMI, BRI, and RIVPACS will be calculated as specified in attachment to subagreement SAMPLING - ANALYSIS PLAN TABLE 4 FOR METHODS.
 Preserved in 10% formalin

Relinquished By: Andrew Martin Company: Anchor QEA
 Signature/Printed Name: _____ Date/Time: 8/17/2016 17:50

Received By: Denny Pearson Company: EQ
 Signature/Printed Name: _____ Date/Time: 8/17/16 17:00

Relinquished By: Denny Pearson Company: EQ
 Signature/Printed Name: _____ Date/Time: 8/17/16 19:00

Received By: Dannyle Company: EQ
 Signature/Printed Name: _____ Date/Time: 8/17/16 19:00

PARTIAL SAMPLE ID'S PRINTED ON TOP CAP. FULL SAMPLE ID ON LABEL

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 2

CLIENT: ANCHOR REA

DATE: 08 / 17 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.6 °C (w/ CF): 3.6 °C; Blank Sample

8/17/16

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 204

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A

Checked by: 204

Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 1053

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB

125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs

500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Sediment 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) 2

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (____): _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, zna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 228

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 2

CLIENT: ANCHOR REA

DATE: 08 / 17 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) 8/17/16

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.4 °C (w/ CF): 3.4 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 804

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_z 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) 2

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 778

From: Claire Dolphin [mailto:cdolphin@anchorage.com]
Sent: Friday, August 26, 2016 10:21 AM
To: Kathleen Burney
Subject: RE: GWMA Sediment Sampling - 16-08-1268 - Sample Receipt Confirmation & COC Document

For sample #4 please use the time on the COC.

Claire Dolphin
Environmental Scientist

ANCHOR QEA, LLC
cdolphin@anchorage.com
D 949.334.9615

From: Carla Hollowell [mailto:CarlaHollowell@eurofinsUS.com]
Sent: Thursday, August 18, 2016 4:45 PM
To: Andy Martin <amartin@anchorage.com>
Cc: Claire Dolphin <cdolphin@anchorage.com>; Cindy Fields <cfields@anchorage.com>
Subject: GWMA Sediment Sampling - 16-08-1268 - Sample Receipt Confirmation & COC Document

Thank you for submitting samples to Eurofins Calscience.
A sample receipt confirmation and copy of your COC are attached. Please review the attached document and let us know if you need to make revisions to the scope of work.

Please note:

- The collection time for sample #4 has a different time on the COC vs the label; please confirm which is correct.
- Samples were not submitted with a table and the COC did not include method numbers; Please include this information with all submissions to ensure that samples go into our analysis / laboratory rotation right away.
- Please verify methods and method numbers are indicated correctly on the attached document.

Thank you!

Carla Lee Hollowell
Environmental Project Manager



7440 Lincoln Way
GARDEN GROVE, CA 92841



Calscience

Subcontractor Analysis Report

Work Order: 16-08-1268

Page 1 of 1

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.

1. Eurofins Frontier Global Sciences - Bothell,WA CA ELAP 2954


Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

22 September 2016

Carla Lee Hollowell
Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841
RE: Sediments - 2016

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Amy Goodall".

Amy Goodall
Project Manager

Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IA-SS-04-0-5-20160817	1608619-01	Soil/Sediment	17-Aug-16 08:25	19-Aug-16 09:30
IA-SS-02-0-5-20160817	1608619-02	Soil/Sediment	17-Aug-16 09:15	19-Aug-16 09:30
CS-SS-01-0-5-20160817	1608619-03	Soil/Sediment	17-Aug-16 10:08	19-Aug-16 09:30
IB-SS-12-0-5-20160817	1608619-04	Soil/Sediment	17-Aug-16 11:23	19-Aug-16 09:30
IB-SS-13-0-5-20160817	1608619-05	Soil/Sediment	17-Aug-16 13:00	19-Aug-16 09:30
IB-SS-14-0-5-20160817	1608619-06	Soil/Sediment	17-Aug-16 14:38	19-Aug-16 09:30

Return to Contents

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager

Page 2 of 18



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 8/19/2016 9:30:00 AM . The samples were received intact, on-ice within a sealed cooler at 0.9 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Total solids analysis was performed by Eurofins Calscience.

Total mercury preparation and analysis was performed by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631B.

Trace metals preparation and analysis was performed by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EFGS-054, a modified EPA 1638.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries.

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.


Return to Contents

Eurofins Frontier Global Sciences, Inc.



The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager

Sample Receipt Checklist

EFGS Work Order: 1608619

Client: Eurofins Calscience

Date & Time Received: 8/19/16 9:30

Date Labeled: 8/19/16 Labeled By: BGW

Project: _____

Received By: LM

Label Verified By: JCL

of Coolers Received: 1 Samples Arrived By: Shipping Service _____ Courier _____ Hand _____ Other (Specify: _____)

Coolant: None/Ambient Loose Ice Gel Ice Dry Ice Coolant Required: Y/N Temp Blank Used: Y/N for Cooler(s): _____

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	<u>Y</u>	
Custody Seals are present and intact:	<u>Y</u>	
Custody seals signed:	<u>Y</u>	

TID:	CF:	Date/time:	By:
<u>5225</u>	<u>0.1 °C</u>	<u>8/19/16 9:30</u>	<u>LM</u>
Cooler 1: <u>1.0 °C</u>	w/CF: <u>0.9 °C</u>	Cooler 4: _____ °C	w/CF: _____ °C
Cooler 2: _____ °C	w/CF: _____ °C	Cooler 5: _____ °C	w/CF: _____ °C
Cooler 3: _____ °C	w/CF: _____ °C	Cooler 6: _____ °C	w/CF: _____ °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	<u>Y</u>	
Date and time of collection:	<u>Y</u>	
Sampled by:	<u>N</u>	
Preservation type:	<u>NA</u>	
Requested analyses:	<u>Y</u>	
Required signatures:	<u>Y</u>	
Internal COC required:	<u>N</u>	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	<u>Y</u>	
Sample labels are present and legible:	<u>Y</u>	
Sample ID on container/bag matches COC:	<u>Y</u>	
Correct sample containers used:	<u>Y</u>	
Samples received within holding times:	<u>Y</u>	
Sample volume sufficient for requested analyses:	<u>Y</u>	
Correct preservative used for requested analyses:	<u>NA</u>	

Anomalies/Non-conformances (attach additional pages if needed):

The lids for sample 1 has IA-SS-04 written on it however the label on container says IA-SS-02.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
 For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO # / LAB USE ONLY

DATE: 08/18/16
 PAGE: 1 OF 1

LABORATORY CLIENT: **EUROFINS CALSCIENCE**
 ADDRESS: **7440 LINCOLN WAY**
 CITY: **GARDEN GROVE** STATE: **CA** ZIP: _____
 TEL: _____ E-MAIL: **CARLAHOLLOWELL@EUROFINSUS.COM**

CLIENT PROJECT NAME / NUMBER: **16-08-1268 / GWMA Sediment Sampling** P.O. NO.: _____
 PROJECT CONTACT: **CARLA LEE HOLLOWELL** SAMPLER(S): (PRINT) _____

REQUESTED ANALYSES

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
 SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD
 COELT EDF GLOBAL ID: _____ LOG CODE: _____

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	Cd, Cr, Cu, Pb, Zn via 1638(M)	Mercury by EPA 1631E	Other Analytes														
		DATE	TIME								1	2	3	4	5	6	7	8	9	10	11	12			
	IA-SS-04-0-5-20160817	8/17/2016	825	SED	1	X			X	X															
	IA-SS-02-0-5-20160817	8/17/2016	915	SED	1	X			X	X															
	CS-SS-01-0-5-20160817	8/17/2016	1008	SED	1	X			X	X															
	IB-SS-12-0-5-20160817	8/17/2016	1123	SED	1	X			X	X															
	IB-SS-14-0-5-20160817	8/17/2016	1300	SED	1	X			X	X															
	IA-SS-04-0-5-20160817	8/17/2016	1438	SED	1	X			X	X															

SPECIAL INSTRUCTIONS:
 10-day TAT
 Please provide CEDEN EDD
 Report in ~~ng/kg~~, dry weight
 (CH) mg/kg

J Flags

IB-SS-12-0-5-20160817 #5
IB-SS-14-0-5-20160817 #6

[Signature]

Relinquished by: (Signature)	Received by: (Signature/Affiliation) <i>Fedex 777031156200</i>	Date: <i>8/18/16</i>	Time: <i>1650</i>
Relinquished by: (Signature)	Received by: (Signature/Affiliation) <i>[Signature] EFL</i>	Date: <i>8/19/16</i>	Time: <i>9:30</i>
Relinquished by: (Signature)	Received by: (Signature/Affiliation) <i>Law Miller</i>	Date:	Time:

1-2 Seal 0.90c FedEx 7770 3115 6200



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

IA-SS-04-0-5-20160817

1608619-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.119	0.00083	0.00753	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	--------------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.152	0.009	0.038	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	30.1	0.05	0.15	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	45.0	0.039	0.154	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	16.0	0.004	0.061	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	82.2	0.05	0.38	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	62.5	-	0.1	% by Weight	1	F609431	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	----------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1268/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 22-Sep-16 13:42
--	--	------------------------------

IA-SS-02-0-5-20160817

1608619-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.637	0.00128	0.0117	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	--------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.789	0.029	0.123	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	65.1	0.15	0.49	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	160	0.125	0.490	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	81.8	0.011	0.196	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	297	0.15	1.23	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	40.6	-	0.1	% by Weight	1	F609431	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

CS-SS-01-0-5-20160817

1608619-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.624	0.00122	0.0111	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	--------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	1.17	0.026	0.110	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	69.8	0.13	0.44	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	183	0.113	0.441	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	95.9	0.010	0.177	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	467	0.13	1.10	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	39.4	-	0.1	% by Weight	1	F609431	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1268/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 22-Sep-16 13:42
--	--	-------------------------------------

IB-SS-12-0-5-20160817
1608619-04

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	1.32	0.00490	0.0446	mg/kg dry	500	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	------	---------	--------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	1.00	0.019	0.081	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	88.1	0.10	0.32	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	117	0.082	0.323	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	59.2	0.007	0.129	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	358	0.10	0.81	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	48.5	-	0.1	% by Weight	1	F609431	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1268/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 22-Sep-16 13:42
--	--	------------------------------

IB-SS-13-0-5-20160817
1608619-05

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.216	0.00095	0.00864	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.274	0.020	0.085	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	37.3	0.10	0.34	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	55.7	0.087	0.341	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	30.2	0.008	0.137	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	116	0.10	0.85	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	49.7	-	0.1	% by Weight	1	F609431	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

IB-SS-14-0-5-20160817

1608619-06

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.213	0.00083	0.00758	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.157	0.018	0.073	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	24.0	0.09	0.29	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	50.0	0.075	0.292	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	15.7	0.007	0.117	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	74.5	0.09	0.73	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	61.0	-	0.1	% by Weight	1	F609431	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch F608408 - EPA 3051A Microwave Digestion

Blank (F608408-BLK1)											
Prepared: 24-Aug-16 Analyzed: 27-Aug-16											
Chromium	ND	0.06	0.20	mg/kg wet							U
Copper	ND	0.051	0.200	mg/kg wet							U
Zinc	0.37	0.06	0.50	mg/kg wet							J
Lead	ND	0.005	0.080	mg/kg wet							U

Blank (F608408-BLK2)											
Prepared: 24-Aug-16 Analyzed: 27-Aug-16											
Zinc	0.18	0.06	0.50	mg/kg wet							J
Chromium	ND	0.06	0.20	mg/kg wet							U
Copper	ND	0.051	0.200	mg/kg wet							U
Lead	ND	0.005	0.080	mg/kg wet							U

LCS (F608408-BS1)											
Prepared: 24-Aug-16 Analyzed: 27-Aug-16											
Chromium	10.45	0.06	0.20	mg/kg wet	10.002		104	85-115			
Copper	10.70	0.051	0.200	mg/kg wet	10.004		107	51-145			
Zinc	9.57	0.06	0.50	mg/kg wet	10.004		95.7	46-146			
Lead	9.556	0.005	0.080	mg/kg wet	10.002		95.5	72-143			

LCS Dup (F608408-BSD1)											
Prepared: 24-Aug-16 Analyzed: 27-Aug-16											
Chromium	10.20	0.06	0.20	mg/kg wet	10.002		102	85-115	2.38	20	
Zinc	9.53	0.06	0.50	mg/kg wet	10.004		95.3	46-146	0.414	20	
Copper	10.74	0.051	0.200	mg/kg wet	10.004		107	51-145	0.377	20	
Lead	9.888	0.005	0.080	mg/kg wet	10.002		98.9	72-143	3.41	20	

Matrix Spike (F608408-MS1)											
Source: 1608619-01											
Prepared: 24-Aug-16 Analyzed: 27-Aug-16											
Chromium	30.48	0.05	0.16	mg/kg dry	8.1441	30.07	5.04	85-115			QM-14
Zinc	76.70	0.05	0.41	mg/kg dry	8.1458	82.24	-68.0	46-146			QM-14
Copper	46.78	0.042	0.163	mg/kg dry	8.1458	44.96	22.3	51-145			QM-14
Lead	22.12	0.004	0.065	mg/kg dry	8.1441	16.02	74.8	72-143			

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F608408 - EPA 3051A Microwave Digestion											
Matrix Spike (F608408-MS2)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	68.34	0.11	0.37	mg/kg dry	18.439	56.95	61.8	85-115			QM-14
Copper	177.8	0.094	0.369	mg/kg dry	18.443	184.1	-34.1	51-145			QM-14
Zinc	205.7	0.11	0.92	mg/kg dry	18.443	217.5	-63.8	46-146			QM-14
Lead	44.52	0.008	0.147	mg/kg dry	18.439	31.53	70.4	72-143			QM-14
Matrix Spike (F608408-MS3)		Source: 1608619-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	63.18	0.05	0.15	mg/kg dry	30.728	30.07	108	85-115			AS
Zinc	156.3	0.05	0.38	mg/kg dry	76.820	82.24	96.4	46-146			AS
Copper	85.17	0.039	0.154	mg/kg dry	38.410	44.96	105	51-145			AS
Lead	23.18	0.004	0.061	mg/kg dry	7.6820	16.02	93.2	72-143			AS
Matrix Spike (F608408-MS4)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Copper	319.0	0.125	0.488	mg/kg dry	122.09	184.1	111	51-145			AS
Zinc	460.6	0.15	1.22	mg/kg dry	244.18	217.5	99.6	46-146			AS
Chromium	165.8	0.15	0.49	mg/kg dry	97.673	56.95	111	85-115			AS
Lead	58.49	0.011	0.195	mg/kg dry	24.418	31.53	110	72-143			AS
Matrix Spike Dup (F608408-MSD1)		Source: 1608619-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	31.57	0.05	0.18	mg/kg dry	8.8046	30.07	17.1	85-115	109	20	QM-14, QR-08
Zinc	76.89	0.05	0.44	mg/kg dry	8.8063	82.24	-60.7	46-146	-11.2	20	QM-14
Copper	47.02	0.045	0.176	mg/kg dry	8.8063	44.96	23.4	51-145	4.59	20	QM-14
Lead	23.06	0.004	0.070	mg/kg dry	8.8046	16.02	79.9	72-143	6.64	20	
Matrix Spike Dup (F608408-MSD2)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Zinc	234.6	0.14	1.20	mg/kg dry	23.994	217.5	71.1	46-146	3730	20	QM-14, QR-08
Chromium	67.78	0.15	0.48	mg/kg dry	23.989	56.95	45.2	85-115	31.1	20	QM-14, QR-08
Copper	208.4	0.122	0.480	mg/kg dry	23.994	184.1	101	51-145	403	20	QM-14, QR-08
Lead	55.07	0.011	0.192	mg/kg dry	23.989	31.53	98.1	72-143	32.8	20	QR-08, QM-14

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch F608408 - EPA 3051A Microwave Digestion

Matrix Spike Dup (F608408-MSD3)		Source: 1608619-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	63.11	0.05	0.15	mg/kg dry	30.728	30.07	108	85-115	0.192	20	AS
Copper	84.62	0.039	0.154	mg/kg dry	38.410	44.96	103	51-145	1.39	20	AS
Zinc	156.9	0.05	0.38	mg/kg dry	76.820	82.24	97.2	46-146	0.815	20	AS
Lead	24.27	0.004	0.061	mg/kg dry	7.6820	16.02	107	72-143	14.1	20	AS

Matrix Spike Dup (F608408-MSD4)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Zinc	452.7	0.15	1.22	mg/kg dry	244.18	217.5	96.3	46-146	3.30	20	AS
Chromium	161.5	0.15	0.49	mg/kg dry	97.673	56.95	107	85-115	4.06	20	AS
Copper	315.5	0.125	0.488	mg/kg dry	122.09	184.1	108	51-145	2.61	20	AS
Lead	58.66	0.011	0.195	mg/kg dry	24.418	31.53	111	72-143	0.625	20	AS

Batch F608534 - EPA 3051A Microwave Digestion

Blank (F608534-BLK1)		Prepared: 24-Aug-16 Analyzed: 03-Sep-16									
Cadmium	ND	0.012	0.050	mg/kg wet							U

Blank (F608534-BLK2)		Prepared: 24-Aug-16 Analyzed: 03-Sep-16									
Cadmium	ND	0.012	0.050	mg/kg wet							U

LCS (F608534-BS1)		Prepared: 24-Aug-16 Analyzed: 03-Sep-16									
Cadmium	7.331	0.012	0.050	mg/kg wet	8.0060		91.6	84-113			

LCS Dup (F608534-BSD1)		Prepared: 24-Aug-16 Analyzed: 03-Sep-16									
Cadmium	7.299	0.012	0.050	mg/kg wet	8.0060		91.2	84-113	0.446	20	

Matrix Spike (F608534-MS1)		Source: 1608619-01RE1			Prepared: 24-Aug-16 Analyzed: 03-Sep-16						
Cadmium	6.085	0.010	0.041	mg/kg dry	6.5189	0.152	91.0	84-113			

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F608534 - EPA 3051A Microwave Digestion											
Matrix Spike (F608534-MS2) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	13.48	0.022	0.092	mg/kg dry	14.759	0.929	85.0	84-113			
Matrix Spike (F608534-MS3) Source: 1608619-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	3.178	0.009	0.038	mg/kg dry	3.0728	0.152	98.5	84-113			AS
Matrix Spike (F608534-MS4) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	10.79	0.029	0.122	mg/kg dry	9.7673	0.929	101	84-113			AS
Matrix Spike Dup (F608534-MSD1) Source: 1608619-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	6.459	0.011	0.044	mg/kg dry	7.0475	0.152	89.5	84-113	1.68	20	
Matrix Spike Dup (F608534-MSD2) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	18.08	0.029	0.120	mg/kg dry	19.202	0.929	89.3	84-113	4.92	20	
Matrix Spike Dup (F608534-MSD3) Source: 1608619-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	3.201	0.009	0.038	mg/kg dry	3.0728	0.152	99.2	84-113	0.754	20	AS
Matrix Spike Dup (F608534-MSD4) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	10.72	0.029	0.122	mg/kg dry	9.7673	0.929	100	84-113	0.735	20	AS
Batch F609436 - EFGS-066 Cold Aqua Regia Digestion for Hg											
Blank (F609436-BLK1) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00045	0.00011	0.00100	mg/kg wet							J
Blank (F609436-BLK2) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00025	0.00011	0.00100	mg/kg wet							J

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609436 - EFGS-066 Cold Aqua Regia Digestion for Hg											
Blank (F609436-BLK3) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00021	0.00011	0.00100	mg/kg wet							J
LCS (F609436-BS1) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00807	0.00011	0.00100	mg/kg wet	0.0080160		101	75-125			
LCS Dup (F609436-BSD1) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00838	0.00011	0.00100	mg/kg wet	0.0080160		105	75-125	3.75	24	
Duplicate (F609436-DUP1) Source: 1608619-06 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.2073	0.00081	0.00740	mg/kg dry		0.2126			2.50	24	
Matrix Spike (F609436-MS1) Source: 1608619-06 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.8265	0.00383	0.0349	mg/kg dry	0.55855	0.2126	110	71-125			
Matrix Spike (F609436-MS2) Source: 1608621-01 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.3848	0.00243	0.0221	mg/kg dry	0.35344	0.00335	108	71-125			
Matrix Spike Dup (F609436-MSD1) Source: 1608619-06 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.8418	0.00407	0.0371	mg/kg dry	0.59289	0.2126	106	71-125	3.50	24	
Matrix Spike Dup (F609436-MSD2) Source: 1608621-01 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.3650	0.00241	0.0219	mg/kg dry	0.35096	0.00335	103	71-125	4.62	24	

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1268/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:42

Notes and Definitions

- U Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
- QR-08 The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
- QM-14 The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 2 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- J The result is an estimated concentration.
- AS This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Return to Contents

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager

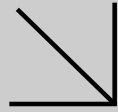
Page 18 of 18



Environmental
Calscience

Supplemental Report 2

The original report has been revised/corrected.



WORK ORDER NUMBER: 16-08-1269

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA Sediment Sampling

Attention: Andrew Martin
 27201 Puerta Real
 Suite 350
 Mission Viejo, CA 92691-8306

Carla Hollowell FOL

Approved for release on 12/16/2016 by:
 Carla Hollowell
 Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA Sediment Sampling
 Work Order Number: 16-08-1269

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 9060A Total Organic Carbon (Solid).	5
	3.2 SM 2540 B (M) Total Solids (Solid).	7
	3.3 EPA 1631E Low Level Hg, Total (Aqueous).	9
	3.4 EPA 1640 ICP/MS Metals (Aqueous).	10
	3.5 ASTM D4464 (M) Particle Size Laser (Solid).	11
	3.6 EPA 8081A Organochlorine Pesticides (Solid).	14
	3.7 EPA 8270C SIM OC Pesticides (Solid).	17
	3.8 EPA 8270C SIM PAHs (Solid).	26
	3.9 EPA 8270C SIM PCB Congeners (Solid).	35
4	Particle Size Summary - 16-08-1269.	53
5	Quality Control Sample Data.	61
	5.1 MS/MSD.	61
	5.2 Sample Duplicate.	68
	5.3 LCS/LCSD.	69
6	Glossary of Terms and Qualifiers.	76
7	Chain-of-Custody/Sample Receipt Form.	77
8	Subcontract Narrative.	80
9	Subcontract Report (EFGS) - 16-08-1269.	81

Work Order Narrative

Work Order: 16-08-1269

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/17/16. They were assigned to Work Order 16-08-1269.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 16-08-1269
27201 Puerta Real, Suite 350	Project Name: GWMA Sediment Sampling
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 08/17/16 19:00
	Number of Containers: 50

Attn: Andrew Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
CM-SS-10-0-5-20160816	16-08-1269-1	08/16/16 08:14	6	Sediment
CB-SS-11-0-5-20160816	16-08-1269-2	08/16/16 10:02	6	Sediment
OA-SS-09-0-5-20160816	16-08-1269-3	08/16/16 11:06	6	Sediment
FH-SS-07-0-5-20160816	16-08-1269-4	08/16/16 12:10	6	Sediment
IA-SS-05-0-5-20160816	16-08-1269-5	08/16/16 13:23	6	Sediment
IA-SS-06-0-5-20160816	16-08-1269-6	08/16/16 14:30	6	Sediment
IA-SS-03-0-5-20160816	16-08-1269-7	08/16/16 15:40	6	Sediment
IA-SS-1006-0-5-20160816	16-08-1269-8	08/16/16 14:32	6	Sediment
EB-20160816	16-08-1269-9	08/16/16 16:14	1	Aqueous
FB-20160816	16-08-1269-10	08/16/16 16:15	1	Aqueous

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: EPA 9060A
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	2.7	0.12	0.043	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-EE	08/16/16 10:02	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	2.4	0.095	0.033	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	2.3	0.11	0.039	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.59	0.076	0.026	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-05-0-5-20160816	16-08-1269-5-EE	08/16/16 13:23	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.15	0.073	0.025	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: EPA 9060A
Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.5	0.10	0.035	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-EE	08/16/16 15:40	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.48	0.093	0.032	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.4	0.11	0.037	1.00	

Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-06-013-1600	N/A	Solid	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	0.050	0.017	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	40.3	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-EE	08/16/16 10:02	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	52.8	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	45.0	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	65.9	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-05-0-5-20160816	16-08-1269-5-EE	08/16/16 13:23	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	68.4	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	49.8	0.100	0.100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-EE	08/16/16 15:40	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	53.6	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	47.1	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-05-019-3381	N/A	Solid	N/A	08/23/16	08/23/16 21:00	G0823TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	ND	0.100	0.100	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 1631E Total
Method: EPA 1631E
Units: ng/L

Project: GWMA Sediment Sampling

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20160816	16-08-1269-9-A	08/16/16 16:14	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	2.06	0.500	0.113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-20160816	16-08-1269-10-A	08/16/16 16:15	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.500	0.113	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-224-140	N/A	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Mercury	ND	0.500	0.113	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3005A Total
Method: EPA 1640
Units: ug/L

Project: GWMA Sediment Sampling

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EB-20160816	16-08-1269-9-A	08/16/16 16:14	Aqueous	ICP/MS 05	08/19/16	08/22/16 18:46	160819L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.0127	0.0300	0.00567	1.00	B,J
Chromium	1.88	0.500	0.164	1.00	
Copper	3.08	0.0300	0.00898	1.00	B
Lead	0.290	0.0300	0.0135	1.00	
Zinc	2.36	0.500	0.0736	1.00	B

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FB-20160816	16-08-1269-10-A	08/16/16 16:15	Aqueous	ICP/MS 05	08/19/16	08/22/16 18:53	160819L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.00850	0.0300	0.00567	1.00	B,J
Chromium	ND	0.500	0.164	1.00	
Copper	9.20	0.0300	0.00898	1.00	B
Lead	0.0368	0.0300	0.0135	1.00	
Zinc	0.280	0.500	0.0736	1.00	B,J

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-13-067-627	N/A	Aqueous	ICP/MS 05	08/19/16	08/22/16 17:12	160819L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Cadmium	0.00781	0.0300	0.00567	1.00	J
Chromium	ND	0.500	0.164	1.00	
Copper	0.0143	0.0300	0.00898	1.00	J
Lead	ND	0.0300	0.0135	1.00	
Zinc	0.172	0.500	0.0736	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-A	08/16/16 08:14	Sediment	LPSA 1	N/A	08/19/16 10:30	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	8.46	
Silt (0.00391 to 0.0625mm)	62.17	
Total Silt and Clay (0 to 0.0625mm)	70.62	
Very Fine Sand (0.0625 to 0.125mm)	15.49	
Fine Sand (0.125 to 0.25mm)	11.49	
Medium Sand (0.25 to 0.5mm)	2.39	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-A	08/16/16 10:02	Sediment	LPSA 1	N/A	08/19/16 10:37	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	5.73	
Silt (0.00391 to 0.0625mm)	45.41	
Total Silt and Clay (0 to 0.0625mm)	51.14	
Very Fine Sand (0.0625 to 0.125mm)	31.31	
Fine Sand (0.125 to 0.25mm)	14.80	
Medium Sand (0.25 to 0.5mm)	2.23	
Coarse Sand (0.5 to 1mm)	0.51	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-A	08/16/16 11:06	Sediment	LPSA 1	N/A	08/19/16 10:46	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	12.61	
Silt (0.00391 to 0.0625mm)	75.86	
Total Silt and Clay (0 to 0.0625mm)	88.48	
Very Fine Sand (0.0625 to 0.125mm)	11.39	
Fine Sand (0.125 to 0.25mm)	0.13	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-A	08/16/16 12:10	Sediment	LPSA 1	N/A	08/19/16 10:57	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	5.32	
Silt (0.00391 to 0.0625mm)	34.23	
Total Silt and Clay (0 to 0.0625mm)	39.55	
Very Fine Sand (0.0625 to 0.125mm)	9.51	
Fine Sand (0.125 to 0.25mm)	25.12	
Medium Sand (0.25 to 0.5mm)	20.02	
Coarse Sand (0.5 to 1mm)	5.64	
Very Coarse Sand (1 to 2mm)	0.16	
Gravel (greater than 2mm)	ND	

IA-SS-05-0-5-20160816	16-08-1269-5-A	08/16/16 13:23	Sediment	LPSA 1	N/A	08/19/16 11:13	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	4.99	
Silt (0.00391 to 0.0625mm)	25.98	
Total Silt and Clay (0 to 0.0625mm)	30.98	
Very Fine Sand (0.0625 to 0.125mm)	13.49	
Fine Sand (0.125 to 0.25mm)	29.38	
Medium Sand (0.25 to 0.5mm)	21.49	
Coarse Sand (0.5 to 1mm)	4.54	
Very Coarse Sand (1 to 2mm)	0.13	
Gravel (greater than 2mm)	ND	

IA-SS-06-0-5-20160816	16-08-1269-6-A	08/16/16 14:30	Sediment	LPSA 1	N/A	08/19/16 11:21	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	12.88	
Silt (0.00391 to 0.0625mm)	63.30	
Total Silt and Clay (0 to 0.0625mm)	76.17	
Very Fine Sand (0.0625 to 0.125mm)	15.40	
Fine Sand (0.125 to 0.25mm)	8.43	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-A	08/16/16 15:40	Sediment	LPSA 1	N/A	08/19/16 11:27	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	14.95	
Silt (0.00391 to 0.0625mm)	56.52	
Total Silt and Clay (0 to 0.0625mm)	71.47	
Very Fine Sand (0.0625 to 0.125mm)	14.11	
Fine Sand (0.125 to 0.25mm)	10.80	
Medium Sand (0.25 to 0.5mm)	3.62	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-A	08/16/16 14:32	Sediment	LPSA 1	N/A	08/19/16 11:34	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	12.83	
Silt (0.00391 to 0.0625mm)	63.70	
Total Silt and Clay (0 to 0.0625mm)	76.53	
Very Fine Sand (0.0625 to 0.125mm)	14.50	
Fine Sand (0.125 to 0.25mm)	8.97	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	GC 44	08/26/16	09/01/16 09:31	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	49	22	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	181	25-145	2,7		
Decachlorobiphenyl	125	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-EE	08/16/16 10:02	Sediment	GC 44	08/26/16	09/01/16 09:45	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	38	17	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	172	25-145	2,7		
Decachlorobiphenyl	131	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	GC 44	08/26/16	09/01/16 09:59	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	44	20	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	119	25-145			
Decachlorobiphenyl	116	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	GC 44	08/26/16	09/01/16 10:13	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	30	14	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	60	25-145			
Decachlorobiphenyl	108	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-05-0-5-20160816	16-08-1269-5-EE	08/16/16 13:23	Sediment	GC 44	08/26/16	09/01/16 12:32	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	29	13	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	604	25-145	2,7		
Decachlorobiphenyl	134	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	GC 44	08/26/16	09/01/16 12:46	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	40	18	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	169	25-145	2,7		
Decachlorobiphenyl	136	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-EE	08/16/16 15:40	Sediment	GC 44	08/26/16	09/01/16 13:00	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	37	17	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	108	25-145			
Decachlorobiphenyl	123	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	GC 44	08/26/16	09/01/16 13:15	160826L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	42	19	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	192	25-145	2,7		
Decachlorobiphenyl	159	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-858-426	N/A	Solid	GC 44	08/26/16	09/01/16 06:11	160826L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	20	9.0	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	95	25-145			
Decachlorobiphenyl	102	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	GC/MS BBB	08/24/16	08/29/16 21:46	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.50	0.17	1.00	
Cis-nonachlor	ND	0.50	0.13	1.00	
2,4'-DDD	ND	0.50	0.19	1.00	
2,4'-DDE	7.5	0.50	0.087	1.00	
2,4'-DDT	ND	0.50	0.15	1.00	
4,4'-DDD	ND	0.50	0.099	1.00	
4,4'-DDT	ND	0.50	0.13	1.00	
Dieldrin	ND	0.50	0.26	1.00	
Gamma Chlordane	ND	0.50	0.13	1.00	
Oxychlordane	ND	0.50	0.18	1.00	
Trans-nonachlor	ND	0.50	0.11	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	33	25-200	
2,4,5,6-Tetrachloro-m-Xylene	60	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	GC/MS BBB	08/24/16	08/30/16 14:29	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	48	2.5	0.50	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	183	25-200	
2,4,5,6-Tetrachloro-m-Xylene	65	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-EE	08/16/16 10:02	Sediment	GC/MS BBB	08/24/16	08/30/16 14:45	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.38	0.13	1.00	
Cis-nonachlor	ND	0.38	0.095	1.00	
2,4'-DDD	ND	0.38	0.14	1.00	
2,4'-DDE	ND	0.38	0.066	1.00	
2,4'-DDT	ND	0.38	0.12	1.00	
4,4'-DDD	ND	0.38	0.075	1.00	
4,4'-DDE	15	0.38	0.076	1.00	
4,4'-DDT	ND	0.38	0.099	1.00	
Dieldrin	ND	0.38	0.20	1.00	
Gamma Chlordane	ND	0.38	0.10	1.00	
Oxychlordane	ND	0.38	0.14	1.00	
Trans-nonachlor	ND	0.38	0.081	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
Dibutylchloredate	41	25-200			
2,4,5,6-Tetrachloro-m-Xylene	25	25-200			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	GC/MS BBB	08/24/16	08/29/16 22:18	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.44	0.15	1.00	
Cis-nonachlor	ND	0.44	0.11	1.00	
2,4'-DDD	ND	0.44	0.17	1.00	
2,4'-DDE	16	0.44	0.078	1.00	
2,4'-DDT	ND	0.44	0.14	1.00	
4,4'-DDD	ND	0.44	0.088	1.00	
4,4'-DDT	ND	0.44	0.12	1.00	
Dieldrin	ND	0.44	0.23	1.00	
Gamma Chlordane	ND	0.44	0.12	1.00	
Oxychlordane	ND	0.44	0.16	1.00	
Trans-nonachlor	ND	0.44	0.095	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	44	25-200	
2,4,5,6-Tetrachloro-m-Xylene	70	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	GC/MS BBB	08/24/16	08/30/16 15:01	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	120	4.4	0.90	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	200	25-200	
2,4,5,6-Tetrachloro-m-Xylene	89	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	GC/MS BBB	08/24/16	08/29/16 22:34	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.30	0.10	1.00	
Cis-nonachlor	ND	0.30	0.077	1.00	
2,4'-DDD	ND	0.30	0.12	1.00	
2,4'-DDE	2.7	0.30	0.053	1.00	
2,4'-DDT	ND	0.30	0.094	1.00	
4,4'-DDD	ND	0.30	0.060	1.00	
4,4'-DDT	ND	0.30	0.080	1.00	
Dieldrin	ND	0.30	0.16	1.00	
Gamma Chlordane	ND	0.30	0.081	1.00	
Oxychlordane	ND	0.30	0.11	1.00	
Trans-nonachlor	ND	0.30	0.065	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	36	25-200	
2,4,5,6-Tetrachloro-m-Xylene	63	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	GC/MS BBB	08/24/16	08/30/16 15:17	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	27	1.5	0.31	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	168	25-200	
2,4,5,6-Tetrachloro-m-Xylene	74	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-05-0-5-20160816	16-08-1269-5-EE	08/16/16 13:23	Sediment	GC/MS BBB	08/24/16	08/29/16 22:50	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.29	0.097	1.00	
Cis-nonachlor	ND	0.29	0.074	1.00	
2,4'-DDD	ND	0.29	0.11	1.00	
2,4'-DDE	ND	0.29	0.051	1.00	
2,4'-DDT	ND	0.29	0.090	1.00	
4,4'-DDD	ND	0.29	0.058	1.00	
4,4'-DDE	9.4	0.29	0.059	1.00	
4,4'-DDT	ND	0.29	0.076	1.00	
Dieldrin	ND	0.29	0.15	1.00	
Gamma Chlordane	ND	0.29	0.077	1.00	
Oxychlordane	ND	0.29	0.11	1.00	
Trans-nonachlor	ND	0.29	0.062	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	39	25-200			
2,4,5,6-Tetrachloro-m-Xylene	66	25-200			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	GC/MS BBB	08/24/16	08/29/16 23:06	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.40	0.13	1.00	
Cis-nonachlor	ND	0.40	0.10	1.00	
2,4'-DDD	ND	0.40	0.15	1.00	
2,4'-DDE	9.4	0.40	0.071	1.00	
2,4'-DDT	ND	0.40	0.12	1.00	
4,4'-DDD	ND	0.40	0.080	1.00	
4,4'-DDT	ND	0.40	0.11	1.00	
Dieldrin	ND	0.40	0.21	1.00	
Gamma Chlordane	ND	0.40	0.11	1.00	
Oxychlordane	ND	0.40	0.15	1.00	
Trans-nonachlor	ND	0.40	0.086	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	45	25-200	
2,4,5,6-Tetrachloro-m-Xylene	70	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	GC/MS BBB	08/24/16	08/30/16 15:33	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	53	2.0	0.41	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	115	25-200	
2,4,5,6-Tetrachloro-m-Xylene	74	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-EE	08/16/16 15:40	Sediment	GC/MS BBB	08/24/16	08/29/16 23:22	160824L11

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.37	0.12	1.00	
Cis-nonachlor	ND	0.37	0.094	1.00	
2,4'-DDD	ND	0.37	0.14	1.00	
2,4'-DDE	ND	0.37	0.065	1.00	
2,4'-DDT	ND	0.37	0.11	1.00	
4,4'-DDD	ND	0.37	0.074	1.00	
4,4'-DDE	13	0.37	0.075	1.00	
4,4'-DDT	ND	0.37	0.097	1.00	
Dieldrin	ND	0.37	0.20	1.00	
Gamma Chlordane	ND	0.37	0.099	1.00	
Oxychlordane	ND	0.37	0.13	1.00	
Trans-nonachlor	ND	0.37	0.079	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	42	25-200			
2,4,5,6-Tetrachloro-m-Xylene	71	25-200			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	GC/MS BBB	08/24/16	08/29/16 23:38	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.42	0.14	1.00	
Cis-nonachlor	ND	0.42	0.11	1.00	
2,4'-DDD	ND	0.42	0.16	1.00	
2,4'-DDE	8.6	0.42	0.074	1.00	
2,4'-DDT	ND	0.42	0.13	1.00	
4,4'-DDD	ND	0.42	0.084	1.00	
4,4'-DDT	ND	0.42	0.11	1.00	
Dieldrin	ND	0.42	0.22	1.00	
Gamma Chlordane	ND	0.42	0.11	1.00	
Oxychlordane	ND	0.42	0.15	1.00	
Trans-nonachlor	ND	0.42	0.091	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	38	25-200	
2,4,5,6-Tetrachloro-m-Xylene	57	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	GC/MS BBB	08/24/16	08/30/16 15:49	160824L11

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	54	2.1	0.43	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	90	25-200	
2,4,5,6-Tetrachloro-m-Xylene	65	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 9 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-154-67	N/A	Solid	GC/MS BBB	08/24/16	08/29/16 15:19	160824L11

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.20	0.067	1.00	
Cis-nonachlor	ND	0.20	0.051	1.00	
2,4'-DDD	ND	0.20	0.076	1.00	
2,4'-DDE	ND	0.20	0.035	1.00	
2,4'-DDT	ND	0.20	0.062	1.00	
4,4'-DDD	ND	0.20	0.040	1.00	
4,4'-DDE	ND	0.20	0.040	1.00	
4,4'-DDT	ND	0.20	0.053	1.00	
Dieldrin	ND	0.20	0.11	1.00	
Gamma Chlordane	ND	0.20	0.053	1.00	
Oxychlordane	ND	0.20	0.073	1.00	
Trans-nonachlor	ND	0.20	0.043	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	120	25-200	
2,4,5,6-Tetrachloro-m-Xylene	84	25-200	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	GC/MS AAA	08/30/16	09/01/16 20:50	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	6.7	25	5.8	1.00	J
Anthracene	140	25	8.6	1.00	
Benzo (a) Anthracene	130	25	5.3	1.00	
Benzo (a) Pyrene	340	25	4.5	1.00	
Benzo (e) Pyrene	230	25	4.9	1.00	
Biphenyl	ND	25	4.6	1.00	
Chrysene	200	25	5.5	1.00	
Dibenz (a,h) Anthracene	67	25	4.8	1.00	
2,6-Dimethylnaphthalene	110	25	4.2	1.00	
Fluoranthene	140	25	4.5	1.00	
Fluorene	9.7	25	7.7	1.00	J
2-Methylnaphthalene	7.3	25	5.7	1.00	J
1-Methylnaphthalene	ND	25	5.7	1.00	
1-Methylphenanthrene	26	25	6.1	1.00	
Naphthalene	ND	25	8.6	1.00	
Perylene	870	25	5.9	1.00	
Phenanthrene	42	25	5.5	1.00	
Pyrene	110	25	5.6	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	69	14-146	
Nitrobenzene-d5	63	18-162	
p-Terphenyl-d14	75	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-EE	08/16/16 10:02	Sediment	GC/MS AAA	08/30/16	09/01/16 21:10	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	5.3	19	4.5	1.00	J
Anthracene	54	19	6.6	1.00	
Benzo (a) Anthracene	79	19	4.1	1.00	
Benzo (a) Pyrene	140	19	3.5	1.00	
Benzo (e) Pyrene	92	19	3.7	1.00	
Biphenyl	ND	19	3.5	1.00	
Chrysene	110	19	4.2	1.00	
Dibenz (a,h) Anthracene	30	19	3.7	1.00	
2,6-Dimethylnaphthalene	42	19	3.2	1.00	
Fluoranthene	170	19	3.5	1.00	
Fluorene	6.4	19	5.9	1.00	J
2-Methylnaphthalene	7.4	19	4.4	1.00	J
1-Methylnaphthalene	4.6	19	4.4	1.00	J
1-Methylphenanthrene	9.8	19	4.7	1.00	J
Naphthalene	ND	19	6.6	1.00	
Perylene	580	19	4.5	1.00	
Phenanthrene	46	19	4.2	1.00	
Pyrene	130	19	4.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	71	14-146	
Nitrobenzene-d5	62	18-162	
p-Terphenyl-d14	76	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	GC/MS AAA	08/30/16	09/01/16 21:30	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	22	5.2	1.00	
Anthracene	24	22	7.7	1.00	
Benzo (a) Anthracene	36	22	4.8	1.00	
Benzo (a) Pyrene	63	22	4.1	1.00	
Benzo (e) Pyrene	48	22	4.4	1.00	
Biphenyl	ND	22	4.1	1.00	
Chrysene	55	22	5.0	1.00	
Dibenz (a,h) Anthracene	8.6	22	4.3	1.00	J
2,6-Dimethylnaphthalene	100	22	3.8	1.00	
Fluoranthene	90	22	4.1	1.00	
Fluorene	ND	22	6.9	1.00	
2-Methylnaphthalene	ND	22	5.2	1.00	
1-Methylnaphthalene	ND	22	5.2	1.00	
1-Methylphenanthrene	ND	22	5.5	1.00	
Naphthalene	ND	22	7.7	1.00	
Perylene	250	22	5.3	1.00	
Phenanthrene	27	22	4.9	1.00	
Pyrene	68	22	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	69	14-146	
Nitrobenzene-d5	59	18-162	
p-Terphenyl-d14	72	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	GC/MS AAA	08/30/16	09/01/16 21:50	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	3.7	15	3.6	1.00	J
Anthracene	42	15	5.3	1.00	
Benzo (a) Anthracene	63	15	3.3	1.00	
Benzo (a) Pyrene	97	15	2.8	1.00	
Benzo (e) Pyrene	69	15	3.0	1.00	
Biphenyl	ND	15	2.8	1.00	
Chrysene	99	15	3.4	1.00	
Dibenz (a,h) Anthracene	21	15	3.0	1.00	
2,6-Dimethylnaphthalene	21	15	2.6	1.00	
Fluoranthene	90	15	2.8	1.00	
Fluorene	5.9	15	4.7	1.00	J
2-Methylnaphthalene	6.9	15	3.5	1.00	J
1-Methylnaphthalene	3.6	15	3.5	1.00	J
1-Methylphenanthrene	10	15	3.8	1.00	J
Naphthalene	6.0	15	5.3	1.00	J
Perylene	47	15	3.6	1.00	
Phenanthrene	49	15	3.4	1.00	
Pyrene	94	15	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	73	14-146	
Nitrobenzene-d5	69	18-162	
p-Terphenyl-d14	82	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-05-0-5-20160816	16-08-1269-5-EE	08/16/16 13:23	Sediment	GC/MS AAA	08/30/16	09/01/16 22:09	160830L19

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	15	3.4	1.00	
Anthracene	ND	15	5.1	1.00	
Benzo (a) Anthracene	7.1	15	3.1	1.00	J
Benzo (a) Pyrene	9.6	15	2.7	1.00	J
Benzo (e) Pyrene	8.6	15	2.9	1.00	J
Biphenyl	ND	15	2.7	1.00	
Chrysene	8.8	15	3.2	1.00	J
Dibenz (a,h) Anthracene	ND	15	2.8	1.00	
2,6-Dimethylnaphthalene	17	15	2.5	1.00	
Fluoranthene	11	15	2.7	1.00	J
Fluorene	ND	15	4.5	1.00	
2-Methylnaphthalene	ND	15	3.4	1.00	
1-Methylnaphthalene	ND	15	3.4	1.00	
1-Methylphenanthrene	ND	15	3.6	1.00	
Naphthalene	ND	15	5.1	1.00	
Perylene	27	15	3.5	1.00	
Phenanthrene	3.7	15	3.2	1.00	J
Pyrene	8.5	15	3.3	1.00	J

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	69	14-146	
Nitrobenzene-d5	68	18-162	
p-Terphenyl-d14	72	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	GC/MS AAA	08/30/16	09/01/16 22:29	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	5.2	20	4.7	1.00	J
Anthracene	130	20	7.0	1.00	
Benzo (a) Anthracene	170	20	4.3	1.00	
Benzo (a) Pyrene	250	20	3.7	1.00	
Benzo (e) Pyrene	180	20	3.9	1.00	
Biphenyl	ND	20	3.7	1.00	
Chrysene	330	20	4.5	1.00	
Dibenz (a,h) Anthracene	38	20	3.9	1.00	
2,6-Dimethylnaphthalene	50	20	3.4	1.00	
Fluoranthene	300	20	3.6	1.00	
Fluorene	13	20	6.2	1.00	J
2-Methylnaphthalene	5.9	20	4.7	1.00	J
1-Methylnaphthalene	ND	20	4.7	1.00	
1-Methylphenanthrene	17	20	5.0	1.00	J
Naphthalene	ND	20	6.9	1.00	
Perylene	250	20	4.8	1.00	
Phenanthrene	80	20	4.4	1.00	
Pyrene	280	20	4.5	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	68	14-146	
Nitrobenzene-d5	64	18-162	
p-Terphenyl-d14	88	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-EE	08/16/16 15:40	Sediment	GC/MS AAA	08/30/16	09/01/16 22:49	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	19	4.4	1.00	
Anthracene	46	19	6.5	1.00	
Benzo (a) Anthracene	44	19	4.0	1.00	
Benzo (a) Pyrene	140	19	3.4	1.00	
Benzo (e) Pyrene	92	19	3.6	1.00	
Biphenyl	ND	19	3.5	1.00	
Chrysene	79	19	4.1	1.00	
Dibenz (a,h) Anthracene	26	19	3.6	1.00	
2,6-Dimethylnaphthalene	18	19	3.2	1.00	J
Fluoranthene	44	19	3.4	1.00	
Fluorene	ND	19	5.8	1.00	
2-Methylnaphthalene	ND	19	4.3	1.00	
1-Methylnaphthalene	ND	19	4.3	1.00	
1-Methylphenanthrene	16	19	4.6	1.00	J
Naphthalene	ND	19	6.4	1.00	
Perylene	93	19	4.4	1.00	
Phenanthrene	17	19	4.1	1.00	J
Pyrene	55	19	4.2	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	65	14-146	
Nitrobenzene-d5	51	18-162	
p-Terphenyl-d14	85	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	GC/MS AAA	08/30/16	09/01/16 23:08	160830L19

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	5.2	21	5.0	1.00	J
Anthracene	130	21	7.4	1.00	
Benzo (a) Anthracene	170	21	4.6	1.00	
Benzo (a) Pyrene	310	21	3.9	1.00	
Benzo (e) Pyrene	200	21	4.2	1.00	
Biphenyl	ND	21	4.0	1.00	
Chrysene	280	21	4.7	1.00	
Dibenz (a,h) Anthracene	56	21	4.1	1.00	
2,6-Dimethylnaphthalene	56	21	3.6	1.00	
Fluoranthene	270	21	3.9	1.00	
Fluorene	12	21	6.6	1.00	J
2-Methylnaphthalene	5.8	21	4.9	1.00	J
1-Methylnaphthalene	ND	21	4.9	1.00	
1-Methylphenanthrene	31	21	5.3	1.00	
Naphthalene	ND	21	7.4	1.00	
Perylene	270	21	5.1	1.00	
Phenanthrene	56	21	4.7	1.00	
Pyrene	220	21	4.8	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	68	14-146	
Nitrobenzene-d5	65	18-162	
p-Terphenyl-d14	79	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 9 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-097-217	N/A	Solid	GC/MS AAA	08/30/16	09/01/16 15:36	160830L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	10	2.4	1.00	
Anthracene	ND	10	3.5	1.00	
Benzo (a) Anthracene	ND	10	2.2	1.00	
Benzo (a) Pyrene	ND	10	1.8	1.00	
Benzo (e) Pyrene	ND	10	2.0	1.00	
Biphenyl	ND	10	1.9	1.00	
Chrysene	ND	10	2.2	1.00	
Dibenz (a,h) Anthracene	ND	10	2.0	1.00	
2,6-Dimethylnaphthalene	ND	10	1.7	1.00	
Fluoranthene	ND	10	1.8	1.00	
Fluorene	ND	10	3.1	1.00	
2-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylphenanthrene	ND	10	2.5	1.00	
Naphthalene	ND	10	3.5	1.00	
Perylene	ND	10	2.4	1.00	
Phenanthrene	ND	10	2.2	1.00	
Pyrene	ND	10	2.2	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	78	14-146	
Nitrobenzene-d5	87	18-162	
p-Terphenyl-d14	91	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CM-SS-10-0-5-20160816	16-08-1269-1-EE	08/16/16 08:14	Sediment	GC/MS HHH	08/23/16	08/25/16 22:56	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.99	0.36	1.00	
PCB018	ND	0.49	0.18	1.00	
PCB028	1.7	0.49	0.083	1.00	
PCB037	ND	0.49	0.15	1.00	
PCB044	2.9	0.49	0.21	1.00	
PCB049	1.6	0.49	0.28	1.00	
PCB052	3.4	0.49	0.15	1.00	
PCB066	2.0	0.49	0.25	1.00	
PCB070	2.2	0.49	0.15	1.00	
PCB074	1.3	0.49	0.21	1.00	
PCB077	ND	0.49	0.19	1.00	
PCB081	ND	0.49	0.30	1.00	
PCB087	1.9	0.49	0.26	1.00	
PCB099	2.6	0.49	0.15	1.00	
PCB101	5.1	0.49	0.24	1.00	
PCB105	2.6	0.49	0.13	1.00	
PCB110	4.3	0.49	0.11	1.00	
PCB114	ND	0.49	0.20	1.00	
PCB118	3.9	0.49	0.21	1.00	
PCB119	ND	0.49	0.23	1.00	
PCB123	ND	0.49	0.26	1.00	
PCB126	ND	0.49	0.20	1.00	
PCB128	ND	0.49	0.25	1.00	
PCB132/153	6.0	0.99	0.43	1.00	
PCB138/158	4.4	0.99	0.23	1.00	
PCB149	2.7	0.49	0.24	1.00	
PCB151	1.6	0.49	0.17	1.00	
PCB156	ND	0.49	0.14	1.00	
PCB157	ND	0.49	0.13	1.00	
PCB167	ND	0.49	0.15	1.00	
PCB168	ND	0.49	0.12	1.00	
PCB169	ND	0.49	0.15	1.00	
PCB170	ND	0.49	0.16	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1269
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.49	0.21	1.00	
PCB180	1.9	0.49	0.10	1.00	
PCB183	ND	0.49	0.27	1.00	
PCB187	1.5	0.49	0.21	1.00	
PCB189	ND	0.49	0.15	1.00	
PCB194	ND	0.49	0.28	1.00	
PCB195	ND	0.49	0.29	1.00	
PCB201	ND	0.49	0.24	1.00	
PCB206	ND	0.49	0.48	1.00	
PCB209	ND	0.49	0.36	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	52	50-150			
p-Terphenyl-d14	82	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-SS-11-0-5-20160816	16-08-1269-2-EE	08/16/16 10:02	Sediment	GC/MS HHH	08/23/16	08/25/16 23:19	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.75	0.27	1.00	
PCB018	ND	0.38	0.13	1.00	
PCB028	ND	0.38	0.063	1.00	
PCB037	ND	0.38	0.11	1.00	
PCB044	1.7	0.38	0.16	1.00	
PCB049	0.91	0.38	0.21	1.00	
PCB052	1.7	0.38	0.12	1.00	
PCB066	1.5	0.38	0.19	1.00	
PCB070	1.9	0.38	0.11	1.00	
PCB074	1.1	0.38	0.16	1.00	
PCB077	ND	0.38	0.15	1.00	
PCB081	ND	0.38	0.22	1.00	
PCB087	2.2	0.38	0.20	1.00	
PCB099	1.8	0.38	0.11	1.00	
PCB101	3.5	0.38	0.18	1.00	
PCB105	1.8	0.38	0.10	1.00	
PCB110	3.3	0.38	0.086	1.00	
PCB114	ND	0.38	0.15	1.00	
PCB118	3.8	0.38	0.16	1.00	
PCB119	ND	0.38	0.18	1.00	
PCB123	ND	0.38	0.20	1.00	
PCB126	ND	0.38	0.15	1.00	
PCB128	ND	0.38	0.19	1.00	
PCB132/153	4.7	0.75	0.32	1.00	
PCB138/158	3.8	0.75	0.18	1.00	
PCB149	2.1	0.38	0.18	1.00	
PCB151	1.3	0.38	0.13	1.00	
PCB156	ND	0.38	0.11	1.00	
PCB157	ND	0.38	0.098	1.00	
PCB167	ND	0.38	0.12	1.00	
PCB168	ND	0.38	0.091	1.00	
PCB169	ND	0.38	0.11	1.00	
PCB170	0.85	0.38	0.12	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.38	0.16	1.00	
PCB180	1.8	0.38	0.079	1.00	
PCB183	0.51	0.38	0.21	1.00	
PCB187	0.96	0.38	0.16	1.00	
PCB189	ND	0.38	0.11	1.00	
PCB194	ND	0.38	0.21	1.00	
PCB195	ND	0.38	0.22	1.00	
PCB201	ND	0.38	0.18	1.00	
PCB206	ND	0.38	0.36	1.00	
PCB209	ND	0.38	0.27	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	53	50-150			
p-Terphenyl-d14	99	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-SS-09-0-5-20160816	16-08-1269-3-EE	08/16/16 11:06	Sediment	GC/MS HHH	08/23/16	08/25/16 23:42	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.89	0.32	1.00	
PCB018	ND	0.44	0.16	1.00	
PCB028	0.89	0.44	0.074	1.00	
PCB037	ND	0.44	0.13	1.00	
PCB044	ND	0.44	0.19	1.00	
PCB049	0.75	0.44	0.25	1.00	
PCB052	1.6	0.44	0.14	1.00	
PCB066	2.2	0.44	0.23	1.00	
PCB070	1.7	0.44	0.13	1.00	
PCB074	1.1	0.44	0.19	1.00	
PCB077	ND	0.44	0.17	1.00	
PCB081	ND	0.44	0.27	1.00	
PCB087	2.8	0.44	0.24	1.00	
PCB099	2.4	0.44	0.13	1.00	
PCB101	3.2	0.44	0.22	1.00	
PCB105	2.4	0.44	0.12	1.00	
PCB110	3.5	0.44	0.10	1.00	
PCB114	ND	0.44	0.18	1.00	
PCB118	3.9	0.44	0.19	1.00	
PCB119	ND	0.44	0.21	1.00	
PCB123	ND	0.44	0.23	1.00	
PCB126	ND	0.44	0.18	1.00	
PCB128	ND	0.44	0.23	1.00	
PCB132/153	5.8	0.89	0.38	1.00	
PCB138/158	4.3	0.89	0.21	1.00	
PCB149	2.1	0.44	0.22	1.00	
PCB151	1.5	0.44	0.15	1.00	
PCB156	ND	0.44	0.13	1.00	
PCB157	ND	0.44	0.12	1.00	
PCB167	ND	0.44	0.14	1.00	
PCB168	ND	0.44	0.11	1.00	
PCB169	ND	0.44	0.14	1.00	
PCB170	1.2	0.44	0.14	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.44	0.19	1.00	
PCB180	2.4	0.44	0.093	1.00	
PCB183	ND	0.44	0.24	1.00	
PCB187	1.5	0.44	0.19	1.00	
PCB189	ND	0.44	0.14	1.00	
PCB194	ND	0.44	0.25	1.00	
PCB195	ND	0.44	0.26	1.00	
PCB201	ND	0.44	0.21	1.00	
PCB206	ND	0.44	0.43	1.00	
PCB209	ND	0.44	0.32	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	57	50-150			
p-Terphenyl-d14	96	50-150			



Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FH-SS-07-0-5-20160816	16-08-1269-4-EE	08/16/16 12:10	Sediment	GC/MS HHH	08/23/16	08/26/16 00:06	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.60	0.22	1.00	
PCB018	ND	0.30	0.11	1.00	
PCB028	ND	0.30	0.050	1.00	
PCB037	ND	0.30	0.091	1.00	
PCB044	ND	0.30	0.13	1.00	
PCB049	0.63	0.30	0.17	1.00	
PCB052	1.2	0.30	0.094	1.00	
PCB066	1.3	0.30	0.15	1.00	
PCB070	1.5	0.30	0.090	1.00	
PCB074	0.79	0.30	0.13	1.00	
PCB077	ND	0.30	0.12	1.00	
PCB081	ND	0.30	0.18	1.00	
PCB087	1.4	0.30	0.16	1.00	
PCB099	2.0	0.30	0.091	1.00	
PCB101	3.7	0.30	0.15	1.00	
PCB105	1.7	0.30	0.082	1.00	
PCB110	3.4	0.30	0.069	1.00	
PCB114	ND	0.30	0.12	1.00	
PCB118	4.2	0.30	0.13	1.00	
PCB119	ND	0.30	0.14	1.00	
PCB123	ND	0.30	0.16	1.00	
PCB126	ND	0.30	0.12	1.00	
PCB128	1.1	0.30	0.15	1.00	
PCB132/153	7.3	0.60	0.26	1.00	
PCB138/158	5.3	0.60	0.14	1.00	
PCB149	3.3	0.30	0.15	1.00	
PCB151	1.6	0.30	0.10	1.00	
PCB156	ND	0.30	0.087	1.00	
PCB157	ND	0.30	0.078	1.00	
PCB167	ND	0.30	0.093	1.00	
PCB168	ND	0.30	0.073	1.00	
PCB169	ND	0.30	0.092	1.00	
PCB170	1.3	0.30	0.095	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1269
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.30	0.13	1.00	
PCB180	3.0	0.30	0.063	1.00	
PCB183	1.1	0.30	0.17	1.00	
PCB187	1.7	0.30	0.13	1.00	
PCB189	ND	0.30	0.092	1.00	
PCB194	0.80	0.30	0.17	1.00	
PCB195	ND	0.30	0.18	1.00	
PCB201	ND	0.30	0.15	1.00	
PCB206	0.79	0.30	0.29	1.00	
PCB209	ND	0.30	0.22	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	63	50-150			
p-Terphenyl-d14	95	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 9 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-05-0-5-20160816	16-08-1269-5-EE	08/16/16 13:23	Sediment	GC/MS HHH	08/23/16	08/26/16 00:29	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.58	0.21	1.00	
PCB018	ND	0.29	0.10	1.00	
PCB028	ND	0.29	0.049	1.00	
PCB037	ND	0.29	0.088	1.00	
PCB044	ND	0.29	0.13	1.00	
PCB049	ND	0.29	0.16	1.00	
PCB052	ND	0.29	0.091	1.00	
PCB066	ND	0.29	0.15	1.00	
PCB070	ND	0.29	0.087	1.00	
PCB074	ND	0.29	0.13	1.00	
PCB077	ND	0.29	0.11	1.00	
PCB081	ND	0.29	0.17	1.00	
PCB087	ND	0.29	0.16	1.00	
PCB099	0.42	0.29	0.088	1.00	
PCB101	0.66	0.29	0.14	1.00	
PCB105	ND	0.29	0.079	1.00	
PCB110	0.74	0.29	0.067	1.00	
PCB114	ND	0.29	0.12	1.00	
PCB118	0.84	0.29	0.12	1.00	
PCB119	ND	0.29	0.14	1.00	
PCB123	ND	0.29	0.15	1.00	
PCB126	ND	0.29	0.12	1.00	
PCB128	ND	0.29	0.15	1.00	
PCB132/153	0.93	0.58	0.25	1.00	
PCB138/158	0.49	0.58	0.14	1.00	J
PCB149	0.46	0.29	0.14	1.00	
PCB151	ND	0.29	0.098	1.00	
PCB156	ND	0.29	0.084	1.00	
PCB157	ND	0.29	0.076	1.00	
PCB167	ND	0.29	0.090	1.00	
PCB168	ND	0.29	0.071	1.00	
PCB169	ND	0.29	0.089	1.00	
PCB170	ND	0.29	0.092	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1269
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 10 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.29	0.13	1.00	
PCB180	ND	0.29	0.061	1.00	
PCB183	ND	0.29	0.16	1.00	
PCB187	ND	0.29	0.12	1.00	
PCB189	ND	0.29	0.089	1.00	
PCB194	ND	0.29	0.16	1.00	
PCB195	ND	0.29	0.17	1.00	
PCB201	ND	0.29	0.14	1.00	
PCB206	ND	0.29	0.28	1.00	
PCB209	ND	0.29	0.21	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	58	50-150			
p-Terphenyl-d14	107	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 11 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-06-0-5-20160816	16-08-1269-6-EE	08/16/16 14:30	Sediment	GC/MS HHH	08/23/16	08/26/16 00:52	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.80	0.29	1.00	
PCB018	ND	0.40	0.14	1.00	
PCB028	ND	0.40	0.067	1.00	
PCB037	ND	0.40	0.12	1.00	
PCB044	1.6	0.40	0.17	1.00	
PCB049	0.99	0.40	0.22	1.00	
PCB052	2.5	0.40	0.12	1.00	
PCB066	2.2	0.40	0.20	1.00	
PCB070	2.6	0.40	0.12	1.00	
PCB074	1.4	0.40	0.17	1.00	
PCB077	1.8	0.40	0.15	1.00	
PCB081	ND	0.40	0.24	1.00	
PCB087	3.8	0.40	0.21	1.00	
PCB099	3.1	0.40	0.12	1.00	
PCB101	6.7	0.40	0.19	1.00	
PCB105	5.0	0.40	0.11	1.00	
PCB110	6.9	0.40	0.091	1.00	
PCB114	ND	0.40	0.16	1.00	
PCB118	6.7	0.40	0.17	1.00	
PCB119	ND	0.40	0.19	1.00	
PCB123	ND	0.40	0.21	1.00	
PCB126	ND	0.40	0.16	1.00	
PCB128	2.1	0.40	0.20	1.00	
PCB132/153	11	0.80	0.34	1.00	
PCB138/158	9.8	0.80	0.19	1.00	
PCB149	5.6	0.40	0.19	1.00	
PCB151	2.4	0.40	0.13	1.00	
PCB156	1.3	0.40	0.11	1.00	
PCB157	ND	0.40	0.10	1.00	
PCB167	ND	0.40	0.12	1.00	
PCB168	ND	0.40	0.097	1.00	
PCB169	ND	0.40	0.12	1.00	
PCB170	1.8	0.40	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1269
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 12 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	0.95	0.40	0.17	1.00	
PCB180	4.0	0.40	0.084	1.00	
PCB183	0.88	0.40	0.22	1.00	
PCB187	2.2	0.40	0.17	1.00	
PCB189	ND	0.40	0.12	1.00	
PCB194	0.82	0.40	0.22	1.00	
PCB195	ND	0.40	0.23	1.00	
PCB201	ND	0.40	0.19	1.00	
PCB206	ND	0.40	0.38	1.00	
PCB209	0.76	0.40	0.29	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	62	50-150			
p-Terphenyl-d14	108	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 13 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-03-0-5-20160816	16-08-1269-7-EE	08/16/16 15:40	Sediment	GC/MS HHH	08/23/16	08/26/16 01:15	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.75	0.27	1.00	
PCB018	ND	0.37	0.13	1.00	
PCB028	ND	0.37	0.063	1.00	
PCB037	ND	0.37	0.11	1.00	
PCB044	ND	0.37	0.16	1.00	
PCB049	0.37	0.37	0.21	1.00	J
PCB052	1.1	0.37	0.12	1.00	
PCB066	1.0	0.37	0.19	1.00	
PCB070	1.3	0.37	0.11	1.00	
PCB074	0.81	0.37	0.16	1.00	
PCB077	ND	0.37	0.14	1.00	
PCB081	ND	0.37	0.22	1.00	
PCB087	1.5	0.37	0.20	1.00	
PCB099	2.0	0.37	0.11	1.00	
PCB101	3.6	0.37	0.18	1.00	
PCB105	1.8	0.37	0.10	1.00	
PCB110	3.9	0.37	0.086	1.00	
PCB114	ND	0.37	0.15	1.00	
PCB118	4.7	0.37	0.16	1.00	
PCB119	ND	0.37	0.18	1.00	
PCB123	ND	0.37	0.19	1.00	
PCB126	ND	0.37	0.15	1.00	
PCB128	1.2	0.37	0.19	1.00	
PCB132/153	7.6	0.75	0.32	1.00	
PCB138/158	6.7	0.75	0.18	1.00	
PCB149	3.7	0.37	0.18	1.00	
PCB151	1.4	0.37	0.13	1.00	
PCB156	0.73	0.37	0.11	1.00	
PCB157	ND	0.37	0.097	1.00	
PCB167	ND	0.37	0.11	1.00	
PCB168	ND	0.37	0.091	1.00	
PCB169	ND	0.37	0.11	1.00	
PCB170	1.2	0.37	0.12	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1269
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 14 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.37	0.16	1.00	
PCB180	2.2	0.37	0.078	1.00	
PCB183	0.56	0.37	0.21	1.00	
PCB187	1.2	0.37	0.16	1.00	
PCB189	ND	0.37	0.11	1.00	
PCB194	ND	0.37	0.21	1.00	
PCB195	ND	0.37	0.22	1.00	
PCB201	ND	0.37	0.18	1.00	
PCB206	ND	0.37	0.36	1.00	
PCB209	ND	0.37	0.27	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	69	50-150			
p-Terphenyl-d14	96	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 15 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-SS-1006-0-5-20160816	16-08-1269-8-EE	08/16/16 14:32	Sediment	GC/MS HHH	08/23/16	08/26/16 01:39	160823L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.85	0.31	1.00	
PCB018	ND	0.42	0.15	1.00	
PCB028	1.1	0.42	0.071	1.00	
PCB037	ND	0.42	0.13	1.00	
PCB044	1.9	0.42	0.18	1.00	
PCB049	1.1	0.42	0.24	1.00	
PCB052	2.1	0.42	0.13	1.00	
PCB066	2.1	0.42	0.22	1.00	
PCB070	2.1	0.42	0.13	1.00	
PCB074	1.1	0.42	0.18	1.00	
PCB077	ND	0.42	0.16	1.00	
PCB081	ND	0.42	0.25	1.00	
PCB087	3.1	0.42	0.23	1.00	
PCB099	2.6	0.42	0.13	1.00	
PCB101	5.6	0.42	0.21	1.00	
PCB105	2.8	0.42	0.12	1.00	
PCB110	5.5	0.42	0.097	1.00	
PCB114	ND	0.42	0.17	1.00	
PCB118	6.1	0.42	0.18	1.00	
PCB119	ND	0.42	0.20	1.00	
PCB123	ND	0.42	0.22	1.00	
PCB126	ND	0.42	0.17	1.00	
PCB128	1.2	0.42	0.22	1.00	
PCB132/153	10	0.85	0.37	1.00	
PCB138/158	7.8	0.85	0.20	1.00	
PCB149	4.4	0.42	0.21	1.00	
PCB151	2.0	0.42	0.14	1.00	
PCB156	ND	0.42	0.12	1.00	
PCB157	ND	0.42	0.11	1.00	
PCB167	ND	0.42	0.13	1.00	
PCB168	ND	0.42	0.10	1.00	
PCB169	ND	0.42	0.13	1.00	
PCB170	1.8	0.42	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 16 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	1.0	0.42	0.18	1.00	
PCB180	4.0	0.42	0.089	1.00	
PCB183	0.99	0.42	0.23	1.00	
PCB187	2.0	0.42	0.18	1.00	
PCB189	ND	0.42	0.13	1.00	
PCB194	1.0	0.42	0.24	1.00	
PCB195	ND	0.42	0.25	1.00	
PCB201	ND	0.42	0.20	1.00	
PCB206	ND	0.42	0.41	1.00	
PCB209	1.2	0.42	0.31	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	52	50-150			
p-Terphenyl-d14	98	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 17 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-418-223	N/A	Solid	GC/MS HHH	08/23/16	08/25/16 11:42	160823L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.40	0.14	1.00	
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	ND	0.20	0.11	1.00	
PCB052	ND	0.20	0.063	1.00	
PCB066	ND	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	ND	0.20	0.11	1.00	
PCB099	ND	0.20	0.061	1.00	
PCB101	ND	0.20	0.098	1.00	
PCB105	ND	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	ND	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	ND	0.40	0.17	1.00	
PCB138/158	ND	0.40	0.094	1.00	
PCB149	ND	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	ND	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/17/16
 Work Order: 16-08-1269
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 18 of 18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB180	ND	0.20	0.042	1.00	
PCB183	ND	0.20	0.11	1.00	
PCB187	ND	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB195	ND	0.20	0.12	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
PCB209	ND	0.20	0.15	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	50-150			
p-Terphenyl-d14	84	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

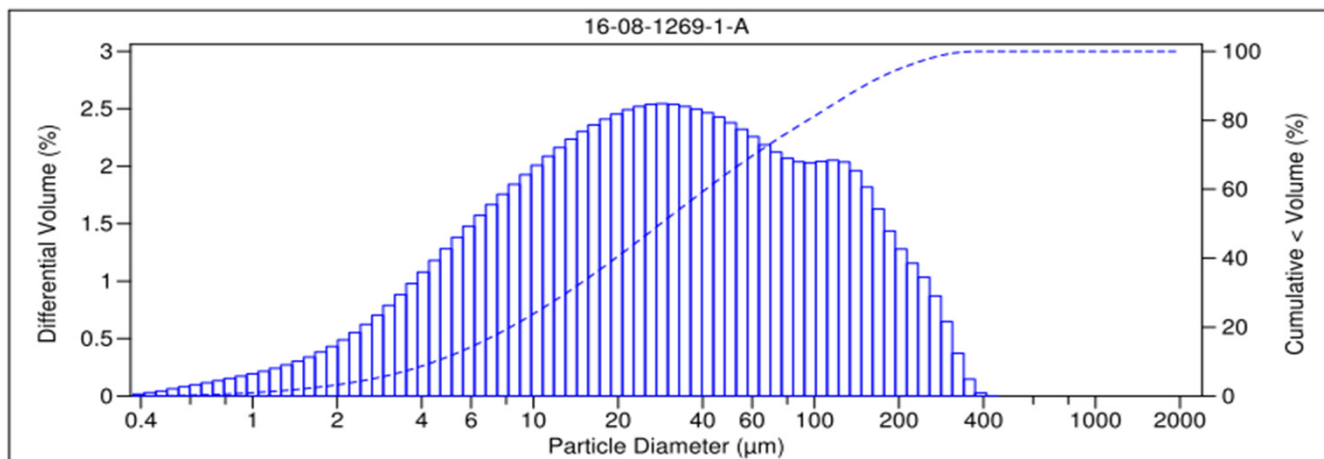
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 1 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
CM-SS-10-0-5-20160816		Silt	0.055

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	2.39	11.49	15.49	62.17	8.46	70.62



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

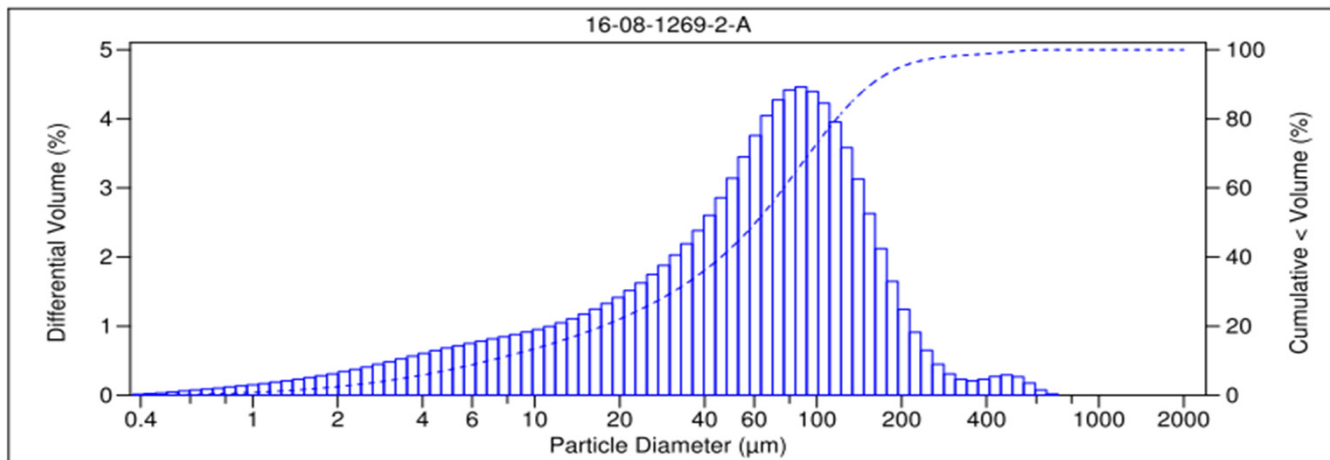
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 2 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
CB-SS-11-0-5-20160816		Very Fine Sand	0.077

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.51	2.23	14.80	31.31	45.41	5.73	51.14



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

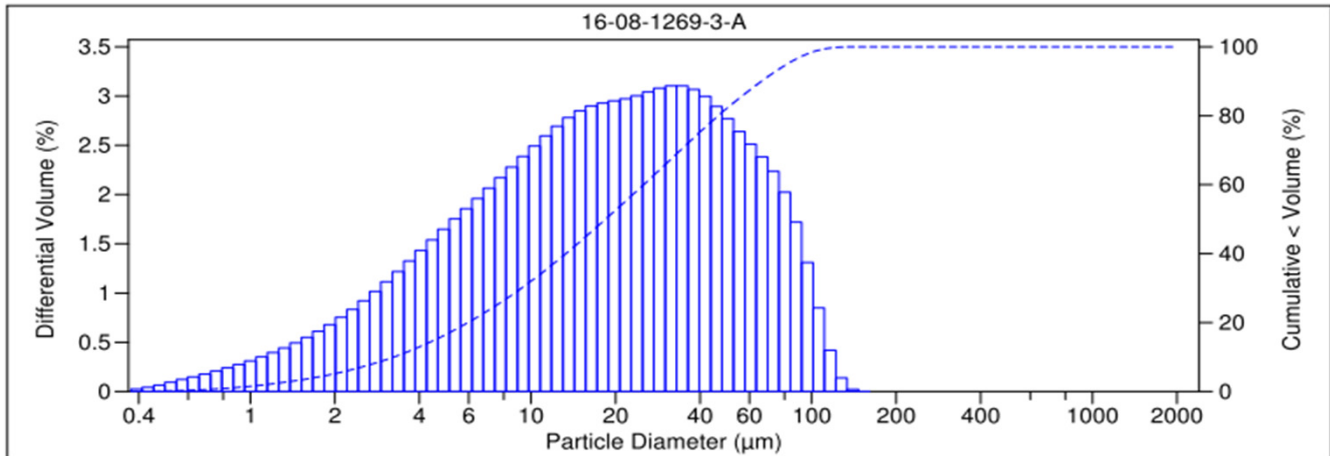
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 3 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
OA-SS-09-0-5-20160816		Silt	0.027

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.13	11.39	75.86	12.61	88.48



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

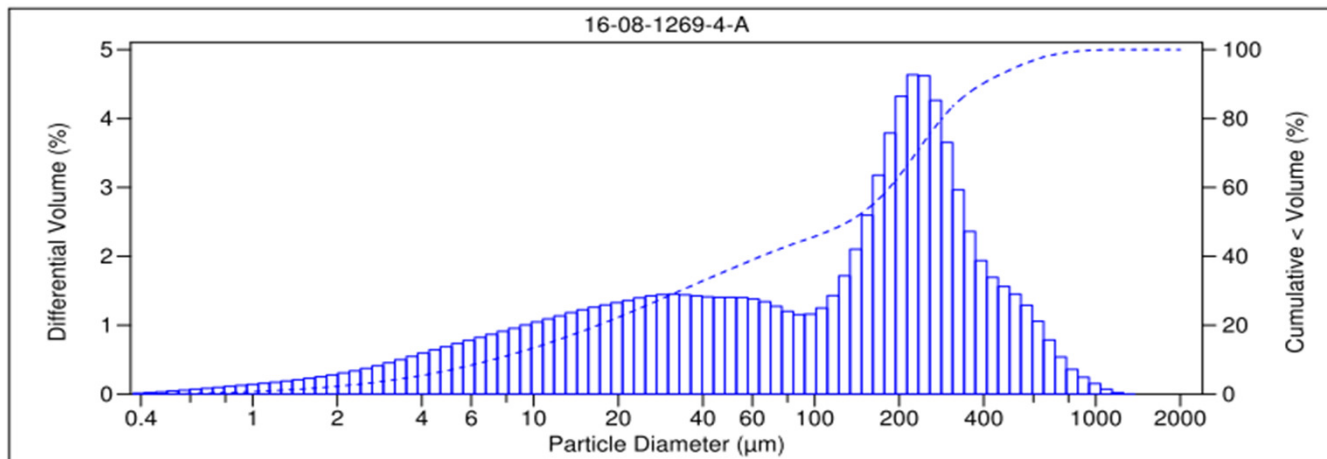
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 4 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
FH-SS-07-0-5-20160816		Fine Sand	0.170

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.16	5.64	20.02	25.12	9.51	34.23	5.32	39.55



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

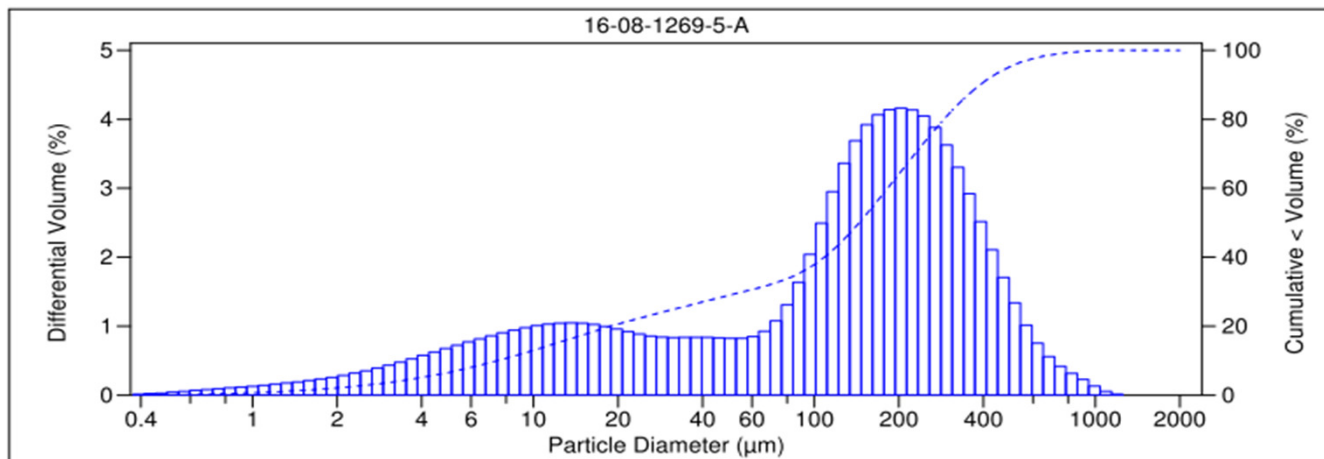
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 5 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
IA-SS-05-0-5-20160816		Fine Sand	0.176

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.13	4.54	21.49	29.38	13.49	25.98	4.99	30.98



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

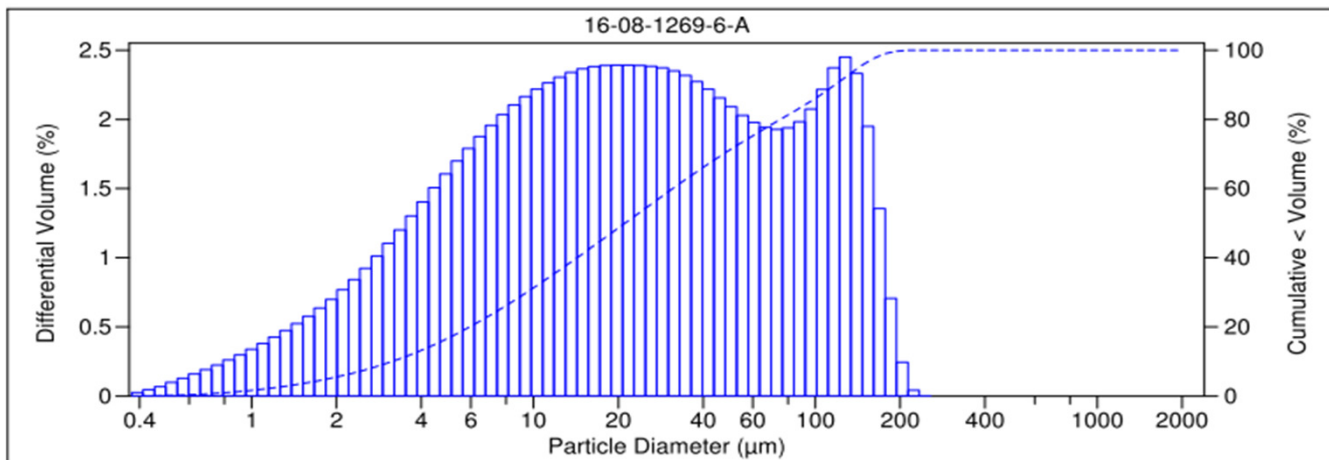
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 6 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
IA-SS-06-0-5-20160816		Silt	0.041

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	8.43	15.40	63.30	12.88	76.17



V 3.0

Return to Contents



Calscience

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

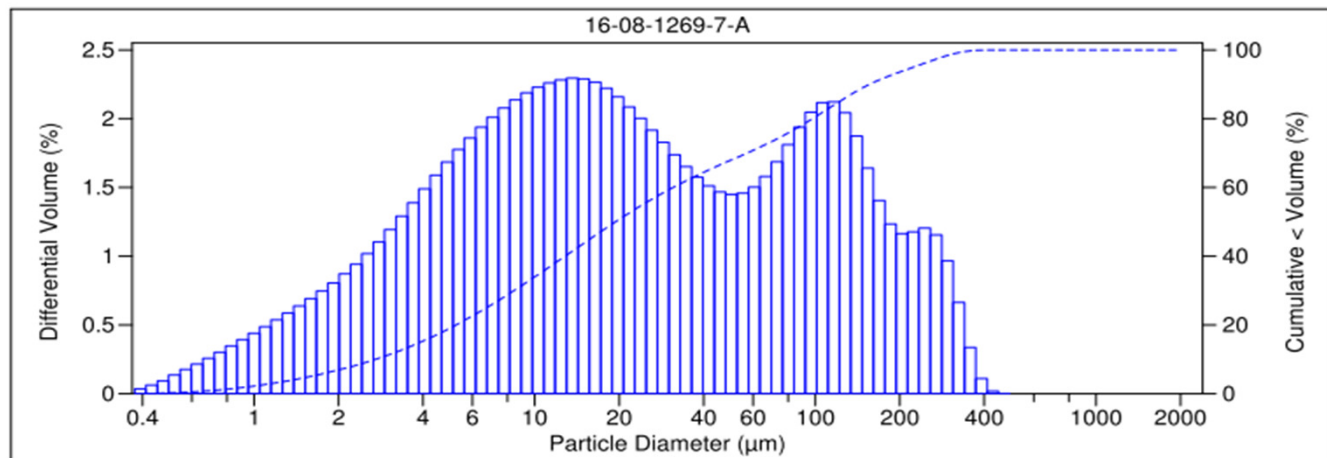
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 7 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
IA-SS-03-0-5-20160816		Silt	0.054

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	3.62	10.80	14.11	56.52	14.95	71.47



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

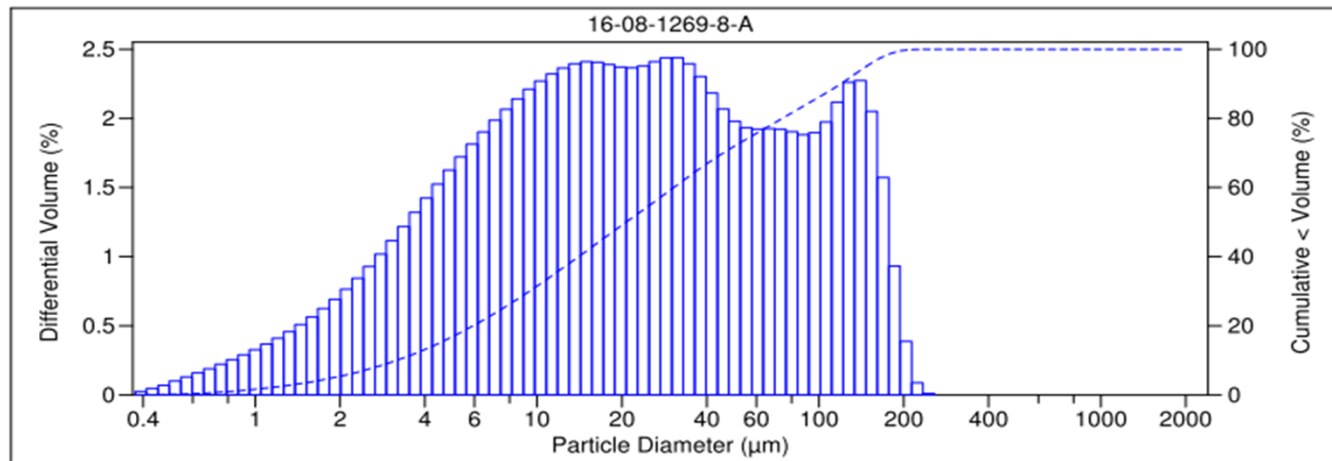
Date Sampled: 08/16/16
 Date Received: 08/17/16
 Work Order No: 16-08-1269
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 8 of 8

Sample ID	Depth ft	Description	Mean Grain Size mm
IA-SS-1006-0-5-20160816		Silt	0.041

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	8.97	14.50	63.70	12.83	76.53



V 3.0

Return to Contents



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OA-SS-09-0-5-20160816	Sample	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCS1
OA-SS-09-0-5-20160816	Matrix Spike	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCS1
OA-SS-09-0-5-20160816	Matrix Spike Duplicate	Sediment	TOC 1	08/19/16	08/19/16 18:23	G0819TOCS1

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	1.020	3.000	4.184	105	4.310	110	75-125	3	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA Sediment Sampling

Page 2 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
EB-20160816	Sample	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829S01				
EB-20160816	Matrix Spike	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829S01				
EB-20160816	Matrix Spike Duplicate	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829S01				
<u>Parameter</u>	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Mercury	2.057	20.00	22.45	102	23.27	106	71-125	4	0-24	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA Sediment Sampling

Page 3 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
16-08-1323-3	Sample	Sea Water	ICP/MS 05	08/19/16	08/22/16 18:38	160819S01				
16-08-1323-3	Matrix Spike	Sea Water	ICP/MS 05	08/19/16	08/22/16 17:43	160819S01				
16-08-1323-3	Matrix Spike Duplicate	Sea Water	ICP/MS 05	08/19/16	08/22/16 17:51	160819S01				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.04816	0.5000	0.6097	112	0.5950	109	50-150	2	0-20	
Chromium	0.5803	5.000	6.098	110	6.145	111	50-150	1	0-20	
Copper	2.654	0.5000	3.475	4X	3.415	4X	50-150	4X	0-20	Q
Lead	0.7014	0.5000	1.377	135	1.342	128	50-150	3	0-20	
Zinc	22.00	5.000	22.65	4X	22.38	4X	50-150	4X	0-20	Q

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 4 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1268-6	Sample	Sediment	GC 44	08/26/16	09/01/16 09:16	160826S13
16-08-1268-6	Matrix Spike	Sediment	GC 44	08/26/16	09/01/16 07:08	160826S13
16-08-1268-6	Matrix Spike Duplicate	Sediment	GC 44	08/26/16	09/01/16 07:23	160826S13

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	16.80	336	14.68	294	50-135	14	0-25	3
Alpha-BHC	ND	5.000	0	0	24.17	483	50-135	200	0-25	3,4
Beta-BHC	ND	5.000	0	0	0	0	50-135	0	0-25	3
Delta-BHC	ND	5.000	25.40	508	23.47	469	50-135	8	0-25	3
Gamma-BHC	ND	5.000	0	0	11.99	240	50-135	200	0-25	3,4
Dieldrin	ND	5.000	31.29	626	29.97	599	50-135	4	0-25	3
4,4'-DDD	ND	5.000	8.547	171	15.50	310	50-135	58	0-25	3,4
4,4'-DDE	ND	5.000	25.44	509	29.65	593	50-135	15	0-25	3
4,4'-DDT	ND	5.000	10.08	202	9.497	190	50-135	6	0-25	3
Endosulfan I	ND	5.000	9.666	193	13.56	271	50-135	34	0-25	3,4
Endosulfan II	ND	5.000	5.433	109	16.22	324	50-135	100	0-25	3,4
Endosulfan Sulfate	ND	5.000	7.985	160	8.915	178	50-135	11	0-25	3
Endrin	ND	5.000	7.240	145	7.967	159	50-135	10	0-25	3
Endrin Aldehyde	ND	5.000	9.364	187	13.50	270	50-135	36	0-25	3,4
Endrin Ketone	ND	5.000	6.649	133	6.487	130	50-135	2	0-25	
Heptachlor	ND	5.000	3.276	66	10.80	216	50-135	107	0-25	3,4
Heptachlor Epoxide	ND	5.000	53.45	1069	8.393	168	50-135	146	0-25	3,4
Methoxychlor	ND	5.000	8.343	167	7.617	152	50-135	9	0-25	3
Alpha Chlordane	ND	5.000	0	0	8.294	166	50-135	200	0-25	3,4
Gamma Chlordane	ND	5.000	74.08	1482	57.11	1142	50-135	26	0-25	3,4

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 5 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1268-5	Sample	Sediment	GC/MS BBB	08/24/16	08/29/16 20:42	160824S11
16-08-1268-5	Matrix Spike	Sediment	GC/MS BBB	08/24/16	08/29/16 21:14	160824S11
16-08-1268-5	Matrix Spike Duplicate	Sediment	GC/MS BBB	08/24/16	08/29/16 21:30	160824S11

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	6.816	136	5.285	106	25-200	25	0-25	
Alpha Chlordane	ND	5.000	2.565	51	2.262	45	25-200	13	0-25	
Alpha-BHC	ND	5.000	3.269	65	2.389	48	25-200	31	0-25	4
Beta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
4,4'-DDD	ND	5.000	2.820	56	2.042	41	25-200	32	0-25	4
4,4'-DDE	7.276	5.000	12.41	103	10.04	55	25-200	21	0-25	
4,4'-DDT	ND	5.000	0	0	0	0	25-200	0	0-25	3
Delta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
Dieldrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan I	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan II	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan Sulfate	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Aldehyde	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Ketone	ND	5.000	0	0	0	0	25-200	0	0-25	3
Gamma Chlordane	ND	5.000	2.727	55	2.425	48	25-200	12	0-25	
Gamma-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
Heptachlor	ND	5.000	0	0	0	0	25-200	0	0-25	3
Heptachlor Epoxide	ND	5.000	2.888	58	2.307	46	25-200	22	0-25	
Methoxychlor	ND	5.000	1.593	32	1.642	33	25-200	3	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 6 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
FH-SS-07-0-5-20160816	Sample	Sediment	GC/MS AAA	08/30/16	09/01/16 21:50	160830S19
FH-SS-07-0-5-20160816	Matrix Spike	Sediment	GC/MS AAA	08/30/16	09/01/16 20:11	160830S19
FH-SS-07-0-5-20160816	Matrix Spike Duplicate	Sediment	GC/MS AAA	08/30/16	09/01/16 20:30	160830S19

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acenaphthene	ND	100.0	88.76	89	86.79	87	40-160	2	0-20	
Acenaphthylene	13.81	100.0	97.65	84	97.76	84	40-160	0	0-20	
Anthracene	27.44	100.0	117.8	90	114.1	87	40-160	3	0-20	
Benzo (a) Anthracene	41.66	100.0	144.0	102	149.1	107	40-160	4	0-20	
Benzo (a) Pyrene	63.83	100.0	162.0	98	168.5	105	40-160	4	0-20	
Benzo (b) Fluoranthene	108.3	100.0	207.4	99	209.3	101	40-160	1	0-20	
Benzo (g,h,i) Perylene	34.21	100.0	125.8	92	115.8	82	40-160	8	0-20	
Benzo (k) Fluoranthene	47.91	100.0	141.1	93	154.7	107	40-160	9	0-20	
Chrysene	65.29	100.0	166.9	102	189.0	124	40-160	12	0-20	
Dibenz (a,h) Anthracene	14.07	100.0	111.3	97	96.82	83	40-160	14	0-20	
Fluoranthene	59.13	100.0	162.5	103	174.6	116	40-160	7	0-20	
Fluorene	ND	100.0	90.63	91	88.48	88	40-160	2	0-20	
Indeno (1,2,3-c,d) Pyrene	33.05	100.0	124.0	91	115.8	83	40-160	7	0-20	
2-Methylnaphthalene	ND	100.0	85.71	86	85.04	85	40-160	1	0-20	
1-Methylnaphthalene	ND	100.0	73.61	74	73.50	74	40-160	0	0-20	
Naphthalene	ND	100.0	71.32	71	67.74	68	40-160	5	0-20	
Phenanthrene	32.57	100.0	142.5	110	144.6	112	40-160	1	0-20	
Pyrene	61.80	100.0	183.8	122	211.8	150	40-160	14	0-46	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 7 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1268-5	Sample	Sediment	GC/MS HHH	08/23/16	08/25/16 22:10	160823S13
16-08-1268-5	Matrix Spike	Sediment	GC/MS HHH	08/23/16	08/25/16 14:52	160823S13
16-08-1268-5	Matrix Spike Duplicate	Sediment	GC/MS HHH	08/23/16	08/25/16 15:15	160823S13

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	41.48	83	39.74	79	50-150	4	0-25	
PCB028	ND	50.00	47.25	95	42.91	86	50-150	10	0-25	
PCB044	ND	50.00	43.70	87	38.23	76	50-150	13	0-25	
PCB052	ND	50.00	40.94	82	36.58	73	50-150	11	0-25	
PCB066	ND	50.00	52.80	106	44.66	89	50-150	17	0-25	
PCB077	ND	50.00	49.09	98	43.63	87	50-150	12	0-25	
PCB101	1.116	50.00	44.77	87	37.96	74	50-150	16	0-25	
PCB105	ND	50.00	52.57	105	46.83	94	50-150	12	0-25	
PCB118	1.550	50.00	54.20	105	49.98	97	50-150	8	0-25	
PCB126	ND	50.00	49.25	98	43.82	88	50-150	12	0-25	
PCB128	ND	50.00	51.12	102	43.98	88	50-150	15	0-25	
PCB170	0.7413	50.00	47.74	94	44.67	88	50-150	7	0-25	
PCB180	1.176	50.00	59.88	117	52.10	102	50-150	14	0-25	
PCB187	0.6676	50.00	50.67	100	45.61	90	50-150	11	0-25	
PCB195	ND	50.00	48.29	97	44.67	89	50-150	8	0-25	
PCB206	ND	50.00	50.23	100	50.49	101	50-150	1	0-25	
PCB209	0.5892	50.00	51.29	101	52.82	104	50-150	3	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: SM 2540 B (M)

Project: GWMA Sediment Sampling

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
16-08-1268-1	Sample	Sediment	N/A	08/23/16 00:00	08/23/16 21:00	G0823TSD1
16-08-1268-1	Sample Duplicate	Sediment	N/A	08/23/16 00:00	08/23/16 21:00	G0823TSD1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total	62.50	64.40	3	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: N/A
Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-06-013-1600	LCS	Solid	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1			
099-06-013-1600	LCSD	Solid	TOC 1	08/19/16	08/19/16 18:23	G0819TOCL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.6000	0.6227	104	0.6154	103	80-120	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 1631E Total
Method: EPA 1631E

Project: GWMA Sediment Sampling

Page 2 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-224-140	LCS	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829L01			
099-15-224-140	LCSD	Aqueous	Hg/AF 1	08/29/16	08/29/16 00:00	160829L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	20.00	20.17	101	20.64	103	71-125	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3005A Total
Method: EPA 1640

Project: GWMA Sediment Sampling

Page 3 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-13-067-627	LCS	Aqueous	ICP/MS 05	08/19/16	08/22/16 17:28	160819L01			
099-13-067-627	LCSD	Aqueous	ICP/MS 05	08/19/16	08/22/16 17:36	160819L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	0.5000	0.5060	101	0.5012	100	70-130	1	0-20	
Chromium	5.000	5.252	105	5.299	106	70-130	1	0-20	
Copper	0.5000	0.5039	101	0.5045	101	70-130	0	0-20	
Lead	0.5000	0.4857	97	0.4825	97	70-130	1	0-20	
Zinc	5.000	5.220	104	5.144	103	70-130	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 4 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-858-426	LCS	Solid	GC 44	08/26/16	09/01/16 05:43	160826L13				
099-12-858-426	LCSD	Solid	GC 44	08/26/16	09/01/16 05:57	160826L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	5.173	103	5.007	100	50-135	36-149	3	0-25	
Alpha-BHC	5.000	5.192	104	5.068	101	50-135	36-149	2	0-25	
Beta-BHC	5.000	5.512	110	5.315	106	50-135	36-149	4	0-25	
Delta-BHC	5.000	5.816	116	5.711	114	50-135	36-149	2	0-25	
Gamma-BHC	5.000	5.433	109	5.097	102	50-135	36-149	6	0-25	
Dieldrin	5.000	5.903	118	5.593	112	50-135	36-149	5	0-25	
4,4'-DDD	5.000	6.299	126	5.946	119	50-135	36-149	6	0-25	
4,4'-DDE	5.000	5.897	118	5.609	112	50-135	36-149	5	0-25	
4,4'-DDT	5.000	6.510	130	6.117	122	50-135	36-149	6	0-25	
Endosulfan I	5.000	5.692	114	5.372	107	50-135	36-149	6	0-25	
Endosulfan II	5.000	6.378	128	6.026	121	50-135	36-149	6	0-25	
Endosulfan Sulfate	5.000	6.318	126	5.779	116	50-135	36-149	9	0-25	
Endrin	5.000	5.936	119	5.716	114	50-135	36-149	4	0-25	
Endrin Aldehyde	5.000	5.656	113	5.228	105	50-135	36-149	8	0-25	
Endrin Ketone	5.000	6.634	133	6.167	123	50-135	36-149	7	0-25	
Heptachlor	5.000	5.549	111	5.276	106	50-135	36-149	5	0-25	
Heptachlor Epoxide	5.000	5.757	115	5.367	107	50-135	36-149	7	0-25	
Methoxychlor	5.000	6.708	134	6.288	126	50-135	36-149	6	0-25	
Alpha Chlordane	5.000	5.520	110	5.276	106	50-135	36-149	5	0-25	
Gamma Chlordane	5.000	5.515	110	5.314	106	50-135	36-149	4	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 5 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-154-67	LCS	Solid	GC/MS BBB	08/24/16	08/29/16 15:35	160824L11				
099-16-154-67	LCSD	Solid	GC/MS BBB	08/24/16	08/29/16 15:51	160824L11				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	4.590	92	4.528	91	25-200	0-229	1	0-25	
Alpha Chlordane	5.000	4.594	92	4.504	90	25-200	0-229	2	0-25	
Alpha-BHC	5.000	4.516	90	4.406	88	25-200	0-229	2	0-25	
Beta-BHC	5.000	4.409	88	4.701	94	25-200	0-229	6	0-25	
4,4'-DDD	5.000	5.268	105	5.113	102	25-200	0-229	3	0-25	
4,4'-DDE	5.000	4.916	98	4.703	94	25-200	0-229	4	0-25	
4,4'-DDT	5.000	5.427	109	5.479	110	25-200	0-229	1	0-25	
Delta-BHC	5.000	6.153	123	5.779	116	25-200	0-229	6	0-25	
Dieldrin	5.000	6.171	123	5.729	115	25-200	0-229	7	0-25	
Endosulfan I	5.000	4.717	94	4.293	86	25-200	0-229	9	0-25	
Endosulfan II	5.000	5.391	108	6.731	135	25-200	0-229	22	0-25	
Endosulfan Sulfate	5.000	6.154	123	6.024	120	25-200	0-229	2	0-25	
Endrin	5.000	9.056	181	9.252	185	25-200	0-229	2	0-25	
Endrin Aldehyde	5.000	5.040	101	4.497	90	25-200	0-229	11	0-25	
Endrin Ketone	5.000	7.138	143	6.608	132	25-200	0-229	8	0-25	
Gamma Chlordane	5.000	4.580	92	4.547	91	25-200	0-229	1	0-25	
Gamma-BHC	5.000	4.648	93	4.746	95	25-200	0-229	2	0-25	
Heptachlor	5.000	5.694	114	5.944	119	25-200	0-229	4	0-25	
Heptachlor Epoxide	5.000	4.930	99	4.767	95	25-200	0-229	3	0-25	
Methoxychlor	5.000	7.367	147	7.213	144	25-200	0-229	2	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 6 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-14-097-217	LCS	Solid	GC/MS AAA	08/30/16	09/01/16 15:56	160830L19				
099-14-097-217	LCSD	Solid	GC/MS AAA	08/30/16	09/01/16 16:15	160830L19				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acenaphthene	100.0	88.70	89	84.07	84	48-108	38-118	5	0-11	
Acenaphthylene	100.0	87.91	88	81.21	81	40-160	20-180	8	0-20	
Anthracene	100.0	87.48	87	81.62	82	40-160	20-180	7	0-20	
Benzo (a) Anthracene	100.0	92.03	92	89.51	90	40-160	20-180	3	0-20	
Benzo (a) Pyrene	100.0	90.27	90	89.30	89	40-160	20-180	1	0-20	
Benzo (b) Fluoranthene	100.0	97.36	97	97.14	97	40-160	20-180	0	0-20	
Benzo (g,h,i) Perylene	100.0	99.47	99	95.50	96	40-160	20-180	4	0-20	
Benzo (k) Fluoranthene	100.0	88.69	89	87.65	88	40-160	20-180	1	0-20	
Chrysene	100.0	90.93	91	88.54	89	40-160	20-180	3	0-20	
Dibenz (a,h) Anthracene	100.0	95.05	95	90.55	91	40-160	20-180	5	0-20	
Fluoranthene	100.0	83.09	83	82.14	82	40-160	20-180	1	0-20	
Fluorene	100.0	86.98	87	82.91	83	40-160	20-180	5	0-20	
Indeno (1,2,3-c,d) Pyrene	100.0	90.22	90	87.98	88	40-160	20-180	3	0-20	
2-Methylnaphthalene	100.0	91.96	92	87.13	87	40-160	20-180	5	0-20	
1-Methylnaphthalene	100.0	80.88	81	77.18	77	40-160	20-180	5	0-20	
Naphthalene	100.0	84.48	84	80.37	80	40-160	20-180	5	0-20	
Phenanthrene	100.0	95.65	96	92.27	92	40-160	20-180	4	0-20	
Pyrene	100.0	100.5	101	102.6	103	40-160	20-180	2	0-16	

Total number of LCS compounds: 18

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/17/16
Work Order: 16-08-1269
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 7 of 7

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-418-223	LCS	Solid	GC/MS HHH	08/23/16	08/25/16 12:06	160823L13				
099-16-418-223	LCSD	Solid	GC/MS HHH	08/23/16	08/25/16 12:29	160823L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	37.88	76	42.12	84	24-132	6-150	11	0-28	
PCB028	50.00	39.75	80	42.64	85	31-133	14-150	7	0-26	
PCB044	50.00	39.76	80	43.82	88	36-120	22-134	10	0-28	
PCB052	50.00	40.78	82	45.37	91	31-121	16-136	11	0-27	
PCB066	50.00	45.63	91	51.13	102	43-139	27-155	11	0-25	
PCB077	50.00	40.93	82	45.60	91	41-131	26-146	11	0-25	
PCB101	50.00	38.92	78	42.73	85	37-121	23-135	9	0-27	
PCB105	50.00	43.24	86	46.00	92	48-132	34-146	6	0-26	
PCB118	50.00	44.76	90	51.04	102	46-136	31-151	13	0-25	
PCB126	50.00	39.74	79	44.66	89	38-134	22-150	12	0-25	
PCB128	50.00	39.27	79	46.10	92	40-130	25-145	16	0-26	
PCB170	50.00	41.11	82	45.62	91	40-124	26-138	10	0-29	
PCB180	50.00	45.47	91	52.95	106	41-143	24-160	15	0-26	
PCB187	50.00	40.18	80	44.60	89	39-129	24-144	10	0-26	
PCB195	50.00	41.16	82	45.63	91	44-128	30-142	10	0-28	
PCB206	50.00	42.66	85	45.53	91	33-135	16-152	7	0-24	
PCB209	50.00	40.41	81	44.11	88	29-137	11-155	9	0-29	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 16-08-1269

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory number:

Date: 8/16/16

Project Name: 171205-DI.03

Project Number: GWMA Sediment Sampling

Project Manager: Andrew Martin

Phone Number: 949-347-2780

Shipment Method:

Test Parameters



16-08-1269

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Benthic community-analysis										Comments/Preservation		
					TOTAL Solids	Grain Size	TOC	TOTAL metals and mercury	PATH, OC pesticides	PCBS	Asphalt						
1	CM-SS-10-0-5-20160816	8/16/16 / 0814	SED	6	X	X	X	X	X	X	X						ice
2	CB-SS-11-0-5-20160816	/ 1002		6	X	X	X	X	X	X							
3	DA-SS-09-0-5-20160816	/ 1106		6	X	X	X	X	X	X							
4	FH-SS-07-0-5-20160816	/ 1210		6	X	X	X	X	X	X							
5	IA-SS-05-0-5-20160816	/ 1323		6	X	X	X	X	X	X							
6	EA-SS-06-0-5-20160816	/ 1430		6	X	X	X	X	X	X							
7	FA-SS-03-0-5-20160816	1540		6	X	X	X	X	X	X							
8	IA-SS-1000-0-5-20160816	1432	SED	6	X	X	X	X	X	X							
9	EB-20160816	8/16/16 / 1614	WAT	1				X									
10	FB-20160816	8/16/16 / 1615	WAT	1				X									
11																	
12																	
13																	
14																	
15																	

Notes:

Metrics of IBI, RMI, BRI, and RIVPACS will be calculated as specified in attachment to subagreement See SAP Table 4 for methodologies

Preserved in 10% formalin

Relinquished By: *Andrew Martin* Company: Anchor QEA
 Signature/Printed Name: Andrew Martin Date/Time: 8/17/2016 17:50

Received By: *Denny Iriguan* Company: ECU
 Signature/Printed Name: Denny Iriguan Date/Time: 8/17/16 17:50

Relinquished By: *Denny Iriguan* Company: ECU
 Signature/Printed Name: Denny Iriguan Date/Time: 8/17/16 19:00

Received By: *Dannyle ECU* Company: ECU
 Signature/Printed Name: Dannyle ECU Date/Time: 8/17/16 19:00

PARTIAL SAMPLE ID'S PRINTED ON TOP CAP. FULL SAMPLE ID ON LABEL

SAMPLE RECEIPT CHECKLIST

COOLER 3 OF 2

CLIENT: ANCHOR REA

DATE: 08 / 17 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) 8/16/17

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.5 °C (w/ CF): 3.5 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter Checked by: 204

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 204

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) 2

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 1017

SAMPLE RECEIPT CHECKLIST

COOLER ~~2~~ OF ~~2~~

CLIENT: ANCHOR REA

DATE: 08 / 17 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.7 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A

Checked by: 804

Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 1053

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) 2

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (____): _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 1017

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.

1. Eurofins Frontier Global Sciences - Bothell,WA CA ELAP 2954



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

22 September 2016

Carla Lee Hollowell
Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841
RE: Sediments - 2016

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Amy Goodall".

Amy Goodall
Project Manager


Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CM-SS-10-0-5-20160816	1608620-01	Soil/Sediment	16-Aug-16 08:14	19-Aug-16 09:30
CB-SS-11-0-5-20160816	1608620-02	Soil/Sediment	16-Aug-16 10:02	19-Aug-16 09:30
OA-SS-09-0-5-20160816	1608620-03	Soil/Sediment	16-Aug-16 11:06	19-Aug-16 09:30
FH-SS-07-0-5-20160816	1608620-04	Soil/Sediment	16-Aug-16 12:10	19-Aug-16 09:30
IA-SS-05-0-5-20160816	1608620-05	Soil/Sediment	16-Aug-16 13:23	19-Aug-16 09:30
IA-SS-06-0-5-20160816	1608620-06	Soil/Sediment	16-Aug-16 14:30	19-Aug-16 09:30
IA-SS-03-0-5-20160816	1608620-07	Soil/Sediment	16-Aug-16 15:40	19-Aug-16 09:30
IA-SS-1006-0-5-20160816	1608620-08	Soil/Sediment	16-Aug-16 14:32	19-Aug-16 09:30

Return to Contents

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager

Page 2 of 20



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 8/19/2016 9:30:00 AM . The samples were received intact, on-ice within a sealed cooler at 0.9 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Total solids analysis was performed by Eurofins Calscience.

Total mercury preparation and analysis was performed by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631B.

Trace metals preparation and analysis was performed by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EFGS-054, a modified EPA 1638.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries.

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.


Return to Contents

Eurofins Frontier Global Sciences, Inc.



The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Sample Receipt Checklist

EFGS Work Order: 1608620

Client: Eurofins Calscience

Date & Time Received: 8/19/16 9:30

Date Labeled: 8/19/16 Labeled By: Baw

Project: _____

Received By: LM

Label Verified By: JCL

of Coolers Received: 1 Samples Arrived By: Shipping Service _____ Courier _____ Hand _____ Other (Specify: _____)

Coolant: None/Ambient Loose Ice Gel Ice Dry Ice Coolant Required: Y/N Temp Blank Used: Y/N for Cooler(s): _____

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	<u>Y</u>	
Custody Seals are present and intact:	<u>Y</u>	
Custody seals signed:	<u>Y</u>	

TID: <u>5225</u>	CF: <u>0.1</u> °C	Date/time: <u>8/19/16 9:30</u>	By: <u>LM</u>
Cooler 1: <u>1.0</u> °C	w/ CF: <u>0.9</u> °C	Cooler 4: _____ °C	w/ CF: _____ °C
Cooler 2: _____ °C	w/ CF: _____ °C	Cooler 5: _____ °C	w/ CF: _____ °C
Cooler 3: _____ °C	w/ CF: _____ °C	Cooler 6: _____ °C	w/ CF: _____ °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	<u>Y</u>	
Date and time of collection:	<u>Y</u>	
Sampled by:	<u>N</u>	
Preservation type:	<u>MA</u>	
Requested analyses:	<u>Y</u>	
Required signatures:	<u>Y</u>	
Internal COC required:	<u>N</u>	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	<u>Y</u>	
Sample labels are present and legible:	<u>Y</u>	
Sample ID on container/bag matches COC:	<u>Y</u>	
Correct sample containers used:	<u>Y</u>	
Samples received within holding times:	<u>Y</u>	
Sample volume sufficient for requested analyses:	<u>Y</u>	
Correct preservative used for requested analyses:	<u>NA</u>	

Anomalies/Non-conformances (attach additional pages if needed):



Calscience

EFGS 1608620

CHAIN OF CUSTODY RECORD

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
 For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO # / LAB USE ONLY

DATE: 08/18/16
 PAGE: 1 OF 1

LABORATORY CLIENT: EUROFINS CALSCIENCE

ADDRESS: 7440 LINCOLN WAY

CITY: GARDEN GROVE STATE: CA ZIP:

TEL: E-MAIL: CARLAHOLLOWELL@EUROFINSUS.COM

CLIENT PROJECT NAME / NUMBER: 16-08-1269 / GWMA Sediment Sampling P.O. NO.:

PROJECT CONTACT: CARLA LEE HOLLOWELL SAMPLER(S): (PRINT)

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
 SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD

COELT EDF GLOBAL ID: LOG CODE:

REQUESTED ANALYSES

SPECIAL INSTRUCTIONS:
 10-day TAT
 Please provide CEDEN EDD
 Report in ng/kg, dry weight
 (CH) mg/kg

J Flagg

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	Cd, Cr, Cu, Pb, Zn via 1638(M)	Mercury by EPA 1631E														
		DATE	TIME																					
	CM-SS-10-0-5-20160816	8/16/2016	814	SED	1	X			X	X														
	CB-SS-11-0-5-20160816	8/16/2016	1002	SED	1	X			X	X														
	OA-SS-09-0-5-20160816	8/16/2016	1106	SED	1	X			X	X														
	FH-SS-07-0-5-20160816	8/16/2016	1210	SED	1	X			X	X														
	IA-SS-05-0-5-20160816	8/16/2016	1323	SED	1	X			X	X														
	IA-SS-06-0-5-20160816	8/16/2016	1430	SED	1	X			X	X														
	IA-SS-03-0-5-20160816	8/16/2016	1540	SED	1	X			X	X														
	IA-SS-1006-0-5-20160816	8/16/2016	1432	SED	1	X			X	X														
(CH)	IA-SS-04-0-5-20160817	8/16/2016	1614	SED	1	X			X	X														
(CH)	IA-SS-04-0-5-20160817	8/16/2016	1615	SED	1	X			X	X														

Relinquished by: (Signature) *[Signature]*

Relinquished by: (Signature) *[Signature]*

Relinquished by: (Signature) *[Signature]*

Received by: (Signature/Affiliation) *Fedex 777031156200* Date: 8/18/16 Time: 1650

Received by: (Signature/Affiliation) *[Signature] EFGS* Date: 8/19/16 Time: 9:30

Received by: (Signature/Affiliation) *Lars Mitter* Date: Time:



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

CM-SS-10-0-5-20160816

1608620-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.498	0.00120	0.0109	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	--------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.929	0.029	0.122	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	56.9	0.15	0.49	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	184	0.125	0.488	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	31.5	0.011	0.195	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	218	0.15	1.22	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	40.3	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

CB-SS-11-0-5-20160816

1608620-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.427	0.00094	0.00855	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	--------------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.694	0.018	0.074	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	29.7	0.09	0.29	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	63.6	0.075	0.294	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	22.5	0.007	0.118	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	146	0.09	0.74	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	52.8	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	----------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
 Bothell, WA 98011
 425.686.1996 Phone
 425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1269/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 22-Sep-16 13:47
--	--	------------------------------

OA-SS-09-0-5-20160816
1608620-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.226	0.00107	0.00971	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.592	0.020	0.084	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	50.4	0.10	0.34	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	64.8	0.086	0.337	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	23.3	0.008	0.135	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	116	0.10	0.84	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	45.0	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

FH-SS-07-0-5-20160816

1608620-04

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.294	0.00072	0.00656	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.141	0.011	0.047	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	23.5	0.06	0.19	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	66.1	0.048	0.188	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	19.0	0.004	0.075	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	83.2	0.06	0.47	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	65.9	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

IA-SS-05-0-5-20160816

1608620-05

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.0632	0.00076	0.00692	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	--------	---------	---------	--------------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.097	0.007	0.030	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	21.6	0.04	0.12	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	25.6	0.030	0.118	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	7.51	0.003	0.047	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	57.2	0.04	0.30	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	68.4	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	----------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

IA-SS-06-0-5-20160816

1608620-06

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.301	0.00102	0.00928	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.293	0.023	0.098	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	31.9	0.12	0.39	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	65.0	0.100	0.390	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	24.1	0.009	0.156	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	106	0.12	0.98	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	49.8	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

IA-SS-03-0-5-20160816

1608620-07

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.229	0.00090	0.00815	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.235	0.019	0.081	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	37.6	0.10	0.32	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	60.9	0.082	0.322	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	23.6	0.007	0.129	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	98.9	0.10	0.81	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	53.6	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1269/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 22-Sep-16 13:47
--	--	------------------------------

IA-SS-1006-0-5-20160816
1608620-08

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	0.316	0.00106	0.00963	mg/kg dry	100	F609436	19-Sep-16	6I21004	20-Sep-16	EPA 1631B	
---------	-------	---------	---------	-----------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.392	0.024	0.101	mg/kg dry	10	F608534	24-Aug-16	6I06014	03-Sep-16	EPA 1638 Mod.	
Chromium	44.2	0.12	0.40	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Copper	84.4	0.103	0.404	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Lead	29.5	0.009	0.162	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	
Zinc	135	0.12	1.01	mg/kg dry	10	F608408	24-Aug-16	6H31019	27-Aug-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	47.1	-	0.1	% by Weight	1	F609432	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch F608408 - EPA 3051A Microwave Digestion

Blank (F608408-BLK1)

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Chromium	ND	0.06	0.20	mg/kg wet							U
Zinc	0.37	0.06	0.50	mg/kg wet							J
Copper	ND	0.051	0.200	mg/kg wet							U
Lead	ND	0.005	0.080	mg/kg wet							U

Blank (F608408-BLK2)

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Chromium	ND	0.06	0.20	mg/kg wet							U
Zinc	0.18	0.06	0.50	mg/kg wet							J
Copper	ND	0.051	0.200	mg/kg wet							U
Lead	ND	0.005	0.080	mg/kg wet							U

LCS (F608408-BS1)

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Zinc	9.57	0.06	0.50	mg/kg wet	10.004		95.7	46-146			
Copper	10.70	0.051	0.200	mg/kg wet	10.004		107	51-145			
Chromium	10.45	0.06	0.20	mg/kg wet	10.002		104	85-115			
Lead	9.556	0.005	0.080	mg/kg wet	10.002		95.5	72-143			

LCS Dup (F608408-BSD1)

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Copper	10.74	0.051	0.200	mg/kg wet	10.004		107	51-145	0.377	20	
Chromium	10.20	0.06	0.20	mg/kg wet	10.002		102	85-115	2.38	20	
Zinc	9.53	0.06	0.50	mg/kg wet	10.004		95.3	46-146	0.414	20	
Lead	9.888	0.005	0.080	mg/kg wet	10.002		98.9	72-143	3.41	20	

Matrix Spike (F608408-MS1)

Source: 1608619-01

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Zinc	76.70	0.05	0.41	mg/kg dry	8.1458	82.24	-68.0	46-146			QM-14
Chromium	30.48	0.05	0.16	mg/kg dry	8.1441	30.07	5.04	85-115			QM-14
Copper	46.78	0.042	0.163	mg/kg dry	8.1458	44.96	22.3	51-145			QM-14
Lead	22.12	0.004	0.065	mg/kg dry	8.1441	16.02	74.8	72-143			

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F608408 - EPA 3051A Microwave Digestion											
Matrix Spike (F608408-MS2)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	68.34	0.11	0.37	mg/kg dry	18.439	56.95	61.8	85-115			QM-14
Copper	177.8	0.094	0.369	mg/kg dry	18.443	184.1	-34.1	51-145			QM-14
Zinc	205.7	0.11	0.92	mg/kg dry	18.443	217.5	-63.8	46-146			QM-14
Lead	44.52	0.008	0.147	mg/kg dry	18.439	31.53	70.4	72-143			QM-14
Matrix Spike (F608408-MS3)		Source: 1608619-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	63.18	0.05	0.15	mg/kg dry	30.728	30.07	108	85-115			AS
Zinc	156.3	0.05	0.38	mg/kg dry	76.820	82.24	96.4	46-146			AS
Copper	85.17	0.039	0.154	mg/kg dry	38.410	44.96	105	51-145			AS
Lead	23.18	0.004	0.061	mg/kg dry	7.6820	16.02	93.2	72-143			AS
Matrix Spike (F608408-MS4)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	165.8	0.15	0.49	mg/kg dry	97.673	56.95	111	85-115			AS
Zinc	460.6	0.15	1.22	mg/kg dry	244.18	217.5	99.6	46-146			AS
Copper	319.0	0.125	0.488	mg/kg dry	122.09	184.1	111	51-145			AS
Lead	58.49	0.011	0.195	mg/kg dry	24.418	31.53	110	72-143			AS
Matrix Spike Dup (F608408-MSD1)		Source: 1608619-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Copper	47.02	0.045	0.176	mg/kg dry	8.8063	44.96	23.4	51-145	4.59	20	QM-14
Chromium	31.57	0.05	0.18	mg/kg dry	8.8046	30.07	17.1	85-115	109	20	QM-14, QR-08
Zinc	76.89	0.05	0.44	mg/kg dry	8.8063	82.24	-60.7	46-146	-11.2	20	QM-14
Lead	23.06	0.004	0.070	mg/kg dry	8.8046	16.02	79.9	72-143	6.64	20	
Matrix Spike Dup (F608408-MSD2)		Source: 1608620-01			Prepared: 24-Aug-16 Analyzed: 27-Aug-16						
Chromium	67.78	0.15	0.48	mg/kg dry	23.989	56.95	45.2	85-115	31.1	20	QM-14, QR-08
Copper	208.4	0.122	0.480	mg/kg dry	23.994	184.1	101	51-145	403	20	QM-14, QR-08
Zinc	234.6	0.14	1.20	mg/kg dry	23.994	217.5	71.1	46-146	3730	20	QM-14, QR-08
Lead	55.07	0.011	0.192	mg/kg dry	23.989	31.53	98.1	72-143	32.8	20	QM-14, QR-08

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch F608408 - EPA 3051A Microwave Digestion

Matrix Spike Dup (F608408-MSD3)

Source: 1608619-01

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Chromium	63.11	0.05	0.15	mg/kg dry	30.728	30.07	108	85-115	0.192	20	AS
Copper	84.62	0.039	0.154	mg/kg dry	38.410	44.96	103	51-145	1.39	20	AS
Zinc	156.9	0.05	0.38	mg/kg dry	76.820	82.24	97.2	46-146	0.815	20	AS
Lead	24.27	0.004	0.061	mg/kg dry	7.6820	16.02	107	72-143	14.1	20	AS

Matrix Spike Dup (F608408-MSD4)

Source: 1608620-01

Prepared: 24-Aug-16 Analyzed: 27-Aug-16

Copper	315.5	0.125	0.488	mg/kg dry	122.09	184.1	108	51-145	2.61	20	AS
Chromium	161.5	0.15	0.49	mg/kg dry	97.673	56.95	107	85-115	4.06	20	AS
Zinc	452.7	0.15	1.22	mg/kg dry	244.18	217.5	96.3	46-146	3.30	20	AS
Lead	58.66	0.011	0.195	mg/kg dry	24.418	31.53	111	72-143	0.625	20	AS

Batch F608534 - EPA 3051A Microwave Digestion

Blank (F608534-BLK1)

Prepared: 24-Aug-16 Analyzed: 03-Sep-16

Cadmium	ND	0.012	0.050	mg/kg wet							U
---------	----	-------	-------	-----------	--	--	--	--	--	--	---

Blank (F608534-BLK2)

Prepared: 24-Aug-16 Analyzed: 03-Sep-16

Cadmium	ND	0.012	0.050	mg/kg wet							U
---------	----	-------	-------	-----------	--	--	--	--	--	--	---

LCS (F608534-BS1)

Prepared: 24-Aug-16 Analyzed: 03-Sep-16

Cadmium	7.331	0.012	0.050	mg/kg wet	8.0060		91.6	84-113			
---------	-------	-------	-------	-----------	--------	--	------	--------	--	--	--

LCS Dup (F608534-BSD1)

Prepared: 24-Aug-16 Analyzed: 03-Sep-16

Cadmium	7.299	0.012	0.050	mg/kg wet	8.0060		91.2	84-113	0.446	20	
---------	-------	-------	-------	-----------	--------	--	------	--------	-------	----	--

Matrix Spike (F608534-MS1)

Source: 1608619-01RE1

Prepared: 24-Aug-16 Analyzed: 03-Sep-16

Cadmium	6.085	0.010	0.041	mg/kg dry	6.5189	0.152	91.0	84-113			
---------	-------	-------	-------	-----------	--------	-------	------	--------	--	--	--

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F608534 - EPA 3051A Microwave Digestion											
Matrix Spike (F608534-MS2) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	13.48	0.022	0.092	mg/kg dry	14.759	0.929	85.0	84-113			
Matrix Spike (F608534-MS3) Source: 1608619-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	3.178	0.009	0.038	mg/kg dry	3.0728	0.152	98.5	84-113			AS
Matrix Spike (F608534-MS4) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	10.79	0.029	0.122	mg/kg dry	9.7673	0.929	101	84-113			AS
Matrix Spike Dup (F608534-MSD1) Source: 1608619-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	6.459	0.011	0.044	mg/kg dry	7.0475	0.152	89.5	84-113	1.68	20	
Matrix Spike Dup (F608534-MSD2) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	18.08	0.029	0.120	mg/kg dry	19.202	0.929	89.3	84-113	4.92	20	
Matrix Spike Dup (F608534-MSD3) Source: 1608619-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	3.201	0.009	0.038	mg/kg dry	3.0728	0.152	99.2	84-113	0.754	20	AS
Matrix Spike Dup (F608534-MSD4) Source: 1608620-01RE1 Prepared: 24-Aug-16 Analyzed: 03-Sep-16											
Cadmium	10.72	0.029	0.122	mg/kg dry	9.7673	0.929	100	84-113	0.735	20	AS
Batch F609436 - EFGS-066 Cold Aqua Regia Digestion for Hg											
Blank (F609436-BLK1) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00045	0.00011	0.00100	mg/kg wet							J
Blank (F609436-BLK2) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00025	0.00011	0.00100	mg/kg wet							J

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1269/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
22-Sep-16 13:47

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609436 - EFGS-066 Cold Aqua Regia Digestion for Hg											
Blank (F609436-BLK3) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00021	0.00011	0.00100	mg/kg wet							J
LCS (F609436-BS1) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00807	0.00011	0.00100	mg/kg wet	0.0080160		101	75-125			
LCS Dup (F609436-BSD1) Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.00838	0.00011	0.00100	mg/kg wet	0.0080160		105	75-125	3.75	24	
Duplicate (F609436-DUP1) Source: 1608619-06 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.2073	0.00081	0.00740	mg/kg dry		0.2126			2.50	24	
Matrix Spike (F609436-MS1) Source: 1608619-06 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.8265	0.00383	0.0349	mg/kg dry	0.55855	0.2126	110	71-125			
Matrix Spike (F609436-MS2) Source: 1608621-01 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.3848	0.00243	0.0221	mg/kg dry	0.35344	0.00335	108	71-125			
Matrix Spike Dup (F609436-MSD1) Source: 1608619-06 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.8418	0.00407	0.0371	mg/kg dry	0.59289	0.2126	106	71-125	3.50	24	
Matrix Spike Dup (F609436-MSD2) Source: 1608621-01 Prepared: 19-Sep-16 Analyzed: 20-Sep-16											
Mercury	0.3650	0.00241	0.0219	mg/kg dry	0.35096	0.00335	103	71-125	4.62	24	

Eurofins Frontier Global Sciences, Inc.

Amy Goodall

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016

Project Number: 16-08-1269/GWMA Sediment Sampling

Project Manager: Carla Lee Hollowell

Reported:

22-Sep-16 13:47

Notes and Definitions

- U Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
- QR-08 The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
- QM-14 The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 2 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- J The result is an estimated concentration.
- AS This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager

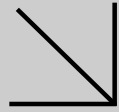
Page 20 of 20



Environmental
Calscience

Supplemental Report 1

The original report has been revised/corrected.



WORK ORDER NUMBER: 16-08-1364

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA Sediment Sampling

Attention: Andrew Martin
 27201 Puerta Real
 Suite 350
 Mission Viejo, CA 92691-8306

Carla Hollowell FOL

Approved for release on 12/16/2016 by:
 Carla Hollowell
 Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA Sediment Sampling
 Work Order Number: 16-08-1364

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 9060A Total Organic Carbon (Solid).	5
	3.2 SM 2540 B (M) Total Solids (Solid).	7
	3.3 ASTM D4464 (M) Particle Size Laser (Solid).	9
	3.4 EPA 8081A Organochlorine Pesticides (Solid).	12
	3.5 EPA 8270C SIM OC Pesticides (Solid).	15
	3.6 EPA 8270C SIM PAHs (Solid).	23
	3.7 EPA 8270C SIM PCB Congeners (Solid).	31
4	Particle Size Summary - 16-08-1364.	47
5	Quality Control Sample Data.	54
	5.1 MS/MSD.	54
	5.2 Sample Duplicate.	59
	5.3 LCS/LCSD.	60
6	Glossary of Terms and Qualifiers.	65
7	Chain-of-Custody/Sample Receipt Form.	66
8	Subcontract Narrative.	70
9	Subcontract Report (EFGS) - 16-08-1364.	71

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/18/16. They were assigned to Work Order 16-08-1364.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 16-08-1364
27201 Puerta Real, Suite 350	Project Name: GWMA Sediment Sampling
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 08/18/16 18:25
	Number of Containers: 54

Attn: Andrew Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
OB-SS-17-0-5-20160818	16-08-1364-1	08/18/16 09:08	6	Sediment
SP-SS-20-0-5-20160818	16-08-1364-2	08/18/16 09:58	8	Sediment
SP-SS-19-0-5-20160818	16-08-1364-3	08/18/16 11:20	8	Sediment
SP-SS-18-0-5-20160818	16-08-1364-4	08/18/16 12:22	8	Sediment
LE-SS-21-0-5-20160818	16-08-1364-5	08/18/16 14:00	8	Sediment
LE-SS-22-0-5-20160818	16-08-1364-6	08/18/16 14:55	8	Sediment
IB-SS-15-0-5-20160818	16-08-1364-7	08/18/16 15:35	8	Sediment

Return to Contents



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: EPA 9060A
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-EE	08/18/16 09:08	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.4	0.10	0.036	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-EE	08/18/16 09:58	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.3	0.10	0.036	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-EE	08/18/16 11:20	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	0.073	0.025	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-EE	08/18/16 12:22	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	1.6	0.11	0.037	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-21-0-5-20160818	16-08-1364-5-EE	08/18/16 14:00	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	6.1	0.12	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: EPA 9060A
Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-22-0-5-20160818	16-08-1364-6-EE	08/18/16 14:55	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	6.6	0.15	0.052	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-EE	08/18/16 15:35	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.35	0.080	0.028	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-06-013-1602	N/A	Solid	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	0.050	0.017	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-DD	08/18/16 09:08	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	47.8	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-DD	08/18/16 09:58	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	48.7	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-DD	08/18/16 11:20	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	68.2	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-DD	08/18/16 12:22	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	46.5	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-21-0-5-20160818	16-08-1364-5-DD	08/18/16 14:00	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	41.0	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-22-0-5-20160818	16-08-1364-6-DD	08/18/16 14:55	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	33.6	0.100	0.100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-DD	08/18/16 15:35	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	62.3	0.100	0.100	1.00	

Method Blank	099-05-019-3383	N/A	Solid	N/A	08/29/16	08/29/16 21:00	G0829TSB1
--------------	-----------------	-----	-------	-----	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	ND	0.100	0.100	1.00	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-F	08/18/16 09:08	Sediment	LPSA 1	N/A	08/19/16 12:10	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	11.42	
Silt (0.00391 to 0.0625mm)	75.59	
Total Silt and Clay (0 to 0.0625mm)	87.02	
Very Fine Sand (0.0625 to 0.125mm)	12.90	
Fine Sand (0.125 to 0.25mm)	0.080	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-H	08/18/16 09:58	Sediment	LPSA 1	N/A	08/19/16 12:18	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	12.36	
Silt (0.00391 to 0.0625mm)	74.96	
Total Silt and Clay (0 to 0.0625mm)	87.32	
Very Fine Sand (0.0625 to 0.125mm)	12.49	
Fine Sand (0.125 to 0.25mm)	0.19	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-H	08/18/16 11:20	Sediment	LPSA 1	N/A	08/19/16 12:24	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	0.93	
Silt (0.00391 to 0.0625mm)	11.40	
Total Silt and Clay (0 to 0.0625mm)	12.34	
Very Fine Sand (0.0625 to 0.125mm)	58.52	
Fine Sand (0.125 to 0.25mm)	22.61	
Medium Sand (0.25 to 0.5mm)	3.64	
Coarse Sand (0.5 to 1mm)	0.85	
Very Coarse Sand (1 to 2mm)	2.05	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: GWMA Sediment Sampling

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-H	08/18/16 12:22	Sediment	LPSA 1	N/A	08/19/16 12:30	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	14.13	
Silt (0.00391 to 0.0625mm)	76.92	
Total Silt and Clay (0 to 0.0625mm)	91.05	
Very Fine Sand (0.0625 to 0.125mm)	8.58	
Fine Sand (0.125 to 0.25mm)	0.37	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

LE-SS-21-0-5-20160818	16-08-1364-5-H	08/18/16 14:00	Sediment	LPSA 1	N/A	08/19/16 12:36	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	5.87	
Silt (0.00391 to 0.0625mm)	51.41	
Total Silt and Clay (0 to 0.0625mm)	57.28	
Very Fine Sand (0.0625 to 0.125mm)	21.30	
Fine Sand (0.125 to 0.25mm)	17.20	
Medium Sand (0.25 to 0.5mm)	3.87	
Coarse Sand (0.5 to 1mm)	0.34	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

LE-SS-22-0-5-20160818	16-08-1364-6-H	08/18/16 14:55	Sediment	LPSA 1	N/A	08/19/16 12:41	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	7.01	
Silt (0.00391 to 0.0625mm)	67.91	
Total Silt and Clay (0 to 0.0625mm)	74.92	
Very Fine Sand (0.0625 to 0.125mm)	12.20	
Fine Sand (0.125 to 0.25mm)	12.20	
Medium Sand (0.25 to 0.5mm)	0.67	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: N/A
 Method: ASTM D4464 (M)
 Units: %

Project: GWMA Sediment Sampling

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-H	08/18/16 15:35	Sediment	LPSA 1	N/A	08/19/16 15:07	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	10.61	
Silt (0.00391 to 0.0625mm)	56.31	
Total Silt and Clay (0 to 0.0625mm)	66.92	
Very Fine Sand (0.0625 to 0.125mm)	16.10	
Fine Sand (0.125 to 0.25mm)	15.50	
Medium Sand (0.25 to 0.5mm)	1.47	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-DD	08/18/16 09:08	Sediment	GC 44	08/27/16	09/01/16 13:29	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	42	19	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	177	25-145	2,7		
Decachlorobiphenyl	142	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-DD	08/18/16 09:58	Sediment	GC 44	08/27/16	09/01/16 13:43	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	41	18	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	120	25-145			
Decachlorobiphenyl	142	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-DD	08/18/16 11:20	Sediment	GC 44	08/27/16	09/01/16 13:57	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	29	13	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
2,4,5,6-Tetrachloro-m-Xylene	213	25-145	2,7		
Decachlorobiphenyl	114	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-DD	08/18/16 12:22	Sediment	GC 44	08/27/16	09/01/16 14:12	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	43	19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	185	25-145	2,7		
Decachlorobiphenyl	150	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-21-0-5-20160818	16-08-1364-5-DD	08/18/16 14:00	Sediment	GC 44	08/27/16	09/01/16 14:26	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	49	22	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	198	25-145	2,7		
Decachlorobiphenyl	199	24-168	2,7		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-22-0-5-20160818	16-08-1364-6-DD	08/18/16 14:55	Sediment	GC 44	08/27/16	09/01/16 14:40	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	59	27	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	115	25-145			
Decachlorobiphenyl	183	24-168	2,7		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-DD	08/18/16 15:35	Sediment	GC 44	08/27/16	09/01/16 14:54	160827L06

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	32	14	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	352	25-145	2,7		
Decachlorobiphenyl	132	24-168			

Method Blank	099-12-858-427	N/A	Solid	GC 44	08/27/16	09/01/16 06:54	160827L06
--------------	----------------	-----	-------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	20	9.0	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	86	25-145			
Decachlorobiphenyl	98	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-DD	08/18/16 09:08	Sediment	GC/MS BBB	08/24/16	08/29/16 23:54	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.42	0.14	1.00	
Cis-nonachlor	ND	0.42	0.11	1.00	
2,4'-DDD	ND	0.42	0.16	1.00	
2,4'-DDE	8.2	0.42	0.073	1.00	
2,4'-DDT	ND	0.42	0.13	1.00	
4,4'-DDD	ND	0.42	0.083	1.00	
4,4'-DDT	ND	0.42	0.11	1.00	
Dieldrin	ND	0.42	0.22	1.00	
Gamma Chlordane	ND	0.42	0.11	1.00	
Oxychlordane	ND	0.42	0.15	1.00	
Trans-nonachlor	ND	0.42	0.089	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	34	25-200	
2,4,5,6-Tetrachloro-m-Xylene	63	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-DD	08/18/16 09:08	Sediment	GC/MS BBB	08/24/16	08/30/16 16:05	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	59	2.1	0.42	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	138	25-200	
2,4,5,6-Tetrachloro-m-Xylene	72	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-DD	08/18/16 09:58	Sediment	GC/MS BBB	08/24/16	08/30/16 00:10	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.41	0.14	1.00	
Cis-nonachlor	ND	0.41	0.10	1.00	
2,4'-DDD	ND	0.41	0.16	1.00	
2,4'-DDE	6.1	0.41	0.072	1.00	
2,4'-DDT	ND	0.41	0.13	1.00	
4,4'-DDD	ND	0.41	0.081	1.00	
4,4'-DDT	ND	0.41	0.11	1.00	
Dieldrin	ND	0.41	0.22	1.00	
Gamma Chlordane	ND	0.41	0.11	1.00	
Oxychlordane	ND	0.41	0.15	1.00	
Trans-nonachlor	ND	0.41	0.088	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	40	25-200	
2,4,5,6-Tetrachloro-m-Xylene	68	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-DD	08/18/16 09:58	Sediment	GC/MS BBB	08/24/16	08/30/16 16:21	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	31	2.0	0.41	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	135	25-200	
2,4,5,6-Tetrachloro-m-Xylene	77	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-DD	08/18/16 11:20	Sediment	GC/MS BBB	08/24/16	08/30/16 00:26	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.29	0.098	1.00	
Cis-nonachlor	ND	0.29	0.075	1.00	
2,4'-DDD	ND	0.29	0.11	1.00	
2,4'-DDE	ND	0.29	0.052	1.00	
2,4'-DDT	ND	0.29	0.091	1.00	
4,4'-DDD	ND	0.29	0.058	1.00	
4,4'-DDE	0.38	0.29	0.059	1.00	
4,4'-DDT	ND	0.29	0.077	1.00	
Dieldrin	ND	0.29	0.16	1.00	
Gamma Chlordane	ND	0.29	0.078	1.00	
Oxychlordane	ND	0.29	0.11	1.00	
Trans-nonachlor	ND	0.29	0.063	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	31	25-200			
2,4,5,6-Tetrachloro-m-Xylene	63	25-200			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-DD	08/18/16 12:22	Sediment	GC/MS BBB	08/24/16	08/30/16 00:42	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	0.65	0.43	0.15	1.00	
Cis-nonachlor	0.59	0.43	0.11	1.00	
2,4'-DDD	ND	0.43	0.17	1.00	
2,4'-DDE	6.7	0.43	0.076	1.00	
2,4'-DDT	ND	0.43	0.14	1.00	
4,4'-DDD	ND	0.43	0.087	1.00	
4,4'-DDT	ND	0.43	0.11	1.00	
Dieldrin	ND	0.43	0.23	1.00	
Gamma Chlordane	1.7	0.43	0.12	1.00	
Oxychlordane	ND	0.43	0.16	1.00	
Trans-nonachlor	0.48	0.43	0.093	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	42	25-200	
2,4,5,6-Tetrachloro-m-Xylene	62	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-DD	08/18/16 12:22	Sediment	GC/MS BBB	08/24/16	08/30/16 16:37	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	28	2.2	0.44	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	107	25-200	
2,4,5,6-Tetrachloro-m-Xylene	67	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-21-0-5-20160818	16-08-1364-5-DD	08/18/16 14:00	Sediment	GC/MS BBB	08/24/16	08/30/16 00:58	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	2.5	0.49	0.16	1.00	
Cis-nonachlor	1.2	0.49	0.12	1.00	
2,4'-DDD	ND	0.49	0.19	1.00	
2,4'-DDE	ND	0.49	0.086	1.00	
2,4'-DDT	ND	0.49	0.15	1.00	
4,4'-DDD	ND	0.49	0.097	1.00	
4,4'-DDE	16	0.49	0.099	1.00	
4,4'-DDT	ND	0.49	0.13	1.00	
Dieldrin	ND	0.49	0.26	1.00	
Gamma Chlordane	3.5	0.49	0.13	1.00	
Oxychlordane	ND	0.49	0.18	1.00	
Trans-nonachlor	1.6	0.49	0.10	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	35	25-200			
2,4,5,6-Tetrachloro-m-Xylene	61	25-200			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-22-0-5-20160818	16-08-1364-6-DD	08/18/16 14:55	Sediment	GC/MS BBB	08/24/16	08/30/16 01:14	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	3.3	0.60	0.20	1.00	
Cis-nonachlor	ND	0.60	0.15	1.00	
2,4'-DDD	ND	0.60	0.23	1.00	
2,4'-DDE	ND	0.60	0.11	1.00	
2,4'-DDT	ND	0.60	0.19	1.00	
4,4'-DDD	ND	0.60	0.12	1.00	
4,4'-DDE	22	0.60	0.12	1.00	
4,4'-DDT	ND	0.60	0.16	1.00	
Dieldrin	ND	0.60	0.32	1.00	
Gamma Chlordane	4.7	0.60	0.16	1.00	
Oxychlordane	ND	0.60	0.22	1.00	
Trans-nonachlor	2.5	0.60	0.13	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchlorodate	39	25-200			
2,4,5,6-Tetrachloro-m-Xylene	63	25-200			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-DD	08/18/16 15:35	Sediment	GC/MS BBB	08/24/16	08/30/16 01:30	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.32	0.11	1.00	
Cis-nonachlor	ND	0.32	0.081	1.00	
2,4'-DDD	ND	0.32	0.12	1.00	
2,4'-DDE	ND	0.32	0.056	1.00	
2,4'-DDT	ND	0.32	0.099	1.00	
4,4'-DDD	ND	0.32	0.064	1.00	
4,4'-DDE	8.9	0.32	0.065	1.00	
4,4'-DDT	ND	0.32	0.084	1.00	
Dieldrin	ND	0.32	0.17	1.00	
Gamma Chlordane	ND	0.32	0.085	1.00	
Oxychlordane	ND	0.32	0.12	1.00	
Trans-nonachlor	ND	0.32	0.069	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	43	25-200			
2,4,5,6-Tetrachloro-m-Xylene	64	25-200			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-154-66	N/A	Solid	GC/MS BBB	08/24/16	08/29/16 14:31	160824L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.20	0.067	1.00	
Cis-nonachlor	ND	0.20	0.051	1.00	
2,4'-DDD	ND	0.20	0.076	1.00	
2,4'-DDE	ND	0.20	0.035	1.00	
2,4'-DDT	ND	0.20	0.062	1.00	
4,4'-DDD	ND	0.20	0.040	1.00	
4,4'-DDE	ND	0.20	0.040	1.00	
4,4'-DDT	ND	0.20	0.053	1.00	
Dieldrin	ND	0.20	0.11	1.00	
Gamma Chlordane	ND	0.20	0.053	1.00	
Oxychlordane	ND	0.20	0.073	1.00	
Trans-nonachlor	ND	0.20	0.043	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
Dibutylchloredate	121	25-200			
2,4,5,6-Tetrachloro-m-Xylene	85	25-200			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-DD	08/18/16 09:08	Sediment	GC/MS AAA	08/31/16	09/01/16 23:28	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	21	4.9	1.00	
Anthracene	12	21	7.2	1.00	J
Benzo (a) Anthracene	27	21	4.5	1.00	
Benzo (a) Pyrene	49	21	3.8	1.00	
Benzo (e) Pyrene	34	21	4.1	1.00	
Biphenyl	ND	21	3.9	1.00	
Chrysene	35	21	4.6	1.00	
Dibenz (a,h) Anthracene	11	21	4.1	1.00	J
2,6-Dimethylnaphthalene	73	21	3.6	1.00	
Fluoranthene	54	21	3.8	1.00	
Fluorene	ND	21	6.5	1.00	
2-Methylnaphthalene	5.9	21	4.8	1.00	J
1-Methylnaphthalene	ND	21	4.8	1.00	
1-Methylphenanthrene	5.5	21	5.2	1.00	J
Naphthalene	ND	21	7.2	1.00	
Perylene	82	21	5.0	1.00	
Phenanthrene	20	21	4.6	1.00	J
Pyrene	52	21	4.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	71	14-146	
Nitrobenzene-d5	64	18-162	
p-Terphenyl-d14	71	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-DD	08/18/16 09:58	Sediment	GC/MS AAA	08/31/16	09/01/16 23:48	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	21	4.8	1.00	
Anthracene	13	21	7.1	1.00	J
Benzo (a) Anthracene	33	21	4.4	1.00	
Benzo (a) Pyrene	48	21	3.8	1.00	
Benzo (e) Pyrene	37	21	4.0	1.00	
Biphenyl	ND	21	3.8	1.00	
Chrysene	50	21	4.6	1.00	
Dibenz (a,h) Anthracene	9.5	21	4.0	1.00	J
2,6-Dimethylnaphthalene	61	21	3.5	1.00	
Fluoranthene	77	21	3.7	1.00	
Fluorene	ND	21	6.4	1.00	
2-Methylnaphthalene	5.2	21	4.8	1.00	J
1-Methylnaphthalene	ND	21	4.8	1.00	
1-Methylphenanthrene	ND	21	5.1	1.00	
Naphthalene	ND	21	7.1	1.00	
Perylene	32	21	4.9	1.00	
Phenanthrene	53	21	4.6	1.00	
Pyrene	67	21	4.6	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	68	14-146	
Nitrobenzene-d5	63	18-162	
p-Terphenyl-d14	64	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-DD	08/18/16 11:20	Sediment	GC/MS AAA	08/31/16	09/02/16 00:08	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	15	3.4	1.00	
Anthracene	ND	15	5.1	1.00	
Benzo (a) Anthracene	ND	15	3.1	1.00	
Benzo (a) Pyrene	ND	15	2.7	1.00	
Benzo (e) Pyrene	ND	15	2.9	1.00	
Biphenyl	ND	15	2.7	1.00	
Chrysene	ND	15	3.3	1.00	
Dibenz (a,h) Anthracene	ND	15	2.8	1.00	
2,6-Dimethylnaphthalene	3.3	15	2.5	1.00	J
Fluoranthene	ND	15	2.7	1.00	
Fluorene	ND	15	4.6	1.00	
2-Methylnaphthalene	ND	15	3.4	1.00	
1-Methylnaphthalene	ND	15	3.4	1.00	
1-Methylphenanthrene	4.4	15	3.6	1.00	J
Naphthalene	ND	15	5.1	1.00	
Perylene	ND	15	3.5	1.00	
Phenanthrene	ND	15	3.2	1.00	
Pyrene	ND	15	3.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	65	14-146	
Nitrobenzene-d5	68	18-162	
p-Terphenyl-d14	75	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-DD	08/18/16 12:22	Sediment	GC/MS AAA	08/31/16	09/02/16 00:27	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	22	5.1	1.00	
Anthracene	13	22	7.5	1.00	J
Benzo (a) Anthracene	33	22	4.6	1.00	
Benzo (a) Pyrene	57	22	3.9	1.00	
Benzo (e) Pyrene	46	22	4.2	1.00	
Biphenyl	6.5	22	4.0	1.00	J
Chrysene	50	22	4.8	1.00	
Dibenz (a,h) Anthracene	8.6	22	4.2	1.00	J
2,6-Dimethylnaphthalene	62	22	3.7	1.00	
Fluoranthene	70	22	3.9	1.00	
Fluorene	ND	22	6.7	1.00	
2-Methylnaphthalene	7.6	22	5.0	1.00	J
1-Methylnaphthalene	ND	22	5.0	1.00	
1-Methylphenanthrene	19	22	5.3	1.00	J
Naphthalene	9.2	22	7.5	1.00	J
Perylene	36	22	5.1	1.00	
Phenanthrene	38	22	4.8	1.00	
Pyrene	77	22	4.8	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	66	14-146	
Nitrobenzene-d5	62	18-162	
p-Terphenyl-d14	64	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-21-0-5-20160818	16-08-1364-5-DD	08/18/16 14:00	Sediment	GC/MS AAA	08/31/16	09/02/16 00:47	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	120	29	5.00	
Anthracene	ND	120	42	5.00	
Benzo (a) Anthracene	95	120	26	5.00	J
Benzo (a) Pyrene	110	120	22	5.00	J
Benzo (e) Pyrene	130	120	24	5.00	
Biphenyl	ND	120	23	5.00	
Chrysene	190	120	27	5.00	
Dibenz (a,h) Anthracene	ND	120	24	5.00	
2,6-Dimethylnaphthalene	410	120	21	5.00	
Fluoranthene	280	120	22	5.00	
Fluorene	ND	120	38	5.00	
2-Methylnaphthalene	ND	120	28	5.00	
1-Methylnaphthalene	ND	120	28	5.00	
1-Methylphenanthrene	ND	120	30	5.00	
Naphthalene	ND	120	42	5.00	
Perylene	55	120	29	5.00	J
Phenanthrene	140	120	27	5.00	
Pyrene	300	120	27	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	61	14-146	
Nitrobenzene-d5	60	18-162	
p-Terphenyl-d14	64	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-22-0-5-20160818	16-08-1364-6-DD	08/18/16 14:55	Sediment	GC/MS AAA	08/31/16	09/02/16 01:07	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	150	35	5.00	
Anthracene	ND	150	52	5.00	
Benzo (a) Anthracene	130	150	32	5.00	J
Benzo (a) Pyrene	150	150	27	5.00	
Benzo (e) Pyrene	170	150	29	5.00	
Biphenyl	ND	150	28	5.00	
Chrysene	270	150	33	5.00	
Dibenz (a,h) Anthracene	ND	150	29	5.00	
2,6-Dimethylnaphthalene	480	150	25	5.00	
Fluoranthene	300	150	27	5.00	
Fluorene	ND	150	47	5.00	
2-Methylnaphthalene	ND	150	35	5.00	
1-Methylnaphthalene	ND	150	35	5.00	
1-Methylphenanthrene	ND	150	37	5.00	
Naphthalene	ND	150	52	5.00	
Perylene	83	150	35	5.00	J
Phenanthrene	120	150	33	5.00	J
Pyrene	400	150	33	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	67	14-146	
Nitrobenzene-d5	72	18-162	
p-Terphenyl-d14	80	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-DD	08/18/16 15:35	Sediment	GC/MS AAA	08/31/16	09/02/16 01:26	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	16	3.8	1.00	
Anthracene	9.1	16	5.6	1.00	J
Benzo (a) Anthracene	22	16	3.4	1.00	
Benzo (a) Pyrene	28	16	2.9	1.00	
Benzo (e) Pyrene	22	16	3.1	1.00	
Biphenyl	ND	16	3.0	1.00	
Chrysene	31	16	3.6	1.00	
Dibenz (a,h) Anthracene	9.0	16	3.1	1.00	J
2,6-Dimethylnaphthalene	16	16	2.7	1.00	J
Fluoranthene	23	16	2.9	1.00	
Fluorene	ND	16	5.0	1.00	
2-Methylnaphthalene	3.8	16	3.7	1.00	J
1-Methylnaphthalene	ND	16	3.7	1.00	
1-Methylphenanthrene	ND	16	4.0	1.00	
Naphthalene	ND	16	5.5	1.00	
Perylene	14	16	3.8	1.00	J
Phenanthrene	12	16	3.6	1.00	J
Pyrene	30	16	3.6	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	52	14-146	
Nitrobenzene-d5	54	18-162	
p-Terphenyl-d14	69	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-097-218	N/A	Solid	GC/MS AAA	08/31/16	09/01/16 16:35	160831L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Acenaphthene	ND	10	2.4	1.00	
Anthracene	ND	10	3.5	1.00	
Benzo (a) Anthracene	ND	10	2.2	1.00	
Benzo (a) Pyrene	ND	10	1.8	1.00	
Benzo (e) Pyrene	ND	10	2.0	1.00	
Biphenyl	ND	10	1.9	1.00	
Chrysene	ND	10	2.2	1.00	
Dibenz (a,h) Anthracene	ND	10	2.0	1.00	
2,6-Dimethylnaphthalene	ND	10	1.7	1.00	
Fluoranthene	ND	10	1.8	1.00	
Fluorene	ND	10	3.1	1.00	
2-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylphenanthrene	ND	10	2.5	1.00	
Naphthalene	ND	10	3.5	1.00	
Perylene	ND	10	2.4	1.00	
Phenanthrene	ND	10	2.2	1.00	
Pyrene	ND	10	2.2	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
2-Fluorobiphenyl	77	14-146	
Nitrobenzene-d5	84	18-162	
p-Terphenyl-d14	94	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-17-0-5-20160818	16-08-1364-1-DD	08/18/16 09:08	Sediment	GC/MS HHH	08/23/16	08/25/16 16:42	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	0.49	0.84	0.30	1.00	J
PCB018	ND	0.42	0.15	1.00	
PCB028	0.95	0.42	0.070	1.00	
PCB037	ND	0.42	0.13	1.00	
PCB044	0.79	0.42	0.18	1.00	
PCB049	0.64	0.42	0.24	1.00	
PCB052	1.0	0.42	0.13	1.00	
PCB066	1.9	0.42	0.22	1.00	
PCB070	1.2	0.42	0.13	1.00	
PCB074	0.77	0.42	0.18	1.00	
PCB077	ND	0.42	0.16	1.00	
PCB081	ND	0.42	0.25	1.00	
PCB087	1.5	0.42	0.23	1.00	
PCB099	1.6	0.42	0.13	1.00	
PCB101	2.0	0.42	0.21	1.00	
PCB105	1.5	0.42	0.11	1.00	
PCB110	2.3	0.42	0.097	1.00	
PCB114	ND	0.42	0.17	1.00	
PCB118	2.7	0.42	0.18	1.00	
PCB119	ND	0.42	0.20	1.00	
PCB123	ND	0.42	0.22	1.00	
PCB126	ND	0.42	0.17	1.00	
PCB128	0.55	0.42	0.21	1.00	
PCB132/153	4.0	0.84	0.36	1.00	
PCB138/158	3.3	0.84	0.20	1.00	
PCB149	1.6	0.42	0.21	1.00	
PCB151	0.81	0.42	0.14	1.00	
PCB156	ND	0.42	0.12	1.00	
PCB157	ND	0.42	0.11	1.00	
PCB167	ND	0.42	0.13	1.00	
PCB168	ND	0.42	0.10	1.00	
PCB169	ND	0.42	0.13	1.00	
PCB170	0.85	0.42	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	0.70	0.42	0.18	1.00	
PCB180	1.4	0.42	0.088	1.00	
PCB183	0.39	0.42	0.23	1.00	J
PCB187	1.1	0.42	0.18	1.00	
PCB189	ND	0.42	0.13	1.00	
PCB194	ND	0.42	0.24	1.00	
PCB195	ND	0.42	0.25	1.00	
PCB201	ND	0.42	0.20	1.00	
PCB206	ND	0.42	0.41	1.00	
PCB209	0.72	0.42	0.31	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	58	50-150			
p-Terphenyl-d14	89	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-20-0-5-20160818	16-08-1364-2-DD	08/18/16 09:58	Sediment	GC/MS HHH	08/23/16	08/25/16 17:05	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	1.3	0.82	0.30	1.00	
PCB018	1.2	0.41	0.15	1.00	
PCB028	2.5	0.41	0.069	1.00	
PCB037	0.76	0.41	0.12	1.00	
PCB044	2.4	0.41	0.18	1.00	
PCB049	1.5	0.41	0.23	1.00	
PCB052	2.5	0.41	0.13	1.00	
PCB066	4.1	0.41	0.21	1.00	
PCB070	3.3	0.41	0.12	1.00	
PCB074	1.8	0.41	0.18	1.00	
PCB077	1.7	0.41	0.16	1.00	
PCB081	ND	0.41	0.25	1.00	
PCB087	1.8	0.41	0.22	1.00	
PCB099	2.3	0.41	0.12	1.00	
PCB101	4.1	0.41	0.20	1.00	
PCB105	2.1	0.41	0.11	1.00	
PCB110	4.6	0.41	0.094	1.00	
PCB114	ND	0.41	0.17	1.00	
PCB118	4.3	0.41	0.17	1.00	
PCB119	ND	0.41	0.19	1.00	
PCB123	ND	0.41	0.21	1.00	
PCB126	ND	0.41	0.16	1.00	
PCB128	0.74	0.41	0.21	1.00	
PCB132/153	6.9	0.82	0.36	1.00	
PCB138/158	5.7	0.82	0.19	1.00	
PCB149	3.4	0.41	0.20	1.00	
PCB151	1.2	0.41	0.14	1.00	
PCB156	ND	0.41	0.12	1.00	
PCB157	ND	0.41	0.11	1.00	
PCB167	ND	0.41	0.13	1.00	
PCB168	ND	0.41	0.10	1.00	
PCB169	ND	0.41	0.13	1.00	
PCB170	2.1	0.41	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.41	0.18	1.00	
PCB180	3.3	0.41	0.086	1.00	
PCB183	0.75	0.41	0.23	1.00	
PCB187	1.9	0.41	0.17	1.00	
PCB189	ND	0.41	0.13	1.00	
PCB194	1.2	0.41	0.23	1.00	
PCB195	ND	0.41	0.24	1.00	
PCB201	ND	0.41	0.20	1.00	
PCB206	1.2	0.41	0.40	1.00	
PCB209	3.3	0.41	0.30	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	61	50-150			
p-Terphenyl-d14	98	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-19-0-5-20160818	16-08-1364-3-DD	08/18/16 11:20	Sediment	GC/MS HHH	08/23/16	08/25/16 17:29	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.58	0.21	1.00	
PCB018	ND	0.29	0.10	1.00	
PCB028	ND	0.29	0.049	1.00	
PCB037	ND	0.29	0.088	1.00	
PCB044	ND	0.29	0.13	1.00	
PCB049	ND	0.29	0.16	1.00	
PCB052	ND	0.29	0.091	1.00	
PCB066	ND	0.29	0.15	1.00	
PCB070	ND	0.29	0.087	1.00	
PCB074	ND	0.29	0.13	1.00	
PCB077	ND	0.29	0.11	1.00	
PCB081	ND	0.29	0.17	1.00	
PCB087	ND	0.29	0.16	1.00	
PCB099	ND	0.29	0.089	1.00	
PCB101	ND	0.29	0.14	1.00	
PCB105	ND	0.29	0.080	1.00	
PCB110	ND	0.29	0.067	1.00	
PCB114	ND	0.29	0.12	1.00	
PCB118	ND	0.29	0.12	1.00	
PCB119	ND	0.29	0.14	1.00	
PCB123	ND	0.29	0.15	1.00	
PCB126	ND	0.29	0.12	1.00	
PCB128	ND	0.29	0.15	1.00	
PCB132/153	ND	0.58	0.25	1.00	
PCB138/158	ND	0.58	0.14	1.00	
PCB149	ND	0.29	0.14	1.00	
PCB151	ND	0.29	0.098	1.00	
PCB156	ND	0.29	0.084	1.00	
PCB157	ND	0.29	0.076	1.00	
PCB167	ND	0.29	0.090	1.00	
PCB168	ND	0.29	0.071	1.00	
PCB169	ND	0.29	0.089	1.00	
PCB170	ND	0.29	0.093	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.29	0.13	1.00	
PCB180	ND	0.29	0.061	1.00	
PCB183	ND	0.29	0.16	1.00	
PCB187	ND	0.29	0.12	1.00	
PCB189	ND	0.29	0.089	1.00	
PCB194	ND	0.29	0.16	1.00	
PCB195	ND	0.29	0.17	1.00	
PCB201	ND	0.29	0.14	1.00	
PCB206	ND	0.29	0.28	1.00	
PCB209	ND	0.29	0.21	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	72	50-150			
p-Terphenyl-d14	88	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-SS-18-0-5-20160818	16-08-1364-4-DD	08/18/16 12:22	Sediment	GC/MS HHH	08/23/16	08/25/16 17:53	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	3.9	0.86	0.31	1.00	
PCB018	6.1	0.43	0.15	1.00	
PCB028	7.9	0.43	0.072	1.00	
PCB037	1.9	0.43	0.13	1.00	
PCB044	9.9	0.43	0.19	1.00	
PCB049	6.4	0.43	0.24	1.00	
PCB052	9.8	0.43	0.13	1.00	
PCB066	11	0.43	0.22	1.00	
PCB070	12	0.43	0.13	1.00	
PCB074	5.7	0.43	0.19	1.00	
PCB077	1.5	0.43	0.17	1.00	
PCB081	ND	0.43	0.26	1.00	
PCB087	4.7	0.43	0.23	1.00	
PCB099	5.2	0.43	0.13	1.00	
PCB101	11	0.43	0.21	1.00	
PCB105	6.7	0.43	0.12	1.00	
PCB110	12	0.43	0.098	1.00	
PCB114	ND	0.43	0.18	1.00	
PCB118	10	0.43	0.18	1.00	
PCB119	ND	0.43	0.20	1.00	
PCB123	ND	0.43	0.22	1.00	
PCB126	ND	0.43	0.17	1.00	
PCB128	2.3	0.43	0.22	1.00	
PCB132/153	14	0.86	0.37	1.00	
PCB138/158	12	0.86	0.20	1.00	
PCB149	7.3	0.43	0.21	1.00	
PCB151	3.0	0.43	0.14	1.00	
PCB156	1.3	0.43	0.12	1.00	
PCB157	ND	0.43	0.11	1.00	
PCB167	ND	0.43	0.13	1.00	
PCB168	ND	0.43	0.10	1.00	
PCB169	ND	0.43	0.13	1.00	
PCB170	4.3	0.43	0.14	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	2.0	0.43	0.19	1.00	
PCB180	8.5	0.43	0.090	1.00	
PCB183	1.7	0.43	0.24	1.00	
PCB187	3.7	0.43	0.18	1.00	
PCB189	ND	0.43	0.13	1.00	
PCB194	2.1	0.43	0.24	1.00	
PCB195	ND	0.43	0.25	1.00	
PCB201	0.72	0.43	0.21	1.00	
PCB206	1.8	0.43	0.41	1.00	
PCB209	1.2	0.43	0.31	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	65	50-150			
p-Terphenyl-d14	88	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 9 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-21-0-5-20160818	16-08-1364-5-DD	08/18/16 14:00	Sediment	GC/MS HHH	08/23/16	08/25/16 18:17	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.99	0.36	1.00	
PCB018	ND	0.49	0.18	1.00	
PCB028	1.7	0.49	0.083	1.00	
PCB037	ND	0.49	0.15	1.00	
PCB044	3.2	0.49	0.21	1.00	
PCB049	1.5	0.49	0.28	1.00	
PCB052	2.7	0.49	0.15	1.00	
PCB066	2.5	0.49	0.25	1.00	
PCB070	3.2	0.49	0.15	1.00	
PCB074	1.5	0.49	0.21	1.00	
PCB077	ND	0.49	0.19	1.00	
PCB081	ND	0.49	0.30	1.00	
PCB087	2.0	0.49	0.26	1.00	
PCB099	1.9	0.49	0.15	1.00	
PCB101	4.7	0.49	0.24	1.00	
PCB105	ND	0.49	0.13	1.00	
PCB110	5.3	0.49	0.11	1.00	
PCB114	ND	0.49	0.20	1.00	
PCB118	4.4	0.49	0.21	1.00	
PCB119	ND	0.49	0.23	1.00	
PCB123	ND	0.49	0.26	1.00	
PCB126	ND	0.49	0.20	1.00	
PCB128	ND	0.49	0.25	1.00	
PCB132/153	10	0.99	0.43	1.00	
PCB138/158	9.0	0.99	0.23	1.00	
PCB149	5.8	0.49	0.24	1.00	
PCB151	2.0	0.49	0.17	1.00	
PCB156	ND	0.49	0.14	1.00	
PCB157	ND	0.49	0.13	1.00	
PCB167	ND	0.49	0.15	1.00	
PCB168	ND	0.49	0.12	1.00	
PCB169	ND	0.49	0.15	1.00	
PCB170	3.9	0.49	0.16	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 10 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.49	0.21	1.00	
PCB180	5.4	0.49	0.10	1.00	
PCB183	1.5	0.49	0.27	1.00	
PCB187	2.4	0.49	0.21	1.00	
PCB189	ND	0.49	0.15	1.00	
PCB194	ND	0.49	0.28	1.00	
PCB195	ND	0.49	0.29	1.00	
PCB201	ND	0.49	0.24	1.00	
PCB206	ND	0.49	0.48	1.00	
PCB209	2.0	0.49	0.36	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	66	50-150			
p-Terphenyl-d14	89	50-150			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 11 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
LE-SS-22-0-5-20160818	16-08-1364-6-DD	08/18/16 14:55	Sediment	GC/MS HHH	08/23/16	08/25/16 18:40	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	1.2	0.43	1.00	
PCB018	ND	0.59	0.21	1.00	
PCB028	3.1	0.59	0.099	1.00	
PCB037	ND	0.59	0.18	1.00	
PCB044	3.3	0.59	0.26	1.00	
PCB049	2.5	0.59	0.33	1.00	
PCB052	3.8	0.59	0.19	1.00	
PCB066	3.8	0.59	0.30	1.00	
PCB070	5.7	0.59	0.18	1.00	
PCB074	2.6	0.59	0.26	1.00	
PCB077	ND	0.59	0.23	1.00	
PCB081	ND	0.59	0.35	1.00	
PCB087	ND	0.59	0.32	1.00	
PCB099	2.9	0.59	0.18	1.00	
PCB101	5.2	0.59	0.29	1.00	
PCB105	5.7	0.59	0.16	1.00	
PCB110	6.2	0.59	0.14	1.00	
PCB114	ND	0.59	0.24	1.00	
PCB118	6.4	0.59	0.25	1.00	
PCB119	ND	0.59	0.28	1.00	
PCB123	ND	0.59	0.31	1.00	
PCB126	ND	0.59	0.24	1.00	
PCB128	ND	0.59	0.30	1.00	
PCB132/153	13	1.2	0.51	1.00	
PCB138/158	10	1.2	0.28	1.00	
PCB149	7.6	0.59	0.29	1.00	
PCB151	2.7	0.59	0.20	1.00	
PCB156	ND	0.59	0.17	1.00	
PCB157	ND	0.59	0.15	1.00	
PCB167	ND	0.59	0.18	1.00	
PCB168	ND	0.59	0.14	1.00	
PCB169	ND	0.59	0.18	1.00	
PCB170	4.6	0.59	0.19	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 12 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.59	0.26	1.00	
PCB180	7.0	0.59	0.12	1.00	
PCB183	2.5	0.59	0.33	1.00	
PCB187	5.1	0.59	0.25	1.00	
PCB189	ND	0.59	0.18	1.00	
PCB194	ND	0.59	0.33	1.00	
PCB195	ND	0.59	0.35	1.00	
PCB201	ND	0.59	0.29	1.00	
PCB206	ND	0.59	0.57	1.00	
PCB209	2.3	0.59	0.43	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	64	50-150			
p-Terphenyl-d14	84	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 13 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IB-SS-15-0-5-20160818	16-08-1364-7-DD	08/18/16 15:35	Sediment	GC/MS HHH	08/23/16	08/25/16 19:03	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.65	0.23	1.00	
PCB018	ND	0.32	0.11	1.00	
PCB028	ND	0.32	0.054	1.00	
PCB037	ND	0.32	0.097	1.00	
PCB044	ND	0.32	0.14	1.00	
PCB049	ND	0.32	0.18	1.00	
PCB052	ND	0.32	0.10	1.00	
PCB066	ND	0.32	0.17	1.00	
PCB070	ND	0.32	0.096	1.00	
PCB074	ND	0.32	0.14	1.00	
PCB077	ND	0.32	0.13	1.00	
PCB081	ND	0.32	0.19	1.00	
PCB087	ND	0.32	0.17	1.00	
PCB099	ND	0.32	0.098	1.00	
PCB101	ND	0.32	0.16	1.00	
PCB105	ND	0.32	0.088	1.00	
PCB110	1.0	0.32	0.074	1.00	
PCB114	ND	0.32	0.13	1.00	
PCB118	1.2	0.32	0.14	1.00	
PCB119	ND	0.32	0.15	1.00	
PCB123	ND	0.32	0.17	1.00	
PCB126	ND	0.32	0.13	1.00	
PCB128	ND	0.32	0.16	1.00	
PCB132/153	2.1	0.65	0.28	1.00	
PCB138/158	1.2	0.65	0.15	1.00	
PCB149	0.83	0.32	0.16	1.00	
PCB151	ND	0.32	0.11	1.00	
PCB156	ND	0.32	0.093	1.00	
PCB157	ND	0.32	0.084	1.00	
PCB167	ND	0.32	0.099	1.00	
PCB168	ND	0.32	0.079	1.00	
PCB169	ND	0.32	0.098	1.00	
PCB170	ND	0.32	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 14 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.32	0.14	1.00	
PCB180	ND	0.32	0.068	1.00	
PCB183	ND	0.32	0.18	1.00	
PCB187	ND	0.32	0.14	1.00	
PCB189	ND	0.32	0.098	1.00	
PCB194	ND	0.32	0.18	1.00	
PCB195	ND	0.32	0.19	1.00	
PCB201	ND	0.32	0.16	1.00	
PCB206	ND	0.32	0.31	1.00	
PCB209	ND	0.32	0.23	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	69	50-150			
p-Terphenyl-d14	115	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 15 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-418-222	N/A	Solid	GC/MS HHH	08/23/16	08/25/16 12:54	160823L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.40	0.14	1.00	
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	ND	0.20	0.11	1.00	
PCB052	ND	0.20	0.063	1.00	
PCB066	ND	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	ND	0.20	0.11	1.00	
PCB099	ND	0.20	0.061	1.00	
PCB101	ND	0.20	0.098	1.00	
PCB105	ND	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	ND	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	ND	0.40	0.17	1.00	
PCB138/158	ND	0.40	0.094	1.00	
PCB149	ND	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	ND	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 16 of 16

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB180	ND	0.20	0.042	1.00	
PCB183	ND	0.20	0.11	1.00	
PCB187	ND	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB195	ND	0.20	0.12	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
PCB209	ND	0.20	0.15	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	65	50-150			
p-Terphenyl-d14	79	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

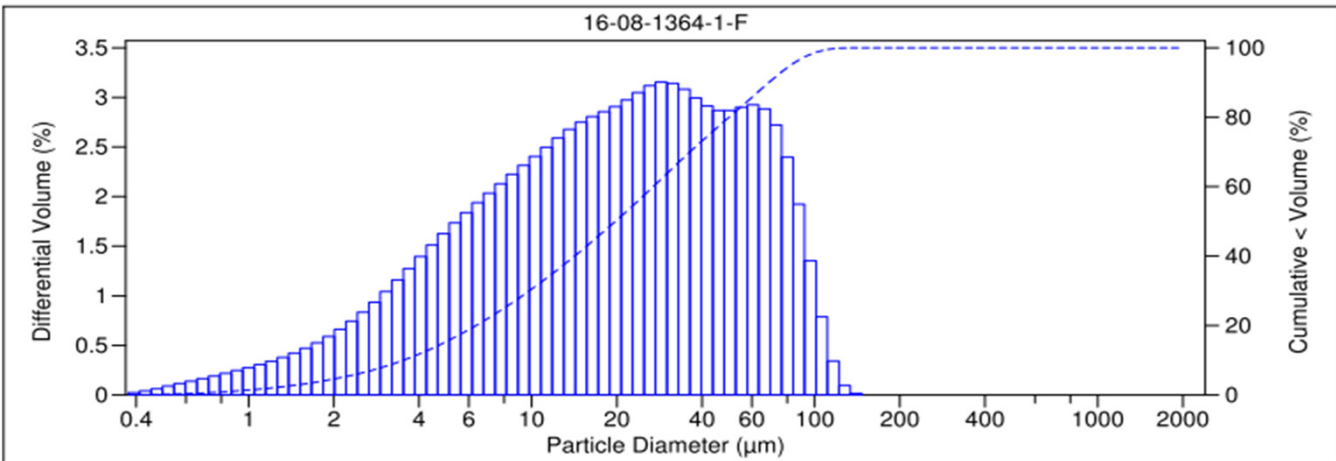
Date Sampled: 08/18/16
 Date Received: 08/18/16
 Work Order No: 16-08-1364
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 1 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
OB-SS-17-0-5-20160818		Silt	0.028

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.08	12.90	75.59	11.42	87.02



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

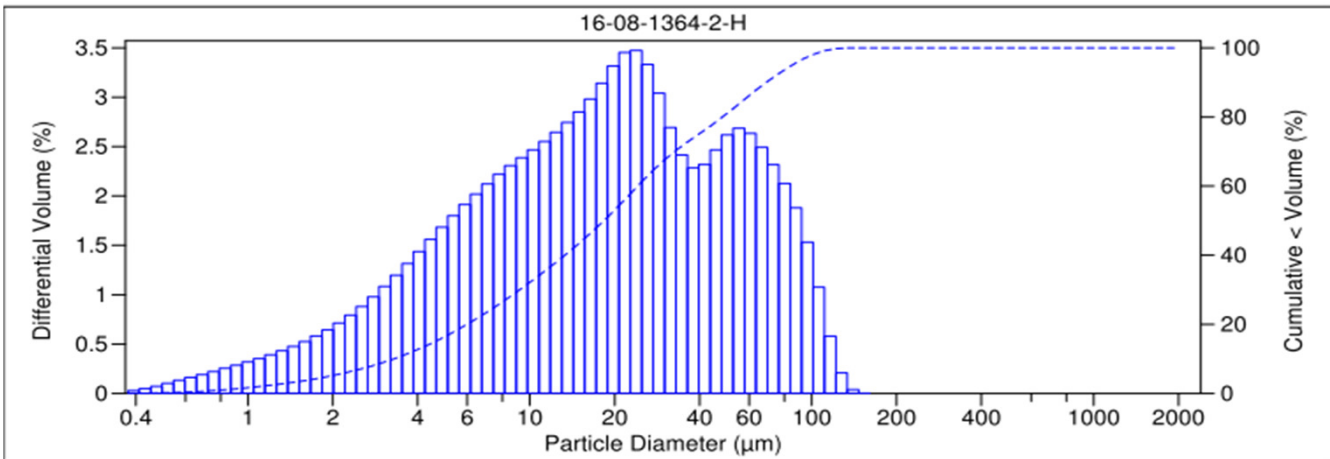
ANCHOR QEA - Mission Viejo	Date Sampled:	08/18/16
	Date Received:	08/18/16
	Work Order No:	16-08-1364
	Date Analyzed:	08/19/16
	Method:	ASTM D4464M

Project: GWMA Sediment Sampling

Page 2 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
SP-SS-20-0-5-20160818		Silt	0.028

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.19	12.49	74.96	12.36	87.32



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

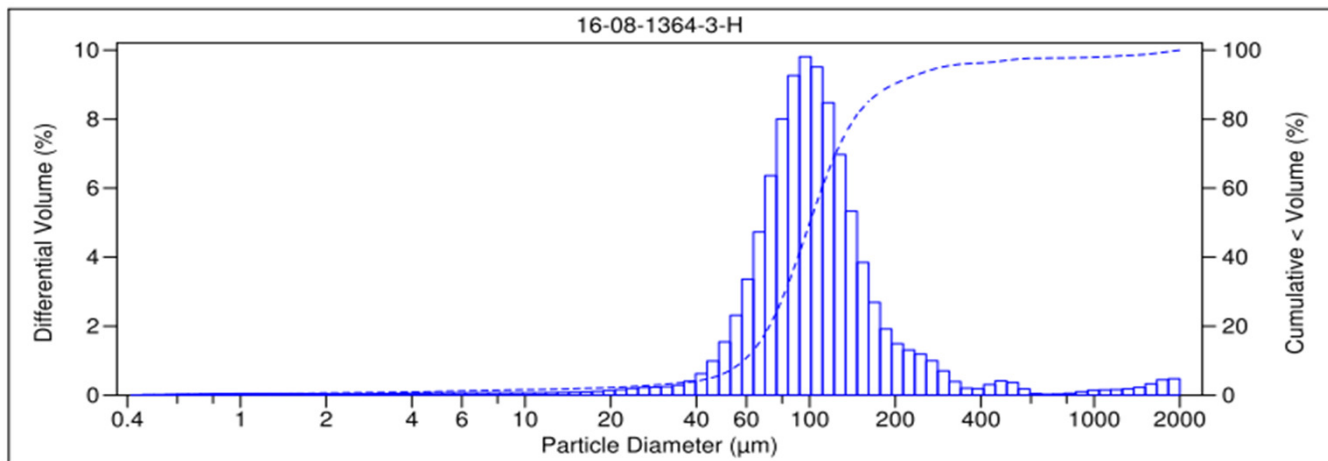
Date Sampled: 08/18/16
 Date Received: 08/18/16
 Work Order No: 16-08-1364
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 3 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
SP-SS-19-0-5-20160818		Fine Sand	0.145

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	2.05	0.85	3.64	22.61	58.52	11.40	0.93	12.34



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

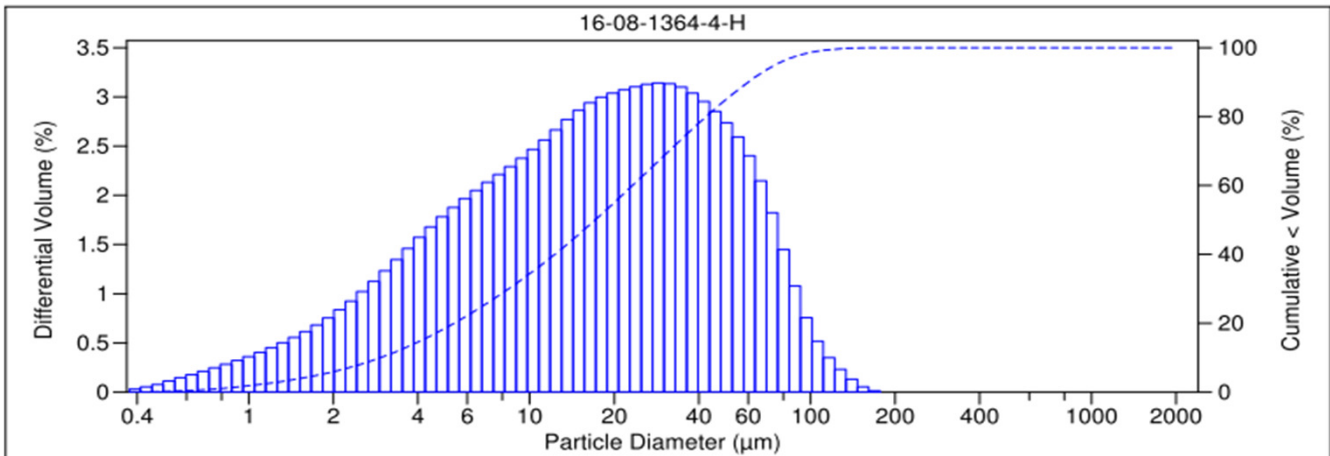
Date Sampled: 08/18/16
 Date Received: 08/18/16
 Work Order No: 16-08-1364
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 4 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
SP-SS-18-0-5-20160818		Silt	0.025

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.37	8.58	76.92	14.13	91.05



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

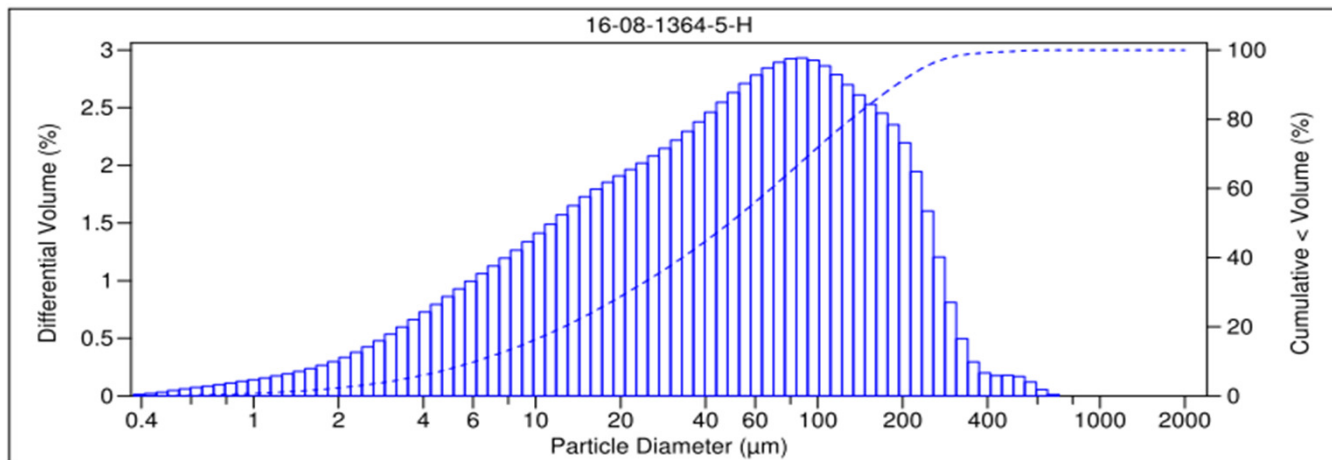
Date Sampled: 08/18/16
 Date Received: 08/18/16
 Work Order No: 16-08-1364
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 5 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
LE-SS-21-0-5-20160818		Very Fine Sand	0.077

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.34	3.87	17.20	21.30	51.41	5.87	57.28



v 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

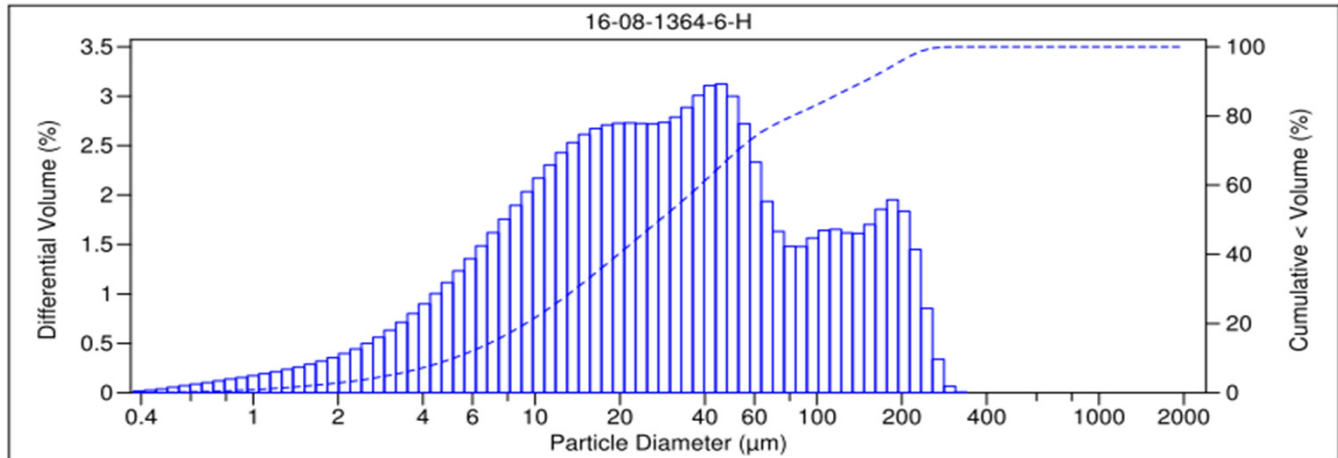
Date Sampled: 08/18/16
 Date Received: 08/18/16
 Work Order No: 16-08-1364
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 6 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
LE-SS-22-0-5-20160818		Silt	0.051

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.67	12.20	12.20	67.91	7.01	74.92



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA - Mission Viejo

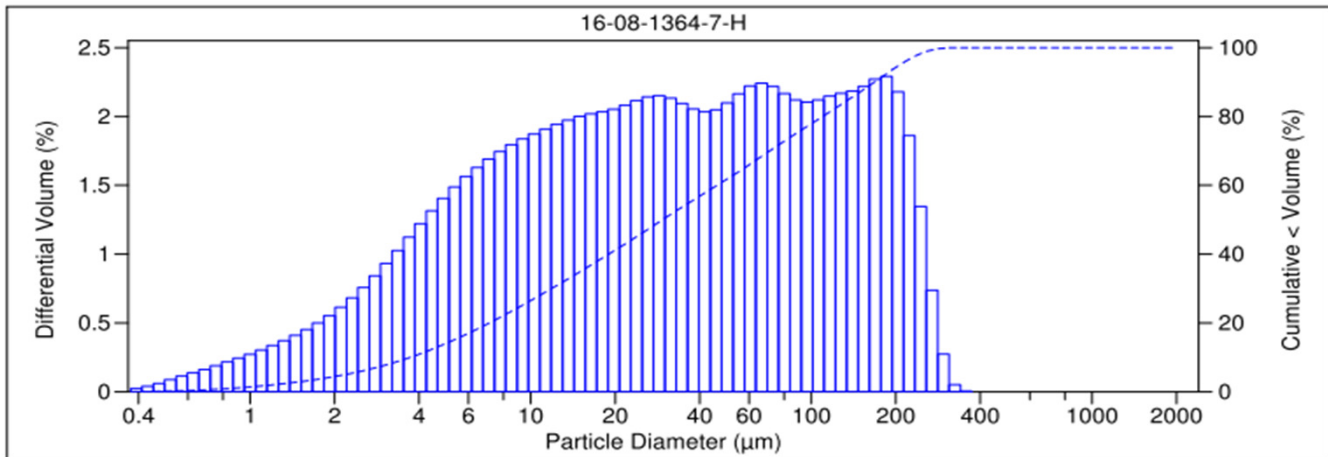
Date Sampled: 08/18/16
 Date Received: 08/18/16
 Work Order No: 16-08-1364
 Date Analyzed: 08/19/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 7 of 7

Sample ID	Depth ft	Description	Mean Grain Size mm
IB-SS-15-0-5-20160818		Silt	0.059

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	1.47	15.50	16.10	56.31	10.61	66.92



V 3.0

Return to Contents



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/18/16
 Work Order: 16-08-1364
 Preparation: N/A
 Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-SS-17-0-5-20160818	Sample	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCS3
OB-SS-17-0-5-20160818	Matrix Spike	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCS3
OB-SS-17-0-5-20160818	Matrix Spike Duplicate	Sediment	TOC 10	08/25/16	08/25/16 16:25	G0825TOCS3

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.6780	3.000	3.967	110	4.050	112	75-125	2	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-SS-17-0-5-20160818	Sample	Sediment	GC 44	08/27/16	09/01/16 13:29	160827S06
OB-SS-17-0-5-20160818	Matrix Spike	Sediment	GC 44	08/27/16	09/01/16 07:37	160827S06
OB-SS-17-0-5-20160818	Matrix Spike Duplicate	Sediment	GC 44	08/27/16	09/01/16 07:51	160827S06

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	5.124	102	5.259	105	50-135	3	0-25	
Alpha-BHC	ND	5.000	8.359	167	8.487	170	50-135	2	0-25	3
Beta-BHC	ND	5.000	107.2	2145	92.32	1846	50-135	15	0-25	3
Delta-BHC	ND	5.000	10.06	201	9.123	182	50-135	10	0-25	3
Gamma-BHC	ND	5.000	5.759	115	5.286	106	50-135	9	0-25	
Dieldrin	ND	5.000	10.27	205	10.28	206	50-135	0	0-25	3
4,4'-DDD	ND	5.000	9.617	192	9.222	184	50-135	4	0-25	3
4,4'-DDE	ND	5.000	50.64	1013	46.05	921	50-135	9	0-25	3
4,4'-DDT	ND	5.000	5.561	111	3.363	67	50-135	49	0-25	4
Endosulfan I	ND	5.000	7.355	147	6.807	136	50-135	8	0-25	3
Endosulfan II	ND	5.000	8.671	173	7.732	155	50-135	11	0-25	3
Endosulfan Sulfate	ND	5.000	7.468	149	7.581	152	50-135	2	0-25	3
Endrin	ND	5.000	0.7060	14	6.347	127	50-135	160	0-25	3,4
Endrin Aldehyde	ND	5.000	6.022	120	5.743	115	50-135	5	0-25	
Endrin Ketone	ND	5.000	8.470	169	7.646	153	50-135	10	0-25	3
Heptachlor	ND	5.000	5.469	109	4.733	95	50-135	14	0-25	
Heptachlor Epoxide	ND	5.000	10.27	205	9.707	194	50-135	6	0-25	3
Methoxychlor	ND	5.000	5.574	111	4.284	86	50-135	26	0-25	4
Alpha Chlordane	ND	5.000	9.539	191	8.721	174	50-135	9	0-25	3
Gamma Chlordane	ND	5.000	20.79	416	20.65	413	50-135	1	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-SS-17-0-5-20160818	Sample	Sediment	GC/MS BBB	08/24/16	08/29/16 23:54	160824S13A
OB-SS-17-0-5-20160818	Matrix Spike	Sediment	GC/MS BBB	08/24/16	08/30/16 01:46	160824S13A
OB-SS-17-0-5-20160818	Matrix Spike Duplicate	Sediment	GC/MS BBB	08/24/16	08/30/16 02:02	160824S13A

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	3.800	76	3.827	77	25-200	1	0-25	
Alpha Chlordane	ND	5.000	1.459	29	1.241	25	25-200	16	0-25	
Alpha-BHC	ND	5.000	1.884	38	1.683	34	25-200	11	0-25	
Beta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
4,4'-DDD	ND	5.000	1.628	33	1.524	30	25-200	7	0-25	
4,4'-DDE	27.99	5.000	27.35	0	26.89	0	25-200	2	0-25	3
4,4'-DDT	ND	5.000	0	0	0	0	25-200	0	0-25	3
Delta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
Dieldrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan I	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan II	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan Sulfate	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Aldehyde	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Ketone	ND	5.000	0	0	0	0	25-200	0	0-25	3
Gamma Chlordane	ND	5.000	1.485	30	1.376	28	25-200	8	0-25	
Gamma-BHC	ND	5.000	2.332	47	0	0	25-200	200	0-25	3,4
Heptachlor	ND	5.000	0	0	0	0	25-200	0	0-25	3
Heptachlor Epoxide	ND	5.000	1.477	30	1.417	28	25-200	4	0-25	
Methoxychlor	ND	5.000	0	0	0	0	25-200	0	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-SS-19-0-5-20160818	Sample	Sediment	GC/MS AAA	08/31/16	09/02/16 00:08	160831S10
SP-SS-19-0-5-20160818	Matrix Spike	Sediment	GC/MS AAA	08/31/16	09/02/16 02:45	160831S10
SP-SS-19-0-5-20160818	Matrix Spike Duplicate	Sediment	GC/MS AAA	08/31/16	09/02/16 03:05	160831S10

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acenaphthene	ND	100.0	72.68	73	69.49	69	40-160	4	0-20	
Acenaphthylene	ND	100.0	71.32	71	67.66	68	40-160	5	0-20	
Anthracene	ND	100.0	73.27	73	71.05	71	40-160	3	0-20	
Benzo (a) Anthracene	ND	100.0	77.79	78	75.40	75	40-160	3	0-20	
Benzo (a) Pyrene	ND	100.0	80.44	80	76.21	76	40-160	5	0-20	
Benzo (b) Fluoranthene	ND	100.0	90.46	90	82.26	82	40-160	9	0-20	
Benzo (g,h,i) Perylene	ND	100.0	48.84	49	48.05	48	40-160	2	0-20	
Benzo (k) Fluoranthene	ND	100.0	89.22	89	86.89	87	40-160	3	0-20	
Chrysene	ND	100.0	77.95	78	75.98	76	40-160	3	0-20	
Dibenz (a,h) Anthracene	ND	100.0	60.21	60	58.70	59	40-160	3	0-20	
Fluoranthene	ND	100.0	65.44	65	62.90	63	40-160	4	0-20	
Fluorene	ND	100.0	80.73	81	72.73	73	40-160	10	0-20	
Indeno (1,2,3-c,d) Pyrene	ND	100.0	53.95	54	52.72	53	40-160	2	0-20	
2-Methylnaphthalene	ND	100.0	73.02	73	67.80	68	40-160	7	0-20	
1-Methylnaphthalene	ND	100.0	61.35	61	59.22	59	40-160	4	0-20	
Naphthalene	ND	100.0	67.62	68	63.38	63	40-160	6	0-20	
Phenanthrene	ND	100.0	79.94	80	76.15	76	40-160	5	0-20	
Pyrene	ND	100.0	95.25	95	89.22	89	40-160	7	0-46	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-SS-17-0-5-20160818	Sample	Sediment	GC/MS HHH	08/23/16	08/25/16 16:42	160823S18
OB-SS-17-0-5-20160818	Matrix Spike	Sediment	GC/MS HHH	08/23/16	08/25/16 14:05	160823S18
OB-SS-17-0-5-20160818	Matrix Spike Duplicate	Sediment	GC/MS HHH	08/23/16	08/25/16 14:28	160823S18

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	38.69	77	42.74	85	50-150	10	0-25	
PCB028	0.4520	50.00	42.77	85	47.81	95	50-150	11	0-25	
PCB044	0.3753	50.00	39.93	79	46.57	92	50-150	15	0-25	
PCB052	0.4907	50.00	35.74	71	41.83	83	50-150	16	0-25	
PCB066	0.9151	50.00	48.01	94	54.77	108	50-150	13	0-25	
PCB077	ND	50.00	44.61	89	50.41	101	50-150	12	0-25	
PCB101	0.9733	50.00	41.06	80	46.36	91	50-150	12	0-25	
PCB105	0.7389	50.00	46.52	92	53.65	106	50-150	14	0-25	
PCB118	1.268	50.00	49.23	96	56.06	110	50-150	13	0-25	
PCB126	ND	50.00	42.66	85	49.86	100	50-150	16	0-25	
PCB128	0.2632	50.00	43.56	87	50.97	101	50-150	16	0-25	
PCB170	0.4070	50.00	46.37	92	49.11	97	50-150	6	0-25	
PCB180	0.6587	50.00	53.11	105	59.79	118	50-150	12	0-25	
PCB187	0.5124	50.00	43.84	87	50.60	100	50-150	14	0-25	
PCB195	ND	50.00	48.07	96	49.31	99	50-150	3	0-25	
PCB206	ND	50.00	52.68	105	50.92	102	50-150	3	0-25	
PCB209	0.3434	50.00	53.05	105	52.35	104	50-150	1	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: SM 2540 B (M)

Project: GWMA Sediment Sampling

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
SP-SS-20-0-5-20160818	Sample	Sediment	N/A	08/29/16 00:00	08/29/16 21:00	G0829TSD1
SP-SS-20-0-5-20160818	Sample Duplicate	Sediment	N/A	08/29/16 00:00	08/29/16 21:00	G0829TSD1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total	48.70	47.30	3	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: N/A
Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-06-013-1602	LCS	Solid	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3			
099-06-013-1602	LCSD	Solid	TOC 10	08/25/16	08/25/16 16:25	G0825TOCL3			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.6000	0.5996	100	0.6306	105	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-858-427	LCS	Solid	GC 44	08/27/16	09/01/16 06:26	160827L06				
099-12-858-427	LCSD	Solid	GC 44	08/27/16	09/01/16 06:40	160827L06				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	5.190	104	5.318	106	50-135	36-149	2	0-25	
Alpha-BHC	5.000	5.193	104	5.345	107	50-135	36-149	3	0-25	
Beta-BHC	5.000	5.629	113	5.681	114	50-135	36-149	1	0-25	
Delta-BHC	5.000	5.928	119	5.866	117	50-135	36-149	1	0-25	
Gamma-BHC	5.000	5.362	107	5.559	111	50-135	36-149	4	0-25	
Dieldrin	5.000	5.956	119	5.979	120	50-135	36-149	0	0-25	
4,4'-DDD	5.000	6.310	126	6.268	125	50-135	36-149	1	0-25	
4,4'-DDE	5.000	5.966	119	5.974	119	50-135	36-149	0	0-25	
4,4'-DDT	5.000	6.495	130	6.454	129	50-135	36-149	1	0-25	
Endosulfan I	5.000	5.694	114	5.735	115	50-135	36-149	1	0-25	
Endosulfan II	5.000	6.384	128	6.446	129	50-135	36-149	1	0-25	
Endosulfan Sulfate	5.000	6.194	124	6.092	122	50-135	36-149	2	0-25	
Endrin	5.000	6.078	122	6.069	121	50-135	36-149	0	0-25	
Endrin Aldehyde	5.000	5.680	114	5.662	113	50-135	36-149	0	0-25	
Endrin Ketone	5.000	6.684	134	6.454	129	50-135	36-149	4	0-25	
Heptachlor	5.000	5.550	111	5.686	114	50-135	36-149	2	0-25	
Heptachlor Epoxide	5.000	5.706	114	6.078	122	50-135	36-149	6	0-25	
Methoxychlor	5.000	6.636	133	6.551	131	50-135	36-149	1	0-25	
Alpha Chlordane	5.000	5.582	112	5.596	112	50-135	36-149	0	0-25	
Gamma Chlordane	5.000	5.615	112	5.628	113	50-135	36-149	0	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-154-66	LCS	Solid	GC/MS BBB	08/24/16	08/29/16 16:17	160824L13				
099-16-154-66	LCSD	Solid	GC/MS BBB	08/24/16	08/29/16 16:33	160824L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	4.597	92	4.586	92	25-200	0-229	0	0-25	
Alpha Chlordane	5.000	4.673	93	4.496	90	25-200	0-229	4	0-25	
Alpha-BHC	5.000	4.420	88	4.521	90	25-200	0-229	2	0-25	
Beta-BHC	5.000	4.710	94	4.462	89	25-200	0-229	5	0-25	
4,4'-DDD	5.000	5.236	105	5.111	102	25-200	0-229	2	0-25	
4,4'-DDE	5.000	4.794	96	4.861	97	25-200	0-229	1	0-25	
4,4'-DDT	5.000	5.595	112	5.445	109	25-200	0-229	3	0-25	
Delta-BHC	5.000	5.743	115	6.535	131	25-200	0-229	13	0-25	
Dieldrin	5.000	5.643	113	5.822	116	25-200	0-229	3	0-25	
Endosulfan I	5.000	4.736	95	4.679	94	25-200	0-229	1	0-25	
Endosulfan II	5.000	5.217	104	6.110	122	25-200	0-229	16	0-25	
Endosulfan Sulfate	5.000	6.540	131	6.206	124	25-200	0-229	5	0-25	
Endrin	5.000	9.546	191	8.922	178	25-200	0-229	7	0-25	
Endrin Aldehyde	5.000	5.265	105	4.849	97	25-200	0-229	8	0-25	
Endrin Ketone	5.000	7.155	143	6.977	140	25-200	0-229	3	0-25	
Gamma Chlordane	5.000	4.652	93	4.524	90	25-200	0-229	3	0-25	
Gamma-BHC	5.000	4.730	95	4.762	95	25-200	0-229	1	0-25	
Heptachlor	5.000	5.697	114	5.865	117	25-200	0-229	3	0-25	
Heptachlor Epoxide	5.000	4.938	99	4.777	96	25-200	0-229	3	0-25	
Methoxychlor	5.000	7.391	148	7.258	145	25-200	0-229	2	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-14-097-218	LCS	Solid	GC/MS AAA	08/31/16	09/01/16 16:55	160831L10				
099-14-097-218	LCSD	Solid	GC/MS AAA	08/31/16	09/01/16 17:15	160831L10				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acenaphthene	100.0	82.05	82	84.71	85	48-108	38-118	3	0-11	
Acenaphthylene	100.0	79.30	79	82.21	82	40-160	20-180	4	0-20	
Anthracene	100.0	81.29	81	82.76	83	40-160	20-180	2	0-20	
Benzo (a) Anthracene	100.0	86.89	87	87.57	88	40-160	20-180	1	0-20	
Benzo (a) Pyrene	100.0	85.85	86	86.94	87	40-160	20-180	1	0-20	
Benzo (b) Fluoranthene	100.0	86.09	86	93.94	94	40-160	20-180	9	0-20	
Benzo (g,h,i) Perylene	100.0	91.98	92	94.21	94	40-160	20-180	2	0-20	
Benzo (k) Fluoranthene	100.0	87.09	87	84.70	85	40-160	20-180	3	0-20	
Chrysene	100.0	85.39	85	87.26	87	40-160	20-180	2	0-20	
Dibenz (a,h) Anthracene	100.0	88.70	89	90.66	91	40-160	20-180	2	0-20	
Fluoranthene	100.0	80.23	80	80.51	81	40-160	20-180	0	0-20	
Fluorene	100.0	81.66	82	83.34	83	40-160	20-180	2	0-20	
Indeno (1,2,3-c,d) Pyrene	100.0	86.06	86	84.07	84	40-160	20-180	2	0-20	
2-Methylnaphthalene	100.0	83.91	84	86.88	87	40-160	20-180	3	0-20	
1-Methylnaphthalene	100.0	74.22	74	77.34	77	40-160	20-180	4	0-20	
Naphthalene	100.0	77.70	78	80.26	80	40-160	20-180	3	0-20	
Phenanthrene	100.0	88.35	88	90.94	91	40-160	20-180	3	0-20	
Pyrene	100.0	93.56	94	99.48	99	40-160	20-180	6	0-16	

Total number of LCS compounds: 18

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/18/16
Work Order: 16-08-1364
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 5 of 5

Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-16-418-222	LCS	Solid		GC/MS HHH	08/23/16	08/25/16 13:17	160823L18			
099-16-418-222	LCSD	Solid		GC/MS HHH	08/23/16	08/25/16 13:41	160823L18			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	40.24	80	42.01	84	24-132	6-150	4	0-28	
PCB028	50.00	40.58	81	43.67	87	31-133	14-150	7	0-26	
PCB044	50.00	38.66	77	43.41	87	36-120	22-134	12	0-28	
PCB052	50.00	40.48	81	44.80	90	31-121	16-136	10	0-27	
PCB066	50.00	47.90	96	52.33	105	43-139	27-155	9	0-25	
PCB077	50.00	41.78	84	45.87	92	41-131	26-146	9	0-25	
PCB101	50.00	39.40	79	43.14	86	37-121	23-135	9	0-27	
PCB105	50.00	43.91	88	47.60	95	48-132	34-146	8	0-26	
PCB118	50.00	45.60	91	49.82	100	46-136	31-151	9	0-25	
PCB126	50.00	40.61	81	43.98	88	38-134	22-150	8	0-25	
PCB128	50.00	40.71	81	43.63	87	40-130	25-145	7	0-26	
PCB170	50.00	41.25	83	45.09	90	40-124	26-138	9	0-29	
PCB180	50.00	43.75	87	48.55	97	41-143	24-160	10	0-26	
PCB187	50.00	41.14	82	43.96	88	39-129	24-144	7	0-26	
PCB195	50.00	43.11	86	46.95	94	44-128	30-142	9	0-28	
PCB206	50.00	43.49	87	46.65	93	33-135	16-152	7	0-24	
PCB209	50.00	41.76	84	44.90	90	29-137	11-155	7	0-29	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

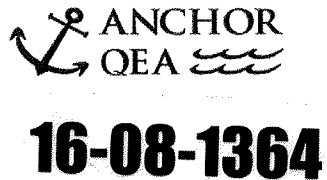
Work Order: 16-08-1364

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____
 Date: 8/18/16
 Project Name: **GWMA Sediment Sampling**
 Project Number: **141205-01.03**
 Project Manager: **Andrew Martin**
 Phone Number: **949-347-2780**
 Shipment Method: Courier



Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters										Comments/Preservation							
					48-day amphipod survival test	48-hour SWI test	TOTAL Solids	TOC	Grain Size	Total metals and mercury	PAHs and OC Resinoids	PCBs										
1	OB-SS-19-0-5-20160818	8/18/16 0908	SED	6			X	X	X	X	X	X	X									Ice
2	SP-SS-20-0-5-20160818	0958		6			X	X	X	X	X	X	X									
3	SP-SS-19-0-5-20160818	1120		6			X	X	X	X	X	X	X									
4	SP-SS-18-0-5-20160818	1222		6			X	X	X	X	X	X	X									
5	LE-SS-21-0-5-20160818	1400		6			X	X	X	X	X	X	X									
6	LE-SS-22-0-5-20160818	1455		6			X	X	X	X	X	X	X									
7	IB-SS-15-0-5-20160818	1535		6			X	X	X	X	X	X	X									
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Notes: Bioassay testing as outlined in work order attachment to subagreement - See SAP Table 4 for methods and analysis

Relinquished By: [Signature] Company: Anchor QEA
 Signature/Printed Name: Clare Dolphin Date/Time: 8/18/16 17:12

Received By: [Signature] Company: ECL
 Signature/Printed Name: D. IRANIAN Date/Time: 8/18/16 @ 17:12

Relinquished By: [Signature] Company: ECL
 Signature/Printed Name: D. IRANIAN Date/Time: 8/18/16 18:25

Received By: [Signature] Company: ECL
 Signature/Printed Name: Dunnyle ECL Date/Time: 8/18/16 18:25



SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 2

CLIENT: ANCHOR QEA

DATE: 08 / 18 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.4 °C (w/ CF): 3.4 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:
 Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804

Checked by: 1017

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

CONTAINER TYPE:
 Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____
 Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (____) EnCores® (____) TerraCores® (____) Z
 Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (____): _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag
 Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1017
 s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 804

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 2

CLIENT: ANCHOR QEA

DATE: 08 / 18 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.7 °C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A

Checked by: 804

Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 1017

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AG_J 500AG_{J_s}

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) Z

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (_____) _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1017

s = H₂SO₄, u = ultra-pure, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 804



Calscience

Subcontractor Analysis Report

Work Order: 16-08-1364

Page 1 of 1

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.

1. Eurofins Frontier Global Sciences - Bothell,WA CA ELAP 2954


Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

29 September 2016

Carla Lee Hollowell
Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841
RE: Sediments - 2016

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Patrick Garcia-Strickland". The signature is written in a cursive style.

Patrick Garcia-Strickland
Laboratory Director


Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
 Bothell, WA 98011
 425.686.1996 Phone
 425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OB-SS-17-0-5-20160818	1608939-01	Soil/Sediment	18-Aug-16 09:08	30-Aug-16 09:15
SP-SS-20-0-5-20160818	1608939-02	Soil/Sediment	18-Aug-16 09:58	30-Aug-16 09:15
SP-SS-19-0-5-20160818	1608939-03	Soil/Sediment	18-Aug-16 11:20	30-Aug-16 09:15
SP-SS-18-0-5-20160818	1608939-04	Soil/Sediment	18-Aug-16 12:22	30-Aug-16 09:15
LE-SS-21-0-5-20160818	1608939-05	Soil/Sediment	18-Aug-16 14:00	30-Aug-16 09:15
LE-SS-22-0-5-20160818	1608939-06	Soil/Sediment	18-Aug-16 14:55	30-Aug-16 09:15
IB-SS-15-0-5-20160818	1608939-07	Soil/Sediment	18-Aug-16 15:35	30-Aug-16 09:15

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 8/30/2016 9:15:00 AM . The samples were received intact, on-ice within a sealed cooler at -0.1 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Total solids analysis was performed in accordance with method SM2540B. Total solids are prepared at the same time as the preparation for the analyte(s) of interest in order to provide the most accurate dry mass correction which may be outside of the method recommended holding time of 7 days from sample collection.

Total mercury preparation and analysis was performed by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631B.

Trace metals preparation and analysis was performed by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EFGS-054, a modified EPA 1638.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.


Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director

Sample Receipt Checklist

EFGS Work Order: 1608939

Client: Eurofins Calscience

Date & Time Received: 8/30/16 9:15

Date Labeled: 8/30/16 Labeled By: LM

Project: _____

Received By: LM

Label Verified By: JCH

of Coolers Received: 1 Samples Arrived By: Shipping Service _____ Courier _____ Hand _____ Other (Specify: _____)

Coolant: None/Ambient Loose Ice Gel Ice Dry Ice Coolant Required: Y N Temp Blank Used: Y N for Cooler(s): _____

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	<u>Y</u>	
Custody Seals are present and intact:	<u>Y</u>	
Custody seals signed:	<u>Y</u>	

TID: <u>43150</u>	CF: <u>10.4</u> °C	Date/time: <u>8/30/16 9:15</u>	By: <u>LM</u>
Cooler 1: <u>-0.5</u> °C	w/ CF: <u>0.1</u> °C	Cooler 4: °C	w/ CF: °C
Cooler 2: °C	w/ CF: °C	Cooler 5: °C	w/ CF: °C
Cooler 3: °C	w/ CF: °C	Cooler 6: °C	w/ CF: °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	<u>Y</u>	
Date and time of collection:	<u>Y</u>	
Sampled by:	<u>N</u>	
Preservation type:	<u>NA</u>	
Requested analyses:	<u>Y</u>	
Required signatures:	<u>Y</u>	
Internal COC required:	<u>N</u>	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	<u>Y</u>	
Sample labels are present and legible:	<u>Y</u>	
Sample ID on container/bag matches COC:	<u>Y</u>	
Correct sample containers used:	<u>Y</u>	
Samples received within holding times:	<u>Y</u>	
Sample volume sufficient for requested analyses:	<u>Y</u>	
Correct preservative used for requested analyses:	<u>NA</u>	

Anomalies/Non-conformances (attach additional pages if needed):

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
 For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO # / LAB USE ONLY

DATE: 08/29/16
 PAGE: 1 OF 1

LABORATORY CLIENT: EUROFINS CALSCIENCE		CLIENT PROJECT NAME / NUMBER: 16-08-1364 / GWMA Sediment Sampling		P.O. NO.:	
ADDRESS: 7440 LINCOLN WAY		PROJECT CONTACT: CARLA LEE HOLLOWELL		SAMPLER(S): (PRINT)	
CITY: GARDEN GROVE	STATE: CA	ZIP:			
TEL:	E-MAIL: CARLAHOLLOWELL@EUROFINSUS.COM				

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
 SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD

COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:
10-day TAT
 Please provide CEDEN and Excel EDDs
 Report in mg/kg, dry weight; report to MDL (J-flag)

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	Cd, Cr, Cu, Pb, Zn via 1638(M)	Mercury by EPA 1631E	Other Analytes															
		DATE	TIME								1	2	3	4	5	6	7	8	9	10	11	12				
	OB-SS-17-0-5-20160818	8/18/2016	908	SED	1	X			X	X																
	SP-SS-20-0-5-20160818	8/18/2016	958	SED	1	X			X	X																
	SP-SS-19-0-5-20160818	8/18/2016	1120	SED	1	X			X	X																
	SP-SS-18-0-5-20160818	8/18/2016	1222	SED	1	X			X	X																
	LE-SS-21-0-5-20160818	8/18/2016	1400	SED	1	X			X	X																
	LE-SS-22-0-5-20160818	8/18/2016	1455	SED	1	X			X	X																
	IB-SS-15-0-5-20160818	8/18/2016	1535	SED	1	X			X	X																

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature/Affiliation) <i>Fedoc # 777106612160</i>	Date: <i>8/29/16</i>	Time: <i>1532</i>
Relinquished by: (Signature)	Received by: (Signature/Affiliation) <i>[Signature] EFGS</i>	Date: <i>8/29/16</i>	Time: <i>9:15</i>
Relinquished by: (Signature)	Received by: (Signature/Affiliation) <i>Lang Mitter</i>	Date:	Time:

Pos Seal - 0.10c Fedoc 7771 0661 2160

Page 76 of 100



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

OB-SS-17-0-5-20160818
1608939-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	79.1	-	21.5	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
----------------	-------------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.372	0.018	0.076	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	47.1	0.09	0.30	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	48.5	0.077	0.304	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	29.9	0.007	0.121	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	128	0.09	0.76	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	47.8	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
-----------------	-------------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

SP-SS-20-0-5-20160818
1608939-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	72.9	-	24.9	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
----------------	-------------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.323	0.022	0.091	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	27.5	0.11	0.37	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	30.3	0.093	0.366	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	33.0	0.008	0.146	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	93.9	0.11	0.91	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	48.7	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
-----------------	-------------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

SP-SS-19-0-5-20160818
1608939-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	8.14	-	0.93	ng/g	20	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.046	0.015	0.064	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	J
Chromium	9.84	0.08	0.26	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	5.55	0.066	0.258	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	5.40	0.006	0.103	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	31.4	0.08	0.64	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	68.2	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

SP-SS-18-0-5-20160818
1608939-04

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	64.9	-	24.8	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.830	0.011	0.046	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	41.8	0.06	0.18	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	47.7	0.047	0.184	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	70.2	0.011	0.184	mg/kg dry	25	F609399	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Zinc	159	0.06	0.46	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	46.5	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

LE-SS-21-0-5-20160818
1608939-05

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	52.0	-	23.6	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	1.32	0.022	0.091	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	28.5	0.11	0.36	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	75.1	0.093	0.365	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	57.1	0.008	0.146	mg/kg dry	10	F609399	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Zinc	354	0.11	0.91	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	41.0	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
 Bothell, WA 98011
 425.686.1996 Phone
 425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

LE-SS-22-0-5-20160818
1608939-06

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	64.0	-	25.1	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	2.32	0.029	0.121	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	46.4	0.15	0.48	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	131	0.123	0.483	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	88.3	0.011	0.193	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	559	0.15	1.21	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	33.6	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

IB-SS-15-0-5-20160818
1608939-07

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	91.1	-	24.3	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.101	0.008	0.035	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	23.8	0.04	0.14	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	28.6	0.036	0.141	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	12.5	0.003	0.056	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	65.0	0.04	0.35	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	62.3	-	0.1	% by Weight	1	F609433	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Cal Standard (6I20017-CAL1) Prepared & Analyzed: 19-Sep-16											
Chromium	0.06	-		µg/L	0.050000		112				
Copper	0.058	-		µg/L	0.050000		116				
Lead	0.023	-		µg/L	0.020000		114				
Cadmium	0.010	-		µg/L	0.010000		98.3				
Cal Standard (6I20017-CAL2) Prepared & Analyzed: 19-Sep-16											
Copper	0.111	-		µg/L	0.10000		111				
Chromium	0.11	-		µg/L	0.10000		107				
Zinc	0.14	-		µg/L	0.20000		67.9				
Lead	0.045	-		µg/L	0.040000		113				
Cadmium	0.020	-		µg/L	0.020000		99.9				
Cal Standard (6I20017-CAL3) Prepared & Analyzed: 19-Sep-16											
Chromium	0.21	-		µg/L	0.20000		106				
Copper	0.225	-		µg/L	0.20000		113				
Zinc	0.96	-		µg/L	0.40000		240				
Lead	0.091	-		µg/L	0.080000		114				
Cadmium	0.041	-		µg/L	0.040000		102				
Cal Standard (6I20017-CAL4) Prepared & Analyzed: 19-Sep-16											
Copper	6.555	-		µg/L	6.2500		105				
Chromium	5.02	-		µg/L	5.0000		100				
Zinc	12.71	-		µg/L	12.500		102				
Lead	1.323	-		µg/L	1.2500		106				
Cadmium	0.512	-		µg/L	0.50000		102				
Cal Standard (6I20017-CAL5) Prepared & Analyzed: 19-Sep-16											
Zinc	24.71	-		µg/L	25.000		98.9				
Chromium	9.77	-		µg/L	10.000		97.7				
Copper	12.99	-		µg/L	12.500		104				
Lead	2.690	-		µg/L	2.5000		108				
Cadmium	0.980	-		µg/L	1.0000		98.0				

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Cal Standard (6I20017-CAL6)

Prepared & Analyzed: 19-Sep-16

Zinc	50.71	-		µg/L	50.000		101				
Copper	25.80	-		µg/L	25.000		103				
Chromium	19.54	-		µg/L	20.000		97.7				
Lead	5.237	-		µg/L	5.0000		105				
Cadmium	1.963	-		µg/L	2.0000		98.2				

Cal Standard (6I20017-CAL7)

Prepared & Analyzed: 19-Sep-16

Zinc	122.1	-		µg/L	125.00		97.7				
Chromium	48.48	-		µg/L	50.000		97.0				
Copper	62.73	-		µg/L	62.500		100				
Lead	12.76	-		µg/L	12.500		102				
Cadmium	4.951	-		µg/L	5.0000		99.0				

Cal Standard (6I20017-CAL8)

Prepared & Analyzed: 19-Sep-16

Copper	125.7	-		µg/L	125.00		101				
Chromium	98.38	-		µg/L	100.00		98.4				
Zinc	247.5	-		µg/L	250.00		99.0				
Lead	25.78	-		µg/L	25.000		103				
Cadmium	9.975	-		µg/L	10.000		99.7				

Cal Standard (6I20017-CAL9)

Prepared & Analyzed: 19-Sep-16

Chromium	201.2	-		µg/L	200.00		101				
Copper	249.5	-		µg/L	250.00		99.8				
Zinc	501.9	-		µg/L	500.00		100				
Lead	49.51	-		µg/L	50.000		99.0				
Cadmium	20.03	-		µg/L	20.000		100				

Calibration Blank (6I20017-CCB1)

Prepared & Analyzed: 19-Sep-16

Copper	-0.001	-		µg/L							U
Zinc	-0.09	-		µg/L							U
Chromium	0.002	-		µg/L							
Lead	-0.00008	-		µg/L							U
Cadmium	0.026	-		µg/L							

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Blank (6I20017-CCB2)											Prepared & Analyzed: 19-Sep-16
Zinc	-0.04	-		µg/L							U
Copper	0.001	-		µg/L							
Chromium	0.0001	-		µg/L							
Lead	-0.0003	-		µg/L							U
Cadmium	0.001	-		µg/L							

Calibration Blank (6I20017-CCB3)											Prepared & Analyzed: 19-Sep-16
Zinc	-0.08	-		µg/L							U
Copper	-0.0003	-		µg/L							U
Chromium	-0.0005	-		µg/L							U
Lead	-0.00005	-		µg/L							U
Cadmium	0.002	-		µg/L							

Calibration Blank (6I20017-CCB4)											Prepared & Analyzed: 19-Sep-16
Chromium	-0.0008	-		µg/L							U
Copper	0.003	-		µg/L							
Zinc	-0.08	-		µg/L							U
Lead	-0.0001	-		µg/L							U
Cadmium	-0.0008	-		µg/L							U

Calibration Blank (6I20017-CCB5)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Zinc	-0.08	-		µg/L							U
Chromium	-0.001	-		µg/L							U
Copper	0.002	-		µg/L							
Lead	0.00009	-		µg/L							
Cadmium	0.0003	-		µg/L							

Calibration Blank (6I20017-CCB6)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Chromium	0.001	-		µg/L							
Zinc	-0.08	-		µg/L							U
Copper	0.006	-		µg/L							
Lead	0.0002	-		µg/L							
Cadmium	-0.0004	-		µg/L							U

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director

Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Blank (6I20017-CCB7)											
						Prepared: 19-Sep-16 Analyzed: 20-Sep-16					
Copper	0.009	-		µg/L							
Chromium	0.0007	-		µg/L							
Zinc	-0.06	-		µg/L							U
Lead	0.0006	-		µg/L							
Cadmium	0.0007	-		µg/L							

Calibration Blank (6I20017-CCB8)											
						Prepared: 19-Sep-16 Analyzed: 20-Sep-16					
Copper	0.0004	-		µg/L							
Chromium	-0.00007	-		µg/L							U
Zinc	-0.09	-		µg/L							U
Lead	0.000	-		µg/L							U
Cadmium	-0.001	-		µg/L							U

Calibration Blank (6I20017-CCB9)											
						Prepared: 19-Sep-16 Analyzed: 20-Sep-16					
Copper	0.002	-		µg/L							
Chromium	0.0008	-		µg/L							
Zinc	-0.10	-		µg/L							U
Lead	0.0002	-		µg/L							
Cadmium	0.0006	-		µg/L							

Calibration Blank (6I20017-CCBA)											
						Prepared: 19-Sep-16 Analyzed: 20-Sep-16					
Copper	0.001	-		µg/L							
Zinc	-0.09	-		µg/L							U
Chromium	0.0008	-		µg/L							
Lead	-0.00001	-		µg/L							U
Cadmium	-0.0002	-		µg/L							U

Calibration Blank (6I20017-CCBB)											
						Prepared: 19-Sep-16 Analyzed: 20-Sep-16					
Copper	0.003	-		µg/L							
Chromium	0.002	-		µg/L							
Zinc	-0.11	-		µg/L							U
Lead	0.0002	-		µg/L							
Cadmium	-0.003	-		µg/L							U

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director

Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Blank (6I20017-CCBC)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	0.004	-		µg/L							
Chromium	0.002	-		µg/L							
Zinc	-0.12	-		µg/L							U
Lead	0.0001	-		µg/L							
Cadmium	-0.001	-		µg/L							U

Calibration Check (6I20017-CCV1)

Prepared & Analyzed: 19-Sep-16

Chromium	49.02	-		µg/L	50.000		98.0	85-115			
Copper	51.76	-		µg/L	50.000		104	80-120			
Zinc	54.31	-		µg/L	50.000		109	79-121			
Lead	10.16	-		µg/L	10.000		102	91-109			
Cadmium	5.187	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV2)

Prepared & Analyzed: 19-Sep-16

Copper	50.89	-		µg/L	50.000		102	80-120			
Zinc	52.34	-		µg/L	50.000		105	79-121			
Chromium	48.27	-		µg/L	50.000		96.5	85-115			
Lead	10.38	-		µg/L	10.000		104	91-109			
Cadmium	5.178	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV3)

Prepared & Analyzed: 19-Sep-16

Copper	50.17	-		µg/L	50.000		100	80-120			
Zinc	51.97	-		µg/L	50.000		104	79-121			
Chromium	48.33	-		µg/L	50.000		96.7	85-115			
Lead	10.28	-		µg/L	10.000		103	91-109			
Cadmium	5.179	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV4)

Prepared & Analyzed: 19-Sep-16

Copper	50.54	-		µg/L	50.000		101	80-120			
Chromium	48.31	-		µg/L	50.000		96.6	85-115			
Zinc	51.97	-		µg/L	50.000		104	79-121			
Lead	10.16	-		µg/L	10.000		102	91-109			
Cadmium	5.105	-		µg/L	5.0020		102	95-105			

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Check (6I20017-CCV5)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Zinc	52.30	-		µg/L	50.000		105	79-121			
Chromium	48.19	-		µg/L	50.000		96.4	85-115			
Copper	50.61	-		µg/L	50.000		101	80-120			
Lead	10.21	-		µg/L	10.000		102	91-109			
Cadmium	5.209	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV6)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	50.49	-		µg/L	50.000		101	80-120			
Zinc	51.49	-		µg/L	50.000		103	79-121			
Chromium	48.27	-		µg/L	50.000		96.5	85-115			
Lead	10.24	-		µg/L	10.000		102	91-109			
Cadmium	5.237	-		µg/L	5.0020		105	95-105			

Calibration Check (6I20017-CCV7)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	48.70	-		µg/L	50.000		97.4	85-115			
Copper	50.37	-		µg/L	50.000		101	80-120			
Zinc	52.19	-		µg/L	50.000		104	79-121			
Lead	9.994	-		µg/L	10.000		99.9	91-109			
Cadmium	5.088	-		µg/L	5.0020		102	95-105			

Calibration Check (6I20017-CCV8)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	48.43	-		µg/L	50.000		96.9	85-115			
Copper	50.91	-		µg/L	50.000		102	80-120			
Zinc	52.85	-		µg/L	50.000		106	79-121			
Lead	10.21	-		µg/L	10.000		102	91-109			
Cadmium	5.208	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV9)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	51.14	-		µg/L	50.000		102	80-120			
Zinc	52.76	-		µg/L	50.000		106	79-121			
Chromium	48.73	-		µg/L	50.000		97.5	85-115			
Lead	10.13	-		µg/L	10.000		101	91-109			
Cadmium	5.193	-		µg/L	5.0020		104	95-105			

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Check (6I20017-CCVA)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	48.68	-		µg/L	50.000		97.4	85-115			
Zinc	52.15	-		µg/L	50.000		104	79-121			
Copper	50.68	-		µg/L	50.000		101	80-120			
Lead	10.17	-		µg/L	10.000		102	91-109			
Cadmium	5.196	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCVB)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	47.82	-		µg/L	50.000		95.6	85-115			
Zinc	52.68	-		µg/L	50.000		105	79-121			
Copper	50.51	-		µg/L	50.000		101	80-120			
Lead	10.27	-		µg/L	10.000		103	91-109			
Cadmium	5.294	-		µg/L	5.0020		106	95-105			

Calibration Check (6I20017-CCVC)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	50.12	-		µg/L	50.000		100	80-120			
Chromium	47.38	-		µg/L	50.000		94.8	85-115			
Zinc	51.66	-		µg/L	50.000		103	79-121			
Lead	10.29	-		µg/L	10.000		103	91-109			
Cadmium	5.236	-		µg/L	5.0020		105	95-105			

Initial Cal Blank (6I20017-ICB1)

Prepared & Analyzed: 19-Sep-16

Zinc	-0.09	-		µg/L							U
Copper	-0.0009	-		µg/L							U
Chromium	-0.001	-		µg/L							U
Lead	-0.0003	-		µg/L							U
Cadmium	-0.001	-		µg/L							U

Initial Cal Check (6I20017-ICV1)

Prepared & Analyzed: 19-Sep-16

Zinc	52.55	-		µg/L	50.000		105	79-121			
Copper	51.70	-		µg/L	50.000		103	80-120			
Chromium	49.25	-		µg/L	50.000		98.5	85-115			
Lead	10.20	-		µg/L	10.000		102	91-109			
Cadmium	5.160	-		µg/L	5.0020		103	95-105			

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6I21010 - F609399											
Cal Standard (6I21010-CAL1)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	0.024	-		µg/L	0.020000		120				
Cadmium	0.009	-		µg/L	0.010000		92.6				
Cal Standard (6I21010-CAL2)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	0.046	-		µg/L	0.040000		115				
Cadmium	0.019	-		µg/L	0.020000		93.2				
Cal Standard (6I21010-CAL3)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	0.092	-		µg/L	0.080000		115				
Cadmium	0.040	-		µg/L	0.040000		101				
Cal Standard (6I21010-CAL4)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	1.342	-		µg/L	1.2500		107				
Cadmium	0.479	-		µg/L	0.50000		95.7				
Cal Standard (6I21010-CAL5)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	2.690	-		µg/L	2.5000		108				
Cadmium	0.981	-		µg/L	1.0000		98.1				
Cal Standard (6I21010-CAL6)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	5.295	-		µg/L	5.0000		106				
Cadmium	1.908	-		µg/L	2.0000		95.4				
Cal Standard (6I21010-CAL7)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	12.75	-		µg/L	12.500		102				
Cadmium	4.773	-		µg/L	5.0000		95.5				
Cal Standard (6I21010-CAL8)											
						Prepared: 19-Sep-16 Analyzed: 21-Sep-16					
Lead	25.74	-		µg/L	25.000		103				
Cadmium	9.848	-		µg/L	10.000		98.5				

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6I21010 - F609399											
Cal Standard (6I21010-CAL9)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	49.53	-		µg/L	50.000		99.1				
Cadmium	20.14	-		µg/L	20.000		101				
Calibration Blank (6I21010-CCB1)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	0.0001	-		µg/L							
Cadmium	-0.0009	-		µg/L							U
Calibration Blank (6I21010-CCB2)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	0.0004	-		µg/L							
Cadmium	-0.0003	-		µg/L							U
Calibration Blank (6I21010-CCB3)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	0.0005	-		µg/L							
Cadmium	0.002	-		µg/L							
Calibration Check (6I21010-CCV1)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	10.28	-		µg/L	10.000		103	91-109			
Cadmium	5.034	-		µg/L	5.0020		101	95-105			
Calibration Check (6I21010-CCV2)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	10.16	-		µg/L	10.000		102	91-109			
Cadmium	5.021	-		µg/L	5.0020		100	95-105			
Calibration Check (6I21010-CCV3)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	10.09	-		µg/L	10.000		101	91-109			
Cadmium	5.012	-		µg/L	5.0020		100	95-105			
Initial Cal Blank (6I21010-ICB1)											
					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Lead	0.00009	-		µg/L							
Cadmium	0.002	-		µg/L							

Return to Contents

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I21010 - F609399

Initial Cal Check (6I21010-ICV1)

Prepared: 19-Sep-16 Analyzed: 21-Sep-16

Lead	10.27	-		µg/L	10.000		103	91-109			
Cadmium	4.925	-		µg/L	5.0020		98.5	95-105			

Batch 6I28024 - F609584

Cal Standard (6I28024-CAL1)

Prepared & Analyzed: 28-Sep-16

Mercury	0.52	-		ng/L	0.50100		103				
---------	------	---	--	------	---------	--	-----	--	--	--	--

Cal Standard (6I28024-CAL2)

Prepared & Analyzed: 28-Sep-16

Mercury	1.03	-		ng/L	1.0020		102				
---------	------	---	--	------	--------	--	-----	--	--	--	--

Cal Standard (6I28024-CAL3)

Prepared & Analyzed: 28-Sep-16

Mercury	4.99	-		ng/L	5.0100		99.7				
---------	------	---	--	------	--------	--	------	--	--	--	--

Cal Standard (6I28024-CAL4)

Prepared & Analyzed: 28-Sep-16

Mercury	19.66	-		ng/L	20.040		98.1				
---------	-------	---	--	------	--------	--	------	--	--	--	--

Cal Standard (6I28024-CAL5)

Prepared & Analyzed: 28-Sep-16

Mercury	38.47	-		ng/L	40.080		96.0				
---------	-------	---	--	------	--------	--	------	--	--	--	--

Calibration Blank (6I28024-CCB1)

Prepared & Analyzed: 28-Sep-16

Mercury	0.04	-		ng/L							
---------	------	---	--	------	--	--	--	--	--	--	--

Calibration Blank (6I28024-CCB2)

Prepared & Analyzed: 28-Sep-16

Mercury	0.09	-		ng/L							
---------	------	---	--	------	--	--	--	--	--	--	--

Calibration Blank (6I28024-CCB3)

Prepared & Analyzed: 28-Sep-16

Mercury	0.05	-		ng/L							
---------	------	---	--	------	--	--	--	--	--	--	--

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6I28024 - F609584											
Calibration Blank (6I28024-CCB4) Prepared & Analyzed: 28-Sep-16											
Mercury	0.06	-		ng/L							
Calibration Blank (6I28024-CCB5) Prepared & Analyzed: 28-Sep-16											
Mercury	0.07	-		ng/L							
Calibration Blank (6I28024-CCB6) Prepared & Analyzed: 28-Sep-16											
Mercury	0.04	-		ng/L							
Calibration Blank (6I28024-CCB7) Prepared & Analyzed: 28-Sep-16											
Mercury	0.11	-		ng/L							
Calibration Blank (6I28024-CCB8) Prepared & Analyzed: 28-Sep-16											
Mercury	0.06	-		ng/L							
Calibration Check (6I28024-CCV1) Prepared & Analyzed: 28-Sep-16											
Mercury	5.16	-		ng/L	5.0000		103	77-123			
Calibration Check (6I28024-CCV2) Prepared & Analyzed: 28-Sep-16											
Mercury	5.24	-		ng/L	5.0000		105	77-123			
Calibration Check (6I28024-CCV3) Prepared & Analyzed: 28-Sep-16											
Mercury	5.40	-		ng/L	5.0000		108	77-123			
Calibration Check (6I28024-CCV4) Prepared & Analyzed: 28-Sep-16											
Mercury	5.43	-		ng/L	5.0000		109	77-123			
Calibration Check (6I28024-CCV5) Prepared & Analyzed: 28-Sep-16											
Mercury	5.21	-		ng/L	5.0000		104	77-123			

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I28024 - F609584

Calibration Check (6I28024-CCV6)					Prepared & Analyzed: 28-Sep-16						
Mercury	5.37	-		ng/L	5.0000		107	77-123			
Calibration Check (6I28024-CCV7)					Prepared & Analyzed: 28-Sep-16						
Mercury	5.31	-		ng/L	5.0000		106	77-123			
Calibration Check (6I28024-CCV8)					Prepared & Analyzed: 28-Sep-16						
Mercury	5.38	-		ng/L	5.0000		108	77-123			
Instrument Blank (6I28024-IBL1)					Prepared & Analyzed: 28-Sep-16						
Mercury	ND	-	0.05	ng/L							U
Instrument Blank (6I28024-IBL2)					Prepared & Analyzed: 28-Sep-16						
Mercury	ND	-	0.05	ng/L							U
Instrument Blank (6I28024-IBL3)					Prepared & Analyzed: 28-Sep-16						
Mercury	ND	-	0.05	ng/L							U
Initial Cal Check (6I28024-ICV1)					Prepared & Analyzed: 28-Sep-16						
Mercury	5.20	-		ng/L	5.0000		104	77-123			

Batch F609399 - EPA 3051A Microwave Digestion

Blank (F609399-BLK1)					Prepared: 17-Sep-16 Analyzed: 20-Sep-16						
Chromium	ND	0.06	0.20	mg/kg wet							U
Copper	ND	0.051	0.200	mg/kg wet							U
Zinc	ND	0.06	0.50	mg/kg wet							U
Lead	ND	0.005	0.080	mg/kg wet							U

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch F609399 - EPA 3051A Microwave Digestion

LCS (F609399-BS1)

Prepared: 17-Sep-16 Analyzed: 20-Sep-16

Copper	10.57	0.051	0.200	mg/kg wet	10.004		106	51-145			
Chromium	10.11	0.06	0.20	mg/kg wet	10.002		101	85-115			
Zinc	10.24	0.06	0.50	mg/kg wet	10.004		102	46-146			
Lead	10.20	0.005	0.080	mg/kg wet	10.002		102	72-143			

LCS Dup (F609399-BSD1)

Prepared: 17-Sep-16 Analyzed: 20-Sep-16

Copper	10.79	0.051	0.200	mg/kg wet	10.004		108	51-145	2.10	20	
Zinc	10.19	0.06	0.50	mg/kg wet	10.004		102	46-146	0.467	20	
Chromium	10.44	0.06	0.20	mg/kg wet	10.002		104	85-115	3.14	20	
Lead	10.54	0.005	0.080	mg/kg wet	10.002		105	72-143	3.23	20	

Matrix Spike (F609399-MS1)

Source: 1608939-01

Prepared: 17-Sep-16 Analyzed: 20-Sep-16

Chromium	44.15	0.09	0.31	mg/kg dry	15.260	47.09	-19.3	85-115			QM-14
Copper	43.76	0.078	0.305	mg/kg dry	15.263	48.54	-31.3	51-145			QM-14
Zinc	97.98	0.09	0.76	mg/kg dry	15.263	127.8	-196	46-146			QM-14
Lead	31.03	0.007	0.122	mg/kg dry	15.260	29.89	7.47	72-143			QM-14

Matrix Spike (F609399-MS2)

Source: 1608939-01

Prepared: 17-Sep-16 Analyzed: 20-Sep-16

Copper	135.6	0.077	0.304	mg/kg dry	75.931	48.54	115	51-145			AS
Zinc	303.3	0.09	0.76	mg/kg dry	151.86	127.8	116	46-146			AS
Chromium	114.9	0.09	0.30	mg/kg dry	60.745	47.09	112	85-115			AS
Lead	46.55	0.007	0.121	mg/kg dry	15.186	29.89	110	72-143			AS

Matrix Spike Dup (F609399-MSD1)

Source: 1608939-01

Prepared: 17-Sep-16 Analyzed: 20-Sep-16

Zinc	134.0	0.09	0.78	mg/kg dry	15.549	127.8	39.7	46-146	-302	20	QM-14, QR-08
Copper	60.14	0.079	0.311	mg/kg dry	15.549	48.54	74.6	51-145	489	20	QM-14, QR-08
Chromium	61.07	0.09	0.31	mg/kg dry	15.546	47.09	89.9	85-115	310	20	QM-14, QR-08
Lead	41.33	0.007	0.124	mg/kg dry	15.546	29.89	73.5	72-143	163	20	QM-14, QR-08

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609399 - EPA 3051A Microwave Digestion											
Matrix Spike Dup (F609399-MSD2)			Source: 1608939-01			Prepared: 17-Sep-16 Analyzed: 20-Sep-16					
Zinc	300.8	0.09	0.76	mg/kg dry	151.86	127.8	114	46-146	1.48	20	AS
Chromium	114.2	0.09	0.30	mg/kg dry	60.745	47.09	111	85-115	1.04	20	AS
Copper	135.2	0.077	0.304	mg/kg dry	75.931	48.54	114	51-145	0.461	20	AS
Lead	46.19	0.007	0.121	mg/kg dry	15.186	29.89	107	72-143	2.16	20	AS
Batch F609452 - EPA 3051A Microwave Digestion											
Blank (F609452-BLK1)			Prepared: 17-Sep-16 Analyzed: 21-Sep-16								
Cadmium	ND	0.012	0.050	mg/kg wet							U
LCS (F609452-BS1)			Prepared: 17-Sep-16 Analyzed: 21-Sep-16								
Cadmium	6.944	0.012	0.050	mg/kg wet	8.0060		86.7	84-113			
LCS Dup (F609452-BSD1)			Prepared: 17-Sep-16 Analyzed: 21-Sep-16								
Cadmium	6.816	0.012	0.050	mg/kg wet	8.0060		85.1	84-113	1.86	20	
Matrix Spike (F609452-MS1)			Source: 1608939-01RE1			Prepared: 17-Sep-16 Analyzed: 21-Sep-16					
Cadmium	8.210	0.018	0.076	mg/kg dry	12.215	0.372	64.2	84-113			QM-07
Matrix Spike (F609452-MS2)			Source: 1608939-01RE1			Prepared: 17-Sep-16 Analyzed: 21-Sep-16					
Cadmium	7.011	0.018	0.076	mg/kg dry	6.0745	0.372	109	84-113			AS
Matrix Spike Dup (F609452-MSD1)			Source: 1608939-01RE1			Prepared: 17-Sep-16 Analyzed: 21-Sep-16					
Cadmium	11.24	0.019	0.078	mg/kg dry	12.444	0.372	87.4	84-113	30.6	20	QR-08
Matrix Spike Dup (F609452-MSD2)			Source: 1608939-01RE1			Prepared: 17-Sep-16 Analyzed: 21-Sep-16					
Cadmium	6.830	0.018	0.076	mg/kg dry	6.0745	0.372	106	84-113	2.77	20	AS

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609584 - EFGS-066 Cold Aqua Regia Digestion for Hg											
Blank (F609584-BLK1) Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	ND	-	0.50	ng/g							U
Blank (F609584-BLK2) Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	ND	-	0.50	ng/g							U
Blank (F609584-BLK3) Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	ND	-	0.50	ng/g							U
LCS (F609584-BS1) Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	3.91	-	0.50	ng/g	4.0080		97.5	75-125			
LCS Dup (F609584-BSD1) Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	3.89	-	0.50	ng/g	4.0080		97.1	75-125	0.416	24	
Duplicate (F609584-DUP1) Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	0.72	-	0.94	ng/g		1.48			69.5	24	QR-07, U
Duplicate (F609584-DUP2) Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	1.40	-	0.94	ng/g		1.48			5.43	24	AD
Matrix Spike (F609584-MS1) Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	324.1	-	21.6	ng/g	344.83	1.48	93.6	71-125			
Matrix Spike (F609584-MS2) Source: 1608939-01 Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	414.5	-	23.2	ng/g	371.75	79.12	90.2	71-125			
Matrix Spike Dup (F609584-MSD1) Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16											
Mercury	377.1	-	23.6	ng/g	377.36	1.48	99.5	71-125	6.19	24	

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1364/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:17
--	--	-------------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch F609584 - EFGS-066 Cold Aqua Regia Digestion for Hg

Matrix Spike Dup (F609584-MSD2)	Source: 1608939-01		Prepared: 27-Sep-16 Analyzed: 28-Sep-16								
Mercury	403.8	-	20.5	ng/g	327.87	79.12	99.0	71-125	9.33	24	

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1364/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:17

Notes and Definitions

- U Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
- QR-08 The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
- QR-07 The RPD/RSD value for the matrix duplicate/triplicate was outside of acceptance limits. Batch QC acceptable based on MS/MSD and/or LCS/LCSD RPD values within control limits.
- QM-14 The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 2 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- QM-13 The analytical spike recovery was outside control limits for the AS and/or ASD. The batch was accepted based on MS/MSD and LCS/LCSD recoveries within control limits.
- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- J The result is an estimated concentration.
- E-01 Sample was preceded by a sample exceeding the calibration curve and was reanalyzed for confirmation.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
- AS This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
- AD This matrix duplicate is an analytical duplicate.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Return to Contents

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

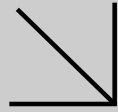
The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Environmental
Calscience

Supplemental Report 1

The original report has been revised/corrected.



WORK ORDER NUMBER: 16-08-1487

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA Sediment Sampling

Attention: Andrew Martin
27201 Puerta Real
Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 12/16/2016 by:
Carla Hollowell
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: GWMA Sediment Sampling
 Work Order Number: 16-08-1487

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 9060A Total Organic Carbon (Solid).	5
	3.2 SM 2540 B (M) Total Solids (Solid).	6
	3.3 ASTM D4464 (M) Particle Size Laser (Solid).	7
	3.4 EPA 8081A Organochlorine Pesticides (Solid).	8
	3.5 EPA 8270C SIM OC Pesticides (Solid).	10
	3.6 EPA 8270C SIM PAHs (Solid).	14
	3.7 EPA 8270C SIM PCB Congeners (Solid).	18
4	Particle Size Summary - 16-08-1487.	26
5	Quality Control Sample Data.	29
	5.1 MS/MSD.	29
	5.2 Sample Duplicate.	34
	5.3 LCS/LCSD.	35
6	Glossary of Terms and Qualifiers.	40
7	Chain-of-Custody/Sample Receipt Form.	41
8	Subcontract Narrative.	46
9	Subcontract Report (EFGS) - 16-08-1487.	47

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/19/16. They were assigned to Work Order 16-08-1487.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order: 16-08-1487
27201 Puerta Real, Suite 350	Project Name: GWMA Sediment Sampling
Mission Viejo, CA 92691-8306	PO Number:
	Date/Time Received: 08/19/16 17:55
	Number of Containers: 23

Attn: Andrew Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
OB-SS-16-0-5-20160819	16-08-1487-1	08/19/16 08:22	7	Sediment
OB-SS-08-0-5-20160819	16-08-1487-2	08/19/16 09:32	8	Sediment
OB-SS-1016-0-5-20160819	16-08-1487-3	08/19/16 08:24	8	Sediment

Return to Contents



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: N/A
Method: EPA 9060A
Units: %

Project: GWMA Sediment Sampling

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.94	0.095	0.033	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	2.0	0.11	0.037	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	0.76	0.093	0.032	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-06-013-1599	N/A	Solid	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	0.050	0.017	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Project: GWMA Sediment Sampling

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	52.6	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	46.8	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	53.5	0.100	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-05-019-3383	N/A	Solid	N/A	08/29/16	08/29/16 21:00	G0829TSB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	ND	0.100	0.100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/19/16
 Work Order: 16-08-1487
 Preparation: N/A
 Method: ASTM D4464 (M)
 Units: %

Project: GWMA Sediment Sampling

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-H	08/19/16 08:22	Sediment	LPSA 1	N/A	08/24/16 10:22	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	11.87	
Silt (0.00391 to 0.0625mm)	65.75	
Total Silt and Clay (0 to 0.0625mm)	77.62	
Very Fine Sand (0.0625 to 0.125mm)	17.49	
Fine Sand (0.125 to 0.25mm)	4.90	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

OB-SS-08-0-5-20160819	16-08-1487-2-H	08/19/16 09:32	Sediment	LPSA 1	N/A	08/24/16 10:34	
------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	11.63	
Silt (0.00391 to 0.0625mm)	69.42	
Total Silt and Clay (0 to 0.0625mm)	81.05	
Very Fine Sand (0.0625 to 0.125mm)	14.10	
Fine Sand (0.125 to 0.25mm)	4.80	
Medium Sand (0.25 to 0.5mm)	0.050	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

OB-SS-1016-0-5-20160819	16-08-1487-3-H	08/19/16 08:24	Sediment	LPSA 1	N/A	08/24/16 10:41	
--------------------------------	-----------------------	---------------------------	-----------------	---------------	------------	---------------------------	--

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	10.82	
Silt (0.00391 to 0.0625mm)	63.10	
Total Silt and Clay (0 to 0.0625mm)	73.91	
Very Fine Sand (0.0625 to 0.125mm)	18.20	
Fine Sand (0.125 to 0.25mm)	7.43	
Medium Sand (0.25 to 0.5mm)	0.46	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	GC 44	08/27/16	09/01/16 15:09	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	38	17	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	359	25-145	2,7		
Decachlorobiphenyl	149	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	GC 44	08/27/16	09/01/16 15:23	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	42	19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	138	25-145			
Decachlorobiphenyl	116	24-168			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	GC 44	08/27/16	09/01/16 15:37	160827L06

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	37	17	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2,4,5,6-Tetrachloro-m-Xylene	202	25-145	2,7		
Decachlorobiphenyl	126	24-168			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-858-427	N/A	Solid	GC 44	08/27/16	09/01/16 06:54	160827L06

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Toxaphene	ND	20	9.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,5,6-Tetrachloro-m-Xylene	86	25-145	
Decachlorobiphenyl	98	24-168	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	GC/MS BBB	08/24/16	08/30/16 02:18	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.38	0.13	1.00	
Cis-nonachlor	ND	0.38	0.096	1.00	
2,4'-DDD	ND	0.38	0.14	1.00	
2,4'-DDE	4.5	0.38	0.066	1.00	
2,4'-DDT	ND	0.38	0.12	1.00	
4,4'-DDD	ND	0.38	0.075	1.00	
4,4'-DDT	ND	0.38	0.099	1.00	
Dieldrin	ND	0.38	0.20	1.00	
Gamma Chlordane	ND	0.38	0.10	1.00	
Oxychlordane	ND	0.38	0.14	1.00	
Trans-nonachlor	ND	0.38	0.081	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	25	25-200	
2,4,5,6-Tetrachloro-m-Xylene	67	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	GC/MS BBB	08/24/16	08/30/16 16:53	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	32	1.9	0.38	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	148	25-200	
2,4,5,6-Tetrachloro-m-Xylene	82	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	GC/MS BBB	08/24/16	08/30/16 02:34	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.43	0.14	1.00	
Cis-nonachlor	ND	0.43	0.11	1.00	
2,4'-DDD	ND	0.43	0.16	1.00	
2,4'-DDE	14	0.43	0.075	1.00	
2,4'-DDT	ND	0.43	0.13	1.00	
4,4'-DDD	ND	0.43	0.085	1.00	
4,4'-DDT	ND	0.43	0.11	1.00	
Dieldrin	ND	0.43	0.23	1.00	
Gamma Chlordane	ND	0.43	0.11	1.00	
Oxychlordane	ND	0.43	0.16	1.00	
Trans-nonachlor	ND	0.43	0.092	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	27	25-200	
2,4,5,6-Tetrachloro-m-Xylene	55	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	GC/MS BBB	08/24/16	08/30/16 17:09	160824L13

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	90	4.3	0.87	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	148	25-200	
2,4,5,6-Tetrachloro-m-Xylene	63	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	GC/MS BBB	08/24/16	08/30/16 02:50	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.37	0.12	1.00	
Cis-nonachlor	ND	0.37	0.094	1.00	
2,4'-DDD	ND	0.37	0.14	1.00	
2,4'-DDE	4.2	0.37	0.065	1.00	
2,4'-DDT	ND	0.37	0.12	1.00	
4,4'-DDD	ND	0.37	0.074	1.00	
4,4'-DDT	ND	0.37	0.098	1.00	
Dieldrin	ND	0.37	0.20	1.00	
Gamma Chlordane	ND	0.37	0.099	1.00	
Oxychlordane	ND	0.37	0.14	1.00	
Trans-nonachlor	ND	0.37	0.080	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	26	25-200	
2,4,5,6-Tetrachloro-m-Xylene	61	25-200	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	GC/MS BBB	08/24/16	08/30/16 17:25	160824L13

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	26	1.9	0.38	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	119	25-200	
2,4,5,6-Tetrachloro-m-Xylene	69	25-200	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/19/16
 Work Order: 16-08-1487
 Preparation: EPA 3541
 Method: EPA 8270C PEST-SIM
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-154-66	N/A	Solid	GC/MS BBB	08/24/16	08/29/16 14:31	160824L13

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha Chlordane	ND	0.20	0.067	1.00	
Cis-nonachlor	ND	0.20	0.051	1.00	
2,4'-DDD	ND	0.20	0.076	1.00	
2,4'-DDE	ND	0.20	0.035	1.00	
2,4'-DDT	ND	0.20	0.062	1.00	
4,4'-DDD	ND	0.20	0.040	1.00	
4,4'-DDE	ND	0.20	0.040	1.00	
4,4'-DDT	ND	0.20	0.053	1.00	
Dieldrin	ND	0.20	0.11	1.00	
Gamma Chlordane	ND	0.20	0.053	1.00	
Oxychlordane	ND	0.20	0.073	1.00	
Trans-nonachlor	ND	0.20	0.043	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloroendate	121	25-200			
2,4,5,6-Tetrachloro-m-Xylene	85	25-200			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	GC/MS AAA	08/31/16	09/02/16 01:46	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	19	4.4	1.00	
Anthracene	18	19	6.6	1.00	J
Benzo (a) Anthracene	31	19	4.1	1.00	
Benzo (a) Pyrene	54	19	3.5	1.00	
Benzo (e) Pyrene	38	19	3.7	1.00	
Biphenyl	ND	19	3.5	1.00	
Chrysene	46	19	4.2	1.00	
Dibenz (a,h) Anthracene	ND	19	3.7	1.00	
2,6-Dimethylnaphthalene	32	19	3.2	1.00	
Fluoranthene	43	19	3.4	1.00	
Fluorene	ND	19	5.9	1.00	
2-Methylnaphthalene	ND	19	4.4	1.00	
1-Methylnaphthalene	ND	19	4.4	1.00	
1-Methylphenanthrene	ND	19	4.7	1.00	
Naphthalene	ND	19	6.5	1.00	
Perylene	38	19	4.5	1.00	
Phenanthrene	19	19	4.2	1.00	J
Pyrene	63	19	4.2	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	63	14-146	
Nitrobenzene-d5	58	18-162	
p-Terphenyl-d14	82	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	GC/MS AAA	08/31/16	09/02/16 02:06	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	21	5.0	1.00	
Anthracene	13	21	7.4	1.00	J
Benzo (a) Anthracene	26	21	4.6	1.00	
Benzo (a) Pyrene	46	21	3.9	1.00	
Benzo (e) Pyrene	33	21	4.2	1.00	
Biphenyl	4.3	21	4.0	1.00	J
Chrysene	36	21	4.8	1.00	
Dibenz (a,h) Anthracene	ND	21	4.2	1.00	
2,6-Dimethylnaphthalene	110	21	3.7	1.00	
Fluoranthene	54	21	3.9	1.00	
Fluorene	ND	21	6.7	1.00	
2-Methylnaphthalene	ND	21	5.0	1.00	
1-Methylnaphthalene	ND	21	5.0	1.00	
1-Methylphenanthrene	ND	21	5.3	1.00	
Naphthalene	ND	21	7.4	1.00	
Perylene	480	21	5.1	1.00	
Phenanthrene	21	21	4.8	1.00	J
Pyrene	59	21	4.8	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	60	14-146	
Nitrobenzene-d5	51	18-162	
p-Terphenyl-d14	75	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	GC/MS AAA	08/31/16	09/02/16 02:26	160831L10

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	19	4.4	1.00	
Anthracene	12	19	6.5	1.00	J
Benzo (a) Anthracene	29	19	4.0	1.00	
Benzo (a) Pyrene	53	19	3.4	1.00	
Benzo (e) Pyrene	38	19	3.7	1.00	
Biphenyl	ND	19	3.5	1.00	
Chrysene	41	19	4.1	1.00	
Dibenz (a,h) Anthracene	7.6	19	3.6	1.00	J
2,6-Dimethylnaphthalene	38	19	3.2	1.00	
Fluoranthene	43	19	3.4	1.00	
Fluorene	ND	19	5.8	1.00	
2-Methylnaphthalene	ND	19	4.3	1.00	
1-Methylnaphthalene	ND	19	4.3	1.00	
1-Methylphenanthrene	5.0	19	4.6	1.00	J
Naphthalene	ND	19	6.5	1.00	
Perylene	39	19	4.4	1.00	
Phenanthrene	18	19	4.1	1.00	J
Pyrene	60	19	4.2	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	63	14-146	
Nitrobenzene-d5	57	18-162	
p-Terphenyl-d14	80	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs
Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-097-218	N/A	Solid	GC/MS AAA	08/31/16	09/01/16 16:35	160831L10

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acenaphthene	ND	10	2.4	1.00	
Anthracene	ND	10	3.5	1.00	
Benzo (a) Anthracene	ND	10	2.2	1.00	
Benzo (a) Pyrene	ND	10	1.8	1.00	
Benzo (e) Pyrene	ND	10	2.0	1.00	
Biphenyl	ND	10	1.9	1.00	
Chrysene	ND	10	2.2	1.00	
Dibenz (a,h) Anthracene	ND	10	2.0	1.00	
2,6-Dimethylnaphthalene	ND	10	1.7	1.00	
Fluoranthene	ND	10	1.8	1.00	
Fluorene	ND	10	3.1	1.00	
2-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylnaphthalene	ND	10	2.3	1.00	
1-Methylphenanthrene	ND	10	2.5	1.00	
Naphthalene	ND	10	3.5	1.00	
Perylene	ND	10	2.4	1.00	
Phenanthrene	ND	10	2.2	1.00	
Pyrene	ND	10	2.2	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	77	14-146	
Nitrobenzene-d5	84	18-162	
p-Terphenyl-d14	94	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-16-0-5-20160819	16-08-1487-1-AA	08/19/16 08:22	Sediment	GC/MS HHH	08/23/16	08/25/16 19:27	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.76	0.28	1.00	
PCB018	ND	0.38	0.14	1.00	
PCB028	0.61	0.38	0.064	1.00	
PCB037	ND	0.38	0.11	1.00	
PCB044	ND	0.38	0.17	1.00	
PCB049	ND	0.38	0.21	1.00	
PCB052	ND	0.38	0.12	1.00	
PCB066	1.3	0.38	0.19	1.00	
PCB070	0.92	0.38	0.11	1.00	
PCB074	ND	0.38	0.17	1.00	
PCB077	ND	0.38	0.15	1.00	
PCB081	ND	0.38	0.23	1.00	
PCB087	1.3	0.38	0.20	1.00	
PCB099	1.2	0.38	0.12	1.00	
PCB101	1.2	0.38	0.19	1.00	
PCB105	1.1	0.38	0.10	1.00	
PCB110	1.8	0.38	0.087	1.00	
PCB114	ND	0.38	0.16	1.00	
PCB118	2.1	0.38	0.16	1.00	
PCB119	ND	0.38	0.18	1.00	
PCB123	ND	0.38	0.20	1.00	
PCB126	ND	0.38	0.15	1.00	
PCB128	ND	0.38	0.19	1.00	
PCB132/153	3.8	0.76	0.33	1.00	
PCB138/158	3.0	0.76	0.18	1.00	
PCB149	1.7	0.38	0.19	1.00	
PCB151	ND	0.38	0.13	1.00	
PCB156	ND	0.38	0.11	1.00	
PCB157	ND	0.38	0.099	1.00	
PCB167	ND	0.38	0.12	1.00	
PCB168	ND	0.38	0.093	1.00	
PCB169	ND	0.38	0.12	1.00	
PCB170	0.83	0.38	0.12	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/19/16
 Work Order: 16-08-1487
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 2 of 8

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.38	0.17	1.00	
PCB180	1.5	0.38	0.080	1.00	
PCB183	ND	0.38	0.21	1.00	
PCB187	1.1	0.38	0.16	1.00	
PCB189	ND	0.38	0.12	1.00	
PCB194	ND	0.38	0.21	1.00	
PCB195	ND	0.38	0.22	1.00	
PCB201	ND	0.38	0.18	1.00	
PCB206	ND	0.38	0.37	1.00	
PCB209	ND	0.38	0.28	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	58	50-150			
p-Terphenyl-d14	105	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 3 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-08-0-5-20160819	16-08-1487-2-AA	08/19/16 09:32	Sediment	GC/MS HHH	08/23/16	08/25/16 19:50	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	0.39	0.85	0.31	1.00	J
PCB018	ND	0.42	0.15	1.00	
PCB028	0.95	0.42	0.071	1.00	
PCB037	ND	0.42	0.13	1.00	
PCB044	1.8	0.42	0.18	1.00	
PCB049	0.71	0.42	0.24	1.00	
PCB052	1.4	0.42	0.13	1.00	
PCB066	2.6	0.42	0.22	1.00	
PCB070	2.2	0.42	0.13	1.00	
PCB074	1.2	0.42	0.18	1.00	
PCB077	ND	0.42	0.16	1.00	
PCB081	ND	0.42	0.25	1.00	
PCB087	3.2	0.42	0.23	1.00	
PCB099	1.8	0.42	0.13	1.00	
PCB101	2.9	0.42	0.21	1.00	
PCB105	2.4	0.42	0.12	1.00	
PCB110	3.1	0.42	0.097	1.00	
PCB114	ND	0.42	0.17	1.00	
PCB118	3.8	0.42	0.18	1.00	
PCB119	ND	0.42	0.20	1.00	
PCB123	ND	0.42	0.22	1.00	
PCB126	ND	0.42	0.17	1.00	
PCB128	ND	0.42	0.22	1.00	
PCB132/153	5.2	0.85	0.37	1.00	
PCB138/158	4.9	0.85	0.20	1.00	
PCB149	2.7	0.42	0.21	1.00	
PCB151	1.2	0.42	0.14	1.00	
PCB156	ND	0.42	0.12	1.00	
PCB157	ND	0.42	0.11	1.00	
PCB167	ND	0.42	0.13	1.00	
PCB168	ND	0.42	0.10	1.00	
PCB169	ND	0.42	0.13	1.00	
PCB170	1.8	0.42	0.13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/19/16
 Work Order: 16-08-1487
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 4 of 8

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.42	0.18	1.00	
PCB180	2.4	0.42	0.089	1.00	
PCB183	ND	0.42	0.23	1.00	
PCB187	1.7	0.42	0.18	1.00	
PCB189	ND	0.42	0.13	1.00	
PCB194	ND	0.42	0.24	1.00	
PCB195	ND	0.42	0.25	1.00	
PCB201	ND	0.42	0.20	1.00	
PCB206	ND	0.42	0.41	1.00	
PCB209	ND	0.42	0.31	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	63	50-150			
p-Terphenyl-d14	113	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 5 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-SS-1016-0-5-20160819	16-08-1487-3-AA	08/19/16 08:24	Sediment	GC/MS HHH	08/23/16	08/25/16 20:13	160823L18

Comment(s): - Results are reported on a dry weight basis.

- Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	0.33	0.74	0.27	1.00	J
PCB018	ND	0.37	0.13	1.00	
PCB028	0.91	0.37	0.062	1.00	
PCB037	ND	0.37	0.11	1.00	
PCB044	ND	0.37	0.16	1.00	
PCB049	ND	0.37	0.21	1.00	
PCB052	ND	0.37	0.12	1.00	
PCB066	1.4	0.37	0.19	1.00	
PCB070	0.92	0.37	0.11	1.00	
PCB074	ND	0.37	0.16	1.00	
PCB077	ND	0.37	0.14	1.00	
PCB081	ND	0.37	0.22	1.00	
PCB087	1.4	0.37	0.20	1.00	
PCB099	1.2	0.37	0.11	1.00	
PCB101	1.9	0.37	0.18	1.00	
PCB105	1.6	0.37	0.10	1.00	
PCB110	2.0	0.37	0.085	1.00	
PCB114	ND	0.37	0.15	1.00	
PCB118	2.4	0.37	0.16	1.00	
PCB119	ND	0.37	0.18	1.00	
PCB123	ND	0.37	0.19	1.00	
PCB126	ND	0.37	0.15	1.00	
PCB128	ND	0.37	0.19	1.00	
PCB132/153	4.1	0.74	0.32	1.00	
PCB138/158	3.2	0.74	0.18	1.00	
PCB149	1.9	0.37	0.18	1.00	
PCB151	0.60	0.37	0.13	1.00	
PCB156	ND	0.37	0.11	1.00	
PCB157	ND	0.37	0.097	1.00	
PCB167	ND	0.37	0.11	1.00	
PCB168	ND	0.37	0.091	1.00	
PCB169	ND	0.37	0.11	1.00	
PCB170	1.0	0.37	0.12	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/19/16
 Work Order: 16-08-1487
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA Sediment Sampling

Page 6 of 8

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB177	ND	0.37	0.16	1.00	
PCB180	1.6	0.37	0.078	1.00	
PCB183	ND	0.37	0.21	1.00	
PCB187	1.2	0.37	0.16	1.00	
PCB189	ND	0.37	0.11	1.00	
PCB194	ND	0.37	0.21	1.00	
PCB195	ND	0.37	0.22	1.00	
PCB201	ND	0.37	0.18	1.00	
PCB206	ND	0.37	0.36	1.00	
PCB209	1.0	0.37	0.27	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	62	50-150			
p-Terphenyl-d14	105	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-418-222	N/A	Solid	GC/MS HHH	08/23/16	08/25/16 12:54	160823L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB005/008	ND	0.40	0.14	1.00	
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	ND	0.20	0.11	1.00	
PCB052	ND	0.20	0.063	1.00	
PCB066	ND	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	ND	0.20	0.11	1.00	
PCB099	ND	0.20	0.061	1.00	
PCB101	ND	0.20	0.098	1.00	
PCB105	ND	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	ND	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	ND	0.40	0.17	1.00	
PCB138/158	ND	0.40	0.094	1.00	
PCB149	ND	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	ND	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA Sediment Sampling

Page 8 of 8

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB180	ND	0.20	0.042	1.00	
PCB183	ND	0.20	0.11	1.00	
PCB187	ND	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB195	ND	0.20	0.12	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
PCB209	ND	0.20	0.15	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	65	50-150			
p-Terphenyl-d14	79	50-150			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

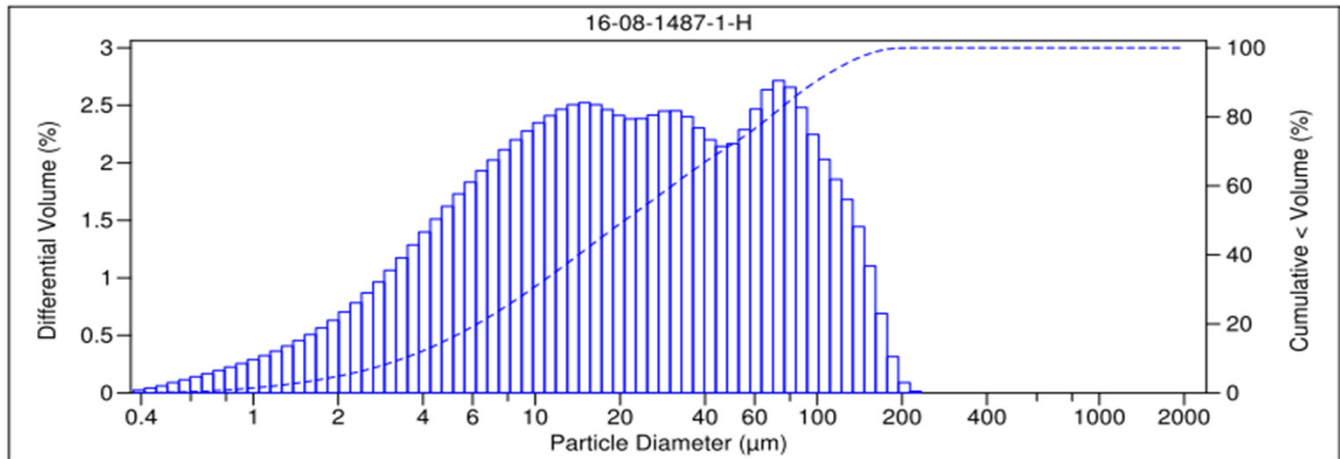
ANCHOR QEA	Date Sampled:	08/19/16
	Date Received:	08/19/16
	Work Order No:	16-08-1487
	Date Analyzed:	08/24/16
	Method:	ASTM D4464M

Project: GWMA Sediment Sampling

Page 1 of 3

Sample ID	Depth ft	Description	Mean Grain Size mm
OB-CS-16-0-5-20160819		Silt	0.037

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	4.90	17.49	65.75	11.87	77.62



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

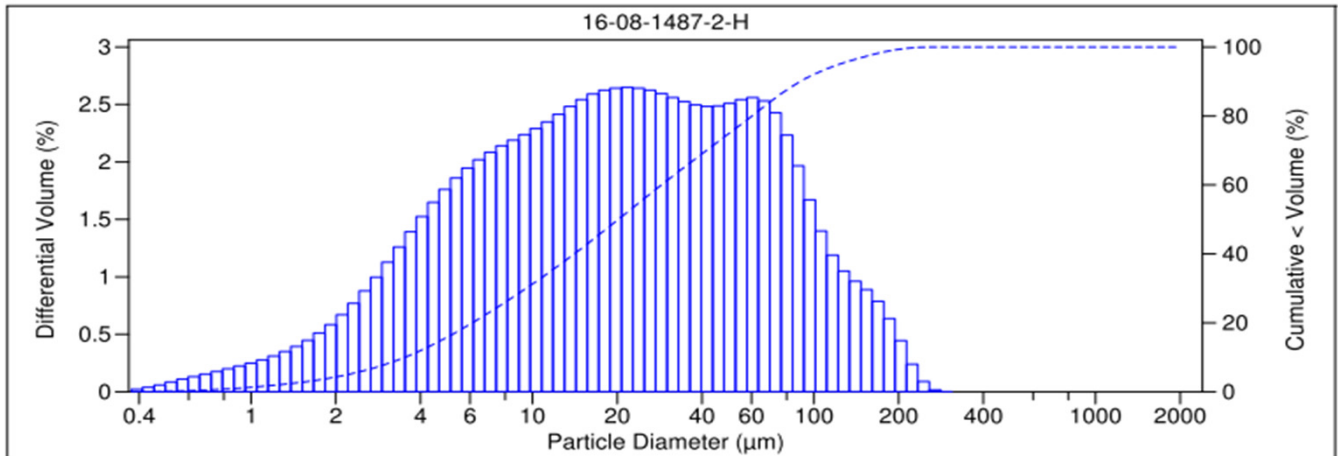
ANCHOR QEA	Date Sampled:	08/19/16
	Date Received:	08/19/16
	Work Order No:	16-08-1487
	Date Analyzed:	08/24/16
	Method:	ASTM D4464M

Project: GWMA Sediment Sampling

Page 2 of 3

Sample ID	Depth ft	Description	Mean Grain Size mm
OB-CS-08-0-5-20160819		Silt	0.036

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.05	4.80	14.10	69.42	11.63	81.05



V 3.0

Return to Contents

PARTICLE SIZE SUMMARY (ASTM D422 / D4464M)

ANCHOR QEA

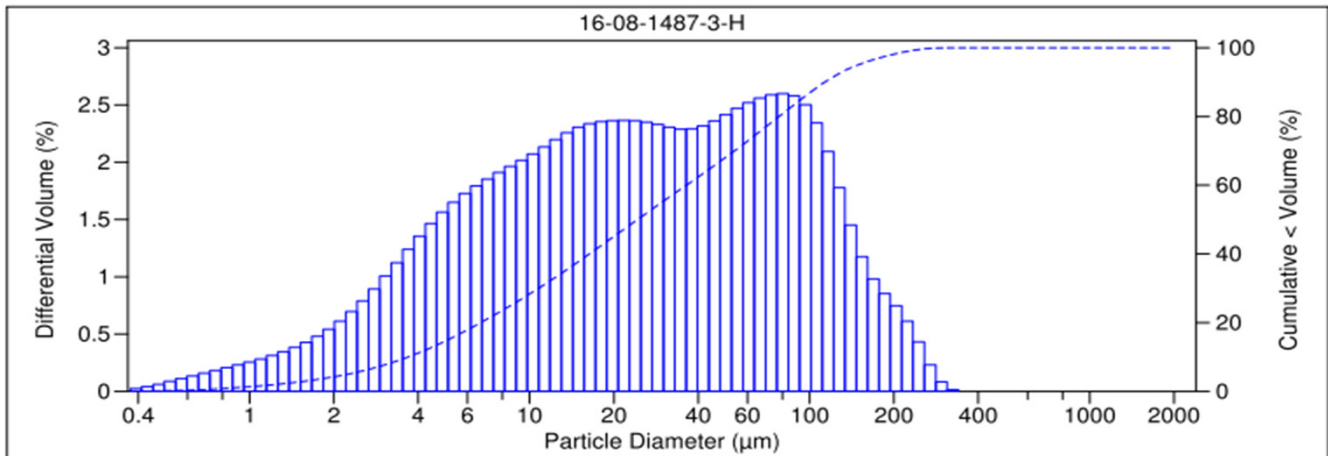
Date Sampled: 08/19/16
 Date Received: 08/19/16
 Work Order No: 16-08-1487
 Date Analyzed: 08/24/16
 Method: ASTM D4464M

Project: GWMA Sediment Sampling

Page 3 of 3

Sample ID	Depth ft	Description	Mean Grain Size mm
OB-CS-1016-0-5-20160819		Silt	0.044

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.46	7.43	18.20	63.10	10.82	73.91



V 3.0

Return to Contents



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: N/A
Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1268-5	Sample	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCS1
16-08-1268-5	Matrix Spike	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCS1
16-08-1268-5	Matrix Spike Duplicate	Sediment	TOC 1	08/24/16	08/24/16 17:06	G0824TOCS1

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.5140	3.000	0.5140	0	0.5140	0	75-125	0	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1364-1	Sample	Sediment	GC 44	08/27/16	09/01/16 13:29	160827S06
16-08-1364-1	Matrix Spike	Sediment	GC 44	08/27/16	09/01/16 07:37	160827S06
16-08-1364-1	Matrix Spike Duplicate	Sediment	GC 44	08/27/16	09/01/16 07:51	160827S06

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	5.124	102	5.259	105	50-135	3	0-25	
Alpha-BHC	ND	5.000	8.359	167	8.487	170	50-135	2	0-25	3
Beta-BHC	ND	5.000	107.2	2145	92.32	1846	50-135	15	0-25	3
Delta-BHC	ND	5.000	10.06	201	9.123	182	50-135	10	0-25	3
Gamma-BHC	ND	5.000	5.759	115	5.286	106	50-135	9	0-25	
Dieldrin	ND	5.000	10.27	205	10.28	206	50-135	0	0-25	3
4,4'-DDD	ND	5.000	9.617	192	9.222	184	50-135	4	0-25	3
4,4'-DDE	ND	5.000	50.64	1013	46.05	921	50-135	9	0-25	3
4,4'-DDT	ND	5.000	5.561	111	3.363	67	50-135	49	0-25	4
Endosulfan I	ND	5.000	7.355	147	6.807	136	50-135	8	0-25	3
Endosulfan II	ND	5.000	8.671	173	7.732	155	50-135	11	0-25	3
Endosulfan Sulfate	ND	5.000	7.468	149	7.581	152	50-135	2	0-25	3
Endrin	ND	5.000	0.7060	14	6.347	127	50-135	160	0-25	3,4
Endrin Aldehyde	ND	5.000	6.022	120	5.743	115	50-135	5	0-25	
Endrin Ketone	ND	5.000	8.470	169	7.646	153	50-135	10	0-25	3
Heptachlor	ND	5.000	5.469	109	4.733	95	50-135	14	0-25	
Heptachlor Epoxide	ND	5.000	10.27	205	9.707	194	50-135	6	0-25	3
Methoxychlor	ND	5.000	5.574	111	4.284	86	50-135	26	0-25	4
Alpha Chlordane	ND	5.000	9.539	191	8.721	174	50-135	9	0-25	3
Gamma Chlordane	ND	5.000	20.79	416	20.65	413	50-135	1	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1364-1	Sample	Sediment	GC/MS BBB	08/24/16	08/29/16 23:54	160824S13A
16-08-1364-1	Matrix Spike	Sediment	GC/MS BBB	08/24/16	08/30/16 01:46	160824S13A
16-08-1364-1	Matrix Spike Duplicate	Sediment	GC/MS BBB	08/24/16	08/30/16 02:02	160824S13A

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	3.800	76	3.827	77	25-200	1	0-25	
Alpha Chlordane	ND	5.000	1.459	29	1.241	25	25-200	16	0-25	
Alpha-BHC	ND	5.000	1.884	38	1.683	34	25-200	11	0-25	
Beta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
4,4'-DDD	ND	5.000	1.628	33	1.524	30	25-200	7	0-25	
4,4'-DDE	27.99	5.000	27.35	0	26.89	0	25-200	2	0-25	3
4,4'-DDT	ND	5.000	0	0	0	0	25-200	0	0-25	3
Delta-BHC	ND	5.000	0	0	0	0	25-200	0	0-25	3
Dieldrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan I	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan II	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endosulfan Sulfate	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Aldehyde	ND	5.000	0	0	0	0	25-200	0	0-25	3
Endrin Ketone	ND	5.000	0	0	0	0	25-200	0	0-25	3
Gamma Chlordane	ND	5.000	1.485	30	1.376	28	25-200	8	0-25	
Gamma-BHC	ND	5.000	2.332	47	0	0	25-200	200	0-25	3,4
Heptachlor	ND	5.000	0	0	0	0	25-200	0	0-25	3
Heptachlor Epoxide	ND	5.000	1.477	30	1.417	28	25-200	4	0-25	
Methoxychlor	ND	5.000	0	0	0	0	25-200	0	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1364-3	Sample	Sediment	GC/MS AAA	08/31/16	09/02/16 00:08	160831S10
16-08-1364-3	Matrix Spike	Sediment	GC/MS AAA	08/31/16	09/02/16 02:45	160831S10
16-08-1364-3	Matrix Spike Duplicate	Sediment	GC/MS AAA	08/31/16	09/02/16 03:05	160831S10

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acenaphthene	ND	100.0	72.68	73	69.49	69	40-160	4	0-20	
Acenaphthylene	ND	100.0	71.32	71	67.66	68	40-160	5	0-20	
Anthracene	ND	100.0	73.27	73	71.05	71	40-160	3	0-20	
Benzo (a) Anthracene	ND	100.0	77.79	78	75.40	75	40-160	3	0-20	
Benzo (a) Pyrene	ND	100.0	80.44	80	76.21	76	40-160	5	0-20	
Benzo (b) Fluoranthene	ND	100.0	90.46	90	82.26	82	40-160	9	0-20	
Benzo (g,h,i) Perylene	ND	100.0	48.84	49	48.05	48	40-160	2	0-20	
Benzo (k) Fluoranthene	ND	100.0	89.22	89	86.89	87	40-160	3	0-20	
Chrysene	ND	100.0	77.95	78	75.98	76	40-160	3	0-20	
Dibenz (a,h) Anthracene	ND	100.0	60.21	60	58.70	59	40-160	3	0-20	
Fluoranthene	ND	100.0	65.44	65	62.90	63	40-160	4	0-20	
Fluorene	ND	100.0	80.73	81	72.73	73	40-160	10	0-20	
Indeno (1,2,3-c,d) Pyrene	ND	100.0	53.95	54	52.72	53	40-160	2	0-20	
2-Methylnaphthalene	ND	100.0	73.02	73	67.80	68	40-160	7	0-20	
1-Methylnaphthalene	ND	100.0	61.35	61	59.22	59	40-160	4	0-20	
Naphthalene	ND	100.0	67.62	68	63.38	63	40-160	6	0-20	
Phenanthrene	ND	100.0	79.94	80	76.15	76	40-160	5	0-20	
Pyrene	ND	100.0	95.25	95	89.22	89	40-160	7	0-46	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-08-1364-1	Sample	Sediment	GC/MS HHH	08/23/16	08/25/16 16:42	160823S18
16-08-1364-1	Matrix Spike	Sediment	GC/MS HHH	08/23/16	08/25/16 14:05	160823S18
16-08-1364-1	Matrix Spike Duplicate	Sediment	GC/MS HHH	08/23/16	08/25/16 14:28	160823S18

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	38.69	77	42.74	85	50-150	10	0-25	
PCB028	0.4520	50.00	42.77	85	47.81	95	50-150	11	0-25	
PCB044	0.3753	50.00	39.93	79	46.57	92	50-150	15	0-25	
PCB052	0.4907	50.00	35.74	71	41.83	83	50-150	16	0-25	
PCB066	0.9151	50.00	48.01	94	54.77	108	50-150	13	0-25	
PCB077	ND	50.00	44.61	89	50.41	101	50-150	12	0-25	
PCB101	0.9733	50.00	41.06	80	46.36	91	50-150	12	0-25	
PCB105	0.7389	50.00	46.52	92	53.65	106	50-150	14	0-25	
PCB118	1.268	50.00	49.23	96	56.06	110	50-150	13	0-25	
PCB126	ND	50.00	42.66	85	49.86	100	50-150	16	0-25	
PCB128	0.2632	50.00	43.56	87	50.97	101	50-150	16	0-25	
PCB170	0.4070	50.00	46.37	92	49.11	97	50-150	6	0-25	
PCB180	0.6587	50.00	53.11	105	59.79	118	50-150	12	0-25	
PCB187	0.5124	50.00	43.84	87	50.60	100	50-150	14	0-25	
PCB195	ND	50.00	48.07	96	49.31	99	50-150	3	0-25	
PCB206	ND	50.00	52.68	105	50.92	102	50-150	3	0-25	
PCB209	0.3434	50.00	53.05	105	52.35	104	50-150	1	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 08/19/16
 Work Order: 16-08-1487
 Preparation: N/A
 Method: SM 2540 B (M)

Project: GWMA Sediment Sampling

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
16-08-1364-2	Sample	Sediment	N/A	08/29/16 00:00	08/29/16 21:00	G0829TSD1
16-08-1364-2	Sample Duplicate	Sediment	N/A	08/29/16 00:00	08/29/16 21:00	G0829TSD1

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total	48.70	47.30	3	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: N/A
Method: EPA 9060A

Project: GWMA Sediment Sampling

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-06-013-1599	LCS	Solid	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1			
099-06-013-1599	LCSD	Solid	TOC 1	08/24/16	08/24/16 17:06	G0824TOCL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.6000	0.6000	100	0.6000	100	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA Sediment Sampling

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-858-427	LCS	Solid	GC 44	08/27/16	09/01/16 06:26	160827L06				
099-12-858-427	LCSD	Solid	GC 44	08/27/16	09/01/16 06:40	160827L06				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	5.190	104	5.318	106	50-135	36-149	2	0-25	
Alpha-BHC	5.000	5.193	104	5.345	107	50-135	36-149	3	0-25	
Beta-BHC	5.000	5.629	113	5.681	114	50-135	36-149	1	0-25	
Delta-BHC	5.000	5.928	119	5.866	117	50-135	36-149	1	0-25	
Gamma-BHC	5.000	5.362	107	5.559	111	50-135	36-149	4	0-25	
Dieldrin	5.000	5.956	119	5.979	120	50-135	36-149	0	0-25	
4,4'-DDD	5.000	6.310	126	6.268	125	50-135	36-149	1	0-25	
4,4'-DDE	5.000	5.966	119	5.974	119	50-135	36-149	0	0-25	
4,4'-DDT	5.000	6.495	130	6.454	129	50-135	36-149	1	0-25	
Endosulfan I	5.000	5.694	114	5.735	115	50-135	36-149	1	0-25	
Endosulfan II	5.000	6.384	128	6.446	129	50-135	36-149	1	0-25	
Endosulfan Sulfate	5.000	6.194	124	6.092	122	50-135	36-149	2	0-25	
Endrin	5.000	6.078	122	6.069	121	50-135	36-149	0	0-25	
Endrin Aldehyde	5.000	5.680	114	5.662	113	50-135	36-149	0	0-25	
Endrin Ketone	5.000	6.684	134	6.454	129	50-135	36-149	4	0-25	
Heptachlor	5.000	5.550	111	5.686	114	50-135	36-149	2	0-25	
Heptachlor Epoxide	5.000	5.706	114	6.078	122	50-135	36-149	6	0-25	
Methoxychlor	5.000	6.636	133	6.551	131	50-135	36-149	1	0-25	
Alpha Chlordane	5.000	5.582	112	5.596	112	50-135	36-149	0	0-25	
Gamma Chlordane	5.000	5.615	112	5.628	113	50-135	36-149	0	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C PEST-SIM

Project: GWMA Sediment Sampling

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-154-66	LCS	Solid	GC/MS BBB	08/24/16	08/29/16 16:17	160824L13				
099-16-154-66	LCSD	Solid	GC/MS BBB	08/24/16	08/29/16 16:33	160824L13				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	4.597	92	4.586	92	25-200	0-229	0	0-25	
Alpha Chlordane	5.000	4.673	93	4.496	90	25-200	0-229	4	0-25	
Alpha-BHC	5.000	4.420	88	4.521	90	25-200	0-229	2	0-25	
Beta-BHC	5.000	4.710	94	4.462	89	25-200	0-229	5	0-25	
4,4'-DDD	5.000	5.236	105	5.111	102	25-200	0-229	2	0-25	
4,4'-DDE	5.000	4.794	96	4.861	97	25-200	0-229	1	0-25	
4,4'-DDT	5.000	5.595	112	5.445	109	25-200	0-229	3	0-25	
Delta-BHC	5.000	5.743	115	6.535	131	25-200	0-229	13	0-25	
Dieldrin	5.000	5.643	113	5.822	116	25-200	0-229	3	0-25	
Endosulfan I	5.000	4.736	95	4.679	94	25-200	0-229	1	0-25	
Endosulfan II	5.000	5.217	104	6.110	122	25-200	0-229	16	0-25	
Endosulfan Sulfate	5.000	6.540	131	6.206	124	25-200	0-229	5	0-25	
Endrin	5.000	9.546	191	8.922	178	25-200	0-229	7	0-25	
Endrin Aldehyde	5.000	5.265	105	4.849	97	25-200	0-229	8	0-25	
Endrin Ketone	5.000	7.155	143	6.977	140	25-200	0-229	3	0-25	
Gamma Chlordane	5.000	4.652	93	4.524	90	25-200	0-229	3	0-25	
Gamma-BHC	5.000	4.730	95	4.762	95	25-200	0-229	1	0-25	
Heptachlor	5.000	5.697	114	5.865	117	25-200	0-229	3	0-25	
Heptachlor Epoxide	5.000	4.938	99	4.777	96	25-200	0-229	3	0-25	
Methoxychlor	5.000	7.391	148	7.258	145	25-200	0-229	2	0-25	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PAHs

Project: GWMA Sediment Sampling

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-14-097-218	LCS	Solid	GC/MS AAA	08/31/16	09/01/16 16:55	160831L10				
099-14-097-218	LCSD	Solid	GC/MS AAA	08/31/16	09/01/16 17:15	160831L10				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acenaphthene	100.0	82.05	82	84.71	85	48-108	38-118	3	0-11	
Acenaphthylene	100.0	79.30	79	82.21	82	40-160	20-180	4	0-20	
Anthracene	100.0	81.29	81	82.76	83	40-160	20-180	2	0-20	
Benzo (a) Anthracene	100.0	86.89	87	87.57	88	40-160	20-180	1	0-20	
Benzo (a) Pyrene	100.0	85.85	86	86.94	87	40-160	20-180	1	0-20	
Benzo (b) Fluoranthene	100.0	86.09	86	93.94	94	40-160	20-180	9	0-20	
Benzo (g,h,i) Perylene	100.0	91.98	92	94.21	94	40-160	20-180	2	0-20	
Benzo (k) Fluoranthene	100.0	87.09	87	84.70	85	40-160	20-180	3	0-20	
Chrysene	100.0	85.39	85	87.26	87	40-160	20-180	2	0-20	
Dibenz (a,h) Anthracene	100.0	88.70	89	90.66	91	40-160	20-180	2	0-20	
Fluoranthene	100.0	80.23	80	80.51	81	40-160	20-180	0	0-20	
Fluorene	100.0	81.66	82	83.34	83	40-160	20-180	2	0-20	
Indeno (1,2,3-c,d) Pyrene	100.0	86.06	86	84.07	84	40-160	20-180	2	0-20	
2-Methylnaphthalene	100.0	83.91	84	86.88	87	40-160	20-180	3	0-20	
1-Methylnaphthalene	100.0	74.22	74	77.34	77	40-160	20-180	4	0-20	
Naphthalene	100.0	77.70	78	80.26	80	40-160	20-180	3	0-20	
Phenanthrene	100.0	88.35	88	90.94	91	40-160	20-180	3	0-20	
Pyrene	100.0	93.56	94	99.48	99	40-160	20-180	6	0-16	

Total number of LCS compounds: 18

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 08/19/16
Work Order: 16-08-1487
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA Sediment Sampling

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-418-222	LCS	Solid	GC/MS HHH	08/23/16	08/25/16 13:17	160823L18				
099-16-418-222	LCSD	Solid	GC/MS HHH	08/23/16	08/25/16 13:41	160823L18				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	40.24	80	42.01	84	24-132	6-150	4	0-28	
PCB028	50.00	40.58	81	43.67	87	31-133	14-150	7	0-26	
PCB044	50.00	38.66	77	43.41	87	36-120	22-134	12	0-28	
PCB052	50.00	40.48	81	44.80	90	31-121	16-136	10	0-27	
PCB066	50.00	47.90	96	52.33	105	43-139	27-155	9	0-25	
PCB077	50.00	41.78	84	45.87	92	41-131	26-146	9	0-25	
PCB101	50.00	39.40	79	43.14	86	37-121	23-135	9	0-27	
PCB105	50.00	43.91	88	47.60	95	48-132	34-146	8	0-26	
PCB118	50.00	45.60	91	49.82	100	46-136	31-151	9	0-25	
PCB126	50.00	40.61	81	43.98	88	38-134	22-150	8	0-25	
PCB128	50.00	40.71	81	43.63	87	40-130	25-145	7	0-26	
PCB170	50.00	41.25	83	45.09	90	40-124	26-138	9	0-29	
PCB180	50.00	43.75	87	48.55	97	41-143	24-160	10	0-26	
PCB187	50.00	41.14	82	43.96	88	39-129	24-144	7	0-26	
PCB195	50.00	43.11	86	46.95	94	44-128	30-142	9	0-28	
PCB206	50.00	43.49	87	46.65	93	33-135	16-152	7	0-24	
PCB209	50.00	41.76	84	44.90	90	29-137	11-155	7	0-29	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 16-08-1487

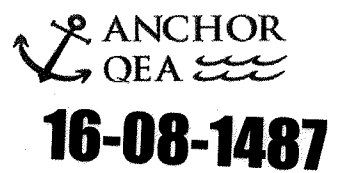
Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____
 Date: 8/19/16
 Project Name: **GWMA Sediment Sampling**
 Project Number: **141205-01.03**
 Project Manager: **Andrew Martin**
 Phone Number: **949-347-2780**
 Shipment Method: _____

Test Parameters



Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters											Comments/Preservation	
					10-day amphipod survival test	48-hour SWI test	Total Solids	TPC	Total metals and mercury	PAHs and PCP pesticides	PCBs	Grain Size					
1	OB-SS-16-0-5-23160819	8/19/16 0822	SED	1			X	X	X	X	X	X					Ice
2	OB-SS-08-0-5-20000819	↓ 0932	↓	1			X	X	X	X	X	X					↓
3	OB-SS-1016-0-5-23160819	↓ 0824	↓	1			X	X	X	X	X	X					
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Notes: Bioassay testing as outlined in work order attachment to subagreement - see table 4 of SAP for methodologies

Relinquished By: [Signature] Company: **Anchor QEA**
 Signature/Printed Name: Claire Delphin Date/Time: 8/19/2016 16:40

Received By: [Signature] Company: **ECC**
 Signature/Printed Name: D. RAMAN Date/Time: 8/19/16 16:40

Relinquished By: [Signature] Company: **ECC**
 Signature/Printed Name: D. RAMAN Date/Time: 8/19/16 17:55

Received By: [Signature] Company: **ECC**
 Signature/Printed Name: DANNYLE ECC Date/Time: 8/19/16 17:55

1487

Table 4
Sediment Analytical Methods and Target Reporting Limits

Parameter	Analytical Method	Target MDL	Target RL ¹	CCMRP Target RL	SWAMP RL
Conventional Parameters					
Total solids (% wet weight)	SM 2540B	0.1	0.1	0.1	N/A
Grain size (% retained)	ASTM D464(M)	1%	1%	1%	1%
TOC (%)	USEPA 9060A	0.012%	0.05%	0.01% OC	0.01% OC
Metals (µg/g or mg/kg)					
Cadmium	USEPA 1638(M)	0.012	0.050	0.01	0.01
Chromium	USEPA 1638(M)	0.20	0.20	0.1	0.1
Copper	USEPA 1638(M)	0.051	0.200	0.01	0.01
Lead	USEPA 1638(M)	0.005	0.080	0.01	0.01
Mercury	USEPA 1638(M)	0.006	0.030	0.03	0.03
Zinc	USEPA 1638(M)	0.06	0.50	0.10	0.10
PAHs (ng/g or µg/kg)					
Acenaphthene	USEPA 8270C-SIM	1.8	10	20	20
Anthracene	USEPA 8270C-SIM	0.81	10	20	20
Biphenyl	USEPA 8270C-SIM	5.5	10	20	20
Naphthalene	USEPA 8270C-SIM	3	10	20	20
2,6-Dimethylnaphthalene	USEPA 8270C-SIM	6.1	10	20	20
Fluorene	USEPA 8270C-SIM	1.5	10	20	20
1-Methylnaphthalene	USEPA 8270C-SIM	2	10	20	20
2-Methylnaphthalene	USEPA 8270C-SIM	1.8	10	20	20
1-Methylphenanthrene	USEPA 8270C-SIM	6.6	10	20	20
Phenanthrene	USEPA 8270C-SIM	1	10	20	20
Benz[a]anthracene	USEPA 8270C-SIM	1.6	10	20	20
Benzo[a]pyrene	USEPA 8270C-SIM	1	10	20	20
Benzo[e]pyrene	USEPA 8270C-SIM	9.5	10	20	20
Chrysene	USEPA 8270C-SIM	1.2	10	20	20
Dibenz[a,h]anthracene	USEPA 8270C-SIM	1	10	20	20
Fluoranthene	USEPA 8270C-SIM	0.98	10	20	20
Perylene	USEPA 8270C-SIM	9.8	10	20	20
Pyrene	USEPA 8270C-SIM	0.99	10	20	20
Organochlorine Pesticides (ng/g or µg/kg) – Low Resolution Analytical Methods					
Total Chlordane ²	USEPA 8081A			--	
alpha-Chlordane (cis-chlordane)	USEPA 8081A	0.064	0.2	0.5	2.0
gamma-Chlordane (trans-chlordane)	USEPA 8081A	0.068	0.2	0.5	2.0
Oxychlordane	USEPA 8081A	0.061	0.2	0.5	1.0
cis-Nonachlor	USEPA 8081A	0.12	0.2	0.5	2.0
trans-Nonachlor	USEPA 8081A	0.06	0.2	0.5	1.0
Dieldrin ³	USEPA 8081A	0.069	0.2	0.02	2.0
Toxaphene ³	USEPA 8081A	0.61	5	0.10	20

1487

Table 4
Sediment Analytical Methods and Target Reporting Limits

Parameter	Analytical Method	Target MDL	Target RL ¹	CCMRP Target RL	SWAMP RL
2,4'-DDD	USEPA 8081A	0.057	0.2	0.5	2.0
2,4'-DDE	USEPA 8081A	0.11	0.2	0.5	2.0
2,4'-DDT	USEPA 8081A	0.062	0.2	0.5	3.0
4,4'-DDD	USEPA 8081A	0.069	0.2	0.5	2.0
4,4'-DDE	USEPA 8081A	0.058	0.2	0.5	2.0
4,4'-DDT	USEPA 8081A	0.067	0.2	0.5	5.0
PCB Congeners (ng/g or µg/kg)⁴ – Low Resolution Analytical Methods					
CL3-PCB-18	USEPA 8270C-SIM	0.039	0.20	0.2	0.4
CL3-PCB-28	USEPA 8270C-SIM	0.055	0.20	0.2	0.4
CL3-PCB-37	USEPA 8270C-SIM	0.035	0.20	0.2	--
CL4-PCB-44	USEPA 8270C-SIM	0.092	0.20	0.2	0.2
CL4-PCB-49	USEPA 8270C-SIM	0.086	0.20	0.2	0.2
CL4-PCB-52	USEPA 8270C-SIM	0.051	0.20	0.2	0.2
CL4-PCB-66	USEPA 8270C-SIM	0.075	0.20	0.2	0.2
CL4-PCB-70	USEPA 8270C-SIM	0.048	0.20	0.2	0.2
CL4-PCB-74	USEPA 8270C-SIM	0.046	0.20	0.2	0.2
CL4-PCB-77	USEPA 8270C-SIM	0.085	0.20	0.2	--
CL4-PCB-81	USEPA 8270C-SIM	0.064	0.20	0.2	--
CL5-PCB-87	USEPA 8270C-SIM	0.041	0.20	0.2	0.2
CL5-PCB-99	USEPA 8270C-SIM	0.054	0.20	0.2	0.2
CL5-PCB-101	USEPA 8270C-SIM	0.051	0.20	0.2	0.2
CL5-PCB-105	USEPA 8270C-SIM	0.042	0.20	0.2	0.2
CL5-PCB-110	USEPA 8270C-SIM	0.046	0.20	0.2	0.2
CL5-PCB-114	USEPA 8270C-SIM	0.036	0.20	0.2	0.2
CL5-PCB-118	USEPA 8270C-SIM	0.059	0.20	0.2	0.2
CL5-PCB-119	USEPA 8270C-SIM	0.046	0.20	0.2	--
CL5-PCB-123	USEPA 8270C-SIM	0.047	0.20	0.2	--
CL5-PCB-126	USEPA 8270C-SIM	0.034	0.20	0.2	--
CL6-PCB-128	USEPA 8270C-SIM	0.039	0.20	0.2	0.2
CL6-PCB-132/153	USEPA 8270C-SIM	0.067	0.40	0.2	0.2
CL6-PCB-138/158	USEPA 8270C-SIM	0.075	0.40	0.2	0.2
CL6-PCB-149	USEPA 8270C-SIM	0.048	0.20	0.2	0.2
CL6-PCB-151	USEPA 8270C-SIM	0.062	0.20	0.2	0.2
CL6-PCB-156	USEPA 8270C-SIM	0.066	0.20	0.2	0.2
CL6-PCB-157	USEPA 8270C-SIM	0.051	0.20	0.2	0.2
CL6-PCB-167	USEPA 8270C-SIM	0.042	0.20	0.2	--
CL6-PCB-168	USEPA 8270C-SIM	0.045	0.20	0.2	--
CL6-PCB-169	USEPA 8270C-SIM	0.033	0.20	0.2	--
CL7-PCB-170	USEPA 8270C-SIM	0.050	0.20	0.2	0.2
CL7-PCB-177	USEPA 8270C-SIM	0.040	0.20	0.2	0.2
CL7-PCB-180	USEPA 8270C-SIM	0.030	0.20	0.2	0.2

1487

Table 4
Sediment Analytical Methods and Target Reporting Limits

Parameter	Analytical Method	Target MDL	Target RL ¹	CCMRP Target RL	SWAMP RL
CL7-PCB-183	USEPA 8270C-SIM	0.032	0.20	0.2	0.2
CL7-PCB-187	USEPA 8270C-SIM	0.039	0.20	0.2	0.2
CL7-PCB-189	USEPA 8270C-SIM	0.025	0.20	0.2	10
CL8-PCB-194	USEPA 8270C-SIM	0.041	0.20	0.2	0.2
CL8-PCB-201	USEPA 8270C-SIM	0.044	0.20	0.2	0.2
CL9-PCB-206	USEPA 8270C-SIM	0.045	0.20	0.2	0.2

Notes:

Units in dry weight unless otherwise noted.

- Matrix interference, total solid concentrations, and/or dilutions due to non-target analytes may increase target RLs. The MDL should be at least three times lower than the RL (40 Code of Federal Regulations 136) but will vary per instrument by MDL study.
- Total chlordane is calculated using the following compounds: alpha-chlordane, gamma-chlordane, oxychlordane, cis-nonachlor, and trans-nonachlor.
- Total maximum daily load sediment target for dieldrin and toxaphene are currently below achievable laboratory RLs. Results should be reported to the MDL.
- PCB co-elutions will vary by instrument and column and may increase RLs for some congeners.

µg/g = micrograms per gram

CCMRP = coordinated compliance monitoring and reporting plan

CFR = code of federal regulations

DDT = dichlorodiphenyltrichloroethane

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyldichloroethylene

MDL = method detection limit

mg/kg = milligrams per kilogram

N/A = not applicable

ng/g = nanogram per gram

OC = organic carbon

PAHs = polycyclic aromatic hydrocarbons

PCB = polychlorinated biphenyl

RL = reporting limit

SIM = selected ion monitoring

SM = standard method

SWAMP = California Surface Water Ambient Monitoring Program

TOC = total organic carbon

USEPA = U.S. Environmental Protection Agency

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ANCHOR QEA

DATE: 08 / 19 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.6 °C (w/ CF): 3.6 °C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter

Checked by: 804

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A
 Sample(s) Present and Intact Present but Not Intact Not Present N/A

Checked by: 804
 Checked by: 1069

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_{znna} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (_____) _____ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO₃, **na** = NaOH, **na₂** = Na₂S₂O₃, **p** = H₃PO₄, Labeled/Checked by: 1069
s = H₂SO₄, **u** = ultra-pure, **znna** = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 659

Return to Contents



Calscience

Subcontractor Analysis Report

Work Order: 16-08-1487

Page 1 of 1

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.

1. Eurofins Frontier Global Sciences - Bothell,WA CA ELAP 2954


Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

29 September 2016

Carla Lee Hollowell
Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841
RE: Sediments - 2016

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Patrick Garcia-Strickland". The signature is written in a cursive style.

Patrick Garcia-Strickland
Laboratory Director


Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OB-SS-16-0-5-20160819	1608940-01	Soil/Sediment	19-Aug-16 08:22	30-Aug-16 09:15
OB-SS-08-0-5-20160819	1608940-02	Soil/Sediment	19-Aug-16 09:32	30-Aug-16 09:15
OB-SS-1016-0-5-20160819	1608940-03	Soil/Sediment	19-Aug-16 08:24	30-Aug-16 09:15

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 8/30/2016 9:15:00 AM . The samples were received intact, on-ice within a sealed cooler at -0.1 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Total solids analysis was performed in accordance with method SM2540B. Total solids are prepared at the same time as the preparation for the analyte(s) of interest in order to provide the most accurate dry mass correction which may be outside of the method recommended holding time of 7 days from sample collection.

Total mercury preparation and analysis was performed by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631B.

Trace metals preparation and analysis was performed by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EFGS-054, a modified EPA 1638.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.


Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director

Sample Receipt Checklist

EFGS Work Order: 1608940

Client: Eurofins Calscience

Date & Time Received: 8/30/16 9:15

Date Labeled: 8/30/16 Labeled By: LM

Project: _____

Received By: LM

Label Verified By: JCL

of Coolers Received: 1 Samples Arrived By: Shipping Service _____ Courier _____ Hand _____ Other (Specify: _____)

Coolant: None/Ambient Loose Ice Gel Ice Dry Ice Coolant Required: Y N Temp Blank Used: Y N for Cooler(s): _____

Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	<u>Y</u>	
Custody Seals are present and intact:	<u>Y</u>	
Custody seals signed:	<u>Y</u>	

TID: <u>43150</u>	CF: <u>+0.4 °C</u>	Date/time: <u>8/30/16 9:15</u>	By: <u>LM</u>
Cooler 1: <u>-0.5 °C</u>	w/ CF: <u>0.1 °C</u>	Cooler 4: <u>°C</u>	w/ CF: <u>°C</u>
Cooler 2: <u>°C</u>	w/ CF: <u>°C</u>	Cooler 5: <u>°C</u>	w/ CF: <u>°C</u>
Cooler 3: <u>°C</u>	w/ CF: <u>°C</u>	Cooler 6: <u>°C</u>	w/ CF: <u>°C</u>

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	<u>Y</u>	
Date and time of collection:	<u>Y</u>	
Sampled by:	<u>N</u>	
Preservation type:	<u>MA</u>	
Requested analyses:	<u>Y</u>	
Required signatures:	<u>Y</u>	
Internal COC required:	<u>N</u>	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	<u>Y</u>	
Sample labels are present and legible:	<u>Y</u>	
Sample ID on container/bag matches COC:	<u>Y</u>	<u>Slight typos</u>
Correct sample containers used:	<u>Y</u>	
Samples received within holding times:	<u>Y</u>	
Sample volume sufficient for requested analyses:	<u>Y</u>	
Correct preservative used for requested analyses:	<u>MA</u>	

Anomalies/Non-conformances (attach additional pages if needed):

Sample 1: COC: OB-SS... Sample Label: IB-SS...

Sample 2: COC: OB-SS... Sample Label: OA-SS...



7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
 For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO # / LAB USE ONLY

DATE: 08/29/16
 PAGE: 1 OF 1

LABORATORY CLIENT: EUROFINS CALSCIENCE

ADDRESS: 7440 LINCOLN WAY

CITY: GARDEN GROVE STATE: CA ZIP:

TEL: E-MAIL: CARLAHOLLOWELL@EUROFINSUS.COM

CLIENT PROJECT NAME / NUMBER: 16-08-1487 / GWMA Sediment Sampling P.O. NO.:

PROJECT CONTACT: CARLA LEE HOLLOWELL SAMPLER(S): (PRINT)

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD

COELT EDF GLOBAL ID: LOG CODE:

REQUESTED ANALYSES

SPECIAL INSTRUCTIONS:
 10-day TAT
 Please provide CEDEN and Excel EDDs
 Report in mg/kg, dry weight; report to MDL (J-flag)

Please check box or fill in blank as needed.

	Unpreserved	Preserved	Field Filtered	Cd, Cr, Cu, Pb, Zn via 1638(M)	Mercury by EPA 1631E														
OB-SS-16-0-5-20160819	X			X	X														
OB-SS-08-0-5-20160819	X			X	X														
OB-SS-1016-0-5-20160819	X			X	X														

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	Cd, Cr, Cu, Pb, Zn via 1638(M)	Mercury by EPA 1631E										
		DATE	TIME																	
	OB-SS-16-0-5-20160819	8/19/2016	822	SED	1	X			X	X										
	OB-SS-08-0-5-20160819	8/19/2016	932	SED	1	X			X	X										
	OB-SS-1016-0-5-20160819	8/19/2016	824	SED	1	X			X	X										

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
<i>[Signature]</i>	Feder 777106612160	8/29/16	1532
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
<i>[Signature]</i>	<i>[Signature]</i> EFGS	8/30/16	9:15
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
<i>[Signature]</i>	Lars Mitter		

Fes Seal -0.1°C Feder 7771 0661 → 160

Page 52 of 71



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

OB-SS-16-0-5-20160819

1608940-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	70.7	-	21.4	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.242	0.022	0.092	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	39.6	0.11	0.37	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	43.6	0.094	0.367	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	24.1	0.008	0.147	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	112	0.11	0.92	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	52.6	-	0.1	% by Weight	1	F609434	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

OB-SS-08-0-5-20160819

1608940-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	74.8	-	24.3	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.671	0.021	0.088	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	38.1	0.11	0.35	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	41.4	0.089	0.351	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	17.2	0.008	0.140	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	96.0	0.11	0.88	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	46.8	-	0.1	% by Weight	1	F609434	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	----------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

OB-SS-1016-0-5-20160819

1608940-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
---------	--------	-----------------	-----------------	-------	----------	-------	----------	----------	----------	--------	-------

Sample Preparation: EFGS-066 Cold Aqua Regia Digestion for Hg

Mercury	90.9	-	24.7	ng/g	500	F609584	27-Sep-16	6I28024	28-Sep-16	EPA 1631B	
---------	------	---	------	------	-----	---------	-----------	---------	-----------	-----------	--

Sample Preparation: EPA 3051A Microwave Digestion

Cadmium	0.180	0.018	0.074	mg/kg dry	10	F609452	17-Sep-16	6I21010	21-Sep-16	EPA 1638 Mod.	
Chromium	30.3	0.09	0.30	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Copper	32.2	0.076	0.298	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Lead	18.0	0.007	0.119	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	
Zinc	82.7	0.09	0.74	mg/kg dry	10	F609399	17-Sep-16	6I20017	20-Sep-16	EPA 1638 Mod.	

Sample Preparation: No Preparation

% Solids	53.5	-	0.1	% by Weight	1	F609434	19-Sep-16		19-Sep-16	SM 2540B	
----------	------	---	-----	-------------	---	---------	-----------	--	-----------	----------	--

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Cal Standard (6I20017-CAL1)

Prepared & Analyzed: 19-Sep-16

Chromium	0.06	-		µg/L	0.050000		112				
Copper	0.058	-		µg/L	0.050000		116				
Lead	0.023	-		µg/L	0.020000		114				
Cadmium	0.010	-		µg/L	0.010000		98.3				

Cal Standard (6I20017-CAL2)

Prepared & Analyzed: 19-Sep-16

Chromium	0.11	-		µg/L	0.100000		107				
Copper	0.111	-		µg/L	0.100000		111				
Zinc	0.14	-		µg/L	0.200000		67.9				
Lead	0.045	-		µg/L	0.040000		113				
Cadmium	0.020	-		µg/L	0.020000		99.9				

Cal Standard (6I20017-CAL3)

Prepared & Analyzed: 19-Sep-16

Copper	0.225	-		µg/L	0.200000		113				
Chromium	0.21	-		µg/L	0.200000		106				
Zinc	0.96	-		µg/L	0.400000		240				
Lead	0.091	-		µg/L	0.080000		114				
Cadmium	0.041	-		µg/L	0.040000		102				

Cal Standard (6I20017-CAL4)

Prepared & Analyzed: 19-Sep-16

Copper	6.555	-		µg/L	6.2500		105				
Zinc	12.71	-		µg/L	12.500		102				
Chromium	5.02	-		µg/L	5.0000		100				
Lead	1.323	-		µg/L	1.2500		106				
Cadmium	0.512	-		µg/L	0.50000		102				

Cal Standard (6I20017-CAL5)

Prepared & Analyzed: 19-Sep-16

Zinc	24.71	-		µg/L	25.000		98.9				
Copper	12.99	-		µg/L	12.500		104				
Chromium	9.77	-		µg/L	10.000		97.7				
Lead	2.690	-		µg/L	2.5000		108				
Cadmium	0.980	-		µg/L	1.0000		98.0				

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Cal Standard (6I20017-CAL6)

Prepared & Analyzed: 19-Sep-16

Chromium	19.54	-		µg/L	20.000		97.7				
Copper	25.80	-		µg/L	25.000		103				
Zinc	50.71	-		µg/L	50.000		101				
Lead	5.237	-		µg/L	5.0000		105				
Cadmium	1.963	-		µg/L	2.0000		98.2				

Cal Standard (6I20017-CAL7)

Prepared & Analyzed: 19-Sep-16

Copper	62.73	-		µg/L	62.500		100				
Chromium	48.48	-		µg/L	50.000		97.0				
Zinc	122.1	-		µg/L	125.00		97.7				
Lead	12.76	-		µg/L	12.500		102				
Cadmium	4.951	-		µg/L	5.0000		99.0				

Cal Standard (6I20017-CAL8)

Prepared & Analyzed: 19-Sep-16

Chromium	98.38	-		µg/L	100.00		98.4				
Zinc	247.5	-		µg/L	250.00		99.0				
Copper	125.7	-		µg/L	125.00		101				
Lead	25.78	-		µg/L	25.000		103				
Cadmium	9.975	-		µg/L	10.000		99.7				

Cal Standard (6I20017-CAL9)

Prepared & Analyzed: 19-Sep-16

Zinc	501.9	-		µg/L	500.00		100				
Chromium	201.2	-		µg/L	200.00		101				
Copper	249.5	-		µg/L	250.00		99.8				
Lead	49.51	-		µg/L	50.000		99.0				
Cadmium	20.03	-		µg/L	20.000		100				

Calibration Blank (6I20017-CCB1)

Prepared & Analyzed: 19-Sep-16

Chromium	0.002	-		µg/L							
Copper	-0.001	-		µg/L							U
Zinc	-0.09	-		µg/L							U
Lead	-0.00008	-		µg/L							U
Cadmium	0.026	-		µg/L							

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Blank (6I20017-CCB2)

Prepared & Analyzed: 19-Sep-16

Zinc	-0.04	-		µg/L							U
Copper	0.001	-		µg/L							
Chromium	0.0001	-		µg/L							
Lead	-0.0003	-		µg/L							U
Cadmium	0.001	-		µg/L							

Calibration Blank (6I20017-CCB3)

Prepared & Analyzed: 19-Sep-16

Zinc	-0.08	-		µg/L							U
Chromium	-0.0005	-		µg/L							U
Copper	-0.0003	-		µg/L							U
Lead	-0.00005	-		µg/L							U
Cadmium	0.002	-		µg/L							

Calibration Blank (6I20017-CCB4)

Prepared & Analyzed: 19-Sep-16

Copper	0.003	-		µg/L							
Zinc	-0.08	-		µg/L							U
Chromium	-0.0008	-		µg/L							U
Lead	-0.0001	-		µg/L							U
Cadmium	-0.0008	-		µg/L							U

Calibration Blank (6I20017-CCB5)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	-0.001	-		µg/L							U
Zinc	-0.08	-		µg/L							U
Copper	0.002	-		µg/L							
Lead	0.00009	-		µg/L							
Cadmium	0.0003	-		µg/L							

Calibration Blank (6I20017-CCB6)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	0.001	-		µg/L							
Copper	0.006	-		µg/L							
Zinc	-0.08	-		µg/L							U
Lead	0.0002	-		µg/L							
Cadmium	-0.0004	-		µg/L							U

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1487/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:16
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Blank (6I20017-CCB7)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Zinc	-0.06	-		µg/L							U
Copper	0.009	-		µg/L							
Chromium	0.0007	-		µg/L							
Lead	0.0006	-		µg/L							
Cadmium	0.0007	-		µg/L							

Calibration Blank (6I20017-CCB8)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Copper	0.0004	-		µg/L							
Chromium	-0.00007	-		µg/L							U
Zinc	-0.09	-		µg/L							U
Lead	0.000	-		µg/L							U
Cadmium	-0.001	-		µg/L							U

Calibration Blank (6I20017-CCB9)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Zinc	-0.10	-		µg/L							U
Copper	0.002	-		µg/L							
Chromium	0.0008	-		µg/L							
Lead	0.0002	-		µg/L							
Cadmium	0.0006	-		µg/L							

Calibration Blank (6I20017-CCBA)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Chromium	0.0008	-		µg/L							
Copper	0.001	-		µg/L							
Zinc	-0.09	-		µg/L							U
Lead	-0.00001	-		µg/L							U
Cadmium	-0.0002	-		µg/L							U

Calibration Blank (6I20017-CCBB)											Prepared: 19-Sep-16 Analyzed: 20-Sep-16
Chromium	0.002	-		µg/L							
Copper	0.003	-		µg/L							
Zinc	-0.11	-		µg/L							U
Lead	0.0002	-		µg/L							
Cadmium	-0.003	-		µg/L							U

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director

Return to Contents



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Blank (6I20017-CCBC)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Zinc	-0.12	-		µg/L							U
Chromium	0.002	-		µg/L							
Copper	0.004	-		µg/L							
Lead	0.0001	-		µg/L							
Cadmium	-0.001	-		µg/L							U

Calibration Check (6I20017-CCV1)

Prepared & Analyzed: 19-Sep-16

Copper	51.76	-		µg/L	50.000		104	80-120			
Zinc	54.31	-		µg/L	50.000		109	79-121			
Chromium	49.02	-		µg/L	50.000		98.0	85-115			
Lead	10.16	-		µg/L	10.000		102	91-109			
Cadmium	5.187	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV2)

Prepared & Analyzed: 19-Sep-16

Copper	50.89	-		µg/L	50.000		102	80-120			
Zinc	52.34	-		µg/L	50.000		105	79-121			
Chromium	48.27	-		µg/L	50.000		96.5	85-115			
Lead	10.38	-		µg/L	10.000		104	91-109			
Cadmium	5.178	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV3)

Prepared & Analyzed: 19-Sep-16

Chromium	48.33	-		µg/L	50.000		96.7	85-115			
Zinc	51.97	-		µg/L	50.000		104	79-121			
Copper	50.17	-		µg/L	50.000		100	80-120			
Lead	10.28	-		µg/L	10.000		103	91-109			
Cadmium	5.179	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV4)

Prepared & Analyzed: 19-Sep-16

Copper	50.54	-		µg/L	50.000		101	80-120			
Chromium	48.31	-		µg/L	50.000		96.6	85-115			
Zinc	51.97	-		µg/L	50.000		104	79-121			
Lead	10.16	-		µg/L	10.000		102	91-109			
Cadmium	5.105	-		µg/L	5.0020		102	95-105			

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Check (6I20017-CCV5)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Zinc	52.30	-		µg/L	50.000		105	79-121			
Copper	50.61	-		µg/L	50.000		101	80-120			
Chromium	48.19	-		µg/L	50.000		96.4	85-115			
Lead	10.21	-		µg/L	10.000		102	91-109			
Cadmium	5.209	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV6)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	50.49	-		µg/L	50.000		101	80-120			
Chromium	48.27	-		µg/L	50.000		96.5	85-115			
Zinc	51.49	-		µg/L	50.000		103	79-121			
Lead	10.24	-		µg/L	10.000		102	91-109			
Cadmium	5.237	-		µg/L	5.0020		105	95-105			

Calibration Check (6I20017-CCV7)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	50.37	-		µg/L	50.000		101	80-120			
Zinc	52.19	-		µg/L	50.000		104	79-121			
Chromium	48.70	-		µg/L	50.000		97.4	85-115			
Lead	9.994	-		µg/L	10.000		99.9	91-109			
Cadmium	5.088	-		µg/L	5.0020		102	95-105			

Calibration Check (6I20017-CCV8)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Zinc	52.85	-		µg/L	50.000		106	79-121			
Chromium	48.43	-		µg/L	50.000		96.9	85-115			
Copper	50.91	-		µg/L	50.000		102	80-120			
Lead	10.21	-		µg/L	10.000		102	91-109			
Cadmium	5.208	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCV9)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	48.73	-		µg/L	50.000		97.5	85-115			
Copper	51.14	-		µg/L	50.000		102	80-120			
Zinc	52.76	-		µg/L	50.000		106	79-121			
Lead	10.13	-		µg/L	10.000		101	91-109			
Cadmium	5.193	-		µg/L	5.0020		104	95-105			

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I20017 - F609399

Calibration Check (6I20017-CCVA)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	48.68	-		µg/L	50.000		97.4	85-115			
Zinc	52.15	-		µg/L	50.000		104	79-121			
Copper	50.68	-		µg/L	50.000		101	80-120			
Lead	10.17	-		µg/L	10.000		102	91-109			
Cadmium	5.196	-		µg/L	5.0020		104	95-105			

Calibration Check (6I20017-CCVB)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Copper	50.51	-		µg/L	50.000		101	80-120			
Zinc	52.68	-		µg/L	50.000		105	79-121			
Chromium	47.82	-		µg/L	50.000		95.6	85-115			
Lead	10.27	-		µg/L	10.000		103	91-109			
Cadmium	5.294	-		µg/L	5.0020		106	95-105			

Calibration Check (6I20017-CCVC)

Prepared: 19-Sep-16 Analyzed: 20-Sep-16

Chromium	47.38	-		µg/L	50.000		94.8	85-115			
Zinc	51.66	-		µg/L	50.000		103	79-121			
Copper	50.12	-		µg/L	50.000		100	80-120			
Lead	10.29	-		µg/L	10.000		103	91-109			
Cadmium	5.236	-		µg/L	5.0020		105	95-105			

Initial Cal Blank (6I20017-ICB1)

Prepared & Analyzed: 19-Sep-16

Chromium	-0.001	-		µg/L							U
Zinc	-0.09	-		µg/L							U
Copper	-0.0009	-		µg/L							U
Lead	-0.0003	-		µg/L							U
Cadmium	-0.001	-		µg/L							U

Initial Cal Check (6I20017-ICV1)

Prepared & Analyzed: 19-Sep-16

Copper	51.70	-		µg/L	50.000		103	80-120			
Zinc	52.55	-		µg/L	50.000		105	79-121			
Chromium	49.25	-		µg/L	50.000		98.5	85-115			
Lead	10.20	-		µg/L	10.000		102	91-109			
Cadmium	5.160	-		µg/L	5.0020		103	95-105			

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6I21010 - F609399											
Cal Standard (6I21010-CAL1)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	0.009	-		µg/L	0.010000		92.6				
Cal Standard (6I21010-CAL2)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	0.019	-		µg/L	0.020000		93.2				
Cal Standard (6I21010-CAL3)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	0.040	-		µg/L	0.040000		101				
Cal Standard (6I21010-CAL4)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	0.479	-		µg/L	0.500000		95.7				
Cal Standard (6I21010-CAL5)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	0.981	-		µg/L	1.000000		98.1				
Cal Standard (6I21010-CAL6)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	1.908	-		µg/L	2.000000		95.4				
Cal Standard (6I21010-CAL7)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	4.773	-		µg/L	5.000000		95.5				
Cal Standard (6I21010-CAL8)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	9.848	-		µg/L	10.000000		98.5				
Cal Standard (6I21010-CAL9)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	20.14	-		µg/L	20.000000		101				
Calibration Blank (6I21010-CCB1)					Prepared: 19-Sep-16 Analyzed: 21-Sep-16						
Cadmium	-0.0009	-		µg/L							U

Return to Contents

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I21010 - F609399

Batch 6I21010 - F609399											
Calibration Blank (6I21010-CCB2)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	-0.0003	-		µg/L							U
Calibration Blank (6I21010-CCB3)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	0.002	-		µg/L							
Calibration Check (6I21010-CCV1)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	5.034	-		µg/L	5.0020		101	95-105			
Calibration Check (6I21010-CCV2)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	5.021	-		µg/L	5.0020		100	95-105			
Calibration Check (6I21010-CCV3)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	5.012	-		µg/L	5.0020		100	95-105			
Initial Cal Blank (6I21010-ICB1)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	0.002	-		µg/L							
Initial Cal Check (6I21010-ICV1)											
Prepared: 19-Sep-16 Analyzed: 21-Sep-16											
Cadmium	4.925	-		µg/L	5.0020		98.5	95-105			

Batch 6I28024 - F609584

Batch 6I28024 - F609584											
Cal Standard (6I28024-CAL1)											
Prepared & Analyzed: 28-Sep-16											
Mercury	0.52	-		ng/L	0.50100		103				
Cal Standard (6I28024-CAL2)											
Prepared & Analyzed: 28-Sep-16											
Mercury	1.03	-		ng/L	1.0020		102				

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1487/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:16
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6I28024 - F609584											
Cal Standard (6I28024-CAL3)					Prepared & Analyzed: 28-Sep-16						
Mercury	4.99	-		ng/L	5.0100		99.7				
Cal Standard (6I28024-CAL4)					Prepared & Analyzed: 28-Sep-16						
Mercury	19.66	-		ng/L	20.040		98.1				
Cal Standard (6I28024-CAL5)					Prepared & Analyzed: 28-Sep-16						
Mercury	38.47	-		ng/L	40.080		96.0				
Calibration Blank (6I28024-CCB1)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.04	-		ng/L							
Calibration Blank (6I28024-CCB2)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.09	-		ng/L							
Calibration Blank (6I28024-CCB3)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.05	-		ng/L							
Calibration Blank (6I28024-CCB4)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.06	-		ng/L							
Calibration Blank (6I28024-CCB5)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.07	-		ng/L							
Calibration Blank (6I28024-CCB6)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.04	-		ng/L							
Calibration Blank (6I28024-CCB7)					Prepared & Analyzed: 28-Sep-16						
Mercury	0.11	-		ng/L							

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1487/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:16
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6I28024 - F609584											
Calibration Blank (6I28024-CCB8)											
Prepared & Analyzed: 28-Sep-16											
Mercury	0.06	-		ng/L							
Calibration Check (6I28024-CCV1)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.16	-		ng/L	5.0000		103	77-123			
Calibration Check (6I28024-CCV2)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.24	-		ng/L	5.0000		105	77-123			
Calibration Check (6I28024-CCV3)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.40	-		ng/L	5.0000		108	77-123			
Calibration Check (6I28024-CCV4)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.43	-		ng/L	5.0000		109	77-123			
Calibration Check (6I28024-CCV5)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.21	-		ng/L	5.0000		104	77-123			
Calibration Check (6I28024-CCV6)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.37	-		ng/L	5.0000		107	77-123			
Calibration Check (6I28024-CCV7)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.31	-		ng/L	5.0000		106	77-123			
Calibration Check (6I28024-CCV8)											
Prepared & Analyzed: 28-Sep-16											
Mercury	5.38	-		ng/L	5.0000		108	77-123			
Instrument Blank (6I28024-IBL1)											
Prepared & Analyzed: 28-Sep-16											
Mercury	ND	-	0.05	ng/L							U

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6I28024 - F609584

Instrument Blank (6I28024-IBL2)											Prepared & Analyzed: 28-Sep-16	
Mercury	ND	-	0.05	ng/L								U

Instrument Blank (6I28024-IBL3)											Prepared & Analyzed: 28-Sep-16	
Mercury	ND	-	0.05	ng/L								U

Initial Cal Check (6I28024-ICV1)											Prepared & Analyzed: 28-Sep-16	
Mercury	5.20	-		ng/L	5.0000		104	77-123				

Batch F609399 - EPA 3051A Microwave Digestion

Blank (F609399-BLK1)											Prepared: 17-Sep-16 Analyzed: 20-Sep-16	
Zinc	ND	0.06	0.50	mg/kg wet								U
Copper	ND	0.051	0.200	mg/kg wet								U
Chromium	ND	0.06	0.20	mg/kg wet								U
Lead	ND	0.005	0.080	mg/kg wet								U

LCS (F609399-BS1)											Prepared: 17-Sep-16 Analyzed: 20-Sep-16	
Copper	10.57	0.051	0.200	mg/kg wet	10.004		106	51-145				
Chromium	10.11	0.06	0.20	mg/kg wet	10.002		101	85-115				
Zinc	10.24	0.06	0.50	mg/kg wet	10.004		102	46-146				
Lead	10.20	0.005	0.080	mg/kg wet	10.002		102	72-143				

LCS Dup (F609399-BSD1)											Prepared: 17-Sep-16 Analyzed: 20-Sep-16	
Chromium	10.44	0.06	0.20	mg/kg wet	10.002		104	85-115	3.14	20		
Copper	10.79	0.051	0.200	mg/kg wet	10.004		108	51-145	2.10	20		
Zinc	10.19	0.06	0.50	mg/kg wet	10.004		102	46-146	0.467	20		
Lead	10.54	0.005	0.080	mg/kg wet	10.002		105	72-143	3.23	20		

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609399 - EPA 3051A Microwave Digestion											
Matrix Spike (F609399-MS1)		Source: 1608939-01			Prepared: 17-Sep-16 Analyzed: 20-Sep-16						
Zinc	97.98	0.09	0.76	mg/kg dry	15.263	127.8	-196	46-146			QM-14
Chromium	44.15	0.09	0.31	mg/kg dry	15.260	47.09	-19.3	85-115			QM-14
Copper	43.76	0.078	0.305	mg/kg dry	15.263	48.54	-31.3	51-145			QM-14
Lead	31.03	0.007	0.122	mg/kg dry	15.260	29.89	7.47	72-143			QM-14
Matrix Spike (F609399-MS2)		Source: 1608939-01			Prepared: 17-Sep-16 Analyzed: 20-Sep-16						
Chromium	114.9	0.09	0.30	mg/kg dry	60.745	47.09	112	85-115			AS
Zinc	303.3	0.09	0.76	mg/kg dry	151.86	127.8	116	46-146			AS
Copper	135.6	0.077	0.304	mg/kg dry	75.931	48.54	115	51-145			AS
Lead	46.55	0.007	0.121	mg/kg dry	15.186	29.89	110	72-143			AS
Matrix Spike Dup (F609399-MSD1)		Source: 1608939-01			Prepared: 17-Sep-16 Analyzed: 20-Sep-16						
Copper	60.14	0.079	0.311	mg/kg dry	15.549	48.54	74.6	51-145	489	20	QM-14, QR-08
Chromium	61.07	0.09	0.31	mg/kg dry	15.546	47.09	89.9	85-115	310	20	QM-14, QR-08
Zinc	134.0	0.09	0.78	mg/kg dry	15.549	127.8	39.7	46-146	-302	20	QM-14, QR-08
Lead	41.33	0.007	0.124	mg/kg dry	15.546	29.89	73.5	72-143	163	20	QM-14, QR-08
Matrix Spike Dup (F609399-MSD2)		Source: 1608939-01			Prepared: 17-Sep-16 Analyzed: 20-Sep-16						
Zinc	300.8	0.09	0.76	mg/kg dry	151.86	127.8	114	46-146	1.48	20	AS
Chromium	114.2	0.09	0.30	mg/kg dry	60.745	47.09	111	85-115	1.04	20	AS
Copper	135.2	0.077	0.304	mg/kg dry	75.931	48.54	114	51-145	0.461	20	AS
Lead	46.19	0.007	0.121	mg/kg dry	15.186	29.89	107	72-143	2.16	20	AS
Batch F609452 - EPA 3051A Microwave Digestion											
Blank (F609452-BLK1)		Prepared: 17-Sep-16 Analyzed: 21-Sep-16									
Cadmium	ND	0.012	0.050	mg/kg wet							U

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609452 - EPA 3051A Microwave Digestion											
LCS (F609452-BS1)					Prepared: 17-Sep-16 Analyzed: 21-Sep-16						
Cadmium	6.944	0.012	0.050	mg/kg wet	8.0060		86.7	84-113			
LCS Dup (F609452-BSD1)					Prepared: 17-Sep-16 Analyzed: 21-Sep-16						
Cadmium	6.816	0.012	0.050	mg/kg wet	8.0060		85.1	84-113	1.86	20	
Matrix Spike (F609452-MS1)					Source: 1608939-01RE1		Prepared: 17-Sep-16 Analyzed: 21-Sep-16				
Cadmium	8.210	0.018	0.076	mg/kg dry	12.215	0.372	64.2	84-113			QM-07
Matrix Spike (F609452-MS2)					Source: 1608939-01RE1		Prepared: 17-Sep-16 Analyzed: 21-Sep-16				
Cadmium	7.011	0.018	0.076	mg/kg dry	6.0745	0.372	109	84-113			AS
Matrix Spike Dup (F609452-MSD1)					Source: 1608939-01RE1		Prepared: 17-Sep-16 Analyzed: 21-Sep-16				
Cadmium	11.24	0.019	0.078	mg/kg dry	12.444	0.372	87.4	84-113	30.6	20	QR-08
Matrix Spike Dup (F609452-MSD2)					Source: 1608939-01RE1		Prepared: 17-Sep-16 Analyzed: 21-Sep-16				
Cadmium	6.830	0.018	0.076	mg/kg dry	6.0745	0.372	106	84-113	2.77	20	AS

Batch F609584 - EFGS-066 Cold Aqua Regia Digestion for Hg

Blank (F609584-BLK1)					Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	ND	-	0.50	ng/g							U
Blank (F609584-BLK2)					Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	ND	-	0.50	ng/g							U
Blank (F609584-BLK3)					Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	ND	-	0.50	ng/g							U

Eurofins Frontier Global Sciences, Inc.

Patrick Garcia-Strickland, Laboratory Director

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc 7440 Lincoln Way Garden Grove CA, 92841	Project: Sediments - 2016 Project Number: 16-08-1487/GWMA Sediment Sampling Project Manager: Carla Lee Hollowell	Reported: 29-Sep-16 17:16
--	--	------------------------------

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F609584 - EFGS-066 Cold Aqua Regia Digestion for Hg											
LCS (F609584-BS1)					Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	3.91	-	0.50	ng/g	4.0080		97.5	75-125			
LCS Dup (F609584-BS1)					Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	3.89	-	0.50	ng/g	4.0080		97.1	75-125	0.416	24	
Duplicate (F609584-DUP1)					Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	0.72	-	0.94	ng/g		1.48			69.5	24	QR-07, U
Duplicate (F609584-DUP2)					Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	1.40	-	0.94	ng/g		1.48			5.43	24	AD
Matrix Spike (F609584-MS1)					Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	324.1	-	21.6	ng/g	344.83	1.48	93.6	71-125			
Matrix Spike (F609584-MS2)					Source: 1608939-01 Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	414.5	-	23.2	ng/g	371.75	79.12	90.2	71-125			
Matrix Spike Dup (F609584-MSD1)					Source: 1608938-02 Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	377.1	-	23.6	ng/g	377.36	1.48	99.5	71-125	6.19	24	
Matrix Spike Dup (F609584-MSD2)					Source: 1608939-01 Prepared: 27-Sep-16 Analyzed: 28-Sep-16						
Mercury	403.8	-	20.5	ng/g	327.87	79.12	99.0	71-125	9.33	24	

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director



Frontier Global Sciences

11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove CA, 92841

Project: Sediments - 2016
Project Number: 16-08-1487/GWMA Sediment Sampling
Project Manager: Carla Lee Hollowell

Reported:
29-Sep-16 17:16

Notes and Definitions

- U Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
- QR-08 The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
- QR-07 The RPD/RSD value for the matrix duplicate/triplicate was outside of acceptance limits. Batch QC acceptable based on MS/MSD and/or LCS/LCSD RPD values within control limits.
- QM-14 The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 2 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- QM-13 The analytical spike recovery was outside control limits for the AS and/or ASD. The batch was accepted based on MS/MSD and LCS/LCSD recoveries within control limits.
- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- J The result is an estimated concentration.
- E-01 Sample was preceded by a sample exceeding the calibration curve and was reanalyzed for confirmation.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
- AS This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
- AD This matrix duplicate is an analytical duplicate.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Return to Contents

Eurofins Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Patrick Garcia-Strickland, Laboratory Director

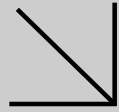
Page 25 of 25

Appendix D-3

Fish Sample Chemistry Report



Calscience



WORK ORDER NUMBER: 16-09-0039

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: GWMA - TMDL Compliance Monitoring

Attention: Andy Martin
27201 Puerta Real
Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 09/27/2016 by:
Carla Hollowell
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Calscience

Contents

Client Project Name: GWMA - TMDL Compliance Monitoring
 Work Order Number: 16-09-0039

1	Work Order Narrative.	3
2	16-09-0039 Anchor TMDL Tissue.	4
3	Sample Summary.	6
4	Client Sample Data.	8
	4.1 ASTM D-2216 (M) Moisture Content (Solid).	8
	4.2 EPA 8081A Organochlorine Pesticides (Tissue).	14
	4.3 EPA 8270C SIM PCB Congeners (Tissue).	51
	4.4 % Lipids via MeCl2 Ext. (NOAA 1993a) (Solid).	115
5	Quality Control Sample Data.	121
	5.1 MS/MSD.	121
	5.2 Sample Duplicate.	125
	5.3 LCS/LCSD.	130
6	Glossary of Terms and Qualifiers.	134
7	Chain-of-Custody/Sample Receipt Form.	135

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/01/16. They were assigned to Work Order 16-09-0039.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

CASE NARRATIVE

Eurofins Calscience Work Order No.: 16-09-0039
Project ID: GWMA – TMDL Compliance Monitoring

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the tissue samples.

Sample Condition on Receipt

Eighty-four (84) tissue samples were received on August 22, 2016 (under work order # 16-08-1554). The samples were transferred to the laboratory in an ice-chest on ice, following strict chain-of-custody (COC) procedures. The samples were frozen at the time of receipt; all samples had a temperature reading below 0C. All samples were given laboratory identification numbers and held in freezers pending further instructions. On September 1, 2016, the samples were re-labeled and logged into the Laboratory Information Management System (LIMS) based on the compositing instructions provided by the client. After the re-labeling event, forty-two (42) samples had been created; those samples are discussed here.

Tests Performed

Percent Moisture by ASTM D-2216 (M)
Chlorinated Pesticides by EPA 8270C SIM
PCB Congeners by EPA 8270C SIM
Percent Lipids by MeCl₂/NOAA 1993a

Data Summary

All samples were homogenized prior to preparation and analysis.

Holding times

All holding times for the tissue samples were met with the following exceptions:
The samples were extracted outside the EPA Method recommended solid sample holding times for EPA 8081A OC Pesticides and EPA 8270C SIM PCB Congeners. The samples were analyzed outside of the recommended holding time for Moisture. However, the tissue samples were frozen after collection and remained in that condition until sample preparation. Eurofins Calscience, Inc. follows standard SWAMP and PSEP guidelines for holding times in tissue samples, which states holding times may be extended up to one year if stored frozen at -18C after collection. In addition, there are no EPA recommended holding times established for tissue samples. Therefore, the sample results have not been flagged as exceeding the EPA Method recommended holding times.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Reporting Limits

All Method Detection Limits were met. The results were evaluated to the MDL, and where applicable, "J" flags were reported.

Method Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all testing.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed at the required frequencies, and unless otherwise noted, all parameters were within the established control limits.

One of the pesticide LCSD recoveries had a %Rec that is flagged as a marginal exceedance as it is slightly over the control limit.

Matrix Spikes

Matrix spike analyses were performed for each applicable analysis on project samples as sample volume allowed. All matrix spikes were performed on project samples. All parameters for the project sample matrix spikes were within the established control limits unless otherwise noted.

The MS/MSD for several EPA 8081 analytes were outside of control limits due to suspected matrix interference. The results have been flagged with the appropriate qualifiers and are released with no further action as the RPD recoveries and LCS/LCSD recoveries were within the control limits.

The RPD %Rec for one EPA 8270 analyte was outside of control limits due to suspected matrix interference. The results have been flagged with the appropriate qualifiers and are released with no further action as LCS/LCSD recoveries were within the control limits.

Surrogates

Surrogate recoveries for all applicable tests and samples were within the established control limits with the following exceptions.

The surrogate recoveries for multiple samples were outside of control limits in the EPA 8081 analyses due to suspected matrix interference. All affected recoveries were detected during re-analyses with a dilution to bring over range concentrations in to calibration range. The samples have been flagged with the appropriate qualifiers and are released with no further action required.



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order:	16-09-0039
27201 Puerta Real, Suite 350	Project Name:	GWMA - TMDL Compliance Monitoring
Mission Viejo, CA 92691-8306	PO Number:	141205-01.01
	Date/Time Received:	09/01/16 13:30
	Number of Containers:	42

Attn: Andy Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
OA-FF-WC-C1-20160820	16-09-0039-1	08/20/16 10:15	1	Tissue
OA-FF-WC-C2-20160820	16-09-0039-2	08/20/16 10:15	1	Tissue
OA-FF-WC-C3-20160820	16-09-0039-3	08/20/16 10:15	1	Tissue
OA-FF-CH-C1-20160820	16-09-0039-4	08/20/16 08:30	1	Tissue
OA-FF-CH-C2-20160820	16-09-0039-5	08/20/16 08:30	1	Tissue
OA-FF-CH-C3-20160820	16-09-0039-6	08/20/16 08:30	1	Tissue
OA-WO-SS-C1-20160820	16-09-0039-7	08/20/16 09:00	1	Tissue
OA-WO-SS-C2-20160820	16-09-0039-8	08/20/16 09:00	1	Tissue
OA-WO-NA-C1-20160820	16-09-0039-9	08/20/16 08:30	1	Tissue
OA-WO-NA-C2-20160820	16-09-0039-10	08/20/16 08:30	0	Tissue
OB-FF-WC-C1-20160820	16-09-0039-11	08/20/16 11:45	1	Tissue
OB-FF-WC-C2-20160820	16-09-0039-12	08/20/16 11:45	1	Tissue
OB-FF-WC-C3-20160820	16-09-0039-13	08/20/16 08:00	1	Tissue
OB-FF-CH-C1-20160820	16-09-0039-14	08/20/16 14:10	1	Tissue
OB-FF-CH-C2-20160820	16-09-0039-15	08/20/16 14:10	1	Tissue
OB-FF-CH-C3-20160820	16-09-0039-16	08/20/16 14:10	1	Tissue
OB-WO-NA-C1-20160820	16-09-0039-17	08/20/16 12:10	1	Tissue
OB-WO-NA-C2-20160820	16-09-0039-18	08/20/16 12:10	1	Tissue
OB-WO-NA-C3-20160820	16-09-0039-19	08/20/16 12:10	1	Tissue
SP-FF-WC-C1-20160821	16-09-0039-20	08/21/16 08:00	1	Tissue
SP-FF-WC-C2-20160821	16-09-0039-21	08/21/16 08:00	1	Tissue
SP-FF-WC-C3-20160821	16-09-0039-22	08/21/16 08:00	1	Tissue
SP-FF-CH-C1-20160821	16-09-0039-23	08/21/16 09:30	1	Tissue
SP-FF-CH-C2-20160821	16-09-0039-24	08/21/16 09:30	1	Tissue
SP-FF-CH-C3-20160821	16-09-0039-25	08/21/16 09:30	1	Tissue
SP-WO-NA-C1-20160821	16-09-0039-26	08/21/16 09:30	1	Tissue
SP-WO-NA-C2-20160821	16-09-0039-27	08/21/16 09:30	1	Tissue
SP-WO-NA-C3-20160821	16-09-0039-28	08/21/16 09:30	1	Tissue
CS-FF-WC-C1-20160821	16-09-0039-29	08/21/16 15:35	1	Tissue
CS-FF-WC-C2-20160821	16-09-0039-30	08/21/16 15:35	1	Tissue
CS-FF-WC-C3-20160821	16-09-0039-31	08/21/16 15:35	1	Tissue
OA-FF-WC-20-20160820	16-09-0039-32	08/20/16 09:00	1	Tissue
OA-FF-WC-23-20160820	16-09-0039-33	08/20/16 10:15	1	Tissue
OA-FF-WC-21-20160820	16-09-0039-34	08/20/16 10:15	1	Tissue
OA-FF-WC-24-20160820	16-09-0039-35	08/20/16 10:15	1	Tissue
OA-FF-WC-12-20160820	16-09-0039-36	08/20/16 10:15	1	Tissue
OB-FF-CH-16-20160820	16-09-0039-37	08/20/16 14:10	1	Tissue
OB-FF-CH-13-20160820	16-09-0039-38	08/20/16 14:10	1	Tissue
SP-FF-CH-14-20160821	16-09-0039-39	08/21/16 09:30	1	Tissue
SP-FF-CH-15-20160821	16-09-0039-40	08/21/16 09:30	1	Tissue
SP-FF-CH-13-20160821	16-09-0039-41	08/21/16 09:30	1	Tissue
SP-FF-CH-12-20160821	16-09-0039-42	08/21/16 09:30	1	Tissue

Return to Contents



Calscience

Sample Summary

Client: ANCHOR QEA, LLC	Work Order:	16-09-0039
27201 Puerta Real, Suite 350	Project Name:	GWMA - TMDL Compliance Monitoring
Mission Viejo, CA 92691-8306	PO Number:	141205-01.01
	Date/Time Received:	09/01/16 13:30
	Number of Containers:	42

Attn: Andy Martin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SP-FF-CH-11-20160821	16-09-0039-43	08/21/16 09:30	1	Tissue

Return to Contents



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C1-20160820	16-09-0039-1-A	08/20/16 10:15	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	72	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C2-20160820	16-09-0039-2-A	08/20/16 10:15	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	77	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C3-20160820	16-09-0039-3-A	08/20/16 10:15	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	66	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C1-20160820	16-09-0039-4-A	08/20/16 08:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	80	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C2-20160820	16-09-0039-5-A	08/20/16 08:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	81	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C3-20160820	16-09-0039-6-A	08/20/16 08:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	82	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C1-20160820	16-09-0039-7-AA	08/20/16 09:00	Tissue	N/A	09/23/16	09/23/16 17:00	G0923MOIB2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	76	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-NA-C1-20160820	16-09-0039-9-A	08/20/16 08:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	78	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C1-20160820	16-09-0039-11-A	08/20/16 11:45	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	76	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C2-20160820	16-09-0039-12-A	08/20/16 11:45	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	73	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C3-20160820	16-09-0039-13-A	08/20/16 08:00	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	71	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C1-20160820	16-09-0039-14-A	08/20/16 14:10	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	80	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C2-20160820	16-09-0039-15-A	08/20/16 14:10	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	80	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C3-20160820	16-09-0039-16-A	08/20/16 14:10	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	80	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C1-20160820	16-09-0039-17-A	08/20/16 12:10	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	78	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C2-20160820	16-09-0039-18-A	08/20/16 12:10	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	78	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C3-20160820	16-09-0039-19-A	08/20/16 12:10	Tissue	N/A	09/23/16	09/23/16 17:00	G0923MOIB2

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	78	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C1-20160821	16-09-0039-20-A	08/21/16 08:00	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	75	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C2-20160821	16-09-0039-21-A	08/21/16 08:00	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	72	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C3-20160821	16-09-0039-22-A	08/21/16 08:00	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	79	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C1-20160821	16-09-0039-23-A	08/21/16 09:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	75	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C2-20160821	16-09-0039-24-A	08/21/16 09:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	80	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C3-20160821	16-09-0039-25-A	08/21/16 09:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	81	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C1-20160821	16-09-0039-26-A	08/21/16 09:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	77	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C2-20160821	16-09-0039-27-A	08/21/16 09:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	78	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C3-20160821	16-09-0039-28-A	08/21/16 09:30	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	77	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C1-20160821	16-09-0039-29-A	08/21/16 15:35	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	73	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C2-20160821	16-09-0039-30-A	08/21/16 15:35	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	74	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C3-20160821	16-09-0039-31-A	08/21/16 15:35	Tissue	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	75	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-05-014-6305	N/A	Solid	N/A	09/13/16	09/13/16 22:00	G0913MOIB7

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Moisture	ND	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	N/A
	Method:	ASTM D-2216 (M)
	Units:	%

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-05-014-6306	N/A	Solid	N/A	09/13/16	09/13/16 22:00	G0913MOIB8

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Moisture	ND	0.10	0.10	1.00	

Method Blank	099-05-014-6346	N/A	Solid	N/A	09/23/16	09/23/16 17:00	G0923MOIB2
---------------------	------------------------	------------	--------------	------------	-----------------	-----------------------	-------------------

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Moisture	ND	0.10	0.10	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C1-20160820	16-09-0039-1-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/16/16 11:58	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	92	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	48	24-168	
2,4,5,6-Tetrachloro-m-Xylene	97	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C1-20160820	16-09-0039-1-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/21/16 12:37	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	63	20	9.9	10.0	
4,4'-DDT	26	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	116	24-168	
2,4,5,6-Tetrachloro-m-Xylene	131	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C1-20160820	16-09-0039-1-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/26/16 11:01	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	590	200	88	200	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	210	24-168	1,2,7		
2,4,5,6-Tetrachloro-m-Xylene	136	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C2-20160820	16-09-0039-2-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/16/16 12:12	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	7.2	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	4.4	1.0	0.44	1.00	
Toxaphene	40	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	28	24-168			
2,4,5,6-Tetrachloro-m-Xylene	67	25-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C2-20160820	16-09-0039-2-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/26/16 11:16	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	210	100	44	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	152	24-168	
2,4,5,6-Tetrachloro-m-Xylene	129	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C3-20160820	16-09-0039-3-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/16/16 12:27	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	6.4	1.0	0.44	1.00	
Toxaphene	41	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	73	24-168	
2,4,5,6-Tetrachloro-m-Xylene	126	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C3-20160820	16-09-0039-3-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/21/16 13:06	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	19	20	9.9	10.0	J

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorodate	151	24-168	
2,4,5,6-Tetrachloro-m-Xylene	165	25-145	1,2,7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C3-20160820	16-09-0039-3-AA	08/20/16 10:15	Tissue	GC 51	09/15/16	09/26/16 11:30	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	250	100	44	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorodate	146	24-168	
2,4,5,6-Tetrachloro-m-Xylene	137	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C1-20160820	16-09-0039-4-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/16/16 12:41	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	0.84	1.0	0.44	1.00	J
Toxaphene	ND	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	70	24-168	
2,4,5,6-Tetrachloro-m-Xylene	99	25-145	

OA-FF-CH-C1-20160820	16-09-0039-4-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/21/16 13:20	160915L17
----------------------	-----------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	17	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	134	24-168	
2,4,5,6-Tetrachloro-m-Xylene	135	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C2-20160820	16-09-0039-5-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/16/16 12:56	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	1.3	2.0	0.99	1.00	J
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.6	1.0	0.44	1.00	
Toxaphene	13	20	8.9	1.00	J
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	64	24-168	
2,4,5,6-Tetrachloro-m-Xylene	89	25-145	

OA-FF-CH-C2-20160820	16-09-0039-5-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/21/16 13:35	160915L17
----------------------	-----------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	25	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	116	24-168	
2,4,5,6-Tetrachloro-m-Xylene	124	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C3-20160820	16-09-0039-6-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/16/16 13:10	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	0.95	1.0	0.44	1.00	J
Toxaphene	ND	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	68	24-168	
2,4,5,6-Tetrachloro-m-Xylene	90	25-145	

OA-FF-CH-C3-20160820	16-09-0039-6-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/21/16 13:49	160915L17
----------------------	-----------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	14	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	115	24-168	
2,4,5,6-Tetrachloro-m-Xylene	117	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8081A
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C1-20160820	16-09-0039-7-AA	08/20/16 09:00	Tissue	GC 51	09/15/16	09/16/16 13:24	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	4.8	1.0	0.44	1.00	
Toxaphene	34	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	74	24-168	
2,4,5,6-Tetrachloro-m-Xylene	113	25-145	

OA-WO-SS-C1-20160820	16-09-0039-7-AA	08/20/16 09:00	Tissue	GC 51	09/15/16	09/26/16 11:44	160915L17
----------------------	-----------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	89	50	22	50.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	135	24-168	
2,4,5,6-Tetrachloro-m-Xylene	136	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C2-20160820	16-09-0039-8-AA	08/20/16 09:00	Tissue	GC 51	09/15/16	09/16/16 13:39	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	3.5	1.0	0.44	1.00	
Toxaphene	26	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	70	24-168	
2,4,5,6-Tetrachloro-m-Xylene	105	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C2-20160820	16-09-0039-8-AA	08/20/16 09:00	Tissue	GC 51	09/15/16	09/21/16 14:17	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	78	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	128	24-168	
2,4,5,6-Tetrachloro-m-Xylene	125	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-NA-C1-20160820	16-09-0039-9-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/16/16 13:53	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.7	1.0	0.44	1.00	
Toxaphene	14	20	9.0	1.00	J
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	66	24-168	
2,4,5,6-Tetrachloro-m-Xylene	90	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-NA-C1-20160820	16-09-0039-9-AA	08/20/16 08:30	Tissue	GC 51	09/15/16	09/21/16 14:32	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	32	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	117	24-168	
2,4,5,6-Tetrachloro-m-Xylene	111	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C1-20160820	16-09-0039-11-AA	08/20/16 11:45	Tissue	GC 51	09/15/16	09/16/16 14:07	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	47	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	32	24-168	
2,4,5,6-Tetrachloro-m-Xylene	78	25-145	

OB-FF-WC-C1-20160820	16-09-0039-11-AA	08/20/16 11:45	Tissue	GC 51	09/15/16	09/21/16 14:46	160915L17
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	23	20	9.9	10.0	
4,4'-DDT	22	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	105	24-168	
2,4,5,6-Tetrachloro-m-Xylene	124	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C1-20160820	16-09-0039-11-AA	08/20/16 11:45	Tissue	GC 51	09/15/16	09/26/16 11:59	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	210	100	44	100	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	162	24-168			
2,4,5,6-Tetrachloro-m-Xylene	101	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C2-20160820	16-09-0039-12-AA	08/20/16 11:45	Tissue	GC 51	09/15/16	09/16/16 14:21	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	4.9	1.0	0.44	1.00	
Toxaphene	32	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	32	24-168			
2,4,5,6-Tetrachloro-m-Xylene	77	25-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C2-20160820	16-09-0039-12-AA	08/20/16 11:45	Tissue	GC 51	09/15/16	09/21/16 15:00	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	45	20	9.9	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	104	24-168	
2,4,5,6-Tetrachloro-m-Xylene	147	25-145	1,2,7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C2-20160820	16-09-0039-12-AA	08/20/16 11:45	Tissue	GC 51	09/15/16	09/26/16 12:13	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	310	100	44	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	161	24-168	
2,4,5,6-Tetrachloro-m-Xylene	118	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C3-20160820	16-09-0039-13-AA	08/20/16 08:00	Tissue	GC 51	09/15/16	09/16/16 14:45	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	83	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	54	24-168	
2,4,5,6-Tetrachloro-m-Xylene	107	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C3-20160820	16-09-0039-13-AA	08/20/16 08:00	Tissue	GC 51	09/15/16	09/21/16 15:15	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	71	20	9.9	10.0	
4,4'-DDT	14	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	88	24-168	
2,4,5,6-Tetrachloro-m-Xylene	157	25-145	1,2,7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C3-20160820	16-09-0039-13-AA	08/20/16 08:00	Tissue	GC 51	09/15/16	09/27/16 10:17	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	340	100	44	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	101	24-168	
2,4,5,6-Tetrachloro-m-Xylene	105	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C1-20160820	16-09-0039-14-AA	08/20/16 14:10	Tissue	GC 51	09/15/16	09/16/16 14:59	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	0.71	1.0	0.44	1.00	J
Toxaphene	ND	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	51	24-168	
2,4,5,6-Tetrachloro-m-Xylene	110	25-145	

OB-FF-CH-C1-20160820	16-09-0039-14-AA	08/20/16 14:10	Tissue	GC 51	09/15/16	09/21/16 15:29	160915L17
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	16	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	98	24-168	
2,4,5,6-Tetrachloro-m-Xylene	149	25-145	1,2,7

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C2-20160820	16-09-0039-15-AA	08/20/16 14:10	Tissue	GC 51	09/15/16	09/16/16 15:13	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	0.73	1.0	0.44	1.00	J
Toxaphene	ND	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	46	24-168	
2,4,5,6-Tetrachloro-m-Xylene	89	25-145	

OB-FF-CH-C2-20160820	16-09-0039-15-AA	08/20/16 14:10	Tissue	GC 51	09/15/16	09/21/16 15:43	160915L17
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	12	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	86	24-168	
2,4,5,6-Tetrachloro-m-Xylene	126	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C3-20160820	16-09-0039-16-AA	08/20/16 14:10	Tissue	GC 51	09/15/16	09/16/16 15:28	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDE	7.9	1.0	0.44	1.00	
4,4'-DDT	0.63	1.0	0.44	1.00	J
Toxaphene	ND	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	41	24-168			
2,4,5,6-Tetrachloro-m-Xylene	87	25-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C1-20160820	16-09-0039-17-AA	08/20/16 12:10	Tissue	GC 51	09/15/16	09/16/16 15:42	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	2.0	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.4	1.0	0.44	1.00	
Toxaphene	11	20	8.9	1.00	J
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	46	24-168	
2,4,5,6-Tetrachloro-m-Xylene	103	25-145	

OB-WO-NA-C1-20160820	16-09-0039-17-AA	08/20/16 12:10	Tissue	GC 51	09/15/16	09/21/16 16:12	160915L17
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	30	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	96	24-168	
2,4,5,6-Tetrachloro-m-Xylene	142	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8081A
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 19 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C2-20160820	16-09-0039-18-AA	08/20/16 12:10	Tissue	GC 51	09/15/16	09/16/16 16:27	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	2.4	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	2.3	1.0	0.44	1.00	
Toxaphene	22	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	84	24-168	
2,4,5,6-Tetrachloro-m-Xylene	97	25-145	

OB-WO-NA-C2-20160820	16-09-0039-18-AA	08/20/16 12:10	Tissue	GC 51	09/15/16	09/21/16 16:26	160915L17
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	30	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	99	24-168	
2,4,5,6-Tetrachloro-m-Xylene	141	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 20 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C3-20160820	16-09-0039-19-AA	08/20/16 12:10	Tissue	GC 51	09/15/16	09/16/16 16:41	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	3.3	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	3.0	1.0	0.44	1.00	
Toxaphene	22	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	87	24-168	
2,4,5,6-Tetrachloro-m-Xylene	98	25-145	

OB-WO-NA-C3-20160820	16-09-0039-19-AA	08/20/16 12:10	Tissue	GC 51	09/15/16	09/21/16 16:41	160915L17
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	42	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	95	24-168	
2,4,5,6-Tetrachloro-m-Xylene	142	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 21 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C1-20160821	16-09-0039-20-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/22/16 13:53	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	150	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	115	24-168	
2,4,5,6-Tetrachloro-m-Xylene	129	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C1-20160821	16-09-0039-20-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/26/16 14:16	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	11	10	4.9	5.00	
4,4'-DDT	13	5.0	2.2	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	106	24-168	
2,4,5,6-Tetrachloro-m-Xylene	109	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 22 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C1-20160821	16-09-0039-20-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/26/16 12:27	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	130	50	22	50.0	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	136	24-168			
2,4,5,6-Tetrachloro-m-Xylene	122	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C2-20160821	16-09-0039-21-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/20/16 14:08	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	97	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	106	24-168			
2,4,5,6-Tetrachloro-m-Xylene	120	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 23 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C2-20160821	16-09-0039-21-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/22/16 14:21	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	12	20	9.9	10.0	J
4,4'-DDT	14	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	127	24-168	
2,4,5,6-Tetrachloro-m-Xylene	103	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C2-20160821	16-09-0039-21-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/26/16 12:48	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	120	50	22	50.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	147	24-168	
2,4,5,6-Tetrachloro-m-Xylene	121	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 24 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C3-20160821	16-09-0039-22-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/20/16 14:22	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	88	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	72	24-168	
2,4,5,6-Tetrachloro-m-Xylene	120	25-145	

SP-FF-WC-C3-20160821	16-09-0039-22-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/22/16 14:36	160915L18
----------------------	------------------	-------------------	--------	-------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	17	20	9.9	10.0	J
4,4'-DDT	18	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	136	24-168	
2,4,5,6-Tetrachloro-m-Xylene	99	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 25 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C3-20160821	16-09-0039-22-AA	08/21/16 08:00	Tissue	GC 51	09/15/16	09/26/16 13:03	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	150	50	22	50.0	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	150	24-168			
2,4,5,6-Tetrachloro-m-Xylene	121	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C1-20160821	16-09-0039-23-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/20/16 14:37	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.2	1.0	0.44	1.00	
Toxaphene	9.7	20	9.0	1.00	J
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	72	24-168			
2,4,5,6-Tetrachloro-m-Xylene	113	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 26 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C1-20160821	16-09-0039-23-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/22/16 14:50	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	8.5	10	4.4	10.0	J

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	91	24-168	
2,4,5,6-Tetrachloro-m-Xylene	86	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C2-20160821	16-09-0039-24-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/20/16 14:51	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	1.4	2.0	0.99	1.00	J
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.3	1.0	0.44	1.00	
Toxaphene	9.8	20	8.9	1.00	J
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	71	24-168	
2,4,5,6-Tetrachloro-m-Xylene	120	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 27 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C2-20160821	16-09-0039-24-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/22/16 15:04	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	19	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	102	24-168	
2,4,5,6-Tetrachloro-m-Xylene	104	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C3-20160821	16-09-0039-25-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/20/16 15:05	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	1.0	2.0	0.99	1.00	J
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.0	1.0	0.44	1.00	
Toxaphene	ND	20	8.9	1.00	
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	64	24-168	
2,4,5,6-Tetrachloro-m-Xylene	108	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 28 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C3-20160821	16-09-0039-25-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/22/16 15:18	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	8.8	10	4.4	10.0	J
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloride	91	24-168			
2,4,5,6-Tetrachloro-m-Xylene	93	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C1-20160821	16-09-0039-26-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/20/16 15:20	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	1.7	2.0	0.99	1.00	J
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.6	1.0	0.44	1.00	
Toxaphene	12	20	8.9	1.00	J
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloride	79	24-168			
2,4,5,6-Tetrachloro-m-Xylene	132	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 29 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C1-20160821	16-09-0039-26-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/22/16 15:33	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	15	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	99	24-168	
2,4,5,6-Tetrachloro-m-Xylene	104	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C2-20160821	16-09-0039-27-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/20/16 15:34	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	1.5	2.0	0.99	1.00	J
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.5	1.0	0.44	1.00	
Toxaphene	9.9	20	9.0	1.00	J
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	74	24-168	
2,4,5,6-Tetrachloro-m-Xylene	131	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 30 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C2-20160821	16-09-0039-27-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/22/16 15:47	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	14	10	4.4	10.0	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	100	24-168			
2,4,5,6-Tetrachloro-m-Xylene	102	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C3-20160821	16-09-0039-28-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/20/16 15:48	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.28	1.00	
2,4'-DDE	2.2	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDT	1.9	1.0	0.44	1.00	
Toxaphene	16	20	8.9	1.00	J
Alpha Chlordane	ND	1.0	0.40	1.00	
Gamma Chlordane	ND	2.0	0.88	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	82	24-168			
2,4,5,6-Tetrachloro-m-Xylene	145	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 31 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C3-20160821	16-09-0039-28-AA	08/21/16 09:30	Tissue	GC 51	09/15/16	09/22/16 16:01	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	18	10	4.4	10.0	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	107	24-168			
2,4,5,6-Tetrachloro-m-Xylene	114	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C1-20160821	16-09-0039-29-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/20/16 16:03	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	88	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	44	24-168			
2,4,5,6-Tetrachloro-m-Xylene	76	25-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 32 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C1-20160821	16-09-0039-29-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/22/16 16:16	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	14	20	9.9	10.0	J
4,4'-DDT	16	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	88	24-168	
2,4,5,6-Tetrachloro-m-Xylene	71	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C1-20160821	16-09-0039-29-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/26/16 13:17	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	140	50	22	50.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	111	24-168	
2,4,5,6-Tetrachloro-m-Xylene	84	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 33 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C2-20160821	16-09-0039-30-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/20/16 16:17	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	98	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	32	24-168	
2,4,5,6-Tetrachloro-m-Xylene	74	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C2-20160821	16-09-0039-30-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/22/16 16:30	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	31	20	9.9	10.0	
4,4'-DDT	32	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloredate	117	24-168	
2,4,5,6-Tetrachloro-m-Xylene	88	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 34 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C2-20160821	16-09-0039-30-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/26/16 13:31	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	260	100	44	100	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	164	24-168			
2,4,5,6-Tetrachloro-m-Xylene	96	25-145			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C3-20160821	16-09-0039-31-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/20/16 16:31	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
Toxaphene	94	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	52	24-168			
2,4,5,6-Tetrachloro-m-Xylene	95	25-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 35 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C3-20160821	16-09-0039-31-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/22/16 16:44	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
2,4'-DDE	21	20	9.9	10.0	
4,4'-DDT	22	10	4.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	102	24-168	
2,4,5,6-Tetrachloro-m-Xylene	99	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C3-20160821	16-09-0039-31-AA	08/21/16 15:35	Tissue	GC 51	09/15/16	09/26/16 13:46	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
4,4'-DDE	230	100	44	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchloroendate	152	24-168	
2,4,5,6-Tetrachloro-m-Xylene	104	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8081A
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 36 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-782-8	N/A	Tissue	GC 51	09/15/16	09/16/16 11:29	160915L17

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDE	ND	1.0	0.44	1.00	
4,4'-DDT	ND	1.0	0.44	1.00	
Toxaphene	ND	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloredate	79	24-168			
2,4,5,6-Tetrachloro-m-Xylene	90	25-145			



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 37 of 37

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-782-9	N/A	Tissue	GC 51	09/15/16	09/16/16 11:43	160915L18

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dieldrin	ND	1.0	0.44	1.00	
Trans-nonachlor	ND	1.0	0.27	1.00	
2,4'-DDD	ND	1.0	0.29	1.00	
2,4'-DDE	ND	2.0	0.99	1.00	
2,4'-DDT	ND	1.0	0.31	1.00	
4,4'-DDD	ND	1.0	0.50	1.00	
4,4'-DDE	ND	1.0	0.44	1.00	
4,4'-DDT	ND	1.0	0.44	1.00	
Toxaphene	ND	20	9.0	1.00	
Alpha Chlordane	ND	1.0	0.41	1.00	
Gamma Chlordane	ND	2.0	0.89	1.00	
Cis-nonachlor	ND	1.0	0.26	1.00	
Oxychlordane	ND	1.0	0.27	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Dibutylchloroendate	76	24-168			
2,4,5,6-Tetrachloro-m-Xylene	90	25-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C1-20160820	16-09-0039-1-AA	08/20/16 10:15	Tissue	GC/MS HHH	09/15/16	09/20/16 12:23	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	0.59	0.20	0.071	1.00	
PCB028	2.1	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	2.9	0.20	0.086	1.00	
PCB049	3.0	0.20	0.11	1.00	
PCB052	5.2	0.20	0.062	1.00	
PCB066	6.8	0.20	0.10	1.00	
PCB070	4.6	0.20	0.059	1.00	
PCB074	3.3	0.20	0.086	1.00	
PCB077	1.9	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	11	0.20	0.11	1.00	
PCB099	10	0.20	0.060	1.00	
PCB101	16	0.20	0.097	1.00	
PCB105	6.2	0.20	0.054	1.00	
PCB110	12	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	17	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	3.8	0.20	0.10	1.00	
PCB132/153	30	0.40	0.17	1.00	
PCB138/158	25	0.40	0.094	1.00	
PCB149	12	0.20	0.097	1.00	
PCB151	3.5	0.20	0.067	1.00	
PCB156	1.8	0.20	0.057	1.00	
PCB157	0.54	0.20	0.052	1.00	
PCB167	0.99	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	0.45	0.20	0.061	1.00	
PCB170	3.3	0.20	0.063	1.00	
PCB177	2.4	0.20	0.087	1.00	
PCB180	8.6	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	2.8	0.20	0.11	1.00	
PCB187	7.9	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.0	0.20	0.11	1.00	
PCB201	0.31	0.20	0.096	1.00	
PCB206	0.24	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	63	14-146			
p-Terphenyl-d14	94	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C2-20160820	16-09-0039-2-AA	08/20/16 10:15	Tissue	GC/MS HHH	09/15/16	09/20/16 12:47	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	0.82	0.20	0.071	1.00	
PCB028	1.5	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	1.8	0.20	0.087	1.00	
PCB049	1.9	0.20	0.11	1.00	
PCB052	3.1	0.20	0.063	1.00	
PCB066	4.0	0.20	0.10	1.00	
PCB070	2.6	0.20	0.060	1.00	
PCB074	1.9	0.20	0.087	1.00	
PCB077	1.0	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	5.3	0.20	0.11	1.00	
PCB099	6.1	0.20	0.061	1.00	
PCB101	9.7	0.20	0.098	1.00	
PCB105	3.3	0.20	0.055	1.00	
PCB110	6.6	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	9.4	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	2.1	0.20	0.10	1.00	
PCB132/153	17	0.40	0.17	1.00	
PCB138/158	14	0.40	0.094	1.00	
PCB149	7.2	0.20	0.098	1.00	
PCB151	1.9	0.20	0.067	1.00	
PCB156	0.96	0.20	0.058	1.00	
PCB157	0.27	0.20	0.052	1.00	
PCB167	0.46	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.20	0.20	0.061	1.00	
PCB170	1.7	0.20	0.063	1.00	
PCB177	1.4	0.20	0.087	1.00	
PCB180	4.2	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	1.4	0.20	0.11	1.00	
PCB187	4.4	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	0.49	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	71	14-146			
p-Terphenyl-d14	110	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C3-20160820	16-09-0039-3-AA	08/20/16 10:15	Tissue	GC/MS HHH	09/15/16	09/20/16 13:11	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	0.39	0.20	0.071	1.00	
PCB028	1.2	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	1.6	0.20	0.087	1.00	
PCB049	1.6	0.20	0.11	1.00	
PCB052	2.4	0.20	0.063	1.00	
PCB066	3.6	0.20	0.10	1.00	
PCB070	2.2	0.20	0.060	1.00	
PCB074	1.8	0.20	0.087	1.00	
PCB077	0.94	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	6.1	0.20	0.11	1.00	
PCB099	5.6	0.20	0.061	1.00	
PCB101	8.3	0.20	0.098	1.00	
PCB105	2.8	0.20	0.055	1.00	
PCB110	5.2	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	8.4	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	1.6	0.20	0.10	1.00	
PCB132/153	16	0.40	0.17	1.00	
PCB138/158	12	0.40	0.094	1.00	
PCB149	5.8	0.20	0.098	1.00	
PCB151	1.9	0.20	0.067	1.00	
PCB156	0.84	0.20	0.058	1.00	
PCB157	0.22	0.20	0.052	1.00	
PCB167	0.46	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.24	0.20	0.061	1.00	
PCB170	1.7	0.20	0.063	1.00	
PCB177	1.2	0.20	0.087	1.00	
PCB180	4.3	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	1.6	0.20	0.11	1.00	
PCB187	4.6	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	0.57	0.20	0.11	1.00	
PCB201	0.20	0.20	0.097	1.00	
PCB206	0.37	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	38	14-146			
p-Terphenyl-d14	55	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 7 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C1-20160820	16-09-0039-4-AA	08/20/16 08:30	Tissue	GC/MS HHH	09/15/16	09/17/16 17:33	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.086	1.00	
PCB049	0.16	0.20	0.11	1.00	J
PCB052	0.30	0.20	0.062	1.00	
PCB066	0.31	0.20	0.10	1.00	
PCB070	0.11	0.20	0.059	1.00	J
PCB074	ND	0.20	0.086	1.00	
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.30	0.20	0.11	1.00	
PCB099	0.43	0.20	0.060	1.00	
PCB101	0.67	0.20	0.097	1.00	
PCB105	0.21	0.20	0.054	1.00	
PCB110	0.41	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.56	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.1	0.40	0.17	1.00	
PCB138/158	0.84	0.40	0.094	1.00	
PCB149	0.39	0.20	0.097	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.12	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.34	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 8 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.11	0.20	0.11	1.00	J
PCB187	0.27	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	45	14-146			
p-Terphenyl-d14	77	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 9 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C2-20160820	16-09-0039-5-AA	08/20/16 08:30	Tissue	GC/MS HHH	09/15/16	09/17/16 17:57	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.086	1.00	
PCB049	0.21	0.20	0.11	1.00	
PCB052	0.42	0.20	0.062	1.00	
PCB066	0.36	0.20	0.10	1.00	
PCB070	0.12	0.20	0.059	1.00	J
PCB074	0.16	0.20	0.086	1.00	J
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.48	0.20	0.11	1.00	
PCB099	0.83	0.20	0.060	1.00	
PCB101	1.2	0.20	0.097	1.00	
PCB105	0.37	0.20	0.054	1.00	
PCB110	0.72	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	1.1	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.31	0.20	0.10	1.00	
PCB132/153	2.1	0.40	0.17	1.00	
PCB138/158	1.7	0.40	0.094	1.00	
PCB149	0.59	0.20	0.097	1.00	
PCB151	0.28	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.26	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	
PCB180	0.63	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 10 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.19	0.20	0.11	1.00	J
PCB187	0.49	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	48	14-146			
p-Terphenyl-d14	83	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 11 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C3-20160820	16-09-0039-6-AA	08/20/16 08:30	Tissue	GC/MS HHH	09/15/16	09/17/16 18:20	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.12	0.20	0.033	1.00	J
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.086	1.00	
PCB049	0.17	0.20	0.11	1.00	J
PCB052	0.31	0.20	0.062	1.00	
PCB066	0.26	0.20	0.10	1.00	
PCB070	ND	0.20	0.059	1.00	
PCB074	0.13	0.20	0.086	1.00	J
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.33	0.20	0.11	1.00	
PCB099	0.50	0.20	0.060	1.00	
PCB101	0.86	0.20	0.097	1.00	
PCB105	0.31	0.20	0.054	1.00	
PCB110	0.48	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.76	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.4	0.40	0.17	1.00	
PCB138/158	1.2	0.40	0.094	1.00	
PCB149	0.49	0.20	0.097	1.00	
PCB151	0.21	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.14	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.41	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 12 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.14	0.20	0.11	1.00	J
PCB187	0.37	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	57	14-146			
p-Terphenyl-d14	98	34-148			



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	EPA 3541
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 13 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C1-20160820	16-09-0039-7-AA	08/20/16 09:00	Tissue	GC/MS HHH	09/15/16	09/21/16 12:24	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.34	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.37	0.20	0.087	1.00	
PCB049	0.51	0.20	0.11	1.00	
PCB052	1.1	0.20	0.063	1.00	
PCB066	1.0	0.20	0.10	1.00	
PCB070	0.95	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	1.7	0.20	0.11	1.00	
PCB099	2.6	0.20	0.061	1.00	
PCB101	3.4	0.20	0.098	1.00	
PCB105	1.2	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	4.1	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	0.35	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	6.3	0.40	0.17	1.00	
PCB138/158	5.1	0.40	0.094	1.00	
PCB149	1.0	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	0.53	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.20	0.20	0.061	1.00	J
PCB170	1.1	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	
PCB180	1.9	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 14 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.64	0.20	0.11	1.00	
PCB187	1.1	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	0.30	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	63	14-146			
p-Terphenyl-d14	38	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 15 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C2-20160820	16-09-0039-8-AA	08/20/16 09:00	Tissue	GC/MS HHH	09/15/16	09/17/16 18:43	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.30	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.35	0.20	0.086	1.00	
PCB049	0.47	0.20	0.11	1.00	
PCB052	0.92	0.20	0.062	1.00	
PCB066	0.62	0.20	0.10	1.00	
PCB070	0.66	0.20	0.059	1.00	
PCB074	0.56	0.20	0.086	1.00	
PCB077	0.26	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	1.3	0.20	0.11	1.00	
PCB099	2.0	0.20	0.060	1.00	
PCB101	2.8	0.20	0.097	1.00	
PCB105	1.0	0.20	0.054	1.00	
PCB110	0.87	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	3.3	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.43	0.20	0.10	1.00	
PCB132/153	5.7	0.40	0.17	1.00	
PCB138/158	4.3	0.40	0.094	1.00	
PCB149	0.96	0.20	0.097	1.00	
PCB151	0.52	0.20	0.067	1.00	
PCB156	0.38	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	0.27	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.70	0.20	0.063	1.00	
PCB177	0.35	0.20	0.087	1.00	
PCB180	1.6	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 16 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.56	0.20	0.11	1.00	
PCB187	1.3	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	0.25	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	74	14-146			
p-Terphenyl-d14	81	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 17 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-NA-C1-20160820	16-09-0039-9-AA	08/20/16 08:30	Tissue	GC/MS HHH	09/15/16	09/17/16 19:06	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.24	0.20	0.087	1.00	
PCB049	0.29	0.20	0.11	1.00	
PCB052	0.50	0.20	0.063	1.00	
PCB066	0.35	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.66	0.20	0.11	1.00	
PCB099	0.90	0.20	0.061	1.00	
PCB101	1.8	0.20	0.098	1.00	
PCB105	0.57	0.20	0.055	1.00	
PCB110	1.1	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	1.5	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.28	0.20	0.10	1.00	
PCB132/153	3.2	0.40	0.17	1.00	
PCB138/158	2.1	0.40	0.094	1.00	
PCB149	1.5	0.20	0.098	1.00	
PCB151	0.46	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.40	0.20	0.063	1.00	
PCB177	0.30	0.20	0.087	1.00	
PCB180	0.96	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 18 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.30	0.20	0.11	1.00	
PCB187	0.84	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	55	14-146			
p-Terphenyl-d14	92	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 19 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C1-20160820	16-09-0039-11-AA	08/20/16 11:45	Tissue	GC/MS HHH	09/15/16	09/20/16 13:59	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	2.2	0.20	0.071	1.00	
PCB028	3.6	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	5.4	0.20	0.087	1.00	
PCB049	6.5	0.20	0.11	1.00	
PCB052	10	0.20	0.063	1.00	
PCB066	8.1	0.20	0.10	1.00	
PCB070	5.5	0.20	0.060	1.00	
PCB074	4.5	0.20	0.087	1.00	
PCB077	2.3	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	8.5	0.20	0.11	1.00	
PCB099	13	0.20	0.061	1.00	
PCB101	23	0.20	0.098	1.00	
PCB105	5.9	0.20	0.055	1.00	
PCB110	13	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	18	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	3.5	0.20	0.10	1.00	
PCB132/153	40	0.40	0.17	1.00	
PCB138/158	29	0.40	0.094	1.00	
PCB149	18	0.20	0.098	1.00	
PCB151	5.3	0.20	0.067	1.00	
PCB156	2.0	0.20	0.058	1.00	
PCB157	0.54	0.20	0.052	1.00	
PCB167	0.97	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.73	0.20	0.061	1.00	
PCB170	4.9	0.20	0.063	1.00	
PCB177	3.7	0.20	0.087	1.00	
PCB180	13	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 20 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	4.0	0.20	0.11	1.00	
PCB187	12	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.7	0.20	0.11	1.00	
PCB201	0.57	0.20	0.097	1.00	
PCB206	0.97	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	32	14-146			
p-Terphenyl-d14	46	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 21 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C2-20160820	16-09-0039-12-AA	08/20/16 11:45	Tissue	GC/MS HHH	09/15/16	09/21/16 12:49	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	1.3	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	1.2	0.20	0.086	1.00	
PCB049	1.4	0.20	0.11	1.00	
PCB052	1.9	0.20	0.062	1.00	
PCB066	3.4	0.20	0.10	1.00	
PCB070	1.5	0.20	0.059	1.00	
PCB074	ND	0.20	0.086	1.00	
PCB077	0.88	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	5.9	0.20	0.11	1.00	
PCB099	5.5	0.20	0.060	1.00	
PCB101	6.8	0.20	0.097	1.00	
PCB105	2.3	0.20	0.054	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	7.5	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	1.5	0.20	0.10	1.00	
PCB132/153	14	0.40	0.17	1.00	
PCB138/158	11	0.40	0.094	1.00	
PCB149	5.6	0.20	0.097	1.00	
PCB151	1.2	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	0.30	0.20	0.061	1.00	
PCB170	1.8	0.20	0.063	1.00	
PCB177	1.3	0.20	0.087	1.00	
PCB180	3.3	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 22 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	1.1	0.20	0.11	1.00	
PCB187	3.9	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	0.84	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	0.36	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	134	14-146			
p-Terphenyl-d14	39	34-148			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 23 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C3-20160820	16-09-0039-13-AA	08/20/16 08:00	Tissue	GC/MS HHH	09/15/16	09/21/16 13:14	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	1.8	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	2.0	0.20	0.087	1.00	
PCB049	2.4	0.20	0.11	1.00	
PCB052	3.0	0.20	0.063	1.00	
PCB066	5.2	0.20	0.10	1.00	
PCB070	2.3	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	1.1	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	7.6	0.20	0.11	1.00	
PCB099	9.2	0.20	0.061	1.00	
PCB101	11	0.20	0.098	1.00	
PCB105	4.3	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	13	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	3.4	0.20	0.10	1.00	
PCB132/153	25	0.40	0.17	1.00	
PCB138/158	20	0.40	0.094	1.00	
PCB149	8.0	0.20	0.098	1.00	
PCB151	2.6	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	0.75	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.39	0.20	0.061	1.00	
PCB170	2.9	0.20	0.063	1.00	
PCB177	2.4	0.20	0.087	1.00	
PCB180	6.8	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 24 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	2.0	0.20	0.11	1.00	
PCB187	7.8	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.0	0.20	0.11	1.00	
PCB201	0.30	0.20	0.097	1.00	
PCB206	0.61	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	115	14-146			
p-Terphenyl-d14	48	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 25 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C1-20160820	16-09-0039-14-AA	08/20/16 14:10	Tissue	GC/MS HHH	09/15/16	09/17/16 19:29	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	0.12	0.20	0.11	1.00	J
PCB052	0.23	0.20	0.063	1.00	
PCB066	0.23	0.20	0.10	1.00	
PCB070	0.16	0.20	0.060	1.00	J
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.31	0.20	0.11	1.00	
PCB099	0.45	0.20	0.061	1.00	
PCB101	0.67	0.20	0.098	1.00	
PCB105	0.27	0.20	0.055	1.00	
PCB110	0.39	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.64	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.3	0.40	0.17	1.00	
PCB138/158	1.1	0.40	0.094	1.00	
PCB149	0.45	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.17	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.43	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 26 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.20	0.11	1.00	
PCB187	0.42	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	68	14-146			
p-Terphenyl-d14	111	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 27 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C2-20160820	16-09-0039-15-AA	08/20/16 14:10	Tissue	GC/MS HHH	09/15/16	09/17/16 19:52	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.11	0.20	0.034	1.00	J
PCB037	ND	0.20	0.060	1.00	
PCB044	0.20	0.20	0.087	1.00	
PCB049	0.23	0.20	0.11	1.00	
PCB052	0.42	0.20	0.063	1.00	
PCB066	0.33	0.20	0.10	1.00	
PCB070	0.24	0.20	0.060	1.00	
PCB074	0.14	0.20	0.087	1.00	J
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.31	0.20	0.11	1.00	
PCB099	0.49	0.20	0.061	1.00	
PCB101	0.82	0.20	0.098	1.00	
PCB105	0.23	0.20	0.055	1.00	
PCB110	0.47	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.71	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.4	0.40	0.17	1.00	
PCB138/158	1.2	0.40	0.094	1.00	
PCB149	0.48	0.20	0.098	1.00	
PCB151	0.28	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.16	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.45	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 28 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.14	0.20	0.11	1.00	J
PCB187	0.40	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	75	14-146			
p-Terphenyl-d14	105	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 29 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C3-20160820	16-09-0039-16-AA	08/20/16 14:10	Tissue	GC/MS HHH	09/15/16	09/17/16 20:15	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.086	1.00	
PCB049	0.13	0.20	0.11	1.00	J
PCB052	0.24	0.20	0.062	1.00	
PCB066	0.28	0.20	0.10	1.00	
PCB070	ND	0.20	0.059	1.00	
PCB074	0.15	0.20	0.086	1.00	J
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.27	0.20	0.11	1.00	
PCB099	0.45	0.20	0.060	1.00	
PCB101	0.68	0.20	0.097	1.00	
PCB105	0.22	0.20	0.054	1.00	
PCB110	0.42	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.53	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.2	0.40	0.17	1.00	
PCB138/158	0.95	0.40	0.094	1.00	
PCB149	0.40	0.20	0.097	1.00	
PCB151	0.21	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.12	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.30	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 30 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.20	0.11	1.00	
PCB187	0.29	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	69	14-146			
p-Terphenyl-d14	103	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 31 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C1-20160820	16-09-0039-17-AA	08/20/16 12:10	Tissue	GC/MS HHH	09/15/16	09/17/16 20:40	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.27	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.31	0.20	0.086	1.00	
PCB049	0.26	0.20	0.11	1.00	
PCB052	0.51	0.20	0.062	1.00	
PCB066	0.45	0.20	0.10	1.00	
PCB070	ND	0.20	0.059	1.00	
PCB074	ND	0.20	0.086	1.00	
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.67	0.20	0.11	1.00	
PCB099	1.0	0.20	0.060	1.00	
PCB101	1.8	0.20	0.097	1.00	
PCB105	0.49	0.20	0.054	1.00	
PCB110	1.0	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	1.4	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.32	0.20	0.10	1.00	
PCB132/153	3.0	0.40	0.17	1.00	
PCB138/158	2.2	0.40	0.094	1.00	
PCB149	1.4	0.20	0.097	1.00	
PCB151	0.40	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.33	0.20	0.063	1.00	
PCB177	0.32	0.20	0.087	1.00	
PCB180	0.80	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 32 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.28	0.20	0.11	1.00	
PCB187	0.82	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	81	14-146			
p-Terphenyl-d14	99	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 33 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C2-20160820	16-09-0039-18-AA	08/20/16 12:10	Tissue	GC/MS HHH	09/15/16	09/17/16 21:03	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.24	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.31	0.20	0.087	1.00	
PCB049	0.28	0.20	0.11	1.00	
PCB052	0.44	0.20	0.063	1.00	
PCB066	0.57	0.20	0.10	1.00	
PCB070	0.22	0.20	0.060	1.00	
PCB074	0.11	0.20	0.087	1.00	J
PCB077	0.23	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.61	0.20	0.11	1.00	
PCB099	0.99	0.20	0.061	1.00	
PCB101	1.7	0.20	0.098	1.00	
PCB105	0.48	0.20	0.055	1.00	
PCB110	1.0	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	1.4	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.29	0.20	0.10	1.00	
PCB132/153	2.8	0.40	0.17	1.00	
PCB138/158	2.1	0.40	0.094	1.00	
PCB149	1.4	0.20	0.098	1.00	
PCB151	0.37	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.36	0.20	0.063	1.00	
PCB177	0.30	0.20	0.087	1.00	
PCB180	0.83	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 34 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.24	0.20	0.11	1.00	
PCB187	0.76	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	80	14-146			
p-Terphenyl-d14	103	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 35 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C3-20160820	16-09-0039-19-AA	08/20/16 12:10	Tissue	GC/MS HHH	09/15/16	09/17/16 21:26	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.23	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.32	0.20	0.086	1.00	
PCB049	0.43	0.20	0.11	1.00	
PCB052	0.70	0.20	0.062	1.00	
PCB066	0.74	0.20	0.10	1.00	
PCB070	ND	0.20	0.059	1.00	
PCB074	0.17	0.20	0.086	1.00	J
PCB077	0.30	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	1.0	0.20	0.11	1.00	
PCB099	1.6	0.20	0.060	1.00	
PCB101	2.5	0.20	0.097	1.00	
PCB105	0.85	0.20	0.054	1.00	
PCB110	1.6	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	2.1	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.51	0.20	0.10	1.00	
PCB132/153	4.9	0.40	0.17	1.00	
PCB138/158	3.5	0.40	0.094	1.00	
PCB149	2.2	0.20	0.097	1.00	
PCB151	0.67	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.57	0.20	0.063	1.00	
PCB177	0.40	0.20	0.087	1.00	
PCB180	1.3	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 36 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.46	0.20	0.11	1.00	
PCB187	1.4	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	92	14-146			
p-Terphenyl-d14	88	34-148			



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	EPA 3541
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 37 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C1-20160821	16-09-0039-20-AA	08/21/16 08:00	Tissue	GC/MS HHH	09/15/16	09/20/16 15:35	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	1.6	0.20	0.071	1.00	
PCB028	3.3	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	4.4	0.20	0.086	1.00	
PCB049	4.3	0.20	0.11	1.00	
PCB052	5.9	0.20	0.062	1.00	
PCB066	6.7	0.20	0.10	1.00	
PCB070	3.6	0.20	0.059	1.00	
PCB074	4.0	0.20	0.086	1.00	
PCB077	1.4	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	5.7	0.20	0.11	1.00	
PCB099	9.8	0.20	0.060	1.00	
PCB101	15	0.20	0.097	1.00	
PCB105	4.2	0.20	0.054	1.00	
PCB110	8.1	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	12	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	2.7	0.20	0.10	1.00	
PCB132/153	26	0.40	0.17	1.00	
PCB138/158	20	0.40	0.094	1.00	
PCB149	10	0.20	0.097	1.00	
PCB151	3.2	0.20	0.067	1.00	
PCB156	1.1	0.20	0.057	1.00	
PCB157	0.37	0.20	0.052	1.00	
PCB167	0.44	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	0.55	0.20	0.061	1.00	
PCB170	3.7	0.20	0.063	1.00	
PCB177	2.3	0.20	0.087	1.00	
PCB180	7.9	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 38 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	2.5	0.20	0.11	1.00	
PCB187	7.7	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.1	0.20	0.11	1.00	
PCB201	0.30	0.20	0.096	1.00	
PCB206	0.51	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	41	14-146			
p-Terphenyl-d14	56	34-148			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 39 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C2-20160821	16-09-0039-21-AA	08/21/16 08:00	Tissue	GC/MS HHH	09/15/16	09/21/16 13:38	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	2.1	0.20	0.071	1.00	
PCB028	4.5	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	7.0	0.20	0.087	1.00	
PCB049	6.5	0.20	0.11	1.00	
PCB052	8.6	0.20	0.063	1.00	
PCB066	9.7	0.20	0.10	1.00	
PCB070	5.5	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	1.6	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	7.8	0.20	0.11	1.00	
PCB099	13	0.20	0.061	1.00	
PCB101	19	0.20	0.098	1.00	
PCB105	6.9	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	19	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	3.9	0.20	0.10	1.00	
PCB132/153	33	0.40	0.17	1.00	
PCB138/158	26	0.40	0.094	1.00	
PCB149	12	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	1.0	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.54	0.20	0.061	1.00	
PCB170	4.2	0.20	0.063	1.00	
PCB177	3.1	0.20	0.087	1.00	
PCB180	13	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 40 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	3.5	0.20	0.11	1.00	
PCB187	8.9	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.6	0.20	0.11	1.00	
PCB201	0.44	0.20	0.097	1.00	
PCB206	0.95	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	60	14-146			
p-Terphenyl-d14	62	34-148			



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 41 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C3-20160821	16-09-0039-22-AA	08/21/16 08:00	Tissue	GC/MS HHH	09/15/16	09/20/16 16:23	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	2.5	0.20	0.071	1.00	
PCB028	8.1	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	11	0.20	0.087	1.00	
PCB049	10	0.20	0.11	1.00	
PCB052	14	0.20	0.063	1.00	
PCB066	15	0.20	0.10	1.00	
PCB070	9.6	0.20	0.060	1.00	
PCB074	9.2	0.20	0.087	1.00	
PCB077	2.0	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	8.7	0.20	0.11	1.00	
PCB099	16	0.20	0.061	1.00	
PCB101	26	0.20	0.098	1.00	
PCB105	6.7	0.20	0.055	1.00	
PCB110	14	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	18	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	3.6	0.20	0.10	1.00	
PCB132/153	32	0.40	0.17	1.00	
PCB138/158	26	0.40	0.094	1.00	
PCB149	14	0.20	0.098	1.00	
PCB151	4.1	0.20	0.067	1.00	
PCB156	1.5	0.20	0.058	1.00	
PCB157	0.45	0.20	0.052	1.00	
PCB167	0.80	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.86	0.20	0.061	1.00	
PCB170	5.4	0.20	0.063	1.00	
PCB177	3.1	0.20	0.087	1.00	
PCB180	11	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 42 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	3.5	0.20	0.11	1.00	
PCB187	10	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.6	0.20	0.11	1.00	
PCB201	0.44	0.20	0.097	1.00	
PCB206	0.80	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	38	14-146			
p-Terphenyl-d14	49	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	EPA 3541
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/kg

Project: GWMA - TMDL Compliance Monitoring Page 43 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C1-20160821	16-09-0039-23-AA	08/21/16 09:30	Tissue	GC/MS HHH	09/15/16	09/17/16 21:49	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.26	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.20	0.20	0.087	1.00	J
PCB049	0.43	0.20	0.11	1.00	
PCB052	0.64	0.20	0.063	1.00	
PCB066	0.62	0.20	0.10	1.00	
PCB070	0.32	0.20	0.060	1.00	
PCB074	0.34	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.40	0.20	0.11	1.00	
PCB099	0.67	0.20	0.061	1.00	
PCB101	0.98	0.20	0.098	1.00	
PCB105	0.36	0.20	0.055	1.00	
PCB110	0.68	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.86	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.4	0.40	0.17	1.00	
PCB138/158	1.3	0.40	0.094	1.00	
PCB149	0.46	0.20	0.098	1.00	
PCB151	0.23	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.17	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.41	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 44 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.12	0.20	0.11	1.00	J
PCB187	0.38	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	78	14-146			
p-Terphenyl-d14	111	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 45 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C2-20160821	16-09-0039-24-AA	08/21/16 09:30	Tissue	GC/MS HHH	09/15/16	09/17/16 22:12	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.14	0.20	0.033	1.00	J
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.086	1.00	
PCB049	0.22	0.20	0.11	1.00	
PCB052	0.39	0.20	0.062	1.00	
PCB066	0.35	0.20	0.10	1.00	
PCB070	0.21	0.20	0.059	1.00	
PCB074	0.23	0.20	0.086	1.00	
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.43	0.20	0.11	1.00	
PCB099	0.66	0.20	0.060	1.00	
PCB101	0.92	0.20	0.097	1.00	
PCB105	0.30	0.20	0.054	1.00	
PCB110	0.50	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.90	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.8	0.40	0.17	1.00	
PCB138/158	1.5	0.40	0.094	1.00	
PCB149	0.59	0.20	0.097	1.00	
PCB151	0.22	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.25	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	
PCB180	0.63	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 46 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.21	0.20	0.11	1.00	
PCB187	0.59	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	86	14-146			
p-Terphenyl-d14	110	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 47 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C3-20160821	16-09-0039-25-AA	08/21/16 09:30	Tissue	GC/MS HHH	09/15/16	09/17/16 22:36	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.086	1.00	
PCB049	0.26	0.20	0.11	1.00	
PCB052	0.41	0.20	0.062	1.00	
PCB066	0.51	0.20	0.10	1.00	
PCB070	ND	0.20	0.059	1.00	
PCB074	0.26	0.20	0.086	1.00	
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.36	0.20	0.11	1.00	
PCB099	0.62	0.20	0.060	1.00	
PCB101	0.90	0.20	0.097	1.00	
PCB105	0.31	0.20	0.054	1.00	
PCB110	0.58	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	0.73	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	1.4	0.40	0.17	1.00	
PCB138/158	1.1	0.40	0.094	1.00	
PCB149	0.44	0.20	0.097	1.00	
PCB151	0.21	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.18	0.20	0.063	1.00	J
PCB177	ND	0.20	0.087	1.00	
PCB180	0.42	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 48 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.13	0.20	0.11	1.00	J
PCB187	0.38	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	78	14-146			
p-Terphenyl-d14	114	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 49 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C1-20160821	16-09-0039-26-AA	08/21/16 09:30	Tissue	GC/MS HHH	09/15/16	09/17/16 23:00	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.33	0.20	0.033	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.74	0.20	0.086	1.00	
PCB049	0.65	0.20	0.11	1.00	
PCB052	0.99	0.20	0.062	1.00	
PCB066	1.1	0.20	0.10	1.00	
PCB070	ND	0.20	0.059	1.00	
PCB074	0.24	0.20	0.086	1.00	
PCB077	ND	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.72	0.20	0.11	1.00	
PCB099	1.2	0.20	0.060	1.00	
PCB101	2.2	0.20	0.097	1.00	
PCB105	0.60	0.20	0.054	1.00	
PCB110	1.5	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	1.5	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.40	0.20	0.10	1.00	
PCB132/153	2.8	0.40	0.17	1.00	
PCB138/158	2.2	0.40	0.094	1.00	
PCB149	1.4	0.20	0.097	1.00	
PCB151	0.41	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.33	0.20	0.063	1.00	
PCB177	0.26	0.20	0.087	1.00	
PCB180	0.69	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 50 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.27	0.20	0.11	1.00	
PCB187	0.67	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	75	14-146			
p-Terphenyl-d14	98	34-148			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 51 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C2-20160821	16-09-0039-27-AA	08/21/16 09:30	Tissue	GC/MS HHH	09/15/16	09/17/16 23:23	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	0.29	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	0.70	0.20	0.087	1.00	
PCB049	0.51	0.20	0.11	1.00	
PCB052	0.89	0.20	0.063	1.00	
PCB066	0.91	0.20	0.10	1.00	
PCB070	0.39	0.20	0.060	1.00	
PCB074	0.29	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	0.65	0.20	0.11	1.00	
PCB099	1.1	0.20	0.061	1.00	
PCB101	1.7	0.20	0.098	1.00	
PCB105	0.62	0.20	0.055	1.00	
PCB110	1.2	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	1.3	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.29	0.20	0.10	1.00	
PCB132/153	2.3	0.40	0.17	1.00	
PCB138/158	1.7	0.40	0.094	1.00	
PCB149	1.2	0.20	0.098	1.00	
PCB151	0.26	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.24	0.20	0.063	1.00	
PCB177	0.21	0.20	0.087	1.00	
PCB180	0.53	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 52 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.16	0.20	0.11	1.00	J
PCB187	0.53	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	54	14-146			
p-Terphenyl-d14	100	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 53 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C3-20160821	16-09-0039-28-AA	08/21/16 09:30	Tissue	GC/MS HHH	09/15/16	09/17/16 23:46	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	0.20	0.20	0.071	1.00	J
PCB028	0.55	0.20	0.033	1.00	
PCB037	0.20	0.20	0.060	1.00	J
PCB044	1.3	0.20	0.086	1.00	
PCB049	0.95	0.20	0.11	1.00	
PCB052	1.4	0.20	0.062	1.00	
PCB066	2.0	0.20	0.10	1.00	
PCB070	1.2	0.20	0.059	1.00	
PCB074	0.50	0.20	0.086	1.00	
PCB077	0.36	0.20	0.077	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	1.1	0.20	0.11	1.00	
PCB099	1.6	0.20	0.060	1.00	
PCB101	2.8	0.20	0.097	1.00	
PCB105	0.93	0.20	0.054	1.00	
PCB110	2.0	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	2.0	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	0.38	0.20	0.10	1.00	
PCB132/153	3.3	0.40	0.17	1.00	
PCB138/158	2.6	0.40	0.094	1.00	
PCB149	1.7	0.20	0.097	1.00	
PCB151	0.43	0.20	0.067	1.00	
PCB156	ND	0.20	0.057	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.061	1.00	
PCB168	ND	0.20	0.048	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	0.32	0.20	0.063	1.00	
PCB177	0.32	0.20	0.087	1.00	
PCB180	0.75	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 54 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	0.27	0.20	0.11	1.00	
PCB187	0.72	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.096	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	81	14-146			
p-Terphenyl-d14	101	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	EPA 3541
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 55 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C1-20160821	16-09-0039-29-AA	08/21/16 15:35	Tissue	GC/MS HHH	09/15/16	09/20/16 16:47	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	0.99	0.20	0.071	1.00	
PCB028	2.9	0.20	0.034	1.00	
PCB037	0.91	0.20	0.060	1.00	
PCB044	3.7	0.20	0.087	1.00	
PCB049	7.9	0.20	0.11	1.00	
PCB052	14	0.20	0.063	1.00	
PCB066	6.9	0.20	0.10	1.00	
PCB070	4.2	0.20	0.060	1.00	
PCB074	3.5	0.20	0.087	1.00	
PCB077	3.2	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	6.9	0.20	0.11	1.00	
PCB099	15	0.20	0.061	1.00	
PCB101	23	0.20	0.098	1.00	
PCB105	5.3	0.20	0.055	1.00	
PCB110	13	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	16	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	3.2	0.20	0.10	1.00	
PCB132/153	39	0.40	0.17	1.00	
PCB138/158	27	0.40	0.094	1.00	
PCB149	22	0.20	0.098	1.00	
PCB151	6.6	0.20	0.067	1.00	
PCB156	1.5	0.20	0.058	1.00	
PCB157	0.47	0.20	0.052	1.00	
PCB167	0.99	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.72	0.20	0.061	1.00	
PCB170	5.3	0.20	0.063	1.00	
PCB177	3.2	0.20	0.087	1.00	
PCB180	11	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 56 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	3.9	0.20	0.11	1.00	
PCB187	13	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.1	0.20	0.11	1.00	
PCB201	0.44	0.20	0.097	1.00	
PCB206	0.31	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	36	14-146			
p-Terphenyl-d14	45	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	EPA 3541
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/kg

Project: GWMA - TMDL Compliance Monitoring Page 57 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C2-20160821	16-09-0039-30-AA	08/21/16 15:35	Tissue	GC/MS HHH	09/15/16	09/20/16 17:12	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	1.8	0.20	0.071	1.00	
PCB028	4.2	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	4.6	0.20	0.087	1.00	
PCB049	6.1	0.20	0.11	1.00	
PCB052	12	0.20	0.063	1.00	
PCB066	10	0.20	0.10	1.00	
PCB070	5.2	0.20	0.060	1.00	
PCB074	5.0	0.20	0.087	1.00	
PCB077	4.1	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	12	0.20	0.11	1.00	
PCB099	21	0.20	0.061	1.00	
PCB101	35	0.20	0.098	1.00	
PCB105	9.3	0.20	0.055	1.00	
PCB110	23	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	27	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	5.7	0.20	0.10	1.00	
PCB132/153	58	0.40	0.17	1.00	
PCB138/158	42	0.40	0.094	1.00	
PCB149	30	0.20	0.098	1.00	
PCB151	8.4	0.20	0.067	1.00	
PCB156	2.5	0.20	0.058	1.00	
PCB157	0.65	0.20	0.052	1.00	
PCB167	1.3	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	0.97	0.20	0.061	1.00	
PCB170	8.2	0.20	0.063	1.00	
PCB177	4.2	0.20	0.087	1.00	
PCB180	15	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 58 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	5.3	0.20	0.11	1.00	
PCB187	15	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.6	0.20	0.11	1.00	
PCB201	0.60	0.20	0.097	1.00	
PCB206	0.34	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	84	14-146			
p-Terphenyl-d14	57	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

ANCHOR QEA, LLC	Date Received:	09/01/16
27201 Puerta Real, Suite 350	Work Order:	16-09-0039
Mission Viejo, CA 92691-8306	Preparation:	EPA 3541
	Method:	EPA 8270C SIM PCB Congeners
	Units:	ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 59 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C3-20160821	16-09-0039-31-AA	08/21/16 15:35	Tissue	GC/MS HHH	09/15/16	09/20/16 17:37	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	1.3	0.20	0.071	1.00	
PCB028	3.6	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	4.7	0.20	0.087	1.00	
PCB049	5.6	0.20	0.11	1.00	
PCB052	9.3	0.20	0.063	1.00	
PCB066	9.3	0.20	0.10	1.00	
PCB070	4.2	0.20	0.060	1.00	
PCB074	4.8	0.20	0.087	1.00	
PCB077	3.1	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	10	0.20	0.11	1.00	
PCB099	19	0.20	0.061	1.00	
PCB101	28	0.20	0.098	1.00	
PCB105	6.5	0.20	0.055	1.00	
PCB110	15	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	22	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	4.0	0.20	0.10	1.00	
PCB132/153	53	0.40	0.17	1.00	
PCB138/158	35	0.40	0.094	1.00	
PCB149	24	0.20	0.098	1.00	
PCB151	7.5	0.20	0.067	1.00	
PCB156	1.7	0.20	0.058	1.00	
PCB157	0.46	0.20	0.052	1.00	
PCB167	0.99	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	1.2	0.20	0.061	1.00	
PCB170	8.2	0.20	0.063	1.00	
PCB177	4.2	0.20	0.087	1.00	
PCB180	13	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 60 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	4.9	0.20	0.11	1.00	
PCB187	15	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	1.9	0.20	0.11	1.00	
PCB201	0.46	0.20	0.097	1.00	
PCB206	1.1	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	39	14-146			
p-Terphenyl-d14	55	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 61 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-780-11	N/A	Tissue	GC/MS HHH	09/15/16	09/17/16 13:18	160915L19

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	ND	0.20	0.11	1.00	
PCB052	ND	0.20	0.063	1.00	
PCB066	ND	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	ND	0.20	0.11	1.00	
PCB099	ND	0.20	0.061	1.00	
PCB101	ND	0.20	0.098	1.00	
PCB105	ND	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	ND	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	ND	0.40	0.17	1.00	
PCB138/158	ND	0.40	0.094	1.00	
PCB149	ND	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	ND	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	
PCB180	ND	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: EPA 3541
 Method: EPA 8270C SIM PCB Congeners
 Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 62 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.20	0.11	1.00	
PCB187	ND	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	85	14-146			
p-Terphenyl-d14	96	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 63 of 64

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-780-12	N/A	Tissue	GC/MS HHH	09/15/16	09/17/16 14:28	160915L20

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
PCB018	ND	0.20	0.071	1.00	
PCB028	ND	0.20	0.034	1.00	
PCB037	ND	0.20	0.060	1.00	
PCB044	ND	0.20	0.087	1.00	
PCB049	ND	0.20	0.11	1.00	
PCB052	ND	0.20	0.063	1.00	
PCB066	ND	0.20	0.10	1.00	
PCB070	ND	0.20	0.060	1.00	
PCB074	ND	0.20	0.087	1.00	
PCB077	ND	0.20	0.078	1.00	
PCB081	ND	0.20	0.12	1.00	
PCB087	ND	0.20	0.11	1.00	
PCB099	ND	0.20	0.061	1.00	
PCB101	ND	0.20	0.098	1.00	
PCB105	ND	0.20	0.055	1.00	
PCB110	ND	0.20	0.046	1.00	
PCB114	ND	0.20	0.082	1.00	
PCB118	ND	0.20	0.084	1.00	
PCB119	ND	0.20	0.094	1.00	
PCB123	ND	0.20	0.10	1.00	
PCB126	ND	0.20	0.080	1.00	
PCB128	ND	0.20	0.10	1.00	
PCB132/153	ND	0.40	0.17	1.00	
PCB138/158	ND	0.40	0.094	1.00	
PCB149	ND	0.20	0.098	1.00	
PCB151	ND	0.20	0.067	1.00	
PCB156	ND	0.20	0.058	1.00	
PCB157	ND	0.20	0.052	1.00	
PCB167	ND	0.20	0.062	1.00	
PCB168	ND	0.20	0.049	1.00	
PCB169	ND	0.20	0.061	1.00	
PCB170	ND	0.20	0.063	1.00	
PCB177	ND	0.20	0.087	1.00	
PCB180	ND	0.20	0.042	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: GWMA - TMDL Compliance Monitoring

Page 64 of 64

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
PCB183	ND	0.20	0.11	1.00	
PCB187	ND	0.20	0.084	1.00	
PCB189	ND	0.20	0.061	1.00	
PCB194	ND	0.20	0.11	1.00	
PCB201	ND	0.20	0.097	1.00	
PCB206	ND	0.20	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>		
2-Fluorobiphenyl	85	14-146			
p-Terphenyl-d14	103	34-148			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C1-20160820	16-09-0039-1-AA	08/20/16 10:15	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	6.3	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C2-20160820	16-09-0039-2-AA	08/20/16 10:15	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	5.6	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-WC-C3-20160820	16-09-0039-3-AA	08/20/16 10:15	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	1.0	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C1-20160820	16-09-0039-4-AA	08/20/16 08:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.14	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C2-20160820	16-09-0039-5-AA	08/20/16 08:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.12	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-FF-CH-C3-20160820	16-09-0039-6-AA	08/20/16 08:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.13	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C1-20160820	16-09-0039-7-AA	08/20/16 09:00	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	1.4	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-SS-C2-20160820	16-09-0039-8-AA	08/20/16 09:00	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.58	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA-WO-NA-C1-20160820	16-09-0039-9-AA	08/20/16 08:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.96	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C1-20160820	16-09-0039-11-AA	08/20/16 11:45	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	4.5	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C2-20160820	16-09-0039-12-AA	08/20/16 11:45	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	4.3	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-WC-C3-20160820	16-09-0039-13-AA	08/20/16 08:00	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	4.9	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C1-20160820	16-09-0039-14-AA	08/20/16 14:10	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.12	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C2-20160820	16-09-0039-15-AA	08/20/16 14:10	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.14	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-FF-CH-C3-20160820	16-09-0039-16-AA	08/20/16 14:10	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.13	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C1-20160820	16-09-0039-17-AA	08/20/16 12:10	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.91	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C2-20160820	16-09-0039-18-AA	08/20/16 12:10	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.87	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OB-WO-NA-C3-20160820	16-09-0039-19-AA	08/20/16 12:10	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.87	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C1-20160821	16-09-0039-20-AA	08/21/16 08:00	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	5.0	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C2-20160821	16-09-0039-21-AA	08/21/16 08:00	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	2.1	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-WC-C3-20160821	16-09-0039-22-AA	08/21/16 08:00	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	1.6	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C1-20160821	16-09-0039-23-AA	08/21/16 09:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.10	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C2-20160821	16-09-0039-24-AA	08/21/16 09:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.14	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-FF-CH-C3-20160821	16-09-0039-25-AA	08/21/16 09:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.12	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)
Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C1-20160821	16-09-0039-26-AA	08/21/16 09:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.89	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C2-20160821	16-09-0039-27-AA	08/21/16 09:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	1.1	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-WO-NA-C3-20160821	16-09-0039-28-AA	08/21/16 09:30	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	0.70	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C1-20160821	16-09-0039-29-AA	08/21/16 15:35	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	5.3	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C2-20160821	16-09-0039-30-AA	08/21/16 15:35	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	2.9	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CS-FF-WC-C3-20160821	16-09-0039-31-AA	08/21/16 15:35	Tissue	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
% Lipids	5.0	0.10	0.10	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

ANCHOR QEA, LLC
 27201 Puerta Real, Suite 350
 Mission Viejo, CA 92691-8306

Date Received: 09/01/16
 Work Order: 16-09-0039
 Preparation: N/A
 Method: MeCl2 Ext. (NOAA 1993a)
 Units: %

Project: GWMA - TMDL Compliance Monitoring

Page 6 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-104-132	N/A	Solid	B03/B13	09/12/16	09/12/16 00:00	160912B07

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
% Lipids	ND	0.10	0.10	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-104-133	N/A	Solid	B03/B13	09/12/16	09/12/16 00:00	160912B08

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
% Lipids	ND	0.10	0.10	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-FF-CH-C2-20160820	Sample	Tissue	GC 51	09/15/16	09/16/16 15:13	160915S17
OB-FF-CH-C2-20160820	Matrix Spike	Tissue	GC 51	09/15/16	09/20/16 16:46	160915S17
OB-FF-CH-C2-20160820	Matrix Spike Duplicate	Tissue	GC 51	09/15/16	09/20/16 18:40	160915S17

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	5.718	114	6.243	125	45-140	9	0-30	
Alpha-BHC	ND	5.000	4.996	100	5.242	105	60-125	5	0-30	
Beta-BHC	ND	5.000	6.560	131	6.548	131	60-125	0	0-30	3
Delta-BHC	ND	5.000	6.549	131	6.526	131	55-130	0	0-30	3
Gamma-BHC	ND	5.000	4.996	100	5.104	102	65-125	2	0-30	
Dieldrin	ND	5.000	5.921	118	5.647	113	65-125	5	0-30	
4,4'-DDD	ND	5.000	6.442	129	7.238	145	30-135	12	0-30	3
4,4'-DDE	12.37	5.000	16.75	88	15.81	69	70-125	6	0-30	3
4,4'-DDT	ND	5.000	7.140	143	6.848	137	45-140	4	0-30	3
Endosulfan I	ND	5.000	7.252	145	7.996	160	15-135	10	0-30	3
Endosulfan II	ND	5.000	4.583	92	4.248	85	35-140	8	0-30	
Endosulfan Sulfate	ND	5.000	3.233	65	2.908	58	60-135	11	0-30	3
Endrin	ND	5.000	6.352	127	5.816	116	60-135	9	0-30	
Endrin Aldehyde	ND	5.000	0.3447	7	0.2577	5	35-145	29	0-30	3
Endrin Ketone	ND	5.000	5.145	103	4.421	88	65-135	15	0-30	
Heptachlor	ND	5.000	5.801	116	6.117	122	50-140	5	0-30	
Heptachlor Epoxide	ND	5.000	6.050	121	6.155	123	65-130	2	0-30	
Methoxychlor	ND	5.000	6.404	128	5.160	103	55-145	22	0-30	
Alpha Chlordane	ND	5.000	5.707	114	5.430	109	65-125	5	0-30	
Gamma Chlordane	ND	5.000	5.846	117	5.700	114	65-125	3	0-30	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-FF-CH-C2-20160821	Sample	Tissue	GC 51	09/15/16	09/20/16 14:51	160915S18
SP-FF-CH-C2-20160821	Matrix Spike	Tissue	GC 51	09/15/16	09/22/16 11:32	160915S18
SP-FF-CH-C2-20160821	Matrix Spike Duplicate	Tissue	GC 51	09/15/16	09/22/16 11:54	160915S18

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	5.000	5.922	118	5.763	115	45-140	3	0-30	
Alpha-BHC	ND	5.000	5.728	115	5.506	110	60-125	4	0-30	
Beta-BHC	ND	5.000	5.209	104	5.195	104	60-125	0	0-30	
Delta-BHC	ND	5.000	6.058	121	5.889	118	55-130	3	0-30	
Gamma-BHC	ND	5.000	5.936	119	5.703	114	65-125	4	0-30	
Dieldrin	ND	5.000	6.696	134	6.466	129	65-125	3	0-30	3
4,4'-DDD	ND	5.000	7.646	153	7.486	150	30-135	2	0-30	3
4,4'-DDE	18.64	5.000	20.95	46	20.44	36	70-125	2	0-30	3
4,4'-DDT	1.288	5.000	7.464	124	7.182	118	45-140	4	0-30	
Endosulfan I	ND	5.000	6.556	131	6.353	127	15-135	3	0-30	
Endosulfan II	ND	5.000	3.427	69	3.283	66	35-140	4	0-30	
Endosulfan Sulfate	ND	5.000	2.748	55	2.626	53	60-135	5	0-30	3
Endrin	ND	5.000	7.218	144	6.974	139	60-135	3	0-30	3
Endrin Aldehyde	ND	5.000	0.3274	7	0.2889	6	35-145	12	0-30	3
Endrin Ketone	ND	5.000	4.620	92	4.440	89	65-135	4	0-30	
Heptachlor	ND	5.000	6.074	121	5.860	117	50-140	4	0-30	
Heptachlor Epoxide	ND	5.000	7.796	156	7.550	151	65-130	3	0-30	3
Methoxychlor	ND	5.000	6.234	125	6.015	120	55-145	4	0-30	
Alpha Chlordane	ND	5.000	6.920	138	6.700	134	65-125	3	0-30	3
Gamma Chlordane	ND	5.000	6.117	122	5.979	120	65-125	2	0-30	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
OB-FF-CH-C2-20160820	Sample	Tissue	GC/MS HHH	09/15/16	09/17/16 19:52	160915S19
OB-FF-CH-C2-20160820	Matrix Spike	Tissue	GC/MS HHH	09/15/16	09/18/16 03:18	160915S19
OB-FF-CH-C2-20160820	Matrix Spike Duplicate	Tissue	GC/MS HHH	09/15/16	09/18/16 03:41	160915S19

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	40.85	82	45.96	92	50-150	12	0-25	
PCB028	ND	50.00	47.46	95	51.20	102	50-150	8	0-25	
PCB044	0.2046	50.00	42.87	85	46.13	92	50-150	7	0-25	
PCB052	0.4214	50.00	42.32	84	45.59	90	50-150	7	0-25	
PCB066	0.3287	50.00	51.37	102	54.12	108	50-150	5	0-25	
PCB077	ND	50.00	50.25	101	51.46	103	50-150	2	0-25	
PCB101	0.8221	50.00	47.89	94	50.70	100	50-150	6	0-25	
PCB105	0.2287	50.00	52.80	105	56.19	112	50-150	6	0-25	
PCB118	0.7108	50.00	50.62	100	53.12	105	50-150	5	0-25	
PCB126	ND	50.00	51.43	103	54.38	109	50-150	6	0-25	
PCB128	ND	50.00	51.07	102	54.10	108	50-150	6	0-25	
PCB170	ND	50.00	43.52	87	47.23	94	50-150	8	0-25	
PCB180	0.4502	50.00	53.57	106	56.28	112	50-150	5	0-25	
PCB187	0.4049	50.00	50.60	100	53.18	106	50-150	5	0-25	
PCB195	ND	50.00	45.88	92	49.68	99	50-150	8	0-25	
PCB206	ND	50.00	40.76	82	44.37	89	50-150	8	0-25	
PCB209	ND	50.00	41.54	83	45.54	91	50-150	9	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-FF-CH-C2-20160821	Sample	Tissue	GC/MS HHH	09/15/16	09/17/16 22:12	160915S20
SP-FF-CH-C2-20160821	Matrix Spike	Tissue	GC/MS HHH	09/15/16	09/21/16 14:04	160915S20
SP-FF-CH-C2-20160821	Matrix Spike Duplicate	Tissue	GC/MS HHH	09/15/16	09/21/16 14:29	160915S20

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	49.07	98	45.55	91	50-150	7	0-25	
PCB028	ND	50.00	56.26	113	50.92	102	50-150	10	0-25	
PCB044	ND	50.00	53.42	107	47.97	96	50-150	11	0-25	
PCB052	0.3882	50.00	48.92	97	45.88	91	50-150	6	0-25	
PCB066	0.3487	50.00	64.11	128	57.07	113	50-150	12	0-25	
PCB077	ND	50.00	60.57	121	53.25	107	50-150	13	0-25	
PCB101	0.9240	50.00	59.19	117	51.75	102	50-150	13	0-25	
PCB105	0.3000	50.00	64.68	129	57.80	115	50-150	11	0-25	
PCB118	0.8979	50.00	63.90	126	55.36	109	50-150	14	0-25	
PCB126	ND	50.00	63.49	127	36.21	72	50-150	55	0-25	4
PCB128	ND	50.00	62.89	126	54.24	108	50-150	15	0-25	
PCB170	0.2533	50.00	52.19	104	46.48	92	50-150	12	0-25	
PCB180	0.6311	50.00	67.31	133	55.79	110	50-150	19	0-25	
PCB187	0.5903	50.00	61.02	121	54.48	108	50-150	11	0-25	
PCB195	ND	50.00	53.37	107	48.00	96	50-150	11	0-25	
PCB206	ND	50.00	48.05	96	45.07	90	50-150	6	0-25	
PCB209	ND	50.00	48.36	97	46.81	94	50-150	3	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
OA-FF-CH-C3-20160820	Sample	Tissue	N/A	09/13/16 00:00	09/13/16 22:00	G0913MOID7
OA-FF-CH-C3-20160820	Sample Duplicate	Tissue	N/A	09/13/16 00:00	09/13/16 22:00	G0913MOID7

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Moisture	81.80	81.70	0	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
SP-FF-CH-C1-20160821	Sample	Tissue	N/A	09/13/16 00:00	09/13/16 22:00	G0913MOID8
SP-FF-CH-C1-20160821	Sample Duplicate	Tissue	N/A	09/13/16 00:00	09/13/16 22:00	G0913MOID8

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Moisture	74.60	74.50	0	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: ASTM D-2216 (M)

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
OB-WO-NA-C3-20160820	Sample	Tissue	N/A	09/23/16 00:00	09/23/16 17:00	G0923MOID2
OB-WO-NA-C3-20160820	Sample Duplicate	Tissue	N/A	09/23/16 00:00	09/23/16 17:00	G0923MOID2

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Moisture	77.90	76.90	1	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
OB-FF-CH-C2-20160820	Sample	Tissue	B03/B13	09/12/16 00:00	09/12/16 00:00	160912D07
OB-FF-CH-C2-20160820	Sample Duplicate	Tissue	B03/B13	09/12/16 00:00	09/12/16 00:00	160912D07

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
% Lipids	0.1400	0.1300	7	0-25	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: N/A
Method: MeCl2 Ext. (NOAA 1993a)

Project: GWMA - TMDL Compliance Monitoring

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
SP-FF-CH-C2-20160821	Sample	Tissue	B03/B13	09/12/16 00:00	09/12/16 00:00	160912D08
SP-FF-CH-C2-20160821	Sample Duplicate	Tissue	B03/B13	09/12/16 00:00	09/12/16 00:00	160912D08

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
% Lipids	0.1400	0.1500	7	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-782-8	LCS	Tissue	GC 51	09/15/16	09/26/16 15:20	160915L17				
099-16-782-8	LCSD	Tissue	GC 51	09/15/16	09/26/16 15:34	160915L17				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	4.632	93	4.604	92	45-140	29-156	1	0-20	
Alpha-BHC	5.000	5.112	102	5.051	101	60-125	49-136	1	0-20	
Beta-BHC	5.000	4.096	82	4.261	85	60-125	49-136	4	0-20	
Delta-BHC	5.000	5.185	104	5.455	109	55-130	42-142	5	0-20	
Gamma-BHC	5.000	5.133	103	5.262	105	65-125	55-135	2	0-25	
Dieldrin	5.000	5.382	108	5.327	107	65-125	55-135	1	0-20	
4,4'-DDD	5.000	5.462	109	5.354	107	30-135	12-152	2	0-20	
4,4'-DDE	5.000	5.368	107	5.333	107	70-125	61-134	1	0-20	
4,4'-DDT	5.000	5.231	105	5.196	104	45-140	29-156	1	0-20	
Endosulfan I	5.000	5.223	104	5.190	104	15-135	0-155	1	0-20	
Endosulfan II	5.000	5.184	104	5.142	103	35-140	18-158	1	0-20	
Endosulfan Sulfate	5.000	5.024	100	4.875	97	60-135	48-148	3	0-20	
Endrin	5.000	5.282	106	5.273	105	60-135	48-148	0	0-20	
Endrin Aldehyde	5.000	4.789	96	4.652	93	35-145	17-163	3	0-20	
Endrin Ketone	5.000	4.904	98	4.767	95	65-135	53-147	3	0-20	
Heptachlor	5.000	5.120	102	5.335	107	50-140	35-155	4	0-20	
Heptachlor Epoxide	5.000	4.896	98	5.163	103	65-130	54-141	5	0-20	
Methoxychlor	5.000	4.686	94	4.643	93	55-145	40-160	1	0-20	
Alpha Chlordane	5.000	4.979	100	5.001	100	65-125	55-135	0	0-20	
Gamma Chlordane	5.000	5.008	100	5.104	102	65-125	55-135	2	0-20	

Total number of LCS compounds: 20

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8081A

Project: GWMA - TMDL Compliance Monitoring

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-782-9	LCS	Tissue	GC 51	09/15/16	09/20/16 18:12	160915L18				
099-16-782-9	LCSD	Tissue	GC 51	09/15/16	09/20/16 18:26	160915L18				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	5.000	5.623	112	5.797	116	45-140	29-156	3	0-20	
Alpha-BHC	5.000	5.635	113	5.844	117	60-125	49-136	4	0-20	
Beta-BHC	5.000	6.698	134	6.782	136	60-125	49-136	1	0-20	ME
Delta-BHC	5.000	5.682	114	5.873	117	55-130	42-142	3	0-20	
Gamma-BHC	5.000	5.122	102	5.356	107	65-125	55-135	4	0-25	
Dieldrin	5.000	5.455	109	5.655	113	65-125	55-135	4	0-20	
4,4'-DDD	5.000	5.690	114	5.881	118	30-135	12-152	3	0-20	
4,4'-DDE	5.000	5.688	114	5.892	118	70-125	61-134	4	0-20	
4,4'-DDT	5.000	4.913	98	5.244	105	45-140	29-156	7	0-20	
Endosulfan I	5.000	6.431	129	6.475	129	15-135	0-155	1	0-20	
Endosulfan II	5.000	4.390	88	4.657	93	35-140	18-158	6	0-20	
Endosulfan Sulfate	5.000	4.140	83	4.404	88	60-135	48-148	6	0-20	
Endrin	5.000	4.336	87	4.620	92	60-135	48-148	6	0-20	
Endrin Aldehyde	5.000	4.123	82	4.380	88	35-145	17-163	6	0-20	
Endrin Ketone	5.000	3.961	79	4.232	85	65-135	53-147	7	0-20	
Heptachlor	5.000	5.844	117	5.982	120	50-140	35-155	2	0-20	
Heptachlor Epoxide	5.000	4.836	97	5.015	100	65-130	54-141	4	0-20	
Methoxychlor	5.000	3.828	77	4.299	86	55-145	40-160	12	0-20	
Alpha Chlordane	5.000	4.679	94	4.878	98	65-125	55-135	4	0-20	
Gamma Chlordane	5.000	5.089	102	5.259	105	65-125	55-135	3	0-20	

Total number of LCS compounds: 20

Total number of ME compounds: 1

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-16-780-11	LCS	Tissue	GC/MS HHH	09/15/16	09/17/16 13:41	160915L19				
099-16-780-11	LCSD	Tissue	GC/MS HHH	09/15/16	09/17/16 14:05	160915L19				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	49.24	98	46.54	93	50-150	33-167	6	0-25	
PCB028	50.00	52.33	105	49.55	99	50-150	33-167	5	0-25	
PCB044	50.00	47.51	95	45.45	91	50-150	33-167	4	0-25	
PCB052	50.00	47.99	96	44.45	89	50-150	33-167	8	0-25	
PCB066	50.00	57.94	116	53.51	107	50-150	33-167	8	0-25	
PCB077	50.00	51.56	103	47.76	96	50-150	33-167	8	0-25	
PCB101	50.00	50.27	101	46.53	93	50-150	33-167	8	0-25	
PCB105	50.00	54.27	109	51.06	102	50-150	33-167	6	0-25	
PCB118	50.00	53.16	106	50.50	101	50-150	33-167	5	0-25	
PCB126	50.00	52.33	105	49.06	98	50-150	33-167	6	0-25	
PCB128	50.00	51.11	102	48.19	96	50-150	33-167	6	0-25	
PCB170	50.00	47.52	95	45.99	92	50-150	33-167	3	0-25	
PCB180	50.00	54.66	109	52.02	104	50-150	33-167	5	0-25	
PCB187	50.00	50.76	102	48.06	96	50-150	33-167	5	0-25	
PCB195	50.00	50.79	102	48.92	98	50-150	33-167	4	0-25	
PCB206	50.00	44.22	88	42.81	86	50-150	33-167	3	0-25	
PCB209	50.00	46.26	93	44.22	88	50-150	33-167	5	0-25	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 09/01/16
Work Order: 16-09-0039
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Project: GWMA - TMDL Compliance Monitoring

Page 4 of 4

Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-16-780-12	LCS	Tissue		GC/MS HHH	09/15/16	09/17/16 14:52	160915L20			
099-16-780-12	LCSD	Tissue		GC/MS HHH	09/15/16	09/17/16 15:15	160915L20			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	49.99	100	43.00	86	50-150	33-167	15	0-25	
PCB028	50.00	52.94	106	45.59	91	50-150	33-167	15	0-25	
PCB044	50.00	47.91	96	41.86	84	50-150	33-167	13	0-25	
PCB052	50.00	47.62	95	41.10	82	50-150	33-167	15	0-25	
PCB066	50.00	58.39	117	50.82	102	50-150	33-167	14	0-25	
PCB077	50.00	52.40	105	45.44	91	50-150	33-167	14	0-25	
PCB101	50.00	51.05	102	44.68	89	50-150	33-167	13	0-25	
PCB105	50.00	55.93	112	48.14	96	50-150	33-167	15	0-25	
PCB118	50.00	55.04	110	47.29	95	50-150	33-167	15	0-25	
PCB126	50.00	54.05	108	45.64	91	50-150	33-167	17	0-25	
PCB128	50.00	52.50	105	44.80	90	50-150	33-167	16	0-25	
PCB170	50.00	48.58	97	40.98	82	50-150	33-167	17	0-25	
PCB180	50.00	55.83	112	48.62	97	50-150	33-167	14	0-25	
PCB187	50.00	52.98	106	45.41	91	50-150	33-167	15	0-25	
PCB195	50.00	51.75	103	44.74	89	50-150	33-167	15	0-25	
PCB206	50.00	45.66	91	39.28	79	50-150	33-167	15	0-25	
PCB209	50.00	45.84	92	39.75	79	50-150	33-167	14	0-25	

Total number of LCS compounds: 17

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 16-09-0039

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: Issue quote #958678 Last Revised on 2014-09-22 by Michele Castr
 Date: 9/1/16
 Project Name: GWMA-TMDL Compliance Monitoring
 Project Number: 141205-01.01
 Project Manager: Andy Martin
 Phone Number: (949) 334 9630
 Shipment Method: _____



Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters					Comments/Preservation
					% Lipids	% Moisture	PCB Congeners	Organochlorine Pesticides	Archive	
1	OA-FF-WC-C1-20160820	8/20/16 10:15	Tissue	1	X	X	X	X		FILLET
2	OA-FF-WC-C2-20160820	8/20/16 10:15	Tissue	1	X	X	X	X		FILLET
3	OA-FF-WC-C3-20160820	8/20/16 10:15	Tissue	1	X	X	X	X		FILLET
4	OA-FF-CH-C1-20160820	8/20/16 8:30	Tissue	1	X	X	X	X		FILLET
5	OA-FF-CH-C2-20160820	8/20/16 8:30	Tissue	1	X	X	X	X		FILLET
6	OA-FF-CH-C3-20160820	8/20/16 8:30	Tissue	1	X	X	X	X		FILLET
7	OA-WO-SS-C1-20160820	8/20/16 9:00	Tissue	1	X	X	X	X		WHOLE BODY
8	OA-WO-SS-C2-20160820	8/20/16 9:00	Tissue	1	X	X	X	X		WHOLE BODY
9	OA-WO-NA-C1-20160820	8/20/16 8:30	Tissue	1	X	X	X	X		WHOLE BODY
10	OA-WO-NA-C2-20160820	8/20/16 8:30	Tissue	1	X	X	X	X		WHOLE BODY
11	OB-FF-WC-C1-20160820	8/20/16 11:45	Tissue	1	X	X	X	X		FILLET
12	OB-FF-WC-C2-20160820	8/20/16 11:45	Tissue	1	X	X	X	X		FILLET

• **Halibut and croaker sample compositing and homogenization steps:** For each composite group, remove all skin-off fillet (or skin-off muscle) from each fish in the composite group. Do not include ribs and stomach tissue when filleting. Homogenize all skin-off fillets from all fish in the composite group to a consistent color and texture and take a subsample for chemical analysis; remaining homogenate should be frozen (to at least -20°C) and archived. Please contact Anchor QEA prior to disposal of archived, frozen tissue homogenates.

• **Surfperches and anchovy compositing and homogenization steps:** All **whole** fish within a composite group should be homogenized. After homogenizing all fish in a composite group, and ensuring homogenization to a consistent color and texture, a subsample should be taken for chemical analysis. Remaining homogenate should be frozen (to at least -20°C) and archived. Please contact Anchor QEA prior to disposal of archived, frozen tissue homogenates.

• If there is insufficient homogenate available to achieve the target detection limits for all analytes in the SAP, please contact Andy Martin for a prioritization list before analysis.

• For all other questions, please contact Andy Martin prior to analysis.

Relinquished By: Anchor QEA
 Signature/Printed Name: Claire Dolphin
 Date/Time: 9/1/16

Received By: [Signature]
 Company: ECA
 Signature/Printed Name: CARLA HOLLOWELL
 Date/Time: 9/1/16 1330

Chain of Custody Record & Laboratory Analysis Request

0039

Laboratory Number: Tissue quote #958678 Last Revised on 2014-09-22 by Michele Cas
 Date: 9/1/16
 Project Name: **GWMA-TMDL Compliance Monitoring**
 Project Number: **141205-01.01**
 Project Manager: **Andy Martin**
 Phone Number: **(949) 334 9630**
 Shipment Method:

Test Parameters



Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters					Comments/Preservation
					% Lipids	% Moisture	PCB Congeners	Organochlorine Pesticides	Archive	
1	OB-FF-WC-C3-20160820	8/20/16 8:00	Tissue	1	X	X	X	X		FILLET
2	OB-FF-CH-C1-20160820	8/20/16 14:10	Tissue	1	X	X	X	X		FILLET
3	OB-FF-CH-C2-20160820	8/20/16 14:10	Tissue	1	X	X	X	X		FILLET
4	OB-FF-CH-C3-20160820	8/20/16 14:10	Tissue	1	X	X	X	X		FILLET
5	OB-WO-NA-C1-20160820	8/20/16 12:10	Tissue	1	X	X	X	X		WHOLE BODY
6	OB-WO-NA-C2-20160820	8/20/16 12:10	Tissue	1	X	X	X	X		WHOLE BODY
7	OB-WO-NA-C3-20160820	8/20/16 12:10	Tissue	1	X	X	X	X		WHOLE BODY
8	SP-FF-WC-C1-20160821	8/21/16 8:00	Tissue	1	X	X	X	X		FILLET
9	SP-FF-WC-C2-20160821	8/21/16 8:00	Tissue	1	X	X	X	X		FILLET
10	SP-FF-WC-C3-20160821	8/21/16 8:00	Tissue	1	X	X	X	X		FILLET
11	SP-FF-CH-C1-20160821	8/21/16 9:30	Tissue	1	X	X	X	X		FILLET
12	SP-FF-CH-C2-20160821	8/21/16 9:30	Tissue	1	X	X	X	X		FILLET

Halibut and croaker sample compositing and homogenization steps: For each composite group, remove all skin-off fillet (or skin-off muscle) from each fish in the composite group. Do not include ribs and stomach tissue when filleting. Homogenize all skin-off fillets from all fish in the composite group to a consistent color and texture and take a subsample for chemical analysis; remaining homogenate should be frozen (to at least -20°C) and archived. Please contact Anchor QEA prior to disposal of archived, frozen tissue homogenates.

Surferches and anchovy compositing and homogenization steps: All **whole** fish within a composite group should be homogenized. After homogenizing all fish in a composite group, and ensuring homogenization to a consistent color and texture, a subsample should be taken for chemical analysis. Remaining homogenate should be frozen (to at least -20°C) and archived. Please contact Anchor QEA prior to disposal of archived, frozen tissue homogenates.


If there is insufficient homogenate available to achieve the target detection limits for all analytes in the SAP, please contact Andy Martin for a prioritization list before analysis.
 For all other questions, please contact Andy Martin prior to analysis.

Relinquished By: Anchor QEA
 Signature/Printed Name: *[Signature]*
 Date/Time: 8/31/16

Received By: *[Signature]* Company: ECI
 Signature/Printed Name: CARLA HOLLOWELL
 Date/Time: 09/01/2016 1330

Chain of Custody Record & Laboratory Analysis Request

0039

Laboratory Number:		
Date: <u>9/1/16</u>		
Project Name: <u>GWMA-TMDL Compliance Monitoring</u>		
Project Number: <u>141205-01.01</u>		
Project Manager: <u>Andy Martin</u>		
Phone Number: <u>(949) 334 9630</u>		
Shipment Method:		

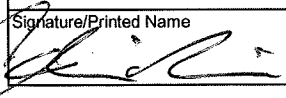
Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters					Comments/Preservation
					% Lipids	% Moisture	PCB Congeners	Organochlorine Pesticides	Archive	
1	SP-FF-CH-C3-20160821	8/21/16 9:30	Tissue	1	X	X	X	X		FILLET
2	SP-WO-NA-C1-20160821	8/21/16 9:30	Tissue	1	X	X	X	X		WHOLE BODY
3	SP-WO-NA-C2-20160821	8/21/16 9:30	Tissue	1	X	X	X	X		WHOLE BODY
4	SP-WO-NA-C3-20160821	8/21/16 9:30	Tissue	1	X	X	X	X		WHOLE BODY
5	CS-FF-WC-C1-20160821	8/21/16 15:35	Tissue	1	X	X	X	X		FILLET
6	CS-FF-WC-C2-20160821	8/21/16 15:35	Tissue	1	X	X	X	X		FILLET
7	CS-FF-WC-C3-20160821	8/21/16 15:35	Tissue	1	X	X	X	X		FILLET
8	OA-FF-WC-20-20160820	8/20/16 9:00	↓	1					X	Archive until further instruction ↓
9	OA-FF-WC-23-20160820	8/20/16 10:15		1					X	
10	OA-FF-WC-21-20160820	8/20/16 10:15		1					X	
11	OA-FF-WC-24-20160820	8/20/16 10:15		1					X	
12	OA-FF-WC-12-20160820	8/20/16 10:15		1					X	

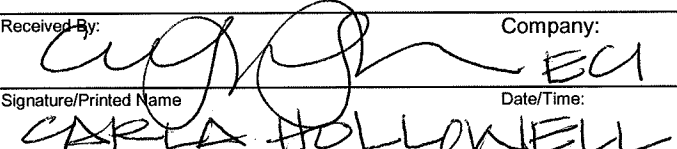
• Halibut and croaker sample compositing and homogenization steps: For each composite group, remove all skin-off fillet (or skin-off muscle) from each fish in the composite group. Do not include ribs and stomach tissue when filleting. Homogenize all skin-off fillets from all fish in the composite group to a consistent color and texture and take a subsample for chemical analysis; remaining homogenate should be frozen (to at least -20°C) and archived. Please contact Anchor QEA prior to disposal of archived, frozen tissue homogenates.

• Surfperches and anchovy compositing and homogenization steps: All whole fish within a composite group should be homogenized. After homogenizing all fish in a composite group, and ensuring homogenization to a consistent color and texture, a subsample should be taken for chemical analysis. Remaining homogenate should be frozen (to at least -20°C) and archived. Please contact Anchor QEA prior to disposal of archived, frozen tissue homogenates.

• If there is insufficient homogenate available to achieve the target detection limits for all analytes in the SAP, please contact Andy Martin for a prioritization list before analysis.

• For all other questions, please contact Andy Martin prior to analysis.

Relinquished By:	Anchor QEA
Signature/Printed Name	Date/Time
	9/1/16
Claire Dolphin	

Received By:	Company:
	ECI
Signature/Printed Name	Date/Time
CARLA HOLLOWELL	09/01/2016 13:20

WO NO. / LAB USE ONLY
16-09 - 0039

DATE: 9/1/16
PAGE: 4 OF 4

LABORATORY CLIENT: Anchor QEA		CLIENT PROJECT NAME / NO.: Anchor QEA		P.O. NO.: 141255-01.03 HETS	
ADDRESS: 27201 Puerta Real Ste 350		PROJECT CONTACT: Andrew Martin		LAB CONTACT OR QUOTE NO.: Quote # 958678	
CITY: Mission Viejo, CA	STATE: CA	ZIP: 92691	DRINKING WATER COMPLIANCE: <input type="checkbox"/> NO <input type="checkbox"/> YES (Complete the notification contact info.)		SAMPLER(S): (PRINT)
TEL:	E-MAIL: amartin@anchorgqa.com		NOTIFICATION CONTACT INFO: NAME: Andrew Martin TEL: 949-334-9630		

TURNAROUND TIME:
 SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD 10 day
 EDD: TEMPERATURE (°C) UPON RECEIPT:
 COELT EDF OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES									

HOLDING TIME (VOLUME) REQUIREMENTS
 Drinking Water (DW) – 30 hrs (100 ± 2.5 mL)
 Ground Water (GW) – 8 hrs (100 mL)
 Recreational Water (RW) – 8 hrs (100 mL)
 Surface Water (SW) – 8 hrs (100 mL)
 Waste Water (WW) – 8 hrs (100 mL)
 Heterotrophic Plate Count – 8 hrs
 (Samples must be filled to the 100 mL mark only; headspace must be present in containers.)

LAB USE ONLY	SAMPLE ID	SAMPLE LOCATION	SAMPLING		MATRIX	NO. OF CONT.	ARCHIVE											COMMENTS			
			DATE	TIME																	
37	OB-FF-CH-16-20160820	Port of LA/LB	8/20/16	1410	TISSUE	1	X														Archive until further instruction
38	OB-FF-CH-13-20160820	↓	8/20/16	1410		1	X														
39	SP-FF-CH-14-20160821	San Pedro	8/21/16	930		1	X														
40	SP-FF-CH-15-20160821	↓	8/21/16	930		1	X														
41	SP-FF-CH-13-20160821	↓	8/21/16	930		1	X														
42	SP-FF-CH-12-20160821	↓	8/21/16	930		1	X														
43	SP-FF-CH-11-20160821	↓	8/21/16	930		1	X														

***NOTIFY FOR:**
 Positive Total or Fecal Coliform / E. Coli sample result(s).
 Negative invalidated Coliform sample result(s).

SAMPLE COLLECTION REQUIREMENTS:
 Care must be taken to avoid contaminating the sample(s) or container(s) during storage and sampling.
 Each sample must be collected in an appropriate sized sterile container. The sample container must allow headspace when the sample is filled to the mark.
 Sample(s) must be filled to the 100 mL mark only. Sample(s) that are filled with more or less than 100 mL are not acceptable. Drinking water sample allowable limits are 100 ± 2.5 mL.
 If sample water is known or suspected to be chlorinated, the sample container must contain adequate sodium thiosulfate to remove the chlorine.
 Sample(s) must arrive at the laboratory at <10°C unless they have not had time to cool down.

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
		8/1/2016	17:30
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

SAMPLE RECEIPT CHECKLIST

COOLER 0 OF 0

CLIENT: Anchor

DATE: 09/01/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): -15.0°C (w/ CF): -15.0°C; Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 802

CUSTODY SEAL:

Cooler	<input type="checkbox"/> Present and Intact	<input type="checkbox"/> Present but Not Intact	<input checked="" type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Checked by: <u>802</u>
Sample(s)	<input type="checkbox"/> Present and Intact	<input type="checkbox"/> Present but Not Intact	<input checked="" type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Checked by: <u>1053</u>

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input checked="" type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input checked="" type="checkbox"/> <u>9/1/16</u>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB
 125PB_z_{na} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s
 500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (____) EnCores® (____) TerraCores® (____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix (Tissue):** Z _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO₃, **na** = NaOH, **na₂** = Na₂S₂O₃, **p** = H₃PO₄, **s** = H₂SO₄, **u** = ultra-pure, **z** = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: 1053
 Reviewed by: 689

Return to Contents

Appendix E

Toxicity Data Reports

CETIS Summary Report

Report Date: 26 Jan-17 14:05 (p 1 of 1)
 Test Code: MYT083116 | 02-8216-1505

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 03-8689-4327	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 31 Aug-16 12:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 12:02	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 05-0093-3485	Code: MYT083116	Client: Internal Lab
Sample Date: 31 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 12h	Station: REF TOX	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
21-3538-4500	Combined Proportion Norma	Dunnett Multiple Comparison Test	0.051	0.076	0.06226		3.4%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	mg/L	95% LCL	95% UCL	TU	✓
04-6017-0013	Combined Proportion Norma	Linear Interpolation (ICPIN)	EC5	0.05599	0.05376	0.06021		
			EC10	0.06238	0.05801	0.07109		
			EC15	0.06876	0.06235	0.08036		
			EC20	0.07515	0.06647	0.0809		
			EC25	0.07858	0.07221	0.08296		
			EC40	0.08752	0.08412	0.09044		
			EC50	0.09348	0.09082	0.09716		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
21-3538-4500	Combined Proportion Norma	PMSD	0.034	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9713	0.9638	0.9788	0.9630	0.9769	0.0027	0.0060	0.62%	0.00%
0.029		5	0.9778	0.9635	0.9921	0.9676	0.9954	0.0052	0.0115	1.18%	-0.67%
0.051		5	0.9639	0.9528	0.9749	0.9537	0.9769	0.0040	0.0089	0.92%	0.76%
0.076		5	0.7731	0.6770	0.8693	0.6898	0.8704	0.0346	0.0774	10.01%	20.40%
0.097		5	0.4296	0.3657	0.4936	0.3565	0.5000	0.0230	0.0515	11.98%	55.77%
0.119		5	0.1176	0.0764	0.1588	0.0602	0.1435	0.0148	0.0332	28.20%	87.89%

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9630	0.9722	0.9676	0.9769
0.029		0.9769	0.9676	0.9676	0.9815	0.9954
0.051		0.9630	0.9676	0.9769	0.9583	0.9537
0.076		0.8704	0.7917	0.8148	0.6991	0.6898
0.097		0.5000	0.3565	0.4213	0.4259	0.4444
0.119		0.1296	0.0602	0.1204	0.1343	0.1435

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/216	208/216	210/216	209/216	211/216
0.029		211/216	209/216	209/216	212/216	215/216
0.051		208/216	209/216	211/216	207/216	206/216
0.076		188/216	171/216	176/216	151/216	149/216
0.097		108/216	77/216	91/216	92/216	96/216
0.119		28/216	13/216	26/216	29/216	31/216

CETIS Analytical Report

Report Date: 26 Jan-17 14:05 (p 1 of 2)
 Test Code: MYT083116 | 02-8216-1505

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 04-6017-0013	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 26 Jan-17 14:05	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			
Batch ID: 03-8689-4327	Test Type: Development-Survival	Analyst: Joe Freas			
Start Date: 31 Aug-16 12:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 02 Sep-16 12:02	Species: Mytilis galloprovincialis	Brine: Not Applicable			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 05-0093-3485	Code: MYT083116	Client: Internal Lab			
Sample Date: 31 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX			
Receipt Date:	Source: Reference Toxicant				
Sample Age: 12h	Station: REF TOX				

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.05599	0.05376	0.06021
EC10	0.06238	0.05801	0.07109
EC15	0.06876	0.06235	0.08036
EC20	0.07515	0.06647	0.0809
EC25	0.07858	0.07221	0.08296
EC40	0.08752	0.08412	0.09044
EC50	0.09348	0.09082	0.09716

Combined Proportion Normal Summary

Calculated Variate(A/B)

Conc-mg/L	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	N	5	0.9713	0.9630	0.9769	0.0027	0.0060	0.62%	0.0%	1049	1080
0.029		5	0.9778	0.9676	0.9954	0.0052	0.0115	1.18%	-0.67%	1056	1080
0.051		5	0.9639	0.9537	0.9769	0.0040	0.0089	0.92%	0.76%	1041	1080
0.076		5	0.7731	0.6898	0.8704	0.0346	0.0774	10.01%	20.4%	835	1080
0.097		5	0.4296	0.3565	0.5000	0.0230	0.0515	11.98%	55.77%	464	1080
0.119		5	0.1176	0.0602	0.1435	0.0148	0.0332	28.20%	87.89%	127	1080

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9630	0.9722	0.9676	0.9769
0.029		0.9769	0.9676	0.9676	0.9815	0.9954
0.051		0.9630	0.9676	0.9769	0.9583	0.9537
0.076		0.8704	0.7917	0.8148	0.6991	0.6898
0.097		0.5000	0.3565	0.4213	0.4259	0.4444
0.119		0.1296	0.0602	0.1204	0.1343	0.1435

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/216	208/216	210/216	209/216	211/216
0.029		211/216	209/216	209/216	212/216	215/216
0.051		208/216	209/216	211/216	207/216	206/216
0.076		188/216	171/216	176/216	151/216	149/216
0.097		108/216	77/216	91/216	92/216	96/216
0.119		28/216	13/216	26/216	29/216	31/216

CETIS Analytical Report

Report Date: 26 Jan-17 14:05 (p 2 of 2)
Test Code: MYT083116 | 02-8216-1505

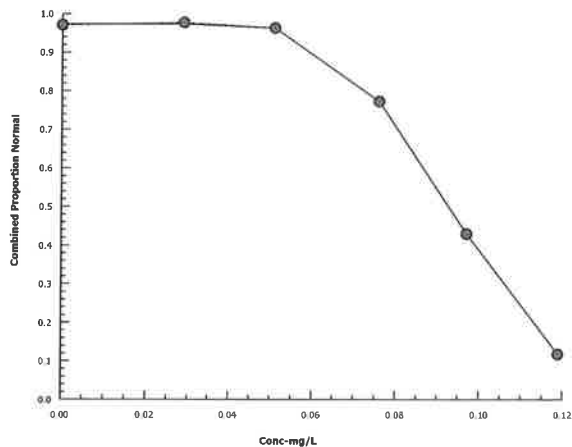
Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-6017-0013 Endpoint: Combined Proportion Normal
Analyzed: 26 Jan-17 14:05 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Summary Report

Report Date: 26 Jan-17 14:11 (p 1 of 1)
 Test Code: MYT083016 | 02-4232-7593

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 02-2116-9271	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 30 Aug-16 13:31	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 13:40	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 13-2110-3845	Code: MYT083016	Client: Internal Lab
Sample Date: 30 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 14h	Station: REF TOX	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
08-9930-7863	Combined Proportion Norma	Dunnett Multiple Comparison Test	0.029	0.051	0.03846		2.68%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	mg/L	95% LCL	95% UCL	TU	✓
19-6882-0866	Combined Proportion Norma	Linear Interpolation (ICPIN)	EC5	0.05341	0.04972	0.05567		
			EC10	0.05996	0.05647	0.06302		
			EC15	0.06652	0.06252	0.07115		
			EC20	0.07308	0.06803	0.07916		
			EC25	0.07917	0.07377	0.0807		
			EC40	0.08449	0.08299	0.086		
			EC50	0.08804	0.08639	0.09015		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
08-9930-7863	Combined Proportion Norma	PMSD	0.02681	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9662	0.9463	0.9861	0.9452	0.9863	0.0072	0.0160	1.66%	0.00%
0.029		5	0.9671	0.9469	0.9873	0.9498	0.9863	0.0073	0.0163	1.68%	-0.09%
0.051		5	0.9361	0.9168	0.9553	0.9178	0.9589	0.0069	0.0155	1.65%	3.12%
0.079		5	0.7297	0.6757	0.7837	0.6804	0.7808	0.0195	0.0435	5.96%	24.48%
0.091		5	0.4027	0.3324	0.4730	0.3516	0.4932	0.0253	0.0566	14.06%	58.32%
0.119		5	0.0977	0.0795	0.1159	0.0822	0.1187	0.0066	0.0147	15.00%	89.89%

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9589	0.9452	0.9863	0.9635	0.9772
0.029		0.9498	0.9863	0.9817	0.9635	0.9543
0.051		0.9269	0.9589	0.9178	0.9406	0.9361
0.079		0.7808	0.7580	0.6895	0.7397	0.6804
0.091		0.4932	0.3607	0.3927	0.3516	0.4155
0.119		0.1187	0.0959	0.1050	0.0822	0.0868

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	210/219	207/219	216/219	211/219	214/219
0.029		208/219	216/219	215/219	211/219	209/219
0.051		203/219	210/219	201/219	206/219	205/219
0.079		171/219	166/219	151/219	162/219	149/219
0.091		108/219	79/219	86/219	77/219	91/219
0.119		26/219	21/219	23/219	18/219	19/219

Analyst:  QA: 

CETIS Analytical Report

Report Date: 26 Jan-17 14:11 (p 1 of 2)
 Test Code: MYT083016 | 02-4232-7593

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 08-9930-7863	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 26 Jan-17 14:11	Analysis: Parametric-Control vs Treatments	Official Results: Yes			
Batch ID: 02-2116-9271	Test Type: Development-Survival	Analyst: Joe Freas			
Start Date: 30 Aug-16 13:31	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 01 Sep-16 13:40	Species: Mytilus galloprovincialis	Brine: Not Applicable			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 13-2110-3845	Code: MYT083016	Client: Internal Lab			
Sample Date: 30 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX			
Receipt Date:	Source: Reference Toxicant				
Sample Age: 14h	Station: REF TOX				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	0.029	0.051	0.03846		2.68%

Dunnett Multiple Comparison Test									
Control	vs	Conc-mg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		0.029	-0.1076	2.362	0.066	8	CDF	0.8632	Non-Significant Effect
		0.051*	2.619	2.362	0.066	8	CDF	0.0294	Significant Effect
		0.079*	12.98	2.362	0.066	8	CDF	7.6E-07	Significant Effect
		0.091*	24.99	2.362	0.066	8	CDF	7.6E-07	Significant Effect
		0.119*	38.13	2.362	0.066	8	CDF	7.6E-07	Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
PMSD	0.02681	<<	0.25	No	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.84724	0.969449	5	489.4	<1.0E-37	Significant Effect
Error	0.0475381	0.0019808	24			
Total	4.89478		29			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	3.094	15.09	0.6855	Equal Variances	
Variances	Levene Equality of Variance Test	1.069	3.895	0.4021	Equal Variances	
Variances	Mod Levene Equality of Variance Test	0.9389	4.248	0.4796	Equal Variances	
Distribution	Anderson-Darling A2 Normality Test	0.437	3.878	0.3010	Normal Distribution	
Distribution	D'Agostino Kurtosis Test	0.9135	2.576	0.3610	Normal Distribution	
Distribution	D'Agostino Skewness Test	1.086	2.576	0.2773	Normal Distribution	
Distribution	D'Agostino-Pearson K2 Omnibus Test	2.015	9.21	0.3652	Normal Distribution	
Distribution	Kolmogorov-Smirnov D Test	0.09572	0.1853	0.7029	Normal Distribution	
Distribution	Shapiro-Wilk W Normality Test	0.9533	0.9031	0.2076	Normal Distribution	

Combined Proportion Normal Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9662	0.9463	0.9861	0.9635	0.9452	0.9863	0.0072	1.66%	0.00%
0.029		5	0.9671	0.9469	0.9873	0.9635	0.9498	0.9863	0.0073	1.68%	-0.09%
0.051		5	0.9361	0.9168	0.9553	0.9361	0.9178	0.9589	0.0069	1.65%	3.12%
0.079		5	0.7297	0.6757	0.7837	0.7397	0.6804	0.7808	0.0195	5.96%	24.48%
0.091		5	0.4027	0.3324	0.4730	0.3927	0.3516	0.4932	0.0253	14.06%	58.32%
0.119		5	0.0977	0.0795	0.1159	0.0959	0.0822	0.1187	0.0066	15.00%	89.89%

CETIS Analytical Report

Report Date: 26 Jan-17 14:11 (p 2 of 2)
 Test Code: MYT083016 | 02-4232-7593

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-9930-7863 Endpoint: Combined Proportion Normal
 Analyzed: 26 Jan-17 14:11 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.2
 Official Results: Yes

Angular (Corrected) Transformed Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.39	1.333	1.448	1.378	1.335	1.453	0.02078	3.34%	0.00%
0.029		5	1.393	1.333	1.454	1.378	1.345	1.453	0.02167	3.48%	-0.22%
0.051		5	1.317	1.276	1.357	1.315	1.28	1.367	0.01465	2.49%	5.30%
0.079		5	1.025	0.9642	1.086	1.035	0.9699	1.084	0.02192	4.78%	26.28%
0.091		5	0.6871	0.6157	0.7584	0.6773	0.6347	0.7785	0.02571	8.37%	50.59%
0.119		5	0.3173	0.2869	0.3477	0.3148	0.2908	0.3518	0.01094	7.71%	77.18%

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9589	0.9452	0.9863	0.9635	0.9772
0.029		0.9498	0.9863	0.9817	0.9635	0.9543
0.051		0.9269	0.9589	0.9178	0.9406	0.9361
0.079		0.7808	0.7580	0.6895	0.7397	0.6804
0.091		0.4932	0.3607	0.3927	0.3516	0.4155
0.119		0.1187	0.0959	0.1050	0.0822	0.0868

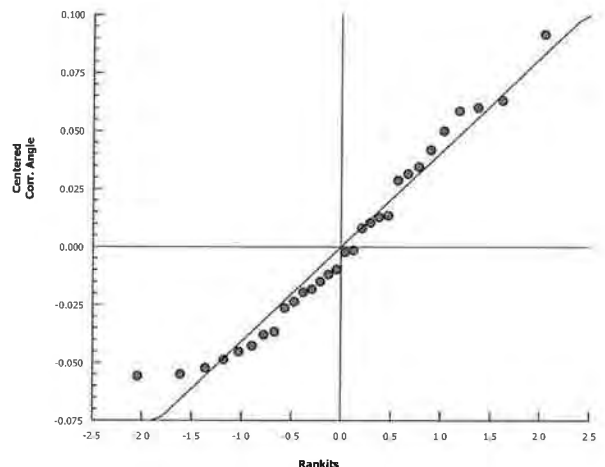
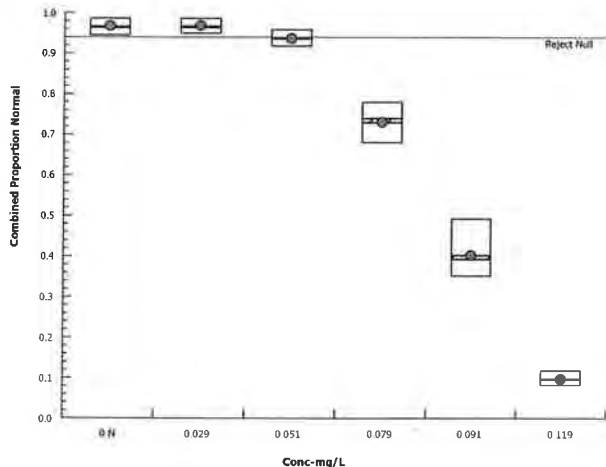
Angular (Corrected) Transformed Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.367	1.335	1.453	1.378	1.419
0.029		1.345	1.453	1.435	1.378	1.355
0.051		1.297	1.367	1.28	1.325	1.315
0.079		1.084	1.056	0.9798	1.035	0.9699
0.091		0.7785	0.6443	0.6773	0.6347	0.7005
0.119		0.3518	0.3148	0.33	0.2908	0.299

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	210/219	207/219	216/219	211/219	214/219
0.029		208/219	216/219	215/219	211/219	209/219
0.051		203/219	210/219	201/219	206/219	205/219
0.079		171/219	166/219	151/219	162/219	149/219
0.091		108/219	79/219	86/219	77/219	91/219
0.119		26/219	21/219	23/219	18/219	19/219

Graphics



CETIS Analytical Report

Report Date: 26 Jan-17 14:11 (p 1 of 2)
 Test Code: MYT083016 | 02-4232-7593

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 19-6882-0866	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2	Analyzed: 26 Jan-17 14:11	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Batch ID: 02-2116-9271	Test Type: Development-Survival	Analyst: Joe Freas	Start Date: 30 Aug-16 13:31	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 13:40	Species: Mytilus galloprovincialis	Brine: Not Applicable	Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 13-2110-3845	Code: MYT083016	Client: Internal Lab	Sample Date: 30 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant		Sample Age: 14h	Station: REF TOX	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.05341	0.04972	0.05567
EC10	0.05996	0.05647	0.06302
EC15	0.06652	0.06252	0.07115
EC20	0.07308	0.06803	0.07916
EC25	0.07917	0.07377	0.0807
EC40	0.08449	0.08299	0.086
EC50	0.08804	0.08639	0.09015

Combined Proportion Normal Summary

Calculated Variate(A/B)

Conc-mg/L	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	N	5	0.9662	0.9452	0.9863	0.0072	0.0160	1.66%	0.0%	1058	1095
0.029		5	0.9671	0.9498	0.9863	0.0073	0.0163	1.68%	-0.09%	1059	1095
0.051		5	0.9361	0.9178	0.9589	0.0069	0.0155	1.65%	3.12%	1025	1095
0.079		5	0.7297	0.6804	0.7808	0.0195	0.0435	5.96%	24.48%	799	1095
0.091		5	0.4027	0.3516	0.4932	0.0253	0.0566	14.06%	58.32%	441	1095
0.119		5	0.0977	0.0822	0.1187	0.0066	0.0147	15.00%	89.89%	107	1095

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9589	0.9452	0.9863	0.9635	0.9772
0.029		0.9498	0.9863	0.9817	0.9635	0.9543
0.051		0.9269	0.9589	0.9178	0.9406	0.9361
0.079		0.7808	0.7580	0.6895	0.7397	0.6804
0.091		0.4932	0.3607	0.3927	0.3516	0.4155
0.119		0.1187	0.0959	0.1050	0.0822	0.0868

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	210/219	207/219	216/219	211/219	214/219
0.029		208/219	216/219	215/219	211/219	209/219
0.051		203/219	210/219	201/219	206/219	205/219
0.079		171/219	166/219	151/219	162/219	149/219
0.091		108/219	79/219	86/219	77/219	91/219
0.119		26/219	21/219	23/219	18/219	19/219

CETIS Measurement Report

Report Date: 26 Jan-17 14:11 (p 1 of 2)
 Test Code: MYT083016 | 02-4232-7593

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	02-2116-9271	Test Type:	Development-Survival	Analyst:	Joe Freas		
Start Date:	30 Aug-16 13:31	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	01 Sep-16 13:40	Species:	Mytilis galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	13-2110-3845	Code:	MYT083016	Client:	Internal Lab		
Sample Date:	30 Aug-16	Material:	Ammonia (Unionized)	Project:	REF TOX		
Receipt Date:		Source:	Reference Toxicant				
Sample Age:	14h	Station:	REF TOX				

Dissolved Oxygen-mg/L											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
0.029		2	6.45	2.003	10.9	6.1	6.8	0.35	0.495	7.67%	0
0.051		2	6.3	2.488	10.11	6	6.6	0.3	0.4243	6.73%	0
0.079		2	6.4	5.129	7.671	6.3	6.5	0.1	0.1414	2.21%	0
0.091		2	6.45	3.273	9.627	6.2	6.7	0.25	0.3536	5.48%	0
0.119		2	6.5	1.418	11.58	6.1	6.9	0.4	0.5657	8.7%	0
Overall		12	6.433	6.23	6.637	6	6.9	0.09239	0.32	4.98%	0 (0%)

pH-Units											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.029		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.051		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.079		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.091		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.119		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		12	7.9	7.9	7.9	7.9	7.9	0	0	0.00%	0 (0%)

Salinity-ppt											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
0.029		2	34	34	34	34	34	0	0	0.0%	0
0.051		2	34	34	34	34	34	0	0	0.0%	0
0.079		2	34	34	34	34	34	0	0	0.0%	0
0.091		2	34	34	34	34	34	0	0	0.0%	0
0.119		2	34	34	34	34	34	0	0	0.0%	0
Overall		12	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.029		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.051		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.079		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.091		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.119		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		12	14.75	14.72	14.78	14.7	14.8	0.01508	0.05222	0.35%	0 (0%)

CETIS Summary Report

Report Date: 26 Jan-17 14:19 (p 1 of 1)
 Test Code: MYT082916 | 16-9120-9803

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-0076-0380	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 29 Aug-16 13:15	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 14:00	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 49h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 14-1577-3918	Code: MYT082916	Client: Internal Lab
Sample Date: 29 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 13h	Station: REF TOX	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
10-8386-0451	Combined Proportion Norma	Dunnett Multiple Comparison Test	0.028	0.051	0.03779		3.19%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	mg/L	95% LCL	95% UCL	TU	✓
14-7955-7716	Combined Proportion Norma	Linear Interpolation (ICPIN)	EC5	0.04004	0.03219	0.05444		
			EC10	0.05173	0.04024	0.05668		
			EC15	0.0569	0.04988	0.06127		
			EC20	0.06207	0.05669	0.0656		
			EC25	0.06724	0.06247	0.0706		
			EC40	0.07966	0.07687	0.08264		
			EC50	0.08589	0.08323	0.09031		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
10-8386-0451	Combined Proportion Norma	PMSD	0.0319	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9724	0.9547	0.9900	0.9585	0.9954	0.0064	0.0142	1.46%	0.00%
0.028		5	0.9696	0.9487	0.9905	0.9493	0.9954	0.0075	0.0168	1.73%	0.28%
0.051		5	0.8820	0.8094	0.9547	0.7880	0.9263	0.0262	0.0585	6.64%	9.29%
0.075		5	0.6562	0.6111	0.7014	0.6037	0.7005	0.0163	0.0364	5.54%	32.51%
0.091		5	0.4065	0.3355	0.4774	0.3548	0.4977	0.0256	0.0571	14.06%	58.20%
0.118		5	0.0986	0.0821	0.1151	0.0876	0.1198	0.0059	0.0133	13.46%	89.86%

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9585	0.9724	0.9631
0.028		0.9677	0.9493	0.9631	0.9954	0.9724
0.051		0.9263	0.9217	0.9124	0.8618	0.7880
0.075		0.7005	0.6636	0.6037	0.6406	0.6728
0.091		0.4977	0.3548	0.4194	0.3641	0.3963
0.118		0.0968	0.0876	0.1198	0.1014	0.0876

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	208/217	211/217	209/217
0.028		210/217	206/217	209/217	216/217	211/217
0.051		201/217	200/217	198/217	187/217	171/217
0.075		152/217	144/217	131/217	139/217	146/217
0.091		108/217	77/217	91/217	79/217	86/217
0.118		21/217	19/217	26/217	22/217	19/217

CETIS Analytical Report

Report Date: 26 Jan-17 14:19 (p 1 of 2)
 Test Code: MYT082916 | 16-9120-9803

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 10-8386-0451	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 26 Jan-17 14:19	Analysis: Parametric-Control vs Treatments	Official Results: Yes
Batch ID: 05-0076-0380	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 29 Aug-16 13:15	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 14:00	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 49h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 14-1577-3918	Code: MYT082916	Client: Internal Lab
Sample Date: 29 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 13h	Station: REF TOX	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	0.028	0.051	0.03779		3.19%

Dunnett Multiple Comparison Test

Control	vs	Conc-mg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		0.028	0.1985	2.362	0.085	8	CDF	0.7681	Non-Significant Effect
		0.051*	5.128	2.362	0.085	8	CDF	7.1E-05	Significant Effect
		0.075*	13.01	2.362	0.085	8	CDF	7.6E-07	Significant Effect
		0.091*	20.1	2.362	0.085	8	CDF	7.6E-07	Significant Effect
		0.118*	30.49	2.362	0.085	8	CDF	7.6E-07	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
PMSD	0.0319	<<	0.25	No	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.72834	0.945668	5	295	<1.0E-37	Significant Effect
Error	0.0769437	0.003206	24			
Total	4.80528		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	6.501	15.09	0.2605	Equal Variances
Variances	Levene Equality of Variance Test	1.53	3.895	0.2180	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.7363	4.248	0.6059	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.5003	3.878	0.2122	Normal Distribution
Distribution	D'Agostino Kurtosis Test	0.9237	2.576	0.3556	Normal Distribution
Distribution	D'Agostino Skewness Test	0.03113	2.576	0.9752	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus Test	0.8543	9.21	0.6524	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1095	0.1853	0.4646	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9599	0.9031	0.3079	Normal Distribution

Combined Proportion Normal Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9724	0.9547	0.9900	0.9724	0.9585	0.9954	0.0064	1.46%	0.00%
0.028		5	0.9696	0.9487	0.9905	0.9677	0.9493	0.9954	0.0075	1.73%	0.28%
0.051		5	0.8820	0.8094	0.9547	0.9124	0.7880	0.9263	0.0262	6.64%	9.29%
0.075		5	0.6562	0.6111	0.7014	0.6636	0.6037	0.7005	0.0163	5.54%	32.51%
0.091		5	0.4065	0.3355	0.4774	0.3963	0.3548	0.4977	0.0256	14.06%	58.20%
0.118		5	0.0986	0.0821	0.1151	0.0968	0.0876	0.1198	0.0059	13.46%	89.86%

CETIS Analytical Report

Report Date: 26 Jan-17 14:19 (p 1 of 2)
 Test Code: MYT082916 | 16-9120-9803

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 14-7955-7716	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2	Analyzed: 26 Jan-17 14:19	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Batch ID: 05-0076-0380	Test Type: Development-Survival	Analyst: Joe Freas	Start Date: 29 Aug-16 13:15	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 14:00	Species: Mytilus galloprovincialis	Brine: Not Applicable	Duration: 49h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 14-1577-3918	Code: MYT082916	Client: Internal Lab	Sample Date: 29 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant		Sample Age: 13h	Station: REF TOX	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.04004	0.03219	0.05444
EC10	0.05173	0.04024	0.05668
EC15	0.0569	0.04988	0.06127
EC20	0.06207	0.05669	0.0656
EC25	0.06724	0.06247	0.0706
EC40	0.07966	0.07687	0.08264
EC50	0.08589	0.08323	0.09031

Combined Proportion Normal Summary

Calculated Variate(A/B)

Conc-mg/L	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	N	5	0.9724	0.9585	0.9954	0.0064	0.0142	1.46%	0.0%	1055	1085
0.028		5	0.9696	0.9493	0.9954	0.0075	0.0168	1.73%	0.28%	1052	1085
0.051		5	0.8820	0.7880	0.9263	0.0262	0.0585	6.64%	9.29%	957	1085
0.075		5	0.6562	0.6037	0.7005	0.0163	0.0364	5.54%	32.51%	712	1085
0.091		5	0.4065	0.3548	0.4977	0.0256	0.0571	14.06%	58.2%	441	1085
0.118		5	0.0986	0.0876	0.1198	0.0059	0.0133	13.46%	89.86%	107	1085

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9585	0.9724	0.9631
0.028		0.9677	0.9493	0.9631	0.9954	0.9724
0.051		0.9263	0.9217	0.9124	0.8618	0.7880
0.075		0.7005	0.6636	0.6037	0.6406	0.6728
0.091		0.4977	0.3548	0.4194	0.3641	0.3963
0.118		0.0968	0.0876	0.1198	0.1014	0.0876

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	208/217	211/217	209/217
0.028		210/217	206/217	209/217	216/217	211/217
0.051		201/217	200/217	198/217	187/217	171/217
0.075		152/217	144/217	131/217	139/217	146/217
0.091		108/217	77/217	91/217	79/217	86/217
0.118		21/217	19/217	26/217	22/217	19/217

CETIS Measurement Report

Report Date: 26 Jan-17 14:19 (p 2 of 2)
Test Code: MYT082916 | 16-9120-9803

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-mg/L	Code	1	2
0	N	6.8	6
0.028		6.7	6.1
0.051		6.9	6.3
0.075		6.8	6.2
0.091		6.6	6.1
0.118		6.7	6.5

pH-Units

Conc-mg/L	Code	1	2
0	N	7.9	7.9
0.028		7.9	7.9
0.051		7.9	7.9
0.075		7.9	7.9
0.091		7.9	7.9
0.118		7.9	7.9

Salinity-ppt

Conc-mg/L	Code	1	2
0	N	34	34
0.028		34	34
0.051		34	34
0.075		34	34
0.091		34	34
0.118		34	34

Temperature-°C

Conc-mg/L	Code	1	2
0	N	14.6	14.9
0.028		14.6	14.9
0.051		14.6	14.9
0.075		14.6	14.9
0.091		14.6	14.9
0.118		14.6	14.9

CETIS Summary Report

Report Date: 26 Jan-17 14:31 (p 1 of 1)
 Test Code: MYT090116 | 18-3025-2961

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	14-9686-3157	Test Type:	Development-Survival	Analyst:	Joe Freas		
Start Date:	01 Sep-16 13:52	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	03 Sep-16 13:55	Species:	Mytilis galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	13-8506-5021	Code:	MYT090116	Client:	Internal Lab		
Sample Date:	01 Sep-16	Material:	Ammonia (Unionized)	Project:	REF TOX		
Receipt Date:		Source:	Reference Toxicant				
Sample Age:	14h	Station:	REF TOX				

Multiple Comparison Summary							
Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
18-8669-6627	Combined Proportion Norma	Dunnett Multiple Comparison Test	0.029	0.055	0.03994		1.98%

Point Estimate Summary							
Analysis ID	Endpoint	Point Estimate Method	Level	mg/L	95% LCL	95% UCL	TU ✓
13-8859-5437	Combined Proportion Norma	Linear Interpolation (ICPIN)	EC5	0.05574	0.05087	0.05786	
			EC10	0.06197	0.05999	0.06413	
			EC15	0.0682	0.06553	0.07107	
			EC20	0.07443	0.07106	0.07846	
			EC25	0.07979	0.07666	0.08165	
			EC40	0.08875	0.08679	0.0908	
			EC50	0.09473	0.09206	0.09726	

Test Acceptability				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
18-8669-6627	Combined Proportion Norma	PMSD	0.01985	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9611	0.9396	0.9825	0.9336	0.9779	0.0077	0.0173	1.79%	0.00%
0.029		5	0.9681	0.9576	0.9787	0.9558	0.9779	0.0038	0.0085	0.88%	-0.74%
0.055		5	0.9221	0.9095	0.9348	0.9115	0.9336	0.0046	0.0102	1.10%	4.05%
0.079		5	0.7363	0.7003	0.7722	0.6991	0.7655	0.0130	0.0290	3.93%	23.39%
0.099		5	0.4133	0.3572	0.4694	0.3407	0.4558	0.0202	0.0452	10.93%	57.00%
0.12		5	0.0832	0.0726	0.0938	0.0708	0.0929	0.0038	0.0085	10.23%	91.34%

Combined Proportion Normal Detail						
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9336	0.9779	0.9690	0.9558
0.029		0.9779	0.9558	0.9690	0.9735	0.9646
0.055		0.9336	0.9115	0.9248	0.9292	0.9115
0.079		0.7124	0.7655	0.6991	0.7566	0.7478
0.099		0.4425	0.3407	0.4027	0.4558	0.4248
0.12		0.0929	0.0841	0.0797	0.0708	0.0885

Combined Proportion Normal Binomials						
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	211/226	221/226	219/226	216/226
0.029		221/226	216/226	219/226	220/226	218/226
0.055		211/226	206/226	209/226	210/226	206/226
0.079		161/226	173/226	158/226	171/226	169/226
0.099		100/226	77/226	91/226	103/226	96/226
0.12		21/226	19/226	18/226	16/226	20/226

CETIS Analytical Report

Report Date: 26 Jan-17 14:31 (p 1 of 2)

Test Code: MYT090116 | 18-3025-2961

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 18-8669-6627	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 26 Jan-17 14:31	Analysis: Parametric-Control vs Treatments	Official Results: Yes			
Batch ID: 14-9686-3157	Test Type: Development-Survival	Analyst: Joe Freas			
Start Date: 01 Sep-16 13:52	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 03 Sep-16 13:55	Species: Mytilus galloprovincialis	Brine: Not Applicable			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 13-8506-5021	Code: MYT090116	Client: Internal Lab			
Sample Date: 01 Sep-16	Material: Ammonia (Unionized)	Project: REF TOX			
Receipt Date:	Source: Reference Toxicant				
Sample Age: 14h	Station: REF TOX				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	0.029	0.055	0.03994		1.98%

Dunnett Multiple Comparison Test

Control	vs	Conc-mg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		0.029	-0.8298	2.362	0.048	8	CDF	0.9735	Non-Significant Effect
		0.055*	4.282	2.362	0.048	8	CDF	5.8E-04	Significant Effect
		0.079*	16.87	2.362	0.048	8	CDF	7.6E-07	Significant Effect
		0.099*	33.27	2.362	0.048	8	CDF	7.6E-07	Significant Effect
		0.12*	53.17	2.362	0.048	8	CDF	7.6E-07	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
PMSD	0.01985	<<	0.25	No	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.85282	0.970564	5	935.2	<1.0E-37	Significant Effect
Error	0.0249083	0.0010379	24			
Total	4.87773		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	6.466	15.09	0.2635	Equal Variances
Variances	Levene Equality of Variance Test	1.682	3.895	0.1772	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.8885	4.248	0.5091	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.5394	3.878	0.1703	Normal Distribution
Distribution	D'Agostino Kurtosis Test	0.7865	2.576	0.4316	Normal Distribution
Distribution	D'Agostino Skewness Test	1.867	2.576	0.0619	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus Test	4.103	9.21	0.1285	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1306	0.1853	0.2083	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9491	0.9031	0.1600	Normal Distribution

Combined Proportion Normal Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9611	0.9396	0.9825	0.9690	0.9336	0.9779	0.0077	1.79%	0.00%
0.029		5	0.9681	0.9576	0.9787	0.9690	0.9558	0.9779	0.0038	0.88%	-0.74%
0.055		5	0.9221	0.9095	0.9348	0.9248	0.9115	0.9336	0.0046	1.10%	4.05%
0.079		5	0.7363	0.7003	0.7722	0.7478	0.6991	0.7655	0.0130	3.93%	23.39%
0.099		5	0.4133	0.3572	0.4694	0.4248	0.3407	0.4558	0.0202	10.93%	57.00%
0.12		5	0.0832	0.0726	0.0938	0.0841	0.0708	0.0929	0.0038	10.23%	91.34%

CETIS Analytical Report

Report Date: 26 Jan-17 14:31 (p 2 of 2)
Test Code: MYT090116 | 18-3025-2961

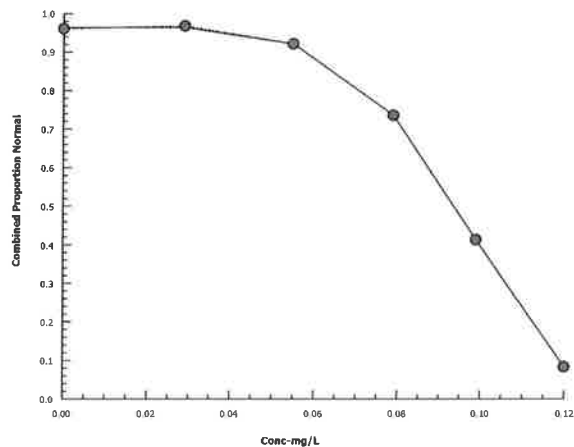
Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-8859-5437 Endpoint: Combined Proportion Normal
Analyzed: 26 Jan-17 14:31 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 26 Jan-17 14:31 (p 1 of 2)
 Test Code: MYT090116 | 18-3025-2961

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-9686-3157	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 01 Sep-16 13:52	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 13:55	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 13-8506-5021	Code: MYT090116	Client: Internal Lab
Sample Date: 01 Sep-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 14h	Station: REF TOX	

Dissolved Oxygen-mg/L

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.45	4.544	8.356	6.3	6.6	0.15	0.2121	3.29%	0
0.029		2	6.3	3.759	8.841	6.1	6.5	0.2	0.2828	4.49%	0
0.055		2	6.6	2.788	10.41	6.3	6.9	0.3	0.4243	6.43%	0
0.079		2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
0.099		2	6.4	2.588	10.21	6.1	6.7	0.3	0.4243	6.63%	0
0.12		2	6.45	0.7322	12.17	6	6.9	0.45	0.6364	9.87%	0
Overall		12	6.45	6.243	6.657	6	6.9	0.09415	0.3261	5.06%	0 (0%)

pH-Units

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.029		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.055		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.079		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.099		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.12		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		12	7.9	7.9	7.9	7.9	7.9	0	0	0.00%	0 (0%)

Salinity-ppt

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
0.029		2	34	34	34	34	34	0	0	0.0%	0
0.055		2	34	34	34	34	34	0	0	0.0%	0
0.079		2	34	34	34	34	34	0	0	0.0%	0
0.099		2	34	34	34	34	34	0	0	0.0%	0
0.12		2	34	34	34	34	34	0	0	0.0%	0
Overall		12	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
0.029		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
0.055		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
0.079		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
0.099		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
0.12		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		12	14.85	14.82	14.88	14.8	14.9	0.01508	0.05222	0.35%	0 (0%)

CETIS Measurement Report

Report Date: 26 Jan-17 14:31 (p 2 of 2)

Test Code: MYT090116 | 18-3025-2961

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-mg/L	Code	1	2
0	N	6.6	6.3
0.029		6.5	6.1
0.055		6.9	6.3
0.079		6.8	6.2
0.099		6.7	6.1
0.12		6.9	6

pH-Units

Conc-mg/L	Code	1	2
0	N	7.9	7.9
0.029		7.9	7.9
0.055		7.9	7.9
0.079		7.9	7.9
0.099		7.9	7.9
0.12		7.9	7.9

Salinity-ppt

Conc-mg/L	Code	1	2
0	N	34	34
0.029		34	34
0.055		34	34
0.079		34	34
0.099		34	34
0.12		34	34

Temperature-°C

Conc-mg/L	Code	1	2
0	N	14.9	14.8
0.029		14.9	14.8
0.055		14.9	14.8
0.079		14.9	14.8
0.099		14.9	14.8
0.12		14.9	14.8

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Test Type: Development-Survival

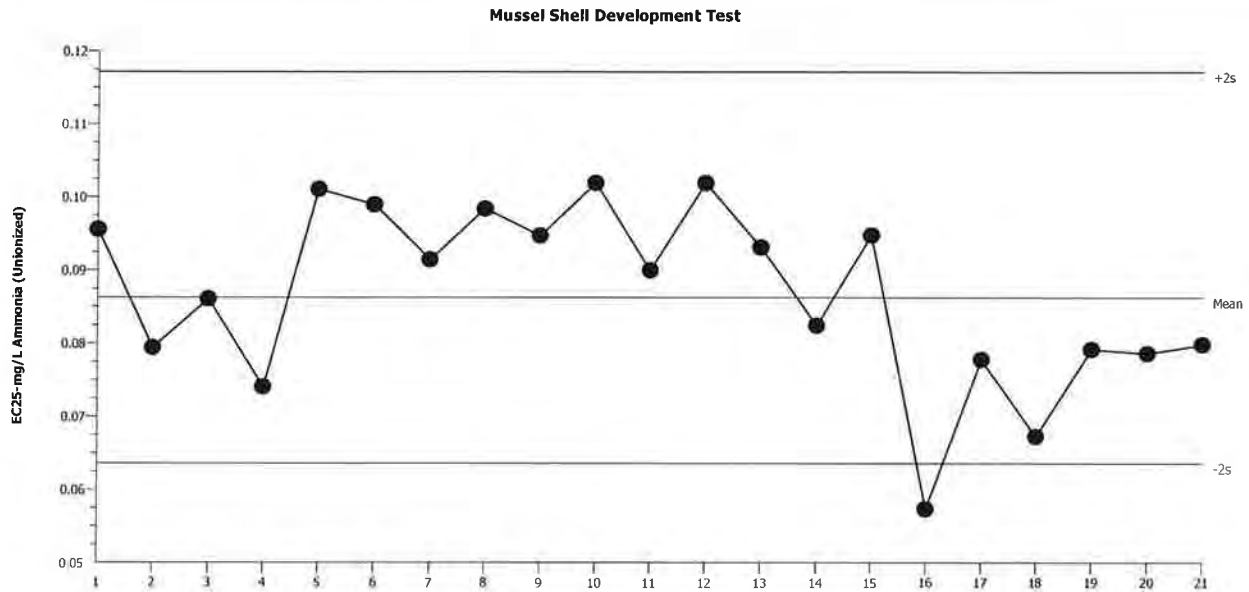
Organism: Mytilis galloprovincialis (Bay Mussel)

Material: Ammonia (Unionized)

Protocol: EPA/600/R-95/136 (1995)

Endpoint: Combined Proportion Normal

Source: Reference Toxicant-REF



Mean: 0.08629

Count: 20

-2s Action Limit: 0.06356

Sigma: n/a

CV: 16.50%

+2s Action Limit: 0.1172

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2014	Oct	16	13:16	0.09556	0.009269	0.6673			12-5781-6563	03-5671-4060
2			21	16:00	0.0794	-0.006896	-0.5448			11-3120-9592	07-9261-7156
3		Dec	3	16:10	0.08609	-0.000208	-0.01576			11-5957-9717	09-8676-3024
4	2015	Jan	14	17:00	0.07404	-0.01225	-1.001			16-7187-6187	09-5797-6437
5			19	13:00	0.1011	0.01477	1.034			10-7678-5704	15-2895-2989
6		Feb	3	11:01	0.09897	0.01267	0.8962			02-3264-0254	04-2015-0412
7			4	13:00	0.09144	0.005143	0.3786			16-7070-4383	01-6920-6839
8			6	18:00	0.09839	0.0121	0.858			12-0226-5766	20-4063-5760
9			7	15:00	0.09471	0.008418	0.6088			05-8900-5334	01-0312-4066
10		Mar	2	12:00	0.1019	0.01562	1.088			13-3957-4687	06-7935-4536
11			13	13:11	0.08994	0.003647	0.2708			10-1325-2256	11-2995-0388
12			25	12:07	0.1019	0.01562	1.088			07-2930-8292	02-2197-8026
13			27	13:00	0.09312	0.006822	0.4976			11-3853-2256	13-5054-4782
14		Apr	7	11:45	0.08241	-0.003879	-0.3008			12-2502-7105	10-2162-0221
15			8	11:09	0.09475	0.008457	0.6115			00-3845-6517	14-9860-8731
16		May	5	15:50	0.05732	-0.02898	-2.676		(-)	06-5240-5858	05-1777-9314
17	2016	Jun	20	0:03	0.07776	-0.008535	-0.6811			09-1849-9021	02-0742-5358
18		Aug	29	13:15	0.06724	-0.01906	-1.632			16-9120-9803	14-7955-7716
19			30	13:31	0.07917	-0.007122	-0.5633			02-4232-7593	19-6882-0866
20			31	12:01	0.07858	-0.007711	-0.6122			02-8216-1505	04-6017-0013
21		Sep	1	13:52	0.07979	-0.006499	-0.5121			18-3025-2961	13-8859-5437

CETIS Summary Report

Report Date: 26 Jan-17 14:38 (p 1 of 1)
 Test Code: EOH082616 | 12-0805-1911

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 12-9047-0004	Test Type: Survival	Analyst: Joe Freas
Start Date: 26 Aug-16 15:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 30 Aug-16 15:40	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 4d 1h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 05-4475-2467	Code: EOH082616	Client: Internal Lab
Sample Date: 26 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 15h	Station: REF TOX	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
05-7833-6956	Survival Rate	Dunnett Multiple Comparison Test	0.216	0.435	0.3065		10.8%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	mg/L	95% LCL	95% UCL	TU	✓
03-7828-2656	Survival Rate	Linear Interpolation (ICPIN)	EC5	0.2647	0.2452	0.3036		
			EC10	0.3133	0.2744	0.3912		
			EC15	0.362	0.3036	0.4788		
			EC20	0.4107	0.3328	0.6224		
			EC25	0.495	0.3406	0.975		
			EC40	0.8539	0.4938	1.168		
EC50	1.09	0.5296	1.308					

Survival Rate Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.216		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.435		4	0.7750	0.6227	0.9273	0.7000	0.9000	0.0479	0.0957	12.35%	22.50%
0.795		4	0.6250	0.3532	0.8968	0.4000	0.8000	0.0854	0.1708	27.33%	37.50%
1.561		4	0.3000	0.1701	0.4299	0.2000	0.4000	0.0408	0.0817	27.22%	70.00%
4.131		4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Survival Rate Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
0.216		1.0000	1.0000	1.0000	1.0000
0.435		0.8000	0.7000	0.7000	0.9000
0.795		0.4000	0.6000	0.8000	0.7000
1.561		0.4000	0.3000	0.3000	0.2000
4.131		0.0000	0.0000	0.0000	0.0000

Survival Rate Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	10/10	10/10	10/10	10/10
0.216		10/10	10/10	10/10	10/10
0.435		8/10	7/10	7/10	9/10
0.795		4/10	6/10	8/10	7/10
1.561		4/10	3/10	3/10	2/10
4.131		0/10	0/10	0/10	0/10

CETIS Analytical Report

Report Date: 26 Jan-17 14:38 (p 1 of 2)
 Test Code: EOH082616 | 12-0805-1911

Reference Toxicant 96-h Acute Survival Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID: 05-7833-6956	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2					
Analyzed: 26 Jan-17 14:38	Analysis: Parametric-Control vs Treatments	Official Results: Yes					
Batch ID: 12-9047-0004	Test Type: Survival	Analyst: Joe Freas					
Start Date: 26 Aug-16 15:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater					
Ending Date: 30 Aug-16 15:40	Species: Eohaustorius estuarius	Brine: Not Applicable					
Duration: 4d 1h	Source: Northwestern Aquatic Science, OR	Age:					
Sample ID: 05-4475-2467	Code: EOH082616	Client: Internal Lab					
Sample Date: 26 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX					
Receipt Date:	Source: Reference Toxicant						
Sample Age: 15h	Station: REF TOX						

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	0.216	0.435	0.3065		10.75%

Dunnett Multiple Comparison Test									
Control	vs	Conc-mg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		0.216	0	2.356	0.175	6	CDF	0.8000	Non-Significant Effect
		0.435*	4.401	2.356	0.175	6	CDF	9.2E-04	Significant Effect
		0.795*	6.65	2.356	0.175	6	CDF	1.5E-05	Significant Effect
		1.561*	11.23	2.356	0.175	6	CDF	8.1E-07	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.00027	0.500066	4	45.17	<1.0E-37	Significant Effect
Error	0.166046	0.0110698	15			
Total	2.16631		19			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Levene Equality of Variance Test	4.137	4.893	0.0187	Equal Variances	
Variances	Mod Levene Equality of Variance Test	3.586	4.893	0.0304	Equal Variances	
Distribution	Anderson-Darling A2 Normality Test	1.355	3.878	0.0011	Non-Normal Distribution	
Distribution	D'Agostino Kurtosis Test	1.507	2.576	0.1318	Normal Distribution	
Distribution	D'Agostino Skewness Test	0.4052	2.576	0.6853	Normal Distribution	
Distribution	D'Agostino-Pearson K2 Omnibus Test	2.435	9.21	0.2960	Normal Distribution	
Distribution	Kolmogorov-Smirnov D Test	0.25	0.2235	0.0020	Non-Normal Distribution	
Distribution	Shapiro-Wilk W Normality Test	0.8942	0.866	0.0321	Normal Distribution	

Survival Rate Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
0.216		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
0.435		4	0.7750	0.6227	0.9273	0.7500	0.7000	0.9000	0.0479	12.35%	22.50%
0.795		4	0.6250	0.3532	0.8968	0.6500	0.4000	0.8000	0.0854	27.33%	37.50%
1.561		4	0.3000	0.1701	0.4299	0.3000	0.2000	0.4000	0.0408	27.22%	70.00%
4.131		4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Angular (Corrected) Transformed Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
0.216		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
0.435		4	1.085	0.8897	1.28	1.049	0.9912	1.249	0.06125	11.29%	23.19%
0.795		4	0.9173	0.6318	1.203	0.9386	0.6847	1.107	0.08971	19.56%	35.04%
1.561		4	0.5769	0.4332	0.7206	0.5796	0.4636	0.6847	0.04515	15.65%	59.14%
4.131		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.00%	88.76%

CETIS Analytical Report

Report Date: 26 Jan-17 14:38 (p 2 of 2)

Test Code: EOH082616 | 12-0805-1911

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 05-7833-6956 Endpoint: Survival Rate
 Analyzed: 26 Jan-17 14:38 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.2
 Official Results: Yes

Survival Rate Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
0.216		1.0000	1.0000	1.0000	1.0000
0.435		0.8000	0.7000	0.7000	0.9000
0.795		0.4000	0.6000	0.8000	0.7000
1.561		0.4000	0.3000	0.3000	0.2000
4.131		0.0000	0.0000	0.0000	0.0000

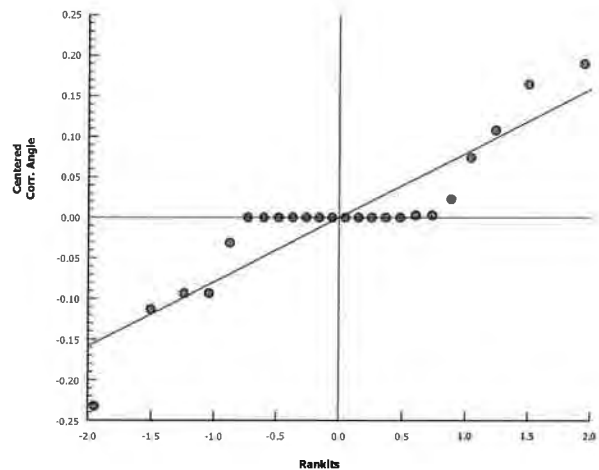
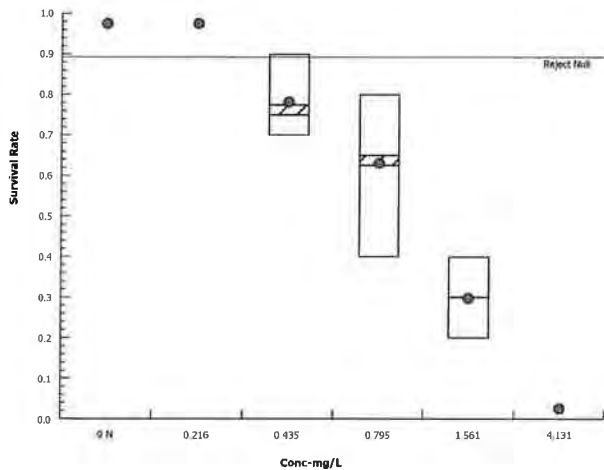
Angular (Corrected) Transformed Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.412	1.412	1.412	1.412
0.216		1.412	1.412	1.412	1.412
0.435		1.107	0.9912	0.9912	1.249
0.795		0.6847	0.8861	1.107	0.9912
1.561		0.6847	0.5796	0.5796	0.4636
4.131		0.1588	0.1588	0.1588	0.1588

Survival Rate Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	10/10	10/10	10/10	10/10
0.216		10/10	10/10	10/10	10/10
0.435		8/10	7/10	7/10	9/10
0.795		4/10	6/10	8/10	7/10
1.561		4/10	3/10	3/10	2/10
4.131		0/10	0/10	0/10	0/10

Graphics



CETIS Analytical Report

Report Date: 26 Jan-17 14:38 (p 2 of 2)

Test Code: EOH082616 | 12-0805-1911

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 03-7828-2656

Endpoint: Survival Rate

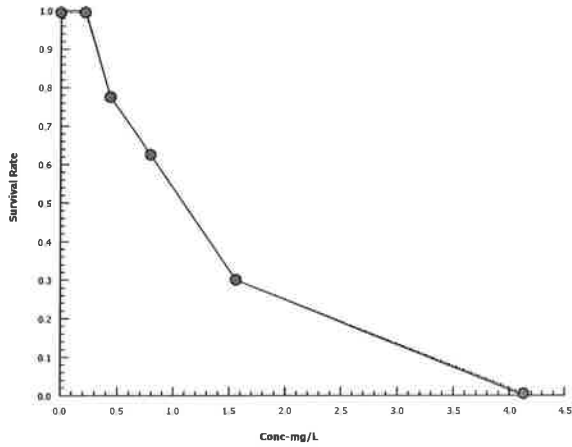
CETIS Version: CETISv1.9.2

Analyzed: 26 Jan-17 14:38

Analysis: Linear Interpolation (ICPIN)

Official Results: Yes

Graphics



CETIS Summary Report

Report Date: 26 Jan-17 14:46 (p 1 of 1)
Test Code: EOH081916 | 10-2042-5258

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 15-5088-3768	Test Type: Survival	Analyst: Joe Freas
Start Date: 19 Aug-16 14:40	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 22 Aug-16 14:55	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 72h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 00-3928-2648	Code: EOH081916	Client: Internal Lab
Sample Date: 19 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 15h	Station: REF TOX	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
15-1551-6239	Survival Rate	Dunnett Multiple Comparison Test	0.433	0.785	0.583		16.1%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	mg/L	95% LCL	95% UCL	TU	✓
19-8914-6087	Survival Rate	Linear Interpolation (ICPIN)	EC5	0.2883	0.242	0.5198		
			EC10	0.3607	0.2681	0.758		
			EC15	0.433	0.2941	1.116		
			EC20	0.609	0.258	1.176		
			EC25	0.785	0.3344	1.28		
			EC40	1.249	0.5064	1.745		
			EC50	1.559	1.028	2.253		

Survival Rate Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.216		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.433		4	0.8500	0.6446	1.0000	0.7000	1.0000	0.0646	0.1291	15.19%	15.00%
0.785		4	0.7500	0.4453	1.0000	0.6000	1.0000	0.0957	0.1915	25.53%	25.00%
1.559		4	0.5000	0.2750	0.7250	0.3000	0.6000	0.0707	0.1414	28.28%	50.00%
4.161		4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Survival Rate Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
0.216		1.0000	1.0000	1.0000	1.0000
0.433		1.0000	0.8000	0.7000	0.9000
0.785		1.0000	0.8000	0.6000	0.6000
1.559		0.6000	0.5000	0.3000	0.6000
4.161		0.0000	0.0000	0.0000	0.0000

Survival Rate Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	10/10	10/10	10/10	10/10
0.216		10/10	10/10	10/10	10/10
0.433		10/10	8/10	7/10	9/10
0.785		10/10	8/10	6/10	6/10
1.559		6/10	5/10	3/10	6/10
4.161		0/10	0/10	0/10	0/10

CETIS Analytical Report

Report Date: 26 Jan-17 14:46 (p 1 of 2)
 Test Code: EOH081916 | 10-2042-5258

Reference Toxicant 96-h Acute Survival Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID: 15-1551-6239	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2					
Analyzed: 26 Jan-17 14:46	Analysis: Parametric-Control vs Treatments	Official Results: Yes					
Batch ID: 15-5088-3768	Test Type: Survival	Analyst: Joe Freas					
Start Date: 19 Aug-16 14:40	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater					
Ending Date: 22 Aug-16 14:55	Species: Eohaustorius estuarius	Brine: Not Applicable					
Duration: 72h	Source: Northwestern Aquatic Science, OR	Age:					
Sample ID: 00-3928-2648	Code: EOH081916	Client: Internal Lab					
Sample Date: 19 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX					
Receipt Date:	Source: Reference Toxicant						
Sample Age: 15h	Station: REF TOX						

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	0.433	0.785	0.583		16.07%

Dunnett Multiple Comparison Test

Control	vs	Conc-mg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		0.216	0	2.356	0.254	6	CDF	0.8000	Non-Significant Effect
		0.433	2.064	2.356	0.254	6	CDF	0.0838	Non-Significant Effect
		0.785*	3.15	2.356	0.254	6	CDF	0.0110	Significant Effect
		1.559*	5.83	2.356	0.254	6	CDF	6.1E-05	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.10263	0.275657	4	11.89	1.5E-04	Significant Effect
Error	0.347763	0.0231842	15			
Total	1.45039		19			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	4.851	4.893	0.0103	Equal Variances
Variances	Mod Levene Equality of Variance Test	3.465	4.893	0.0340	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.223	3.878	0.0033	Non-Normal Distribution
Distribution	D'Agostino Kurtosis Test	1.213	2.576	0.2252	Normal Distribution
Distribution	D'Agostino Skewness Test	1.07	2.576	0.2844	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus Test	2.616	9.21	0.2703	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.25	0.2235	0.0020	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8868	0.866	0.0235	Normal Distribution

Survival Rate Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
0.216		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
0.433		4	0.8500	0.6446	1.0000	0.8500	0.7000	1.0000	0.0646	15.19%	15.00%
0.785		4	0.7500	0.4453	1.0000	0.7000	0.6000	1.0000	0.0957	25.53%	25.00%
1.559		4	0.5000	0.2750	0.7250	0.5500	0.3000	0.6000	0.0707	28.28%	50.00%
4.161		4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Angular (Corrected) Transformed Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
0.216		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
0.433		4	1.19	0.9005	1.479	1.178	0.9912	1.412	0.09091	15.28%	15.73%
0.785		4	1.073	0.6766	1.469	0.9966	0.8861	1.412	0.1245	23.21%	24.02%
1.559		4	0.7843	0.5544	1.014	0.8357	0.5796	0.8861	0.07223	18.42%	44.46%
4.161		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.00%	88.76%

CETIS Analytical Report

Report Date: 26 Jan-17 14:46 (p 2 of 2)

Test Code: EOH081916 | 10-2042-5258

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-1551-6239 Endpoint: Survival Rate
 Analyzed: 26 Jan-17 14:46 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.2
 Official Results: Yes

Survival Rate Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
0.216		1.0000	1.0000	1.0000	1.0000
0.433		1.0000	0.8000	0.7000	0.9000
0.785		1.0000	0.8000	0.6000	0.6000
1.559		0.6000	0.5000	0.3000	0.6000
4.161		0.0000	0.0000	0.0000	0.0000

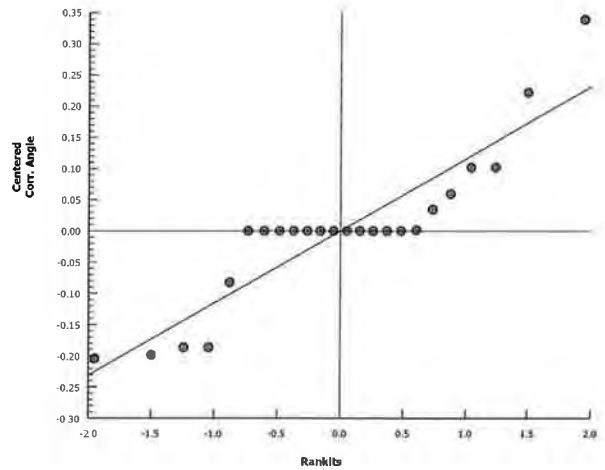
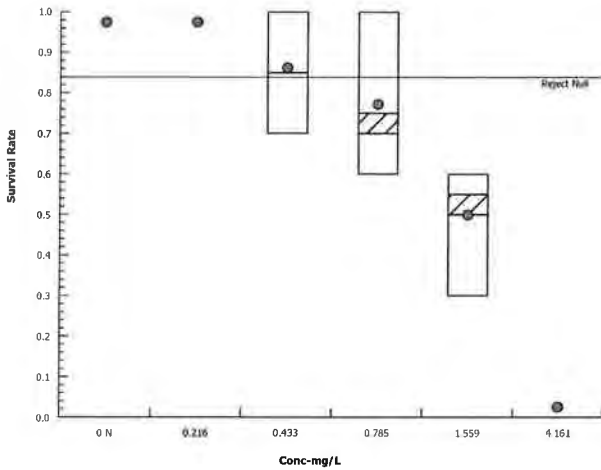
Angular (Corrected) Transformed Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.412	1.412	1.412	1.412
0.216		1.412	1.412	1.412	1.412
0.433		1.412	1.107	0.9912	1.249
0.785		1.412	1.107	0.8861	0.8861
1.559		0.8861	0.7854	0.5796	0.8861
4.161		0.1588	0.1588	0.1588	0.1588

Survival Rate Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	10/10	10/10	10/10	10/10
0.216		10/10	10/10	10/10	10/10
0.433		10/10	8/10	7/10	9/10
0.785		10/10	8/10	6/10	6/10
1.559		6/10	5/10	3/10	6/10
4.161		0/10	0/10	0/10	0/10

Graphics



CETIS Analytical Report

Report Date: 26 Jan-17 14:46 (p 1 of 2)
 Test Code: EOH081916 | 10-2042-5258

Reference Toxicant 96-h Acute Survival Test		Aquatic Bioassay & Consulting Labs, Inc.	
Analysis ID: 19-8914-6087	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2	
Analyzed: 26 Jan-17 14:46	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes	
Batch ID: 15-5088-3768	Test Type: Survival	Analyst: Joe Freas	
Start Date: 19 Aug-16 14:40	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater	
Ending Date: 22 Aug-16 14:55	Species: Eohaustorius estuarius	Brine: Not Applicable	
Duration: 72h	Source: Northwestern Aquatic Science, OR	Age:	
Sample ID: 00-3928-2648	Code: EOH081916	Client: Internal Lab	
Sample Date: 19 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX	
Receipt Date:	Source: Reference Toxicant		
Sample Age: 15h	Station: REF TOX		

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates			
Level	mg/L	95% LCL	95% UCL
EC5	0.2883	0.242	0.5198
EC10	0.3607	0.2681	0.758
EC15	0.433	0.2941	1.116
EC20	0.609	0.258	1.176
EC25	0.785	0.3344	1.28
EC40	1.249	0.5064	1.745
EC50	1.559	1.028	2.253

Survival Rate Summary			Calculated Variate(A/B)								
Conc-mg/L	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	N	4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
0.216		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
0.433		4	0.8500	0.7000	1.0000	0.0646	0.1291	15.19%	15.0%	34	40
0.785		4	0.7500	0.6000	1.0000	0.0957	0.1915	25.53%	25.0%	30	40
1.559		4	0.5000	0.3000	0.6000	0.0707	0.1414	28.28%	50.0%	20	40
4.161		4	0.0000	0.0000	0.0000	0.0000	0.0000		100.0%	0	40

Survival Rate Detail					
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
0.216		1.0000	1.0000	1.0000	1.0000
0.433		1.0000	0.8000	0.7000	0.9000
0.785		1.0000	0.8000	0.6000	0.6000
1.559		0.6000	0.5000	0.3000	0.6000
4.161		0.0000	0.0000	0.0000	0.0000

Survival Rate Binomials					
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	10/10	10/10	10/10	10/10
0.216		10/10	10/10	10/10	10/10
0.433		10/10	8/10	7/10	9/10
0.785		10/10	8/10	6/10	6/10
1.559		6/10	5/10	3/10	6/10
4.161		0/10	0/10	0/10	0/10

CETIS Analytical Report

Report Date: 26 Jan-17 14:46 (p 2 of 2)
Test Code: EOH081916 | 10-2042-5258

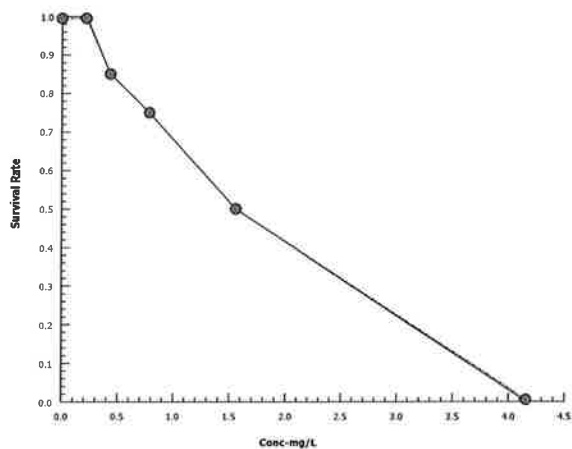
Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-8914-6087 Endpoint: Survival Rate
Analyzed: 26 Jan-17 14:46 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 26 Jan-17 14:46 (p 1 of 2)
 Test Code: EOH081916 | 10-2042-5258

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 15-5088-3768	Test Type: Survival	Analyst: Joe Freas
Start Date: 19 Aug-16 14:40	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 22 Aug-16 14:55	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 72h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 00-3928-2648	Code: EOH081916	Client: Internal Lab
Sample Date: 19 Aug-16	Material: Ammonia (Unionized)	Project: REF TOX
Receipt Date:	Source: Reference Toxicant	
Sample Age: 15h	Station: REF TOX	

Dissolved Oxygen-mg/L

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.75	6.115	7.385	6.7	6.8	0.04999	0.07069	1.05%	0
0.216		2	6.75	4.844	8.656	6.6	6.9	0.15	0.2121	3.14%	0
0.433		2	6.75	6.115	7.385	6.7	6.8	0.04999	0.07069	1.05%	0
0.785		2	6.7	5.429	7.971	6.6	6.8	0.09999	0.1414	2.11%	0
1.559		2	6.8	5.529	8.071	6.7	6.9	0.09999	0.1414	2.08%	0
4.161		2	6.75	6.115	7.385	6.7	6.8	0.04999	0.07069	1.05%	0
Overall		12	6.75	6.686	6.814	6.6	6.9	0.02887	0.1	1.48%	0 (0%)

pH-Units

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.216		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.433		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.785		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
1.559		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
4.161		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		12	7.9	7.9	7.9	7.9	7.9	0	0	0.00%	0 (0%)

Salinity-ppt

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
0.216		2	20	20	20	20	20	0	0	0.0%	0
0.433		2	20	20	20	20	20	0	0	0.0%	0
0.785		2	20	20	20	20	20	0	0	0.0%	0
1.559		2	20	20	20	20	20	0	0	0.0%	0
4.161		2	20	20	20	20	20	0	0	0.0%	0
Overall		12	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.216		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.433		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.785		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
1.559		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
4.161		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		12	14.75	14.72	14.78	14.7	14.8	0.01508	0.05222	0.35%	0 (0%)

CETIS Measurement Report

Report Date: 26 Jan-17 14:46 (p 2 of 2)
Test Code: EOH081916 | 10-2042-5258

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-mg/L	Code	1	2
0	N	6.8	6.7
0.216		6.6	6.9
0.433		6.7	6.8
0.785		6.8	6.6
1.559		6.9	6.7
4.161		6.7	6.8

pH-Units

Conc-mg/L	Code	1	2
0	N	7.9	7.9
0.216		7.9	7.9
0.433		7.9	7.9
0.785		7.9	7.9
1.559		7.9	7.9
4.161		7.9	7.9

Salinity-ppt

Conc-mg/L	Code	1	2
0	N	20	20
0.216		20	20
0.433		20	20
0.785		20	20
1.559		20	20
4.161		20	20

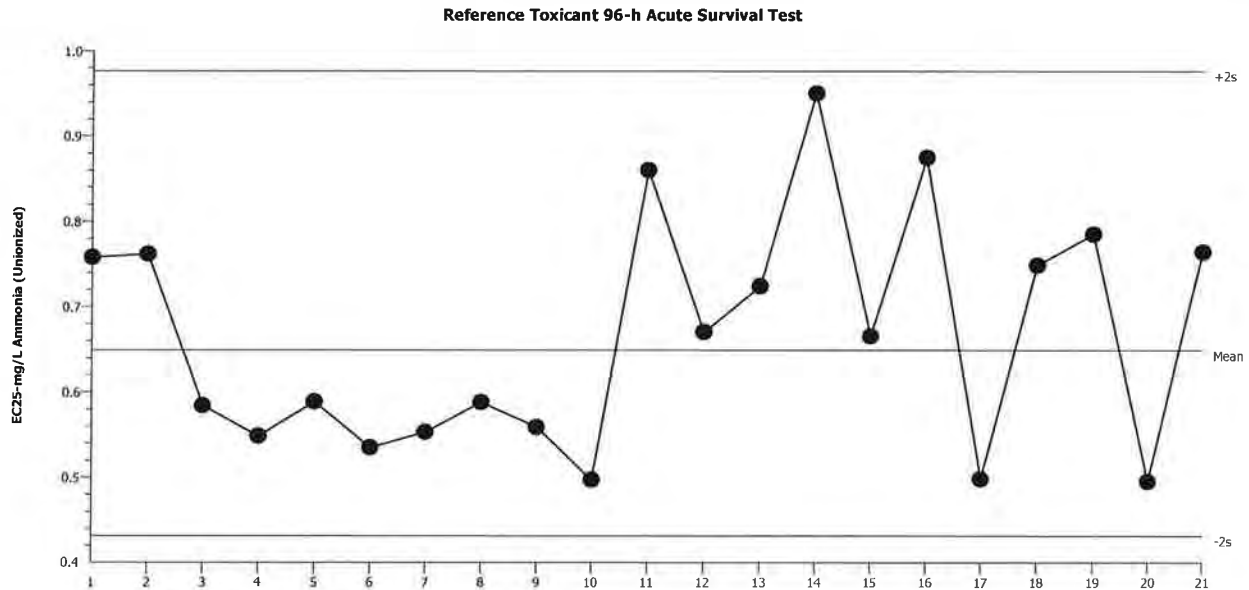
Temperature-°C

Conc-mg/L	Code	1	2
0	N	14.8	14.7
0.216		14.8	14.7
0.433		14.8	14.7
0.785		14.8	14.7
1.559		14.8	14.7
4.161		14.8	14.7

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Test Type: Survival Organism: Eohaustorius estuarius (Amphipod) Material: Ammonia (Unionized)
 Protocol: EPA/600/R-94/025 (1994) Endpoint: Survival Rate Source: Reference Toxicant-REF



Mean: 0.649 Count: 20 -2s Action Limit: 0.4313
 Sigma: n/a CV: 22.70% +2s Action Limit: 0.9766

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2013	Oct	1	0:00	0.7579	0.1089	0.7592			16-3237-9795	18-5045-2015
2			25	0:00	0.7617	0.1127	0.784			11-0703-4586	11-1368-4299
3		Dec	2	12:05	0.584	-0.06496	-0.5162			20-0403-8831	16-1241-2320
4	2014	Mar	3	15:00	0.5483	-0.1007	-0.8253			09-4566-0644	02-5347-5723
5			29	12:05	0.5885	-0.06051	-0.4791			12-6769-6316	19-3437-9784
6		May	26	12:00	0.5349	-0.1141	-0.9468			18-3389-0225	21-0956-2019
7		Jun	27	15:10	0.553	-0.09606	-0.784			14-4723-2072	13-8013-1186
8		Aug	4	14:30	0.5881	-0.06091	-0.4824			05-5751-2262	04-4319-1587
9		Dec	19	14:20	0.5588	-0.09021	-0.7326			15-5240-9390	02-6462-0171
10	2015	Jan	23	13:15	0.4969	-0.1521	-1.307			08-5097-8055	21-3310-7104
11		Mar	2	12:00	0.8601	0.2111	1.378			15-0539-9864	01-6817-9780
12		Apr	3	13:00	0.6702	0.0212	0.1574			08-1167-0633	12-3933-9277
13		Jul	3	9:59	0.7242	0.07516	0.5364			11-3802-2759	04-6629-3041
14		Aug	4	12:01	0.9503	0.3013	1.867			00-8259-5742	03-1846-1391
15		Sep	18	0:00	0.6657	0.01667	0.1241			09-1456-1591	15-5936-2326
16	2016	Apr	8	8:20	0.8749	0.2259	1.462			19-5616-1906	00-4116-5566
17		Jun	17	0:00	0.4981	-0.1509	-1.296			06-7252-3890	10-1091-7700
18		Aug	16	17:06	0.7489	0.09987	0.7006			12-7085-3464	08-3302-7432
19			19	14:40	0.785	0.136	0.9311			10-2042-5258	19-8914-6087
20			26	15:01	0.495	-0.154	-1.326			12-0805-1911	03-7828-2656
21		Nov	21	12:00	0.7644	0.1153	0.8007			12-2687-2350	04-0042-5960

Toxicity Test Data Sheet

DATE		CLIENT	CONC (mg/L)	TEMP (Deg. C)		pH		D.O.		Salinity		Ammonia	
Initial	Final			TAN	NH ₃								
8/31/16	9/2/16	STD TOX	CON	14.7	14.9	7.9	7.9	6.8	6.1	34	34	0	0
		Mytilus	2.0	14.7	14.9	7.9	7.9	6.6	6.1	34	34	1.59	0.029
			4.0	14.7	14.9	7.9	7.9	6.7	6.5	34	34	2.89	0.051
			6.0	14.7	14.9	7.9	7.9	6.9	6.2	34	34	4.33	0.076
			8.0	14.7	14.9	7.9	7.9	6.8	6.1	34	34	5.59	0.097
			10	14.7	14.9	7.9	7.9	6.6	6.3	34	34	6.79	0.119
8/31	9/2	CON	100	14.7	14.9	8.0	8.0	6.9	6.6	34	34	0	0
8/31	9/2												
8/31	9/2	339	100	14.7	14.9	7.9	7.7	6.5	6.2	34	34	0	0
8/31	9/2	340	100	14.7	14.9	7.9	7.6	6.9	7.0	34	34	0	0
8/31	9/2	341	100	14.7	14.9	8.3	8.2	7.1	7.0	34	34	0	0
8/31	9/2	342	100	14.7	14.9	8.1	8.0	6.6	6.7	34	34	0	0
8/31	9/2	343	100	14.7	14.9	7.9	7.7	6.1	6.3	34	34	0	0

MYTILUS TEST DATA SHEET

Test Start Date: 8/31/16
 Test End Date: 9/2/16
 Microscope: 1
 Mytilus Source: Ventura Disc
 Analyst: J

Company: STD TOX
 Sample Rec'd: wt
 Lab No.: NA
 Sample I.D.: MYT083116
 Dilution Water: C-24 pt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE
1	CON	216	211	
2	CON		208	
3	CON		210	
4	CON		209	
5	CON		211	
6	2.0		211	
7	2.0		209	
8	2.0		209	
9	2.0		212	
10	2.0		215	
11	4.0		208	
12	4.0		209	
13	4.0		211	
14	4.0		207	
15	4.0		206	
16	6.0		188	
17	6.0		171	
18	6.0		176	
19	6.0		151	
20	6.0		149	
21	8.0		108	
22	8.0		77	
23	8.0		91	
24	8.0		92	
25	8.0		96	
26	10.0		28	
27	10.0		13	
28	10.0		26	
29	10.0		29	
30	10.0		31	

$t_0 =$
 1. 211
 2. 214
 3. 216
 4. 218
 5. 217

 1081
 ÷ 5

 216.2
 $\bar{x} = 216$

MYTILUS TEST DATA SHEET

Test Start Date: 8/31/16
 Test End Date: 9/2/16
 Microscope: 1
 Mytilus Source: Vulturna Ore
 Analyst: r

Company: Anchor QEA
 Sample Rec'd: _____
 Lab No.: _____
 Sample I.D.: _____
 Dilution Water: con 31 ppt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE	
1	con	216	211		
2	con		215		
3	con		208		
4	con		216		
5	con		201		
6	339			209	
7	339			211	
8	339			213	
9	339			210	
10	339			208	
11	340			211	
12	340			206	
13	340			205	
14	340			204	
15	340			206	
16	341			213	
17	341			211	
18	341			212	
19	341			208	
20	341			206	
21	342			213	
22	342			202	
23	342			208	
24	342			211	
25	342			206	
26	343			211	
27	343			206	
28	343			209	
29	343			205	
30	343			206	

Σ = 216

Toxicity Test Data Sheet

DATE		CLIENT	CONC (mg/L)	TEMP (Deg. C)		pH		D.O.		Salinity		Ammonia	
Initial	Final			TAN	NH ₃								
8/30/16	9/1/16	STD TOX Mytilus	CON	14.8	14.7	7.9	7.9	6.8	6.2	34	34	0	0
			2.0	14.8	14.7	7.9	7.9	6.8	6.1	34	34	1.59	0.029
			4.0	14.8	14.7	7.9	7.9	6.8	6.0	34	34	2.89	0.051
			6.0	14.8	14.7	7.9	7.9	6.5	6.3	34	34	4.36	0.079
			8.0	14.8	14.7	7.9	7.9	6.7	6.2	34	34	5.59	0.091
			10	14.8	14.7	7.9	7.9	6.9	6.1	34	34	6.71	0.119
8/30	9/1	CON	100	14.8	14.7	7.9	7.9	6.8	6.2	34	34	0	0
8/30	9/1	332	100	14.8	14.7	7.9	7.9	6.6	6.5	34	34	0	0
8/30	9/1	333	100	14.8	14.7	8.1	8.0	6.9	7.1	34	34	0	0
8/30	9/1	334	100	14.8	14.7	8.3	8.1	7.0	7.1	34	34	0	0
8/30	9/1	335	100	14.8	14.7	8.0	7.7	6.6	6.8	34	34	0	0
8/30	9/1	336	100	14.8	14.7	7.7	7.8	6.9	6.9	34	34	0	0
8/30	9/1	337	100	14.8	14.7	8.3	7.6	7.3	7.1	34	34	0	0
8/30	9/1	338	100	14.8	14.7	7.6	7.7	6.8	6.2	34	34	0	0

MYTILUS TEST DATA SHEET

Test Start Date: 8/30/16
 Test End Date: 9/1/16
 Microscope: 1
 Mytilus Source: Ventura Orc
 Analyst: J

Company: STD TOX
 Sample Rec'd: 8/30
 Lab No.: NA
 Sample I.D.: M4+083016
 Dilution Water: Con 8ppt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE
1	CON	219	210	
2	CON		207	
3	CON		216	
4	CON		211	
5	CON		214	
6	2.0		206	
7	2.0		216	
8	2.0		215	
9	2.0		211	
10	2.0		209	
11	4.0		203	
12	4.0		210	
13	4.0		201	
14	4.0		206	
15	4.0		205	
16	6.0		171	
17	6.0		166	
18	6.0		151	
19	6.0		162	
20	6.0		149	
21	8.0		108	
22	8.0		79	
23	8.0		86	
24	8.0		77	
25	8.0		91	
26	10.0		26	
27	10.0		21	
28	10.0		23	
29	10.0		18	
30	10.0		19	

$\bar{x} =$
 1.226
 2.219
 3.211
 4.219
 5.220

 1095
 -5

 219
 $\bar{x} = 219$

MYTILUS TEST DATA SHEET

Test Start Date: 8/30/16
 Test End Date: 9/1/16
 Microscope: 1
 Mytilus Source: Verban Die
 Analyst: J

Company: Anchor QEA
 Sample Rec'd: _____
 Lab No.: _____
 Sample I.D.: _____
 Dilution Water: con 2A ppt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE	
1	con	219	211		
2	con		208		
3	con		216		
4	con		211		
5	con		206		
6	332			211	
7	332			215	
8	332			216	
9	332			211	
10	332			205	
11	333			209	
12	333			208	
13	333			211	
14	333			207	
15	333			212	
16	334			211	
17	334			216	
18	334			211	
19	334			205	
20	334			209	
21	335			188	
22	335			179	
23	335			177	
24	335			169	
25	335			171	
26	336			142	
27	336			144	
28	336			151	
29	336			139	
30	336		+	136	

x̄=219

MYTILUS TEST DATA SHEET

Test Start Date: 8/30/16
 Test End Date: 9/1/16
 Microscope: 1
 Mytilus Source: Urbana DC
 Analyst: [Signature]

Company: Anchor QEA
 Sample Rec'd: _____
 Lab No.: _____
 Sample I.D.: _____
 Dilution Water: con 31 ml

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE
1	337	219	215	
2	337		211	
3	337		206	
4	337		204	
5	337		205	
6	338		211	
7	338		208	
8	338		211	
9	338		206	
10	338		211	
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Toxicity Test Data Sheet

DATE		CLIENT	CONC (mg/L)	TEMP (Deg. C)		pH		D.O.		Salinity		Ammonia	
Initial	Final			TAN	NH ₃								
8/29/16	8/31/16	STD TOX	CON	14.6	14.9	7.9	7.9	6.8	6.0	34	34	0	0
		Mytilus	2.0	14.6	14.9	7.9	7.9	6.7	6.1	34	34	1.61	0.028
			4.0	14.6	14.9	7.9	7.9	6.9	6.3	34	34	2.87	0.051
			6.0	14.6	14.9	7.9	7.9	6.8	6.2	34	34	4.31	0.075
			8.0	14.6	14.9	7.9	7.9	6.5	6.1	34	34	5.59	0.091
			10	14.6	14.9	7.9	7.9	6.7	6.5	34	34	6.79	0.118
			(%)	14.6	14.9	7.9	7.9	6.8	6.2	34	34		
8/29/16	8/31/16	CON	100	14.6	14.9	7.9	7.9	6.9	6.3	34	34	0	0
8/29	8/31	326	100	14.6	14.9	7.3	8.0	6.9	7.1	34	34	0	0
8/29	8/31	327	100	14.6	14.9	7.9	7.9	6.6	6.4	34	34	0	0
8/29	8/31	328	100	14.6	14.9	7.8	7.7	7.1	7.3	34	34	0	0
8/29	8/31	329	100	14.6	14.9	7.8	7.6	7.1	7.0	34	34	0	0
8/29	8/31	330	100	14.6	14.9	8.1	7.9	7.1	7.3	34	34	0	0
8/29	8/31	331	100	14.6	14.9	8.0	7.8	7.1	6.8	34	34	0	0

MYTILUS TEST DATA SHEET

Test Start Date: 8/29/16
 Test End Date: 8/31/16
 Microscope: 1
 Mytilus Source: Vesta P.u
 Analyst: J

Company: STD TOX
 Sample Rec'd: 8/29
 Lab No.: no
 Sample I.D.: MYT 082916
 Dilution Water: Con 34 pt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE
1	CON	217	211	
2	CON		216	
3	CON		208	
4	CON		211	
5	CON		209	
6	2.0		210	
7	2.0		206	
8	2.0		209	
9	2.0		216	
10	2.0		211	
11	4.0		201	
12	4.0		200	
13	4.0		198	
14	4.0		187	
15	4.0		171	
16	6.0		152	
17	6.0		144	
18	6.0		131	
19	6.0		139	
20	6.0		146	
21	8.0		108	
22	8.0		77	
23	8.0		91	
24	8.0		79	
25	8.0		86	
26	10.0		21	
27	10.0		19	
28	10.0		26	
29	10.0		22	
30	10.0		19	

F =
 1. 211
 2. 216
 3. 219
 4. 221
 5. 218

 217

MYTILUS TEST DATA SHEET

Test Start Date: 8/29/16
 Test End Date: 8/31/16
 Microscope: _____
 Mytilus Source: Wahon Div
 Analyst: J

Company: Anchor QEA
 Sample Rec'd: _____
 Lab No.: _____
 Sample I.D.: _____
 Dilution Water: Con 3A ppt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE	
1	con	217	211		
2	con		216		
3	con		210		
4	con		209		
5	con		211		
6	226			215	
7	326			211	
8	326			209	
9	326			210	
10	326			211	
11	327			208	
12	327			213	
13	327			211	
14	327			215	
15	327			211	
16	328			207	
17	328			209	
18	328			211	
19	328			206	
20	328			216	
21	329			198	
22	329			186	
23	329			177	
24	329			179	
25	329			171	
26	330			211	
27	330			108	
28	330			211	
29	330			207	
30	330			209	

$\bar{x} = 217$

MYTILUS TEST DATA SHEET

Test Start Date: 8/20/16
 Test End Date: 8/31/16
 Microscope: 1
 Mytilus Source: Upper Ore
 Analyst: J

Company: Anchor QEA
 Sample Rec'd: _____
 Lab No.: _____
 Sample I.D.: _____
 Dilution Water: C-34M

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE
1	331	217	211	
2	331		210	
3	331		216	
4	331		211	
5	331		206	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Toxicity Test Data Sheet

DATE		CLIENT	CONC (mg/L)	TEMP (Deg. C)		pH		D.O.		Salinity		Ammonia	
Initial	Final											TAN	NH ₃
9/1/14	9/3/14	STD TOX Mytilus	CON	14.9	14.8	7.9	7.9	6.6	6.3	34	34	0	0
			2.0	14.9	14.8	7.9	7.9	6.5	6.1	34	34	1.60	0.029
			4.0	14.9	14.8	7.9	7.9	6.9	6.3	34	34	2.91	0.055
			6.0	14.9	14.8	7.9	7.9	6.6	6.2	34	34	4.31	0.079
			8.0	14.9	14.8	7.9	7.9	6.7	6.1	34	34	5.59	0.099
			10	14.9	14.8	7.9	7.9	6.9	6.0	34	34	6.83	0.120
9/1	9/3	CON	1.00	14.9	14.8	8.3	8.0	6.5	6.1	34	34	0	0
9/1	9/3	344	100	14.9	14.8	7.7	7.4	6.9	6.2	34	34	0	0
9/1	9/3	345	100	14.9	14.8	7.9	7.6	6.1	6.3	34	34	0	0
9/1	9/3	346	100	14.9	14.8	7.9	7.9	6.8	7.0	34	34	0	0
9/1	9/3	347	100	14.9	14.8	7.9	7.9	7.2	7.1	34	34	0	0

MYTILUS TEST DATA SHEET

Test Start Date: 9/1/16
 Test End Date: 9/5/16
 Microscope: 1
 Mytilus Source: Verbu D:4
 Analyst: [Signature]

Company: STD TOX
 Sample Rec'd: 9/1
 Lab No.: NA
 Sample I.D.: MYT090116
 Dilution Water: CON 3Apt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE
1	CON	226	219	
2	CON		211	
3	CON		221	
4	CON		219	
5	CON		216	
6	2.0		221	
7	2.0		216	
8	2.0		219	
9	2.0		220	
10	2.0		218	
11	4.0		211	
12	4.0		206	
13	4.0		209	
14	4.0		210	
15	4.0		206	
16	6.0		161	
17	6.0		173	
18	6.0		154	
19	6.0		171	
20	6.0		169	
21	8.0		100	
22	8.0		77	
23	8.0		91	
24	8.0		103	
25	8.0		96	
26	10.0		21	
27	10.0		19	
28	10.0		18	
29	10.0		16	
30	10.0		20	

$\bar{x} =$
 1. 218
 2. 226
 3. 229
 4. 231
 5. 226

 1130
 : 5

 226
 $\bar{x} = 226$

MYTILUS TEST DATA SHEET

Test Start Date: 9/1/16
 Test End Date: 9/3/16
 Microscope: 1
 Mytilus Source: Ventura Dred
 Analyst: [Signature]

Company: Anchor QEA
 Sample Rec'd: _____
 Lab No.: _____
 Sample I.D.: _____
 Dilution Water: Con 34ppt

NOEC: _____

Test Cont. No.	NOMINAL CONCENTRATION	INITIAL DENSITY	NUMBER NORMAL/ALIVE	PROPORTION NORMAL/ALIVE	
1	Con	226	219		
2	Con		220		
3	Con		217		
4	Con		211		
5	Con		208		
6	344			211	
7	344			204	
8	344			206	
9	344			210	
10	344			216	
11	345			201	
12	345			186	
13	345			191	
14	345			177	
15	345			190	
16	346			219	
17	346			214	
18	346			211	
19	346			208	
20	346			211	
21	347			219	
22	347			216	
23	347			211	
24	347			216	
25	347			215	
26					
27					
28					
29					
30					

Σ=226

Test Start Date: 8/26/16

Amphipod Species: E. eschscholtzi

Test End Date: 9/5/16

Collection/Arrival Date: 8/18-8/19

Reference Toxicant: Wt₃

Amphipod Source: N.W. Aquatic Sciences

Sample Source: Anchor

Laboratory: CA ABC

Experiment #: 10d scuba

Test Cont. #	Station Code	Total Number Alive	Number at Start	Percent Survival	Notes (Possible Predators)
Home	1	20	20		
Home	2	20	20		
Home	3	20	20		
Home	4	19	20		
Home	5	16	20		
339	1	17	20		
339	2	19	20		
339	3	18	20		
339	4	17	20		
339	5	17	20		
340	1	19	20		
340	2	18	20		
340	3	16	20		
340	4	17	20		
340	5	17	20		
341	1	20	20		
341	2	20	20		
341	3	18	20		
341	4	19	20		
341	5	18	20		
342	1	20	20		
342	2	18	20		
342	3	17	20		
342	4	19	20		
342	5	19	20		

Test Start Date: 8/24/16

Amphipod Species: E. ectharius

Test End Date: 9/5/16

Collection/Arrival Date: 8/17 - 8/19

Reference Toxicant: NH₃

Amphipod Source: N.W. Aquatics Supply

Sample Source: Anchor

Laboratory: CIA ADC

Experiment #: 10 d sed to

Test Cont. #	Station Code	Total Number Alive	Number at Start	Percent Survival	Notes (Possible Predators)
343	1	20	20		
343	2	20	20		
343	3	18	20		
343	4	20	20		
343	5	20	20		
344	1	19	20		
344	2	19	20		
344	3	18	20		
344	4	17	20		
344	5	19	20		
345	1	16	20		
345	2	15	20		
345	3	16	20		
345	4	16	20		
345	5	15	20		
346	1	20	20		
346	2	20	20		
346	3	20	20		
346	4	19	20		
346	5	19	20		
347	1	20	20		
347	2	18	20		
347	3	19	20		
347	4	20	20		
347	5	19	20		

AMPHIPOD CHEMICAL ANALYSIS SHEET

Project: Aadler
 Date: 8/26/16

Experiment: 10d seed box
 Species: E. ectaticus

Ammonia

Test Container	pH		D.O. mg/L		Salinity ppt.		Temp. °C		Ammonia mg/L
	Day 0	Day 10	Day 0	Day 10	Day 0	Day 10	Day 0	Day 10	Day 0
HOME	7.9	7.9	10.1	9.8	20	20	14.8	14.8	BDL
339	7.8	7.7	10.0	10.0	20	20	14.8	14.8	BDL
340	8.2	7.8	10.3	10.1	20	20	14.8	14.8	BDL
341	7.7	7.8	10.1	9.9	20	20	14.8	14.8	BDL
342	7.7	7.6	10.2	10.3	20	20	14.8	14.8	BDL
343	7.9	7.5	10.1	10.1	20	20	14.8	14.8	BDL
344	7.8	7.8	10.3	10.1	20	20	14.8	14.8	BDL
345	7.9	7.8	10.5	10.3	20	20	14.8	14.8	BDL
346	7.9	7.7	10.1	10.2	20	20	14.8	14.8	BDL
347	8.3	8.1	10.0	10.1	20	20	14.8	14.8	BDL

Initial: [Signature]

AMPHIPOD BIOASSAY STANDARD REFERENCE TOXICANT TEST

COMPANY: Aquatic Bioassay
 START: 8/26/14

I.D.: Ammonium Chloride
 END: 8/30/14

CHEMICAL ANALYSIS

CONC.	8/26					8/30				
	INITIAL					96 HRS.				
	D.O.	TEMP	pH	SAL	Ammonia	D.O.	TEMP	pH	SAL	Ammonia
CON	6.8	14.7	7.9	20	0	7.0	14.9	7.9	20	0
15.6 mg/L	7.1	14.7	7.9	20	12.6	6.8	14.9	7.9	20	0.216
31.2 mg/L	6.9	14.7	7.9	20	24.5	6.9	14.9	7.9	20	0.431
62.5 mg/L	6.7	14.7	7.9	20	44.9	7.0	14.9	7.9	20	0.795
125 mg/L	6.6	14.7	7.9	20	88.5	6.8	14.9	7.9	20	1.561
250 mg/L	6.9	14.7	7.9	20	146.1	6.9	14.9	7.9	20	4.131

BIOLOGICAL MEASUREMENTS

CONC. (mg/L)	0 HRS.	96 HRS.	MEAN SURVIVAL
CONTROL	10	10	
CONTROL	10	10	
CONTROL	10	10	
CONTROL	10	10	
15.6	10	10	
15.6	10	10	
15.6	10	10	
15.6	10	10	
31.2	10	8	
31.2	10	7	
31.2	10	7	
31.2	10	9	
62.5	10	7	
62.5	10	6	
62.5	10	8	
62.5	10	7	
125	10	4	
125	10	3	
125	10	3	
125	10	2	
250	10	0	
250	10	0	
250	10	0	
250	10	0	

DATE: 8/30/14

QA/QC CHECKLIST FOR SEDIMENT TOXICITY
Eohaustorius estuarius 10 Day Survival

Project: Sed Tox Anchor
 QA Batch: NH3
 Test Date: 8/26/16
 Reviewed By: [Signature]

<u>Sample Storage</u>	<u>Yes</u>	<u>No (Explain/Sample #)</u>
4°C in Dark	<u>X</u>	_____
≤ 14 Days	<u>X</u>	_____

<u>Test Conditions</u>	<u>Yes</u>	<u>No (Explain/Sample #)</u>
5 Replicates per Station	<u>X</u>	_____
20 Amphipods per Replicate	<u>X</u>	_____
Water Quality Measurement at Start & End	<u>X</u>	_____
Daily Checks of Beakers	<u>X</u>	_____
Organism Acclimation >96hrs & <2 Weeks	<u>X</u>	_____
Organism Mortality During Acclimation (Must be below 15%)	# <u>21</u>	_____

<u>Test Acceptability</u>	<u>Yes</u>	<u>No (Explain/Sample #)</u>
Control Mean Survival ≥90%	<u>X</u>	_____
Control Survival Each Replicate ≥80%	<u>X</u>	_____
Reference Toxicant Test within Limits	<u>X</u>	_____
Temperature 14-16°C	<u>X</u>	_____
Salinity 17-23ppt.	<u>X</u>	_____
Unionized Ammonia <0.8mg/L	<u>X</u>	_____
Dissolved Oxygen >5.0mg/L	<u>X</u>	_____

<u>Data Validation</u>	<u>Yes</u>	<u>No (Explain/Sample #)</u>
Test Data Entry	<u>X</u>	_____
Water Quality Data Entry	<u>X</u>	_____
Statistical Verification	<u>X</u>	_____
Reference Toxicant Data Entry	<u>X</u>	_____

Test Start Date: 8/19/16

Amphipod Species: E. astarius

Test End Date: 8/29/16

Collection/Arrival Date: 8/9 - 8/11

Reference Toxicant: Mt₃

Amphipod Source: N.V. Aquatic Science

Sample Source: Anders DEA

Laboratory: CA ABC

Experiment #: 10d cal box

Test Cont. #	Station Code	Total Number Alive	Number at Start	Percent Survival	Notes (Possible Predators)
1home	1	18	20		
1home	2	20	20		
1home	3	20	20		
1home	4	20	20		
1home	5	19	20		
326	1	20	20		
326	2	20	20		
326	3	18	20		
326	4	20	20		
326	5	20	20		
327	1	19	20		
327	2	20	20		
327	3	20	20		
327	4	19	20		
327	5	18	20		
328	1	20	20		
328	2	20	20		
328	3	19	20		
328	4	18	20		
328	5	19	20		
329	1	15	20		
329	2	15	20		
329	3	16	20		
329	4	15	20		
329	5	14	20		

Test Start Date: 8/14/16

Amphipod Species: E. costaeus

Test End Date: 8/29/16

Collection/Arrival Date: 8/9-8/11

Reference Toxicant: NA3

Amphipod Source: N.W. Aquatic Services

Sample Source: Anchor QEA

Laboratory: UA ADC

Experiment #: 10d seal bx

Test Cont. #	Station Code	Total Number Alive	Number at Start	Percent Survival	Notes (Possible Predators)
330	1	18	20		
330	2	19	20		
330	3	20	20		
330	4	19	20		
330	5	19	20		
331	1	20	20		
331	2	19	20		
331	3	18	20		
331	4	20	20		
331	5	20	20		
332	1	19	20		
332	2	20	20		
332	3	20	20		
332	4	20	20		
332	5	19	20		
333	1	20	20		
333	2	19	20		
333	3	20	20		
333	4	19	20		
333	5	19	20		
334	1	20	20		
334	2	19	20		
334	3	20	20		
334	4	20	20		
334	5	19	20		

AMPHIPOD CHEMICAL ANALYSIS SHEET


Project: Anchor OEA
 Date: 8/19/16

Experiment: 10d sed Tox
 Species: F. estuarius

0 = BDL

Detection limit 0.1mg/L

Test Container	pH		D.O. mg/L		Salinity ppt.		Temp. °C		Ammonia mg/L
	Day 0	Day 10	Day 0	Day 10	Day 0	Day 10	Day 0	Day 10	Day 0
HOME	7.7	7.8	10.1	10.0	20	20	14.9	14.8	0
326	7.9	7.7	10.3	10.1	20	20	14.9	14.8	0
327	8.1	8.0	9.9	8.9	20	20	14.9	14.8	0
328	7.9	7.7	10.1	10.3	20	20	14.9	14.8	0
329	7.8	7.8	9.9	10.1	20	20	14.9	14.8	0
330	8.3	8.0	9.8	10.3	20	20	14.9	14.8	0
331	7.9	7.8	9.7	10.1	20	20	14.9	14.8	0
332	7.9	7.9	9.9	10.2	20	20	14.9	14.8	0
333	8.1	8.0	10.0	10.1	20	20	14.9	14.8	0
334	8.3	8.1	10.1	10.3	20	20	14.9	14.8	0
335	7.9	7.8	10.0	10.1	20	20	14.9	14.8	0
336	7.9	7.7	9.9	9.9	20	20	14.9	14.8	0
337	8.1	8.0	10.1	10.3	20	20	14.9	14.8	0
338	7.9	7.7	10.1	10.2	20	20	14.9	14.8	0

Initial: 

AMPHIPOD BIOASSAY STANDARD REFERENCE TOXICANT TEST

COMPANY: Aquatic Bioassay
 START: 8/19/16

I.D.: Ammonium Chloride
 END: 8/22/16

CHEMICAL ANALYSIS

CONC.	8/19 INITIAL					8/22 96 HRS.				
	D.O.	TEMP	pH	SAL	Ammonia	D.O.	TEMP	pH	SAL	Ammonia
CON	6.8	14.8	7.9	20	0	6.7	14.7	7.9	20	0
15.6 mg/L	6.6	14.8	7.9	20	12.6	6.9	14.7	7.9	20	0.216
31.2 mg/L	6.7	14.8	7.9	20	24.3	6.8	14.7	7.9	20	0.433
62.5 mg/L	6.8	14.8	7.9	20	44.9	6.6	14.7	7.9	20	0.785
125 mg/L	6.9	14.8	7.9	20	89.1	6.7	14.7	7.9	20	1.557
250 mg/L	6.7	14.8	7.9	20	191	6.8	14.7	7.9	20	4.161

BIOLOGICAL MEASUREMENTS

CONC. (mg/L)	0 HRS.	96 HRS.	MEAN SURVIVAL
CONTROL	10	10	
CONTROL	10	10	
CONTROL	10	10	
CONTROL	10	10	
15.6	10	10	
15.6	10	10	
15.6	10	10	
15.6	10	10	
31.2	10	10	
31.2	10	8	
31.2	10	7	
31.2	10	9	
62.5	10	10	
62.5	10	8	
62.5	10	6	
62.5	10	6	
125	10	6	
125	10	5	
125	10	3	
125	10	6	
250	10	0	
250	10	0	
250	10	0	
250	10	0	

DATE: 8/22/16

QA/QC CHECKLIST FOR SEDIMENT TOXICITY
Eohaustorius estuarius 10 Day Survival

Project: 10d sed tox
 QA Batch: NH3
 Test Date: 8/14
 Reviewed By: [Signature]

Sample Storage Yes No (Explain/Sample #)

4°C in Dark X _____
 ≤ 14 Days X _____

Test Conditions Yes No (Explain/Sample #)

5 Replicates per Station X _____
 20 Amphipods per Replicate X _____
 Water Quality Measurement at Start & End X _____
 Daily Checks of Beakers X _____
 Organism Acclimation >96hrs & <2 Weeks X _____
 Organism Mortality During Acclimation # 26 _____
 (Must be below 15%)


Test Acceptability Yes No (Explain/Sample #)

Control Mean Survival ≥90% X _____
 Control Survival Each Replicate ≥80% X _____
 Reference Toxicant Test within Limits X _____
 Temperature 14-16°C X _____
 Salinity 17-23ppt. X _____
 Unionized Ammonia <0.8mg/L X _____
 Dissolved Oxygen >5.0mg/L X _____

Data Validation Yes No (Explain/Sample #)

Test Data Entry X _____
 Water Quality Data Entry X _____
 Statistical Verification X _____
 Reference Toxicant Data Entry X _____

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: Date: <u>8/10/16</u> Project Name: GWMA Sediment Sampling Project Number: 141205-01.03 Project Manager: Andrew Martin Phone Number: 949-347-2780 Shipment Method:				Test Parameters																				
Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	10 day amphipod survival test	48 hour SWI test																		
326	CM-SS-10-0-5-20160810	8/10/16 0850	SED	5		X																	Ice	
	CM-SS-10-0-5-20160810	0814		1	X																			
	CB-SS-11-0-5-20160810	0835		5		X																		
327	CB-SS-11-0-5-20160810	1002		1	X																			
	OA-SS-09-0-5-20160810	1036		5		X																		
328	OA-SS-09-0-5-20160810	1100		1	X																			
	FA-SS-07-0-5-20160810	1146		5		X																		
329	FA-SS-07-0-5-20160810	1210		1	X																			
	JA-SS-05-0-5-20160810	1339		5		X																		
330	JA-SS-05-0-5-20160810	1376		1	X																			
	JA-SS-06-0-5-20160810	1417		5		X																		
331	JA-SS-06-0-5-20160810	✓ 1441	✓	1	X	X																	✓	
	JA-SS-03-0-5-20160810	✓ 1525	✓	5		X																	✓	
332	JA-SS-03-0-5-20160810	✓ 1540	✓	1		X																	✓	

Notes:
 Bioassay testing as outlined in work order attachment to subagreement


Relinquished By: Clare Dolphin Company: Anchor QEA
 Signature/Printed Name: Clare Dolphin Date/Time: 8/18/16

Received By: Albert M. 8-18-16 Company: Anchor QEA
 Signature/Printed Name: Albert M. Date/Time: 8-18-16 6:45 AM

Relinquished By: Albert M. 8-18-16 Company: Anchor QEA
 Signature/Printed Name: Albert M. Date/Time: 8-18-16 9:30

Received By: John J. Williams Company: Anchor QEA
 Signature/Printed Name: John J. Williams Date/Time: 8-18-16 09:30

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____ Date: <u>8/10/16 8/17/16</u> Project Name: GWMA Sediment Sampling Project Number: 141205-01.03 Project Manager: Andrew Martin Phone Number: 949-347-2780 Shipment Method: _____				Test Parameters																
Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	10 day amphipod survival test	48 hour SWI test														
1	IA-SF-04-05-20160817	8/17/16 0810	SED	5		X														
2	IA-SF-04-05-20160817	0825		1	X															
3	IA-SF-02-05-20160817	0829		5		X														
4	IA-SF-02-05-20160817	0927		1	X															
5	IA-SF-01-05-20160817	0950		5		X														
6	CS-SF-01-05-20160817	1008		1	X	/														
7	IB-SF-12-05-20160817	1110		5		X														
8	IB-SF-12-05-20160817	1123		1	X															
9	IB-SF-13-05-20160817	1244		5		X														
10	IB-SF-13-05-20160817	1300		1	X															
11	IB-SF-14-05-20160817	1415		5		X														
12	IB-SF-14-05-20160817	✓ 1438	✓	1	X															↓
13																				
14																				
15																				

Notes:
 Bioassay testing as outlined in work order attachment to subagreement

Relinquished By: [Signature] Company: Anchor QEA
 Signature/Printed Name: Clare Dolphin Date/Time: 8/18/16

Received By: [Signature] Company: AW
 Signature/Printed Name: Albert-Mark Date/Time: 8-18-16 6:45 AM

Relinquished By: [Signature] Company: AW
 Signature/Printed Name: Albert-Mark Date/Time: 8-18-16 9:30

Received By: [Signature] Company: _____
 Signature/Printed Name: Kim J. Wink Date/Time: 8-18-16 0930

Chain of Custody Record & Laboratory Analysis Request

1000000

Laboratory Number:

Date: 8/18/16

Project Name: GWMA Sediment Sampling

Project Number: 141205-01.03

Project Manager: Andrew Martin

Phone Number: 949-347-2780

Shipment Method:

Test Parameters



No. of Containers

10 day amphipod survival test

48 hour SWI test

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	10 day amphipod survival test	48 hour SWI test	Comments/Preservation
334 1	OB-SS-17-0-5-20160818	8/18/16 0850	SED	5	X		Ice
2	OB-SS-17-0-5-20160814	0908		1	X		
340 3	SP-SS-20-0-5-20160818	0940		5	X		
4	SP-SS-20-0-5-20160818	0958		1	X		
341 5	SP-SS-19-0-5-20160818	1032		5	X		
6	SP-SS-19-0-5-20160818	1110		1	X		
342 7	SP-SS-18-0-5-20160818	1203		5	X		
8	SP-SS-18-0-5-20160818	1222		1	X		
343 9	LE-SS-21-0-5-20160818	1346		5	X		
10	LE-SS-21-0-5-20160818	1400		1	X		
344 11	LE-SS-22-0-5-20160818	1435		5	X		
12	LE-SS-22-0-5-20160818	1455		1	X		
345 13	IB-SS-15-0-5-20160818	1550		6	X	X	
14							
15							

Notes: Bioassay testing as outlined in work order attachment to subagreement

Relinquished By: *[Signature]* Company: Anchor QEA
 Signature/Printed Name: Claire Dolphin Date/Time: 8/20/16

Received By: *[Signature]* Company: *[Signature]*
 Signature/Printed Name: Allison Marie Date/Time: 8-20-16 6:30

Relinquished By: *[Signature]* Company: *[Signature]*
 Signature/Printed Name: 8-20-16 10:35 Date/Time: 10:35

Received By: *[Signature]* Company: *[Signature]*
 Signature/Printed Name: 8 Date/Time: 8/20/16 10:45

Northwestern Aquatic Sciences

3814 Yaquina Bay Rd., P.O. Box 1437, Newport, OR 97365
Tel: 541-265-7225, Fax: 541-265-2799, E-mail: www.nwaquatic.com

SUBJECT: Animal Collection Data Sheet (shipping)			
SOLD TO: Aquatic Bioassay & Consulting Laboratory, Inc. 29 North Olive St. Ventura, CA 93001		Joe Freas 805.573.2392	
FedEx # NONE			
DATE OF SHIPMENT: 8/11/16			
ANIMAL HISTORY			
Species	Age/Size	Number Shipped	
<i>Eohaustorius estuarius</i>	3-5 mm	4,000 + 10%	
WATER QUALITY AT TIME OF SHIPMENT			
Temperature (°C): 14-1	pH: 8.2	Salinity (ppt): 2.9-5	D.O. (mg/L): 8-3
Other:			
PACKAGED BY: GAB/LPS		DATE: 8/11/16	
FIELD COLLECTION/CULTURE NOTES			
Collected 8/10/16 from Yaquina Bay, OR. Interstitial WQ: Temp: 14.0 °C, Salinity 34.0 ppt. Adjusted down ~5 ppt Held at 15°C in aerated water.			
ADDITIONAL COMMENTS			
2-liters of 0.5 mm sieved home sediment included.			

PLEASE RETURN ALL SHIPPING MATERIALS

Please call Gary Buhler or Gerald Irissarri at (541) 265-7225 if there are any questions. Thank You.

Recd. 8.12.16

Conditions Acceptable
[Signature]

8/20	Anchor QEA	1045	ANC 0816-281
8/20	Anchor QEA	1045	ANC 0816-282
8/20	Anchor QEA	1045	ANC 0816-283
8/20	Anchor QEA	1045	ANC 0816-284
8/20	Anchor QEA	1045	ANC 0816-285
8/20	Anchor QEA	1045	ANC 0816-286
8/20	Anchor QEA	1045	ANC 0816-287
8/20	Anchor QEA	1045	ANC 0816-288
8/20	Anchor QEA	1045	ANC 0816-289
8/20	Anchor QEA	1045	ANC 0816-290
8/20	Anchor QEA	1045	ANC 0816-291
8/20	Anchor QEA	1045	ANC 0816-292
8/20	Anchor QEA	1045	ANC 0816-293
8/20	Anchor QEA	1045	ANC 0816-294
8/20	Anchor QEA	1045	ANC 0816-295
8/20	Anchor QEA	1045	ANC 0816-296
8/20	Anchor QEA	1045	ANC 0816-297
8/20	Anchor QEA	1045	ANC 0816-298
8/20	Anchor QEA	1045	ANC 0816-299
8/20	Anchor QEA	1045	ANC 0816-300
8/20	Anchor QEA	1045	ANC 0816-301
8/20	Anchor QEA	1045	ANC 0816-302
8/20	Anchor QEA	1045	ANC 0816-303
8/20	Anchor QEA	1045	ANC 0816-304
8/20	Anchor QEA	1045	ANC 0816-305
8/20	Anchor QEA	1045	ANC 0816-306
8/20	Anchor QEA	1045	ANC 0816-307
8/20	Anchor QEA	1045	ANC 0816-308
8/20	Anchor QEA	1045	ANC 0816-309
8/20	Anchor QEA	1045	ANC 0816-310
8/20	Anchor QEA	1045	ANC 0816-311
8/20	Anchor QEA	1045	ANC 0816-312
8/20	Anchor QEA	1045	ANC 0816-313
8-22	EMERSONS PARK ANNEQUIN JON		EMERSON 314
8-23	City of Malibu	09-23	Com. 0816-315
8-13	City of Malibu	09-23	Com. 0816-316

BENTHIC	1-2.5 GAL PL	OB-SS-17
BENTHIC	1-2.5 GAL PL.	SP-SS-20
BENTHIC	1-2.5 GAL PL.	SP-SS-19
BENTHIC	1-2.5 GAL PL.	SP-SS-18
BENTHIC	1-2.5 GAL PL. (CS)	LE-SS-22
BENTHIC	1-2.5 GAL PL. 1 (CS) GAL PL.	IB-SS-15
BENTHIC	1-2.5 GAL PL.	OB-SS-16
BENTHIC	1-2.5 GAL PL.	OA-SS-08
BENTHIC	1-2.5 GAL PL.	OA-SS-09
BENTHIC	1-2.5 GAL PL.	IA-SS-05
BENTHIC	1-2.5 GAL PL.	PH-SS-07
BENTHIC	1-2.5 GAL PL.	OB-SS-11
BENTHIC	2-2.5 GAL PL.	CM-SS-10
BENTHIC	1-2.5 GAL PL.	IA-SS-06
BENTHIC	1-2.5 GAL PL.	LE-SS-21
BENTHIC	1-2.5 GAL PL.	IA-SS-03
AMPHIPOD MYTILUS		OB-SS-17
AMPHIPOD		OB-SS-17
MYTILUS		SP-SS-20
AMPHIPOD		SP-SS-20
MYTILUS		SP-SS-19
AMPHIPOD		SP-SS-19
MYTILUS		SP-SS-18
AMPHIPOD		SP-SS-18
MYTILUS		SP-SS-18
AMPHIPOD		LE-SS-21
MYTILUS		LE-SS-21
AMPHIPOD		LE-SS-22
MYTILUS		LE-SS-22
AMPHIPOD		LE-SS-22
AMPHIPOD, MYTILUS		IB-SS-15
MYTILUS		OB-SS-16
AMPHIPOD		OB-SS-16
MYTILUS		OA-SS-08
AMPHIPOD		OA-SS-08

4.3

AMPHIPOD (M)
 Total coliform (CS)
 City of Patito, E. coli, enteroc
 Total coliform, E. coli, enteroc

1.7 gal pl.
 1-1.25 mL PL
 1-1.25 mL PL

19/03/09
 Intake
 Discharge

8-12	FM ANT. - CANADA	0915	FM 0816. 317
8-23	ENTHUSIASM CONSCIENCE	WMT	CSC 0816. 318
8-23	ENTHUSIASM ANATOMICAL	WMT	ENA 0816. 319
8-23	ENTHUSIASM ANATOMICAL	WMT	ENA 0816. 320
8-23	MCCSD	WMT	MCC 0816. 321
8-23	HEBER PUBLIC UTILITY DISTRICT	WMT	HPU 0816. 322
8-23	ENTHUSIASM ANATOMICAL	WMT	ENT 0816. 323
8-23	ENTHUSIASM ANATOMICAL	WMT	ENT 0816. 324
8-23	City of Chico	WMT	CC 0816. 325
8-18	Anchor QEA	0930	ANL 0816. 326
8-18	Anchor QEA	930	ANL 0816. 327
8-18	Anchor QEA	930	ANL 0818. 328
8-18	Anchor QEA	930	ANL 0818. 329
8-18	Anchor QEA	930	ANL 0818. 330
8-18	Anchor QEA	930	ANL 0818. 331
8-18	Anchor QEA	930	ANL 0818. 332
8-18	Anchor QEA	930	ANL 0816. 333
8-18	Anchor QEA	930	ANL 0818. 334
8-18	Anchor QEA	930	ANL 0818. 335
8-18	Anchor QEA	930	ANL 0818. 336
8-18	Anchor QEA	930	ANL 0818. 337
8-18	Anchor QEA	930	ANL 0818. 338
8-20	Anchor QEA	1045	ANL 0816. 339
8-20	Anchor QEA	1045	ANL 0816. 340
8-20	Anchor QEA	1045	ANL 0816. 341
8-20	Anchor QEA	1045	ANL 0816. 342
8-20	Anchor QEA	1045	ANL 0816. 343
8-20	Anchor QEA	1045	ANL 0816. 344
8-20	Anchor QEA	1045	ANL 0816. 345
8-20	Anchor QEA	1045	ANL 0816. 346
8-20	Anchor QEA	1045	ANL 0816. 347
8-24	APU	WMT	APU 0816. 348
8-24	PACIFIC GAS & ELEC.	WMT	PGE 0816. 349
8-24	PACIFIC GAS & ELEC.	WMT	PGE 0816. 350
8-24	ENTHUSIASM ANATOMICAL	WMT	ENT 0816. 351
8-24	ENTHUSIASM ANATOMICAL	WMT	ENT 0816. 352

7	18.4	Chronic, Fm, Cor, sd (Pondwrt)	1-1 gal pt.	OUTLINE (Cont)
	2.1	Acute, Fm	1-1 gal pt.	WWT EFF
	1.6	Chronic, PPS, KAP, upetrow	1-1 gal pt.	381675-001
	1.6	Chronic, PPS, KAP, upetrow	1-1 gal pt.	381676-001
	1.6	Chronic, PPS, KAP, upetrow - TST	1-1/2 gal pt.	FIRM EFF
	2.8	Chronic, Fm, Cor, sd	1-1 gal pt.	WWT EFF
	2.2	Chronic, Fm, Cor, sd, AVI, Frank	2-1 gal pt.	EFF
	2.2	Chronic, Fm, Cor, sd	1-1 gal pt.	RECEIVING
	13.5	Acute, Thom	1-5 gal pt.	AB-3-16
26	3.1	Ech / mut swt	Scores 1 bag	SS 10
27	3.1	Ech / mut swt	Scores 1 bag	SS 11
	3.1	Ech / mut swt	Scores 1 bag	SS 09
19	3.1	Ech / mut swt	Score 1 bag	SS 07
330	3.6	Ech / mut swt	Scores 1 bag	SS 05
31	3.6	Ech / mut swt	Scores 1 bag	SS 06
	3.6	Ech / mut swt	Scores 1 bag	SS 03
33	3.5	Ech / mut swt	Scores 1 bag	SS 04
24	3.5	Ech / mut swt	Scores 1 bag	SS 02
15	3.5	Ech / mut swt	Scores 1 bag	SS 01
36	3.5	Ech / mut swt	Scores 1 bag	SS 12
27	3.3	Ech / mut swt	Scores 1 bag	SS 13
38	3.3	Ech / mut swt	Score - 1 bag	SS 14
	3.8	Ech / mut	Score - 1 bag	SS 17
	3.6	Ech / mut	Score - 1 bag	SS 19
	3.3	Ech / mut	Scores - 1 bag	18
	3.5	Ech / mut	Scores - 1 bag	21
	3.3	Ech / mut	Score - 1 bag	22
	3.4	Ech / mut	Scores - 1 bag	17
	3.2	Ech / mut	Scores - 1 bag	16
	11.1	Chronic, ABS	1-1 gal pt.	08
	7.7	Acute, ABS	1-5 gal pt.	24273-01
	7.7	Chronic, ABS	1-1 gal pt.	DISCHARGE 001
	3.0	Chronic, ABS	1-1 gal pt.	DISCHARGE 002
	3.0	Chronic, Fm, Cor, sd (Pondwrt)	1-1 gal pt.	EFF
	3.0	Chronic, Fm, Cor, sd (Pondwrt)	1-1 gal pt.	RECEIVING



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	CM-SS-10-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.326

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 01 Dec-16 14:56 (p 1 of 2)
 Test Code: ANC0816.326m | 20-3658-2260

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 12-7086-6490	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 9:27	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 19-5882-3253	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:01	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 06-5024-3556	Code: ANC0816.326m	Client: Anchor QEA
Sample Date: 16 Aug-16 08:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 2h	Station: CM-SS-10-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	1.70%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	27	n/a	3	8	Exact	0.4921	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	7.961E-05	7.961E-05	1	0.0406	0.8453	Non-Significant Effect
Error	0.0156844	0.0019606	8			
Total	0.015764		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.2608	11.26	0.6234	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.06852	13.75	0.8023	Equal Variances
Variances	Variance Ratio F Test	1.752	23.15	0.6003	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.268	3.878	0.0023	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	2.221	2.576	0.0263	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3595	0.3025	6.3E-04	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.7654	0.7411	0.0055	Non-Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9724	0.9631	0.9954	0.0056	1.28%	0.00%
100		5	0.9733	0.9602	0.9863	0.9724	0.9631	0.9908	0.0047	1.08%	0.09%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.416	1.354	1.478	1.404	1.378	1.503	0.02234	3.53%	0.00%
100		5	1.41	1.363	1.457	1.404	1.378	1.475	0.01688	2.68%	0.40%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9908	0.9724	0.9631	0.9677	0.9724

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.404	1.503	1.39	1.378	1.404
100		1.475	1.404	1.378	1.39	1.404

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	210/217	209/217	211/217
100		215/217	211/217	209/217	210/217	211/217

Mussel Shell Development Test

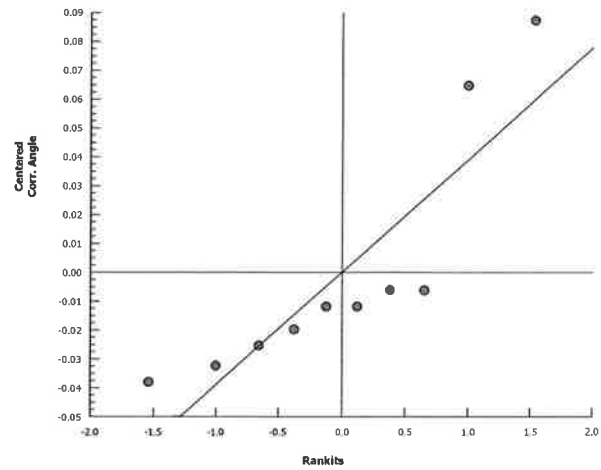
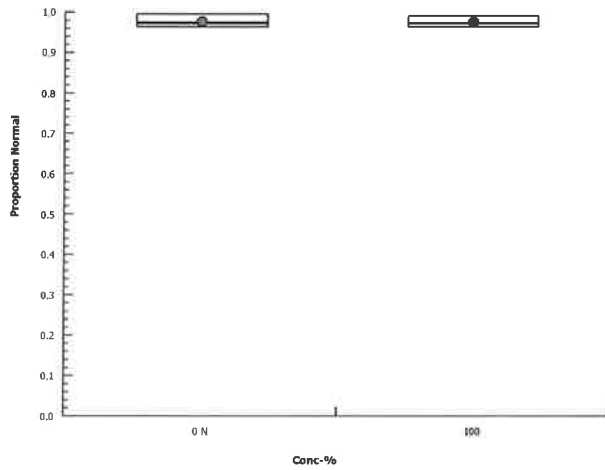
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 12-7086-6490
Analyzed: 01 Dec-16 9:27

Endpoint: Proportion Normal
Analysis: Nonparametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 01 Dec-16 14:56 (p 1 of 1)
 Test Code: ANC0816.326m | 20-3658-2260

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 19-5882-3253	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:01	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 06-5024-3556	Code: ANC0816.326m	Client: Anchor QEA
Sample Date: 16 Aug-16 08:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 2h	Station: CM-SS-10-0-5-20160816	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.6	2.788	10.41	6.3	6.9	0.3	0.4243	6.43%	0
100		2	7	5.729	8.271	6.9	7.1	0.1	0.1414	2.02%	0
Overall		4	6.8	6.249	7.351	6.3	7.1	0.1732	0.3464	5.09%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	8.15	6.244	10.06	8	8.3	0.15	0.2121	2.6%	0
Overall		4	8.025	7.724	8.326	7.9	8.3	0.09465	0.1893	2.36%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	12.84	16.66	14.6	14.9	0.15	0.2121	1.44%	0
100		2	14.75	12.84	16.66	14.6	14.9	0.15	0.2121	1.44%	0
Overall		4	14.75	14.47	15.03	14.6	14.9	0.0866	0.1732	1.17%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.9	6.3
100		6.9	7.1

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		8.3	8

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.6	14.9
100		14.6	14.9



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	CB-SS-11-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.327

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 01 Dec-16 14:59 (p 1 of 2)

Test Code: ANC0816.327m | 07-0861-7315

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-9117-0364	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 9:30	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 01-2411-2263	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:02	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:02	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 16-8919-7389	Code: ANC0816.327m	Client: Anchor QEA
Sample Date: 16 Aug-16 09:35	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 1h	Station: CB-SS-11-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	1.76%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.02985	1.86	0.054	8	CDF	0.5115	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.848E-06	1.848E-06	1	0.0008908	0.9769	Non-Significant Effect
Error	0.0165992	0.0020749	8			
Total	0.0166011		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.06557	11.26	0.8044	Equal Variances
Variances	Mod Levene Equality of Variance Test	9.076E-05	13.75	0.9927	Equal Variances
Variances	Variance Ratio F Test	1.51	23.15	0.6996	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.7484	3.878	0.0511	Normal Distribution
Distribution	D'Agostino Skewness Test	1.68	2.576	0.0929	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3091	0.3025	0.0075	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8718	0.7411	0.1049	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9724	0.9631	0.9954	0.0056	1.28%	0.00%
100		5	0.9751	0.9602	0.9900	0.9724	0.9585	0.9908	0.0054	1.23%	-0.09%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.416	1.354	1.478	1.404	1.378	1.503	0.02234	3.53%	0.00%
100		5	1.416	1.366	1.467	1.404	1.366	1.475	0.01819	2.87%	-0.06%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9585	0.9816	0.9724	0.9908	0.9724

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.404	1.503	1.39	1.378	1.404
100		1.366	1.435	1.404	1.475	1.404

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	210/217	209/217	211/217
100		208/217	213/217	211/217	215/217	211/217

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	OA-SS-09-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.328

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 01 Dec-16 15:02 (p 1 of 2)
 Test Code: ANC0816.328m | 03-0641-1934

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 17-3973-9627	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 9:38	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 10-5933-4765	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:03	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:03	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 05-6056-4690	Code: ANC0816.328m	Client: Anchor QEA
Sample Date: 16 Aug-16 10:36	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 0h	Station: OA-SS-09-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.35%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.5288	1.86	0.067	8	CDF	0.3057	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0009178	0.0009178	1	0.2796	0.6113	Non-Significant Effect
Error	0.0262637	0.003283	8			
Total	0.0271815		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.2272	11.26	0.6464	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.2784	13.75	0.6167	Equal Variances
Variances	Variance Ratio F Test	1.63	23.15	0.6474	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.019	3.878	0.0112	Normal Distribution
Distribution	D'Agostino Skewness Test	1.987	2.576	0.0469	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2871	0.3025	0.0191	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8059	0.7411	0.0171	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9724	0.9631	0.9954	0.0056	1.28%	0.00%
100		5	0.9668	0.9441	0.9895	0.9631	0.9493	0.9954	0.0082	1.89%	0.76%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.416	1.354	1.478	1.404	1.378	1.503	0.02234	3.53%	0.00%
100		5	1.396	1.317	1.476	1.378	1.344	1.503	0.02853	4.57%	1.35%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9539	0.9631	0.9724	0.9493	0.9954

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.404	1.503	1.39	1.378	1.404
100		1.354	1.378	1.404	1.344	1.503



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	FH-SS-07-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.329

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	<100.00 %
TUc =	>1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:07 (p 1 of 1)
Test Code: ANC0816.329m | 01-0825-0973

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-8047-0123	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:04	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:04	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:

Sample ID: 10-7756-4815	Code: ANC0816.329m	Client: Anchor QEA
Sample Date: 16 Aug-16 11:46	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 23h	Station: FH-SS-07-0-5-20160816	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
19-6191-0586	Proportion Normal	Equal Variance t Two-Sample Test	7.8E-05	100% failed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9631	0.9954	0.0056	0.0125	1.28%	0.00%
100		5	0.8396	0.7805	0.8987	0.7880	0.9124	0.0213	0.0476	5.67%	13.81%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9124	0.8571	0.8157	0.8249	0.7880

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	210/217	209/217	211/217
100		198/217	186/217	177/217	179/217	171/217

CETIS Analytical Report

Report Date: 01 Dec-16 15:05 (p 1 of 2)
 Test Code: ANC0816.329m | 01-0825-0973

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 19-6191-0586	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 01 Dec-16 9:43	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 06-8047-0123	Test Type: Development	Analyst: Joe Freas			
Start Date: 29 Aug-16 11:04	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 31 Aug-16 11:04	Species: Mytilus galloprovincialis	Brine: Not Applicable			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 10-7756-4815	Code: ANC0816.329m	Client: Anchor QEA			
Sample Date: 16 Aug-16 11:46	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report				
Sample Age: 12d 23h	Station: FH-SS-07-0-5-20160816				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed proportion normal	2.49%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	6.675	1.86	0.071	8	CDF	7.8E-05	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.160309	0.160309	1	44.55	1.6E-04	Significant Effect
Error	0.0287866	0.0035983	8			
Total	0.189096		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.5863	11.26	0.4658	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.4989	13.75	0.5065	Equal Variances
Variances	Variance Ratio F Test	1.883	23.15	0.5550	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.7966	3.878	0.0388	Normal Distribution
Distribution	D'Agostino Skewness Test	1.635	2.576	0.1020	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2833	0.3025	0.0223	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.862	0.7411	0.0806	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9724	0.9631	0.9954	0.0056	1.28%	0.00%
100		5	0.8396	0.7805	0.8987	0.8249	0.7880	0.9124	0.0213	5.67%	13.81%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.416	1.354	1.478	1.404	1.378	1.503	0.02234	3.53%	0.00%
100		5	1.162	1.077	1.248	1.139	1.092	1.27	0.03066	5.90%	17.89%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9124	0.8571	0.8157	0.8249	0.7880

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.404	1.503	1.39	1.378	1.404
100		1.27	1.183	1.127	1.139	1.092

CETIS Measurement Report

Report Date: 01 Dec-16 15:05 (p 1 of 1)
 Test Code: ANC0816.329m | 01-0825-0973

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	06-8047-0123	Test Type:	Development	Analyst:	Joe Freas		
Start Date:	29 Aug-16 11:04	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	31 Aug-16 11:04	Species:	Mytilus galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	10-7756-4815	Code:	ANC0816.329m	Client:	Anchor QEA		
Sample Date:	16 Aug-16 11:46	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	18 Aug-16 09:30	Source:	Bioassay Report				
Sample Age:	12d 23h	Station:	FH-SS-07-0-5-20160816				

Dissolved Oxygen-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.6	2.788	10.41	6.3	6.9	0.3	0.4243	6.43%	0
100		2	7.05	6.415	7.685	7	7.1	0.05001	0.07072	1.0%	0
Overall		4	6.825	6.253	7.397	6.3	7.1	0.1797	0.3594	5.27%	0 (0%)

pH-Units											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.7	6.429	8.971	7.6	7.8	0.1	0.1414	1.84%	0
Overall		4	7.8	7.575	8.025	7.6	7.9	0.07071	0.1414	1.81%	0 (0%)

Salinity-ppt											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	12.84	16.66	14.6	14.9	0.15	0.2121	1.44%	0
100		2	14.75	12.84	16.66	14.6	14.9	0.15	0.2121	1.44%	0
Overall		4	14.75	14.47	15.03	14.6	14.9	0.0866	0.1732	1.17%	0 (0%)

Dissolved Oxygen-mg/L			
Conc-%	Code	1	2
0	N	6.9	6.3
100		7.1	7

pH-Units			
Conc-%	Code	1	2
0	N	7.9	7.9
100		7.8	7.6

Salinity-ppt			
Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C			
Conc-%	Code	1	2
0	N	14.6	14.9
100		14.6	14.9

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R- 95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-05-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.330

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 02 Dec-16 08:40 (p 1 of 1)
 Test Code: ANC0816.330m | 13-3865-8982

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 16-1979-5974	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:05	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:05	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 00-2684-5669	Code: ANC0816.330m	Client: Anchor QEA
Sample Date: 16 Aug-16 13:39	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 21h	Station: IA-SS-05-0-5-20160816	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
07-3972-7966	Proportion Normal	Equal Variance t Two-Sample Test	0.0976	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9631	0.9954	0.0056	0.0125	1.28%	0.00%
100		5	0.9641	0.9538	0.9743	0.9539	0.9724	0.0037	0.0082	0.86%	1.04%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9724	0.9585	0.9724	0.9539	0.9631

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	210/217	209/217	211/217
100		211/217	208/217	211/217	207/217	209/217

CETIS Analytical Report

Report Date: 02 Dec-16 08:40 (p 1 of 2)
 Test Code: ANC0816.330m | 13-3865-8982

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 07-3972-7966	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 02 Dec-16 8:39	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 16-1979-5974	Test Type: Development	Analyst: Joe Freas
Start Date: 29 Aug-16 11:05	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Aug-16 11:05	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 00-2684-5669	Code: ANC0816.330m	Client: Anchor QEA
Sample Date: 16 Aug-16 13:39	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 21h	Station: IA-SS-05-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	1.43%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.414	1.86	0.045	8	CDF	0.0976	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0029901	0.0029901	1	1.998	0.1952	Non-Significant Effect
Error	0.0119697	0.0014962	8			
Total	0.0149599		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	1.323	11.26	0.2832	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.3304	13.75	0.5863	Equal Variances
Variances	Variance Ratio F Test	5.031	23.15	0.1467	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.7981	3.878	0.0384	Normal Distribution
Distribution	D'Agostino Skewness Test	2.384	2.576	0.0171	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2377	0.3025	0.1148	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8331	0.7411	0.0364	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9724	0.9631	0.9954	0.0056	1.28%	0.00%
100		5	0.9641	0.9538	0.9743	0.9631	0.9539	0.9724	0.0037	0.85%	1.04%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.416	1.354	1.478	1.404	1.378	1.503	0.02234	3.53%	0.00%
100		5	1.381	1.353	1.409	1.378	1.354	1.404	0.009962	1.61%	2.44%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9724	0.9585	0.9724	0.9539	0.9631

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.404	1.503	1.39	1.378	1.404
100		1.404	1.366	1.404	1.354	1.378

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/217	216/217	210/217	209/217	211/217
100		211/217	208/217	211/217	207/217	209/217

CETIS Analytical Report

Report Date: 02 Dec-16 08:40 (p 2 of 2)
Test Code: ANC0816.330m | 13-3865-8982

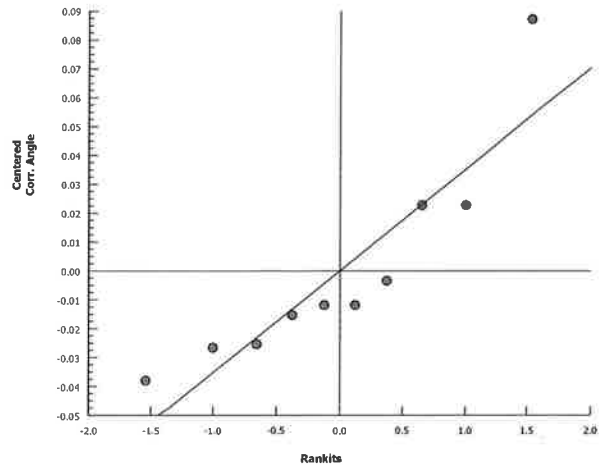
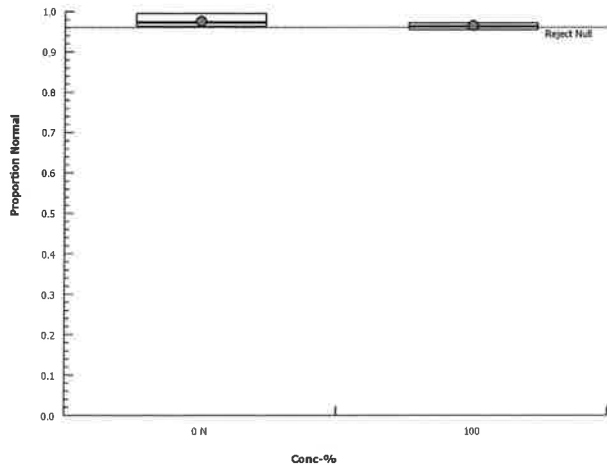
Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 07-3972-7966 Endpoint: Proportion Normal
Analyzed: 02 Dec-16 8:39 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics





November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT: Anchor QEA
SAMPLE I.D.: IA-SS-06-0-5-20160816
DATE RECEIVED: 8/18/2016
ABC LAB. NO.: ANC0816.331

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %
TUc = 1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 01 Dec-16 15:13 (p 1 of 2)
 Test Code: ANC0816.331m | 00-4721-8011

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 04-4533-1537	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2	Analyst: Joe Freas	Batch ID: 02-3352-9709	Test Type: Development
Analyzed: 01 Dec-16 9:55	Analysis: Parametric-Two Sample	Official Results: Yes	Diluent: Laboratory Seawater	Start Date: 29 Aug-16 11:06	Protocol: EPA/600/R-95/136 (1995)
Ending Date: 31 Aug-16 11:06	Species: Mytilus galloprovincialis	Brine: Not Applicable	Age:	Duration: 48h	Source: Carlsbad Aquafarms CA
Sample ID: 18-3435-2432	Code: ANC0816.331m	Client: Anchor QEA	Project: GWMA Sediment Sampling	Sample Date: 16 Aug-16 14:17	Material: Sediment
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report			Sample Age: 12d 21h	Station: IA-SS-06-0-5-20160816

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.19%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.1979	1.86	0.064	8	CDF	0.4240	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0001148	0.0001148	1	0.03915	0.8481	Non-Significant Effect
Error	0.0234667	0.0029333	8			
Total	0.0235815		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.01426	11.26	0.9079	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.07158	13.75	0.7980	Equal Variances
Variances	Variance Ratio F Test	1.35	23.15	0.7781	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.066	3.878	0.0086	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	1.727	2.576	0.0841	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3399	0.3025	0.0017	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8178	0.7411	0.0239	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9742	0.9587	0.9897	0.9724	0.9631	0.9954	0.0056	1.28%	0.00%
100		5	0.9714	0.9510	0.9918	0.9724	0.9493	0.9954	0.0073	1.69%	0.28%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.416	1.354	1.478	1.404	1.378	1.503	0.02234	3.53%	0.00%
100		5	1.409	1.337	1.481	1.404	1.344	1.503	0.02596	4.12%	0.48%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9724	0.9954	0.9677	0.9631	0.9724
100		0.9724	0.9677	0.9954	0.9724	0.9493

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.404	1.503	1.39	1.378	1.404
100		1.404	1.39	1.503	1.404	1.344

CETIS Measurement Report

Report Date: 01 Dec-16 15:13 (p 1 of 1)
 Test Code: ANC0816.331m | 00-4721-8011

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.							
Batch ID:	02-3352-9709	Test Type:	Development	Analyst:	Joe Freas						
Start Date:	29 Aug-16 11:06	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater						
Ending Date:	31 Aug-16 11:06	Species:	Mytilus galloprovincialis	Brine:	Not Applicable						
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:							
Sample ID:	18-3435-2432	Code:	ANC0816.331m	Client:	Anchor QEA						
Sample Date:	16 Aug-16 14:17	Material:	Sediment	Project:	GWMA Sediment Sampling						
Receipt Date:	18 Aug-16 09:30	Source:	Bioassay Report								
Sample Age:	12d 21h	Station:	IA-SS-06-0-5-20160816								

Dissolved Oxygen-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.6	2.788	10.41	6.3	6.9	0.3	0.4243	6.43%	0
100		2	6.95	5.044	8.856	6.8	7.1	0.15	0.2121	3.05%	0
Overall		4	6.775	6.233	7.317	6.3	7.1	0.1702	0.3403	5.02%	0 (0%)

pH-Units											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.9	6.629	9.171	7.8	8	0.1	0.1414	1.79%	0
Overall		4	7.9	7.77	8.03	7.8	8	0.04082	0.08165	1.03%	0 (0%)

Salinity-ppt											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	12.84	16.66	14.6	14.9	0.15	0.2121	1.44%	0
100		2	14.75	12.84	16.66	14.6	14.9	0.15	0.2121	1.44%	0
Overall		4	14.75	14.47	15.03	14.6	14.9	0.0866	0.1732	1.17%	0 (0%)

Dissolved Oxygen-mg/L			
Conc-%	Code	1	2
0	N	6.9	6.3
100		7.1	6.8

pH-Units			
Conc-%	Code	1	2
0	N	7.9	7.9
100		8	7.8

Salinity-ppt			
Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C			
Conc-%	Code	1	2
0	N	14.6	14.9
100		14.6	14.9

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

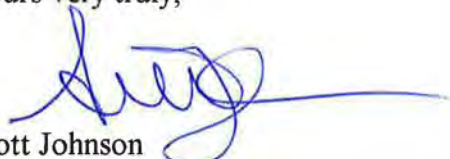
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-03-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.332

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:16 (p 1 of 1)

Test Code: ANC0816.332m | 03-6553-7942

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-4159-3993	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:00	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:

Sample ID: 01-9463-5493	Code: ANC0816.332m	Client: Anchor QEA
Sample Date: 16 Aug-16 15:25	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 19h	Station: IA-SS-03-0-5-20160816	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
04-8379-6593	Proportion Normal	Equal Variance t Two-Sample Test	0.6825	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9406	0.9863	0.0077	0.0173	1.80%	0.00%
100		5	0.9662	0.9416	0.9908	0.9361	0.9863	0.0089	0.0198	2.05%	-0.57%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9635	0.9817	0.9863	0.9635	0.9361

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/219	208/219	216/219	211/219	206/219
100		211/219	215/219	216/219	211/219	205/219

CETIS Analytical Report

Report Date: 01 Dec-16 15:15 (p 1 of 2)

Test Code: ANC0816.332m | 03-6553-7942

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-8379-6593	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 10:29	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 06-4159-3993	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:00	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 01-9463-5493	Code: ANC0816.332m	Client: Anchor QEA
Sample Date: 16 Aug-16 15:25	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 19h	Station: IA-SS-03-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.58%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.4935	1.86	0.061	8	CDF	0.6825	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0006558	0.0006558	1	0.2435	0.6349	Non-Significant Effect
Error	0.0215419	0.0026927	8			
Total	0.0221976		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.207	11.26	0.6612	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.124	13.75	0.7368	Equal Variances
Variances	Variance Ratio F Test	1.238	23.15	0.8412	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.2468	3.878	0.7815	Normal Distribution
Distribution	D'Agostino Skewness Test	0.2665	2.576	0.7898	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1796	0.3025	0.5419	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9658	0.7411	0.8499	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9635	0.9406	0.9863	0.0077	1.80%	0.00%
100		5	0.9662	0.9416	0.9908	0.9635	0.9361	0.9863	0.0089	2.05%	-0.57%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.376	1.315	1.437	1.378	1.325	1.453	0.02194	3.57%	0.00%
100		5	1.392	1.324	1.46	1.378	1.315	1.453	0.02441	3.92%	-1.18%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9635	0.9817	0.9863	0.9635	0.9361

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.378	1.345	1.453	1.378	1.325
100		1.378	1.435	1.453	1.378	1.315

CETIS Measurement Report

Report Date: 01 Dec-16 15:15 (p 1 of 1)
 Test Code: ANC0816.332m | 03-6553-7942

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-4159-3993	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:00	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 01-9463-5493	Code: ANC0816.332m	Client: Anchor QEA
Sample Date: 16 Aug-16 15:25	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 19h	Station: IA-SS-03-0-5-20160816	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
100		2	6.55	5.915	7.185	6.5	6.6	0.04999	0.0707	1.08%	0
Overall		4	6.525	6.127	6.923	6.2	6.8	0.125	0.25	3.83%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		4	7.9	7.9	7.9	7.9	7.9	0	0	0.00%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
100		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		4	14.75	14.66	14.84	14.7	14.8	0.02887	0.05774	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.8	6.2
100		6.6	6.5

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.9	7.9

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.7
100		14.8	14.7

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-04-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.333

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:18 (p 1 of 1)

Test Code: ANC0816.333m | 14-9594-3234

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-8088-7086	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:01	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:

Sample ID: 07-2152-7136	Code: ANC0816.333m	Client: Anchor QEA
Sample Date: 17 Aug-16 08:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 2h	Station: IA-SS-04-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
00-6206-0297	Proportion Normal	Equal Variance t Two-Sample Test	0.2756	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9406	0.9863	0.0077	0.0173	1.80%	0.00%
100		5	0.9562	0.9444	0.9679	0.9452	0.9680	0.0042	0.0095	0.99%	0.48%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9543	0.9498	0.9635	0.9452	0.9680

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/219	208/219	216/219	211/219	206/219
100		209/219	208/219	211/219	207/219	212/219

CETIS Analytical Report

Report Date: 01 Dec-16 15:17 (p 1 of 2)

Test Code: ANC0816.333m | 14-9594-3234

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-6206-0297	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 10:57	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 05-8088-7086	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:01	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 07-2152-7136	Code: ANC0816.333m	Client: Anchor QEA
Sample Date: 17 Aug-16 08:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 2h	Station: IA-SS-04-0-5-20160817	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	1.80%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.622	1.86	0.045	8	CDF	0.2756	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0005720	0.0005720	1	0.3868	0.5513	Non-Significant Effect
Error	0.0118304	0.0014788	8			
Total	0.0124025		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.846	11.26	0.3846	Equal Variances
Variances	Mod Levene Equality of Variance Test	1.164	13.75	0.3221	Equal Variances
Variances	Variance Ratio F Test	4.367	23.15	0.1824	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.292	3.878	0.6362	Normal Distribution
Distribution	D'Agostino Skewness Test	1.338	2.576	0.1810	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1724	0.3025	0.6287	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.952	0.7411	0.6925	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9635	0.9406	0.9863	0.0077	1.80%	0.00%
100		5	0.9562	0.9444	0.9679	0.9543	0.9452	0.9680	0.0042	0.99%	0.48%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.376	1.315	1.437	1.378	1.325	1.453	0.02194	3.57%	0.00%
100		5	1.361	1.332	1.39	1.355	1.335	1.391	0.0105	1.72%	1.10%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9543	0.9498	0.9635	0.9452	0.9680

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.378	1.345	1.453	1.378	1.325
100		1.355	1.345	1.378	1.335	1.391

CETIS Analytical Report

Report Date: 01 Dec-16 15:17 (p 2 of 2)
Test Code: ANC0816.333m | 14-9594-3234

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-6206-0297 Endpoint: Proportion Normal
Analyzed: 01 Dec-16 10:57 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

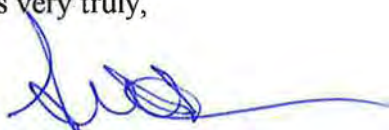
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-02-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.334

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:20 (p 1 of 1)
 Test Code: ANC0816.334m | 17-3713-3050

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 10-8081-2200	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:02	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:02	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 16-0735-1776	Code: ANC0816.334m	Client: Anchor QEA
Sample Date: 17 Aug-16 08:59	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 13d 1h	Station: IA-SS-02-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
06-7851-3573	Proportion Normal	Equal Variance t Two-Sample Test	0.5029	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9406	0.9863	0.0077	0.0173	1.80%	0.00%
100		5	0.9607	0.9382	0.9833	0.9361	0.9863	0.0081	0.0182	1.89%	0.00%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9635	0.9863	0.9635	0.9361	0.9543

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/219	208/219	216/219	211/219	206/219
100		211/219	216/219	211/219	205/219	209/219

CETIS Analytical Report

Report Date: 01 Dec-16 15:19 (p 1 of 2)

Test Code: ANC0816.334m | 17-3713-3050

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 06-7851-3573	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 01 Dec-16 11:03	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 10-8081-2200	Test Type: Development	Analyst: Joe Freas			
Start Date: 30 Aug-16 10:02	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 01 Sep-16 10:02	Species: Mytilus galloprovincialis	Brine: Not Applicable			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 16-0735-1776	Code: ANC0816.334m	Client: Anchor QEA			
Sample Date: 17 Aug-16 08:59	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report				
Sample Age: 13d 1h	Station: IA-SS-02-0-5-20160817				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.45%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.007601	1.86	0.058	8	CDF	0.5029	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.427E-07	1.427E-07	1	5.777E-05	0.9941	Non-Significant Effect
Error	0.0197635	0.0024704	8			
Total	0.0197636		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.0001835	11.26	0.9895	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.0001596	13.75	0.9903	Equal Variances
Variances	Variance Ratio F Test	1.053	23.15	0.9612	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.6477	3.878	0.0915	Normal Distribution
Distribution	D'Agostino Skewness Test	1.056	2.576	0.2911	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2787	0.3025	0.0268	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8798	0.7411	0.1299	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9635	0.9406	0.9863	0.0077	1.80%	0.00%
100		5	0.9607	0.9382	0.9833	0.9635	0.9361	0.9863	0.0081	1.89%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.376	1.315	1.437	1.378	1.325	1.453	0.02194	3.57%	0.00%
100		5	1.376	1.314	1.439	1.378	1.315	1.453	0.02251	3.66%	-0.02%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9635	0.9863	0.9635	0.9361	0.9543

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.378	1.345	1.453	1.378	1.325
100		1.378	1.453	1.378	1.315	1.355

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:


CLIENT:	Anchor QEA
SAMPLE I.D.:	CS-SS-01-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.335

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = <100.00 %
TU_c = >1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 01 Dec-16 15:21 (p 1 of 2)
 Test Code: ANC0816.335m | 05-2051-2766

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-6978-1260	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 11:24	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 14-7607-1818	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:03	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:03	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 14-7176-0166	Code: ANC0816.335m	Client: Anchor QEA
Sample Date: 17 Aug-16 09:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 21 Jul-33 09:30	Source: Bioassay Report	
Sample Age: 13d 0h	Station: CS-SS-01-0-5-20160817	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed proportion normal	2.27%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	8.737	1.86	0.055	8	CDF	1.2E-05	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.166902	0.166902	1	76.33	2.3E-05	Significant Effect
Error	0.0174927	0.0021866	8			
Total	0.184394		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.005375	11.26	0.9434	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.003202	13.75	0.9567	Equal Variances
Variances	Variance Ratio F Test	1.224	23.15	0.8496	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.5468	3.878	0.1633	Normal Distribution
Distribution	D'Agostino Skewness Test	1.152	2.576	0.2491	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1961	0.3025	0.3706	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.892	0.7411	0.1786	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9635	0.9406	0.9863	0.0077	1.80%	0.00%
100		5	0.8073	0.7648	0.8498	0.8082	0.7717	0.8584	0.0153	4.24%	15.97%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.376	1.315	1.437	1.378	1.325	1.453	0.02194	3.57%	0.00%
100		5	1.118	1.063	1.173	1.118	1.073	1.185	0.01983	3.97%	18.78%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.8584	0.8174	0.8082	0.7717	0.7808

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.378	1.345	1.453	1.378	1.325
100		1.185	1.129	1.118	1.073	1.084

CETIS Analytical Report

Report Date: 01 Dec-16 15:21 (p 2 of 2)

Test Code: ANC0816.335m | 05-2051-2766

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-6978-1260

Endpoint: Proportion Normal

CETIS Version: CETISv1.9.2

Analyzed: 01 Dec-16 11:24

Analysis: Parametric-Two Sample

Official Results: Yes

CETIS Measurement Report

Report Date: 01 Dec-16 15:21 (p 1 of 1)

Test Code: ANC0816.335m | 05-2051-2766

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	14-7607-1818	Test Type:	Development	Analyst:	Joe Freas		
Start Date:	30 Aug-16 10:03	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	01 Sep-16 10:03	Species:	Mytilis galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	14-7176-0166	Code:	ANC0816.335m	Client:	Anchor QEA		
Sample Date:	17 Aug-16 09:50	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	21 Jul-33 09:30	Source:	Bioassay Report				
Sample Age:	13d 0h	Station:	CS-SS-01-0-5-20160817				

Dissolved Oxygen-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
100		2	6.7	5.429	7.971	6.6	6.8	0.09999	0.1414	2.11%	0
Overall		4	6.6	6.15	7.05	6.2	6.8	0.1414	0.2828	4.29%	0 (0%)

pH-Units											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.85	5.944	9.756	7.7	8	0.15	0.2121	2.7%	0
Overall		4	7.875	7.675	8.075	7.7	8	0.06292	0.1258	1.60%	0 (0%)

Salinity-ppt											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
100		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		4	14.75	14.66	14.84	14.7	14.8	0.02887	0.05774	0.39%	0 (0%)

Dissolved Oxygen-mg/L			
Conc-%	Code	1	2
0	N	6.8	6.2
100		6.6	6.8

pH-Units			
Conc-%	Code	1	2
0	N	7.9	7.9
100		8	7.7

Salinity-ppt			
Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C			
Conc-%	Code	1	2
0	N	14.8	14.7
100		14.8	14.7

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-12-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.336

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	<100.00 %
TU _c =	>1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:25 (p 1 of 1)
 Test Code: ANC0813.336m | 09-9955-1598

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-5883-9412	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:04	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:04	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:

Sample ID: 00-9385-6190	Code: ANC0813.336m	Client: Anchor QEA
Sample Date: 17 Aug-16 12:44	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 17 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 21h	Station: IB-SS-12-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
05-1117-3677	Proportion Normal	Equal Variance t Two-Sample Test	<1.0E-37	100% failed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9406	0.9863	0.0077	0.0173	1.80%	0.00%
100		5	0.6502	0.6180	0.6825	0.6210	0.6895	0.0116	0.0260	3.99%	32.32%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.6484	0.6575	0.6895	0.6347	0.6210

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/219	208/219	216/219	211/219	206/219
100		142/219	144/219	151/219	139/219	136/219

CETIS Analytical Report

Report Date: 01 Dec-16 15:23 (p 2 of 2)
Test Code: ANC0813.336m | 09-9955-1598

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 05-1117-3677 Endpoint: Proportion Normal
Analyzed: 01 Dec-16 11:30 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

CETIS Measurement Report

Report Date: 01 Dec-16 15:24 (p 1 of 1)

Test Code: ANC0813.336m | 09-9955-1598

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-5883-9412	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:04	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:04	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 00-9385-6190	Code: ANC0813.336m	Client: Anchor QEA
Sample Date: 17 Aug-16 12:44	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 17 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 21h	Station: IB-SS-12-0-5-20160817	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
100		2	6.9	6.889	6.911	6.9	6.9	0	0	0.0%	0
Overall		4	6.7	6.164	7.236	6.2	6.9	0.1683	0.3367	5.03%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
Overall		4	7.825	7.673	7.977	7.7	7.9	0.04787	0.09574	1.22%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
100		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		4	14.75	14.66	14.84	14.7	14.8	0.02887	0.05774	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.8	6.2
100		6.9	6.9

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.7	7.8

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.7
100		14.8	14.7



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-13-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.337

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:28 (p 1 of 1)
 Test Code: ANC0816.337m | 06-2406-2415

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 07-3587-0550	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:05	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:05	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 01-7711-9829	Code: ANC0816.337m	Client: Anchor QEA
Sample Date: 17 Aug-16 13:00	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 21h	Station: IB-SS-13-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
15-0177-0264	Proportion Normal	Equal Variance t Two-Sample Test	0.3285	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9406	0.9863	0.0077	0.0173	1.80%	0.00%
100		5	0.9553	0.9324	0.9781	0.9361	0.9817	0.0082	0.0184	1.92%	0.57%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9817	0.9635	0.9406	0.9543	0.9361

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/219	208/219	216/219	211/219	206/219
100		215/219	211/219	206/219	209/219	205/219

CETIS Analytical Report

Report Date: 01 Dec-16 15:27 (p 2 of 2)
Test Code: ANC0816.337m | 06-2406-2415

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-0177-0264 Endpoint: Proportion Normal
Analyzed: 01 Dec-16 11:36 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

CETIS Measurement Report

Report Date: 01 Dec-16 15:27 (p 1 of 1)
 Test Code: ANC0816.337m | 06-2406-2415

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	07-3587-0550	Test Type:	Development	Analyst:	Joe Freas		
Start Date:	30 Aug-16 10:05	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	01 Sep-16 10:05	Species:	Mytilus galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	01-7711-9829	Code:	ANC0816.337m	Client:	Anchor QEA		
Sample Date:	17 Aug-16 13:00	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	18 Aug-16 09:30	Source:	Bioassay Report				
Sample Age:	12d 21h	Station:	IB-SS-13-0-5-20160817				

Dissolved Oxygen-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
100		2	7.2	5.929	8.471	7.1	7.3	0.1	0.1414	1.96%	0
Overall		4	6.85	6.087	7.613	6.2	7.3	0.2398	0.4796	7.00%	0 (0%)

pH-Units											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.95	3.503	12.4	7.6	8.3	0.35	0.495	6.23%	0
Overall		4	7.925	7.468	8.382	7.6	8.3	0.1436	0.2872	3.62%	0 (0%)

Salinity-ppt											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
100		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		4	14.75	14.66	14.84	14.7	14.8	0.02887	0.05774	0.39%	0 (0%)

Dissolved Oxygen-mg/L											
Conc-%	Code	1	2								
0	N	6.8	6.2								
100		7.3	7.1								

pH-Units											
Conc-%	Code	1	2								
0	N	7.9	7.9								
100		8.3	7.6								

Salinity-ppt											
Conc-%	Code	1	2								
0	N	34	34								
100		34	34								

Temperature-°C											
Conc-%	Code	1	2								
0	N	14.8	14.7								
100		14.8	14.7								

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-14-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.338

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:30 (p 1 of 1)

Test Code: ANC0816.338m | 09-8338-3290

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-4117-0093	Test Type: Development	Analyst: Joe Freas
Start Date: 30 Aug-16 10:06	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 01 Sep-16 10:06	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 01-5795-4976	Code: ANC0816.338m	Client: Anchor QEA
Sample Date: 17 Aug-16 14:15	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 12d 20h	Station: IB-SS-14-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
09-5700-3035	Proportion Normal	Equal Variance t Two-Sample Test	0.2797	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9607	0.9393	0.9822	0.9406	0.9863	0.0077	0.0173	1.80%	0.00%
100		5	0.9562	0.9431	0.9692	0.9406	0.9635	0.0047	0.0105	1.10%	0.48%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9635	0.9498	0.9863	0.9635	0.9406
100		0.9635	0.9498	0.9635	0.9406	0.9635

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/219	208/219	216/219	211/219	206/219
100		211/219	208/219	211/219	206/219	211/219

CETIS Analytical Report

Report Date: 01 Dec-16 15:29 (p 1 of 2)

Test Code: ANC0816.338m | 09-8338-3290

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Table with 3 columns: Analysis ID, Endpoint, and CETIS Version; Analyzed, Analysis, and Official Results; Batch ID, Test Type, and Analyst; Start Date, Protocol, and Diluent; Ending Date, Species, and Brine; Duration, Source, and Age; Sample ID, Code, and Client; Sample Date, Material, and Project; Receipt Date, Source, and Station; Sample Age, Station.

Table with 4 columns: Data Transform, Alt Hyp, Comparison Result, and PMSD. Row: Angular (Corrected), C > T, 100% passed proportion normal, 1.82%

Equal Variance t Two-Sample Test

Table with 10 columns: Control, vs, Conc-%, Test Stat, Critical, MSD, DF, P-Type, P-Value, Decision(alpha:5%). Row: Negative Control, 100, 0.6092, 1.86, 0.046, 8, CDF, 0.2797, Non-Significant Effect

ANOVA Table

Table with 7 columns: Source, Sum Squares, Mean Square, DF, F Stat, P-Value, Decision(alpha:5%). Rows: Between, Error, Total

Distributional Tests

Table with 7 columns: Attribute, Test, Test Stat, Critical, P-Value, Decision(alpha:1%). Rows: Variances (Levene, Mod Levene, Variance Ratio F), Distribution (Anderson-Darling, D'Agostino, Kolmogorov-Smirnov, Shapiro-Wilk)

Proportion Normal Summary

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Median, Min, Max, Std Err, CV%, %Effect. Rows: 0, 100

Angular (Corrected) Transformed Summary

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Median, Min, Max, Std Err, CV%, %Effect. Rows: 0, 100

Proportion Normal Detail

Table with 7 columns: Conc-%, Code, Rep 1, Rep 2, Rep 3, Rep 4, Rep 5. Rows: 0, 100

Angular (Corrected) Transformed Detail

Table with 7 columns: Conc-%, Code, Rep 1, Rep 2, Rep 3, Rep 4, Rep 5. Rows: 0, 100

CETIS Measurement Report

Report Date: 01 Dec-16 15:29 (p 1 of 1)
 Test Code: ANC0816.338m | 09-8338-3290

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	05-4117-0093	Test Type:	Development	Analyst:	Joe Freas		
Start Date:	30 Aug-16 10:06	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	01 Sep-16 10:06	Species:	Mytilus galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	01-5795-4976	Code:	ANC0816.338m	Client:	Anchor QEA		
Sample Date:	17 Aug-16 14:15	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	18 Aug-16 09:30	Source:	Bioassay Report				
Sample Age:	12d 20h	Station:	IB-SS-14-0-5-20160817				

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
100		2	6.5	2.688	10.31	6.2	6.8	0.3	0.4243	6.53%	0
Overall		4	6.5	5.949	7.051	6.2	6.8	0.1732	0.3464	5.33%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.65	7.015	8.285	7.6	7.7	0.05	0.07071	0.92%	0
Overall		4	7.775	7.536	8.014	7.6	7.9	0.075	0.15	1.93%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
100		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		4	14.75	14.66	14.84	14.7	14.8	0.02887	0.05774	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.8	6.2
100		6.8	6.2

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.6	7.7

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.7
100		14.8	14.7



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	OB-SS-17-0-5-20160818
DATE RECEIVED:	8/20/2016 ANC0816.339
ABC LAB. NO.:	

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	SP-SS-20-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.340

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:34 (p 1 of 1)

Test Code: ANC0816.340m | 15-2589-3564

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-6067-7439
Start Date: 31 Aug-16 11:01
Ending Date: 02 Sep-16 11:01
Duration: 48h

Test Type: Development
Protocol: EPA/600/R-95/136 (1995)
Species: Mytilis galloprovincialis
Source: Carlsbad Aquafarms CA

Analyst: Joe Freas
Diluent: Laboratory Seawater
Brine: Not Applicable
Age:

Sample ID: 04-7803-9251
Sample Date: 18 Aug-16 09:40
Receipt Date: 20 Aug-16 10:25
Sample Age: 13d 1h

Code: ANC0816.340m
Material: Sediment
Source: Bioassay Report
Station: SP-SS-20-0-5-20160818

Client: Anchor QEA
Project: GWMA Sediment Sampling

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
00-8611-0777	Proportion Normal	Equal Variance t Two-Sample Test	0.1213	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9731	0.9383	1.0000	0.9306	1.0000	0.0125	0.0281	2.88%	0.00%
100		5	0.9602	0.9458	0.9746	0.9491	0.9769	0.0052	0.0116	1.21%	1.33%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9954	0.9630	1.0000	0.9306
100		0.9769	0.9537	0.9491	0.9676	0.9537

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/216	215/216	208/216	216/216	201/216
100		211/216	206/216	205/216	209/216	206/216

CETIS Analytical Report

Report Date: 01 Dec-16 15:33 (p 1 of 2)
 Test Code: ANC0816.340m | 15-2589-3564

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID:	00-8611-0777	Endpoint:	Proportion Normal	CETIS Version:	CETISv1.9.2		
Analyzed:	01 Dec-16 13:48	Analysis:	Parametric-Two Sample	Official Results:	Yes		
Batch ID:	05-6067-7439	Test Type:	Development	Analyst:	Joe Freas		
Start Date:	31 Aug-16 11:01	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	02 Sep-16 11:01	Species:	Mytilis galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Carlsbad Aquafarms CA	Age:			
Sample ID:	04-7803-9251	Code:	ANC0816.340m	Client:	Anchor QEA		
Sample Date:	18 Aug-16 09:40	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	20 Aug-16 10:25	Source:	Bioassay Report				
Sample Age:	13d 1h	Station:	SP-SS-20-0-5-20160818				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.38%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.262	1.86	0.083	8	CDF	0.1213	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0078348	0.0078348	1	1.592	0.2425	Non-Significant Effect
Error	0.0393635	0.0049204	8			
Total	0.0471983		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.1	11.26	0.0539	Equal Variances
Variances	Mod Levene Equality of Variance Test	7.312	13.75	0.0354	Equal Variances
Variances	Variance Ratio F Test	9.038	23.15	0.0556	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.2675	3.878	0.7135	Normal Distribution
Distribution	D'Agostino Skewness Test	0.1694	2.576	0.8654	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1583	0.3025	0.8216	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9716	0.7411	0.9049	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9731	0.9383	1.0000	0.9769	0.9306	1.0000	0.0125	2.88%	0.00%
100		5	0.9602	0.9458	0.9746	0.9537	0.9491	0.9769	0.0052	1.21%	1.33%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.428	1.311	1.545	1.418	1.304	1.537	0.0421	6.59%	0.00%
100		5	1.372	1.333	1.411	1.354	1.343	1.418	0.014	2.28%	3.92%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9954	0.9630	1.0000	0.9306
100		0.9769	0.9537	0.9491	0.9676	0.9537

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.418	1.503	1.377	1.537	1.304
100		1.418	1.354	1.343	1.39	1.354

CETIS Analytical Report

Report Date: 01 Dec-16 15:33 (p 2 of 2)

Test Code: ANC0816.340m | 15-2589-3564

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-8611-0777
Analyzed: 01 Dec-16 13:48

Endpoint: Proportion Normal
Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

CETIS Measurement Report

Report Date: 01 Dec-16 15:33 (p 1 of 1)
 Test Code: ANC0816.340m | 15-2589-3564

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-6067-7439	Test Type: Development	Analyst: Joe Freas
Start Date: 31 Aug-16 11:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 11:01	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 04-7803-9251	Code: ANC0816.340m	Client: Anchor QEA
Sample Date: 18 Aug-16 09:40	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 1h	Station: SP-SS-20-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.75	4.844	8.656	6.6	6.9	0.15	0.2121	3.14%	0
100		2	6.95	6.315	7.585	6.9	7	0.05	0.07071	1.02%	0
Overall		4	6.85	6.574	7.126	6.6	7	0.0866	0.1732	2.53%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8	8	8	8	8	0	0	0.0%	0
100		2	7.75	5.844	9.656	7.6	7.9	0.15	0.2121	2.74%	0
Overall		4	7.875	7.574	8.176	7.6	8	0.09465	0.1893	2.40%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	13.53	16.07	14.7	14.9	0.1	0.1414	0.96%	0
100		2	14.8	13.53	16.07	14.7	14.9	0.1	0.1414	0.96%	0
Overall		4	14.8	14.62	14.98	14.7	14.9	0.05773	0.1155	0.78%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.9	6.6
100		6.9	7

pH-Units

Conc-%	Code	1	2
0	N	8	8
100		7.9	7.6

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.7	14.9
100		14.7	14.9

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

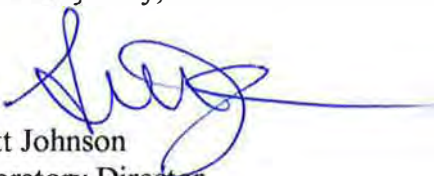
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	SP-SS-19-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.341

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:37 (p 1 of 1)

Test Code: ANC0816.341m | 19-1744-2152

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-2152-3928	Test Type: Development	Analyst: Joe Freas
Start Date: 31 Aug-16 11:02	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 11:02	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 19-2274-0151	Code: ANC0816.341m	Client: Anchor QEA
Sample Date: 18 Aug-16 10:38	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 0h	Station: SP-SS-19-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
11-4236-0116	Proportion Normal	Equal Variance t Two-Sample Test	0.3331	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9731	0.9383	1.0000	0.9306	1.0000	0.0125	0.0281	2.88%	0.00%
100		5	0.9722	0.9555	0.9890	0.9537	0.9861	0.0060	0.0135	1.39%	0.10%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9954	0.9630	1.0000	0.9306
100		0.9861	0.9769	0.9815	0.9630	0.9537

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/216	215/216	208/216	216/216	201/216
100		213/216	211/216	212/216	208/216	206/216



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	SP-SS-18-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.342

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Dec-16 12:48 (p 1 of 1)

Test Code: ANC0816.342m | 04-7922-9827

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-2014-9675	Test Type: Development	Analyst: Joe Freas
Start Date: 31 Aug-16 11:03	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 11:03	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 13-9487-7922	Code: ANC0816.342m	Client: Anchor QEA
Sample Date: 18 Aug-16 12:03	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 12d 23h	Station: SP-SS-18-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
19-7509-4334	Proportion Normal	Equal Variance t Two-Sample Test	0.1922	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9731	0.9383	1.0000	0.9306	1.0000	0.0125	0.0281	2.88%	0.00%
100		5	0.9630	0.9382	0.9877	0.9352	0.9861	0.0089	0.0199	2.07%	1.05%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9954	0.9630	1.0000	0.9306
100		0.9861	0.9352	0.9630	0.9769	0.9537

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/216	215/216	208/216	216/216	201/216
100		213/216	202/216	208/216	211/216	206/216

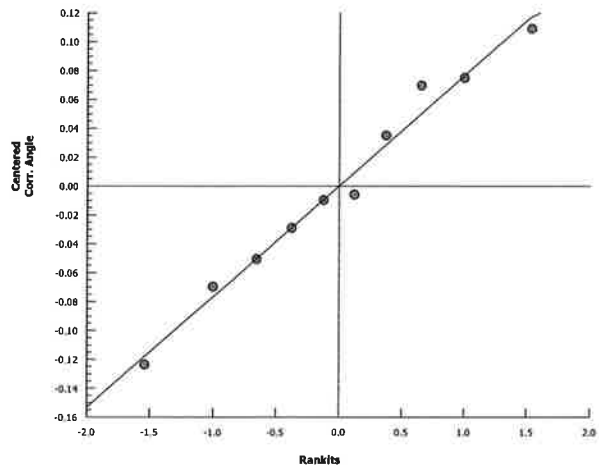
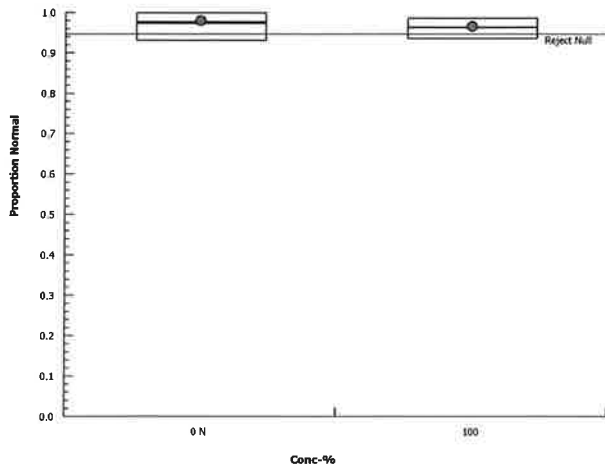
Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-7509-4334 Endpoint: Proportion Normal
Analyzed: 20 Dec-16 12:47 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 20 Dec-16 12:47 (p 1 of 1)
 Test Code: ANC0816.342m | 04-7922-9827

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-2014-9675	Test Type: Development	Analyst: Joe Freas
Start Date: 31 Aug-16 11:03	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 11:03	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 13-9487-7922	Code: ANC0816.342m	Client: Anchor QEA
Sample Date: 18 Aug-16 12:03	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 12d 23h	Station: SP-SS-18-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.75	4.844	8.656	6.6	6.9	0.15	0.2121	3.14%	0
100		2	6.65	6.015	7.285	6.6	6.7	0.04998	0.07069	1.06%	0
Overall		4	6.7	6.475	6.925	6.6	6.9	0.07071	0.1414	2.11%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8	8	8	8	8	0	0	0.0%	0
100		2	8.05	7.415	8.685	8	8.1	0.05001	0.07073	0.88%	0
Overall		4	8.025	7.945	8.105	8	8.1	0.025	0.05	0.62%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	13.53	16.07	14.7	14.9	0.1	0.1414	0.96%	0
100		2	14.8	13.53	16.07	14.7	14.9	0.1	0.1414	0.96%	0
Overall		4	14.8	14.62	14.98	14.7	14.9	0.05773	0.1155	0.78%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.9	6.6
100		6.6	6.7

pH-Units

Conc-%	Code	1	2
0	N	8	8
100		8.1	8

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.7	14.9
100		14.7	14.9



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	LE-SS-21-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.343

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 01 Dec-16 15:40 (p 1 of 2)
 Test Code: ANC0816.343m | 09-3651-2375

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 14-1926-9844	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2	Analyzed: 01 Dec-16 14:01	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 01-6554-3067	Test Type: Development	Analyst: Joe Freas	Start Date: 31 Aug-16 11:04	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 11:04	Species: Mytilis galloprovincialis	Brine: Not Applicable	Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 16-9247-2951	Code: ANC0816.343m	Client: Anchor QEA	Sample Date: 18 Aug-16 13:46	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report		Sample Age: 12d 21h	Station: LE-SS-21-0-5-20160818	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.38%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.262	1.86	0.083	8	CDF	0.1213	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0078348	0.0078348	1	1.592	0.2425	Non-Significant Effect
Error	0.0393635	0.0049204	8			
Total	0.0471983		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.1	11.26	0.0539	Equal Variances
Variances	Mod Levene Equality of Variance Test	7.312	13.75	0.0354	Equal Variances
Variances	Variance Ratio F Test	9.038	23.15	0.0556	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.2675	3.878	0.7135	Normal Distribution
Distribution	D'Agostino Skewness Test	0.1694	2.576	0.8654	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1583	0.3025	0.8216	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9716	0.7411	0.9049	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9731	0.9383	1.0000	0.9769	0.9306	1.0000	0.0125	2.88%	0.00%
100		5	0.9602	0.9458	0.9746	0.9537	0.9491	0.9769	0.0052	1.21%	1.33%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.428	1.311	1.545	1.418	1.304	1.537	0.0421	6.59%	0.00%
100		5	1.372	1.333	1.411	1.354	1.343	1.418	0.014	2.28%	3.92%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9769	0.9954	0.9630	1.0000	0.9306
100		0.9769	0.9537	0.9676	0.9491	0.9537

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.418	1.503	1.377	1.537	1.304
100		1.418	1.354	1.39	1.343	1.354

CETIS Analytical Report

Report Date: 01 Dec-16 15:40 (p 2 of 2)
Test Code: ANC0816.343m | 09-3651-2375

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 14-1926-9844 Endpoint: Proportion Normal
Analyzed: 01 Dec-16 14:01 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

CETIS Measurement Report

Report Date: 01 Dec-16 15:40 (p 1 of 1)
 Test Code: ANC0816.343m | 09-3651-2375

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 01-6554-3067	Test Type: Development	Analyst: Joe Freas
Start Date: 31 Aug-16 11:04	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 02 Sep-16 11:04	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 16-9247-2951	Code: ANC0816.343m	Client: Anchor QEA
Sample Date: 18 Aug-16 13:46	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 12d 21h	Station: LE-SS-21-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.75	4.844	8.656	6.6	6.9	0.15	0.2121	3.14%	0
100		2	6.2	4.929	7.471	6.1	6.3	0.1	0.1414	2.28%	0
Overall		4	6.475	5.918	7.032	6.1	6.9	0.175	0.35	5.41%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8	8	8	8	8	0	0	0.0%	0
100		2	7.8	6.529	9.071	7.7	7.9	0.1	0.1414	1.81%	0
Overall		4	7.9	7.675	8.125	7.7	8	0.07071	0.1414	1.79%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	13.53	16.07	14.7	14.9	0.1	0.1414	0.96%	0
100		2	14.8	13.53	16.07	14.7	14.9	0.1	0.1414	0.96%	0
Overall		4	14.8	14.62	14.98	14.7	14.9	0.05773	0.1155	0.78%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.9	6.6
100		6.1	6.3

pH-Units

Conc-%	Code	1	2
0	N	8	8
100		7.9	7.7

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.7	14.9
100		14.7	14.9



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R- 95/136. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	LE-SS-22-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.344

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 02 Dec-16 08:41 (p 1 of 1)
 Test Code: ANC0816.344m | 19-2709-1402

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-6449-6426	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:00	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 11-8889-0292	Code: ANC0816.344m	Client: Anchor QEA
Sample Date: 18 Aug-16 14:35	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 19h	Station: LE-SS-22-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
07-1133-7701	Proportion Normal	Equal Variance t Two-Sample Test	0.0674	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9204	0.9735	0.0104	0.0232	2.44%	0.00%
100		5	0.9310	0.9109	0.9510	0.9115	0.9558	0.0072	0.0161	1.73%	2.14%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.9336	0.9248	0.9115	0.9292	0.9558

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	220/226	217/226	211/226	208/226
100		211/226	209/226	206/226	210/226	216/226

CETIS Analytical Report

Report Date: 02 Dec-16 08:41 (p 1 of 2)
 Test Code: ANC0816.344m | 19-2709-1402

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 07-1133-7701	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 02 Dec-16 8:41	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 08-6449-6426	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:00	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 11-8889-0292	Code: ANC0816.344m	Client: Anchor QEA
Sample Date: 18 Aug-16 14:35	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 19h	Station: LE-SS-22-0-5-20160818	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.35%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.663	1.86	0.052	8	CDF	0.0674	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0054542	0.0054542	1	2.767	0.1348	Non-Significant Effect
Error	0.0157711	0.0019714	8			
Total	0.0212254		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	2.942	11.26	0.1246	Equal Variances
Variances	Mod Levene Equality of Variance Test	1.926	13.75	0.2145	Equal Variances
Variances	Variance Ratio F Test	2.593	23.15	0.3786	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.2348	3.878	0.8214	Normal Distribution
Distribution	D'Agostino Skewness Test	0.2373	2.576	0.8124	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1346	0.3025	1.0000	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9512	0.7411	0.6825	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9602	0.9204	0.9735	0.0104	2.44%	0.00%
100		5	0.9310	0.9109	0.9510	0.9292	0.9115	0.9558	0.0072	1.73%	2.14%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.353	1.287	1.419	1.37	1.285	1.407	0.02386	3.94%	0.00%
100		5	1.306	1.265	1.348	1.301	1.269	1.359	0.01481	2.54%	3.45%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.9336	0.9248	0.9115	0.9292	0.9558

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.394	1.407	1.37	1.31	1.285
100		1.31	1.293	1.269	1.301	1.359

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	220/226	217/226	211/226	208/226
100		211/226	209/226	206/226	210/226	216/226

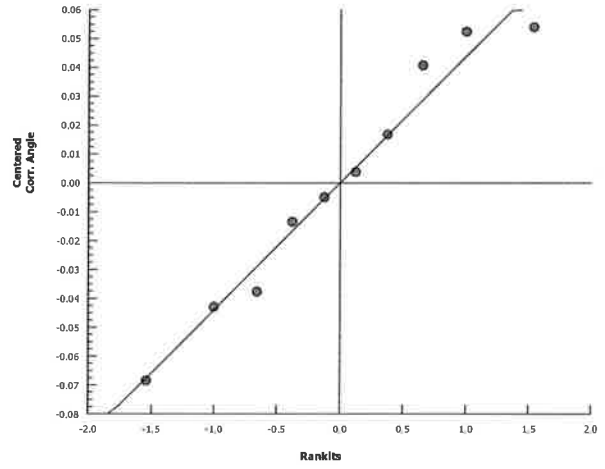
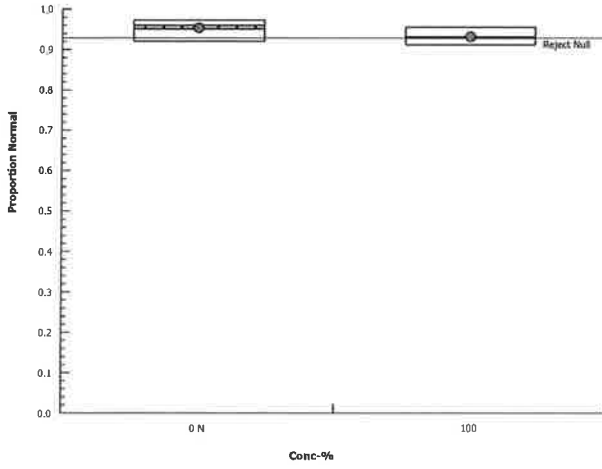
Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 07-1133-7701 Endpoint: Proportion Normal
Analyzed: 02 Dec-16 8:41 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 02 Dec-16 08:41 (p 1 of 1)
 Test Code: ANC0816.344m | 19-2709-1402

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-6449-6426	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:00	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 11-8889-0292	Code: ANC0816.344m	Client: Anchor QEA
Sample Date: 18 Aug-16 14:35	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 19h	Station: LE-SS-22-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.3	3.759	8.841	6.1	6.5	0.2	0.2828	4.49%	0
100		2	6.55	2.103	11	6.2	6.9	0.35	0.495	7.56%	0
Overall		4	6.425	5.853	6.997	6.1	6.9	0.1797	0.3594	5.59%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8.15	6.244	10.06	8	8.3	0.15	0.2121	2.6%	0
100		2	7.65	7.015	8.285	7.6	7.7	0.05	0.07071	0.92%	0
Overall		4	7.9	7.397	8.403	7.6	8.3	0.1581	0.3162	4.00%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.5	6.1
100		6.9	6.2

pH-Units

Conc-%	Code	1	2
0	N	8.3	8
100		7.7	7.6

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-15-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.345

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	<100.00 %
TUc =	>1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:48 (p 1 of 1)
 Test Code: ANC0816.345m | 05-5469-1163

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 21-4450-9997	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:01	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 20-3616-2500	Code: ANC0816.345m	Client: Anchor QEA
Sample Date: 18 Aug-16 15:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 18h	Station: IB-SS-15-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
00-6775-0125	Proportion Normal	Equal Variance t Two-Sample Test	1.9E-04	100% failed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9204	0.9735	0.0104	0.0232	2.44%	0.00%
100		5	0.8363	0.7885	0.8840	0.7832	0.8894	0.0172	0.0385	4.60%	12.09%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.8894	0.8230	0.8451	0.7832	0.8407

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	220/226	217/226	211/226	208/226
100		201/226	186/226	191/226	177/226	190/226

CETIS Analytical Report

Report Date: 01 Dec-16 15:47 (p 1 of 2)
 Test Code: ANC0816.345m | 05-5469-1163

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-6775-0125	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 15:46	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 21-4450-9997	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:01	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 20-3616-2500	Code: ANC0816.345m	Client: Anchor QEA
Sample Date: 18 Aug-16 15:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 18h	Station: IB-SS-15-0-5-20160818	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed proportion normal	2.91%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	5.876	1.86	0.062	8	CDF	1.9E-04	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0969217	0.0969217	1	34.53	3.7E-04	Significant Effect
Error	0.0224577	0.0028072	8			
Total	0.119379		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.2507	11.26	0.6301	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.1277	13.75	0.7330	Equal Variances
Variances	Variance Ratio F Test	1.028	23.15	0.9796	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.232	3.878	0.8307	Normal Distribution
Distribution	D'Agostino Skewness Test	0.1477	2.576	0.8826	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1317	0.3025	1.0000	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9528	0.7411	0.7021	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9602	0.9204	0.9735	0.0104	2.44%	0.00%
100		5	0.8363	0.7885	0.8840	0.8407	0.7832	0.8894	0.0172	4.60%	12.09%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.353	1.287	1.419	1.37	1.285	1.407	0.02386	3.94%	0.00%
100		5	1.156	1.091	1.222	1.16	1.086	1.232	0.02353	4.55%	14.55%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.8894	0.8230	0.8451	0.7832	0.8407

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.394	1.407	1.37	1.31	1.285
100		1.232	1.137	1.166	1.086	1.16

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	220/226	217/226	211/226	208/226
100		201/226	186/226	191/226	177/226	190/226

CETIS Measurement Report

Report Date: 01 Dec-16 15:47 (p 1 of 1)
 Test Code: ANC0816.345m | 05-5469-1163

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 21-4450-9997	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:01	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:01	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 20-3616-2500	Code: ANC0816.345m	Client: Anchor QEA
Sample Date: 18 Aug-16 15:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 18h	Station: IB-SS-15-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.3	3.759	8.841	6.1	6.5	0.2	0.2828	4.49%	0
100		2	6.2	4.929	7.471	6.1	6.3	0.1	0.1414	2.28%	0
Overall		4	6.25	5.945	6.555	6.1	6.5	0.09574	0.1915	3.06%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8.15	6.244	10.06	8	8.3	0.15	0.2121	2.6%	0
100		2	7.75	5.844	9.656	7.6	7.9	0.15	0.2121	2.74%	0
Overall		4	7.95	7.491	8.409	7.6	8.3	0.1443	0.2887	3.63%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.5	6.1
100		6.1	6.3

pH-Units

Conc-%	Code	1	2
0	N	8.3	8
100		7.9	7.6

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8

November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

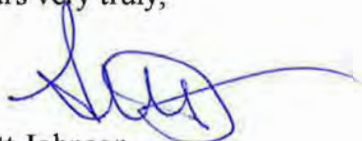
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	OB-SS-16-0-5-20160819
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.346

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:51 (p 1 of 1)
Test Code: ANC0816.346m | 19-5664-2630

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 17-5928-7367	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:02	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:02	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:

Sample ID: 02-9002-5856	Code: ANC0816.346m	Client: Anchor QEA
Sample Date: 19 Aug-16 08:05	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 2h	Station: OB-SS-16-0-5-20160819	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
11-8984-5753	Proportion Normal	Equal Variance t Two-Sample Test	0.2524	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9204	0.9735	0.0104	0.0232	2.44%	0.00%
100		5	0.9425	0.9182	0.9667	0.9204	0.9690	0.0087	0.0195	2.07%	0.93%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.9690	0.9558	0.9336	0.9204	0.9336

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	220/226	217/226	211/226	208/226
100		219/226	216/226	211/226	208/226	211/226

CETIS Analytical Report

Report Date: 01 Dec-16 15:49 (p 1 of 2)
 Test Code: ANC0816.346m | 19-5664-2630

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 11-8984-5753	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2
Analyzed: 01 Dec-16 14:29	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 17-5928-7367	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:02	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:02	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 02-9002-5856	Code: ANC0816.346m	Client: Anchor QEA
Sample Date: 19 Aug-16 08:05	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 2h	Station: OB-SS-16-0-5-20160819	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.64%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.6982	1.86	0.057	8	CDF	0.2524	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0011648	0.0011648	1	0.4874	0.5049	Non-Significant Effect
Error	0.0191174	0.0023897	8			
Total	0.0202822		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.5505	11.26	0.4793	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.2937	13.75	0.6074	Equal Variances
Variances	Variance Ratio F Test	1.471	23.15	0.7174	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.3508	3.878	0.4747	Normal Distribution
Distribution	D'Agostino Skewness Test	0.06688	2.576	0.9467	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1784	0.3025	0.5557	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9341	0.7411	0.4895	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9602	0.9204	0.9735	0.0104	2.44%	0.00%
100		5	0.9425	0.9182	0.9667	0.9336	0.9204	0.9690	0.0087	2.07%	0.93%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.353	1.287	1.419	1.37	1.285	1.407	0.02386	3.94%	0.00%
100		5	1.332	1.277	1.386	1.31	1.285	1.394	0.01967	3.30%	1.60%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.9690	0.9558	0.9336	0.9204	0.9336

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.394	1.407	1.37	1.31	1.285
100		1.394	1.359	1.31	1.285	1.31

CETIS Analytical Report

Report Date: 01 Dec-16 15:49 (p 2 of 2)

Test Code: ANC0816.346m | 19-5664-2630

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 11-8984-5753
Analyzed: 01 Dec-16 14:29

Endpoint: Proportion Normal
Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

CETIS Measurement Report

Report Date: 01 Dec-16 15:49 (p 1 of 1)
Test Code: ANC0816.346m | 19-5664-2630

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 17-5928-7367 Test Type: Development
Start Date: 01 Sep-16 10:02 Protocol: EPA/600/R-95/136 (1995)
Ending Date: 03 Sep-16 10:02 Species: Mytilis galloprovincialis
Duration: 48h Source: Carlsbad Aquafarms CA

Analyst: Joe Freas
Diluent: Laboratory Seawater
Brine: Not Applicable
Age:

Sample ID: 02-9002-5856 Code: ANC0816.346m
Sample Date: 19 Aug-16 08:05 Material: Sediment
Receipt Date: 20 Aug-16 10:25 Source: Bioassay Report
Sample Age: 13d 2h Station: OB-SS-16-0-5-20160819

Client: Anchor QEA
Project: GWMA Sediment Sampling

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.3	3.759	8.841	6.1	6.5	0.2	0.2828	4.49%	0
100		2	6.9	5.629	8.171	6.8	7	0.1	0.1414	2.05%	0
Overall		4	6.6	5.977	7.223	6.1	7	0.1958	0.3916	5.93%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8.15	6.244	10.06	8	8.3	0.15	0.2121	2.6%	0
100		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		4	8.025	7.724	8.326	7.9	8.3	0.09465	0.1893	2.36%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.5	6.1
100		6.8	7

pH-Units

Conc-%	Code	1	2
0	N	8.3	8
100		7.9	7.9

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8



November 29, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA/600/R-95/136. Results were as follows:

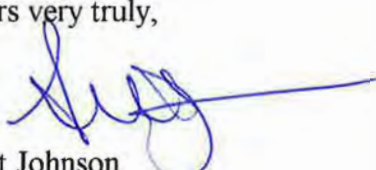
CLIENT:	Anchor QEA
SAMPLE I.D.:	OA-SS-08-0-5-20160819
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.347

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %
TUc = 1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 01 Dec-16 15:54 (p 1 of 1)
 Test Code: ANC0816.347m | 03-2579-7233

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-1543-2837	Test Type: Development	Analyst: Joe Freas
Start Date: 01 Sep-16 10:03	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 03 Sep-16 10:03	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 13-3536-7538	Code: ANC0816.347m	Client: Anchor QEA
Sample Date: 19 Aug-16 09:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 13d 1h	Station: OA-SS-08-0-5-20160819	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
01-1628-7696	Proportion Normal	Equal Variance t Two-Sample Test	0.5123	100% passed proportion normal

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9204	0.9735	0.0104	0.0232	2.44%	0.00%
100		5	0.9531	0.9373	0.9689	0.9336	0.9690	0.0057	0.0128	1.34%	-0.19%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.9690	0.9558	0.9336	0.9558	0.9513

Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	219/226	220/226	217/226	211/226	208/226
100		219/226	216/226	211/226	216/226	215/226

CETIS Analytical Report

Report Date: 01 Dec-16 15:53 (p 1 of 2)
 Test Code: ANC0816.347m | 03-2579-7233

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 01-1628-7696	Endpoint: Proportion Normal	CETIS Version: CETISv1.9.2			
Analyzed: 01 Dec-16 14:36	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 06-1543-2837	Test Type: Development	Analyst: Joe Freas			
Start Date: 01 Sep-16 10:03	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 03 Sep-16 10:03	Species: Mytilus galloprovincialis	Brine: Not Applicable			
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:			
Sample ID: 13-3536-7538	Code: ANC0816.347m	Client: Anchor QEA			
Sample Date: 19 Aug-16 09:10	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report				
Sample Age: 13d 1h	Station: OA-SS-08-0-5-20160819				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed proportion normal	2.28%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.03187	1.86	0.051	8	CDF	0.5123	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.9E-06	1.9E-06	1	0.001016	0.9754	Non-Significant Effect
Error	0.0149671	0.0018709	8			
Total	0.014969		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	3.985	11.26	0.0810	Equal Variances
Variances	Mod Levene Equality of Variance Test	2.576	13.75	0.1596	Equal Variances
Variances	Variance Ratio F Test	3.174	23.15	0.2893	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.3455	3.878	0.4877	Normal Distribution
Distribution	D'Agostino Skewness Test	0.5898	2.576	0.5553	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1538	0.3025	0.8883	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9389	0.7411	0.5411	Normal Distribution

Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9513	0.9225	0.9801	0.9602	0.9204	0.9735	0.0104	2.44%	0.00%
100		5	0.9531	0.9373	0.9689	0.9558	0.9336	0.9690	0.0057	1.34%	-0.19%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.353	1.287	1.419	1.37	1.285	1.407	0.02386	3.94%	0.00%
100		5	1.354	1.317	1.391	1.359	1.31	1.394	0.01339	2.21%	-0.06%

Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9690	0.9735	0.9602	0.9336	0.9204
100		0.9690	0.9558	0.9336	0.9558	0.9513

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.394	1.407	1.37	1.31	1.285
100		1.394	1.359	1.31	1.359	1.348

CETIS Measurement Report

Report Date: 01 Dec-16 15:53 (p 1 of 1)

Test Code: ANC0816.347m | 03-2579-7233

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-1543-2837
 Start Date: 01 Sep-16 10:03
 Ending Date: 03 Sep-16 10:03
 Duration: 48h
 Test Type: Development
 Protocol: EPA/600/R-95/136 (1995)
 Species: Mytilis galloprovincialis
 Source: Carlsbad Aquafarms CA

Analyst: Joe Freas
 Diluent: Laboratory Seawater
 Brine: Not Applicable
 Age:

Sample ID: 13-3536-7538
 Sample Date: 19 Aug-16 09:10
 Receipt Date: 20 Aug-16 10:25
 Sample Age: 13d 1h
 Code: ANC0816.347m
 Material: Sediment
 Source: Bioassay Report
 Station: OA-SS-08-0-5-20160819

Client: Anchor QEA
 Project: GWMA Sediment Sampling

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.3	3.759	8.841	6.1	6.5	0.2	0.2828	4.49%	0
100		2	7.15	6.515	7.785	7.1	7.2	0.05	0.07071	0.99%	0
Overall		4	6.725	5.899	7.551	6.1	7.2	0.2594	0.5188	7.72%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	8.15	6.244	10.06	8	8.3	0.15	0.2121	2.6%	0
100		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		4	8.025	7.724	8.326	7.9	8.3	0.09465	0.1893	2.36%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	6.5	6.1
100		7.2	7.1

pH-Units

Conc-%	Code	1	2
0	N	8.3	8
100		7.9	7.9

Salinity-ppt

Conc-%	Code	1	2
0	N	34	34
100		34	34

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	CM-SS-10-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.326

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY


NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 %

EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 13:29 (p 1 of 1)
 Test Code: ANC0816.326 | 00-1312-5177

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 17-6337-9998	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:00	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 06-1320-5009	Code: ANC0816.326	Client: Anchor QEA
Sample Date: 16 Aug-16 08:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 76h	Station: CM-SS-10-0-5-20160816	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
02-6943-9854	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.7778	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-6943-9854	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	-1.03%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	1.0000	0.9000	1.0000	1.0000

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		20/20	20/20	18/20	20/20	20/20

CETIS Analytical Report

Report Date: 30 Nov-16 13:28 (p 1 of 2)
 Test Code: ANC0816.326 | 00-1312-5177

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 02-6943-9854	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2			
Analyzed: 30 Nov-16 9:35	Analysis: Nonparametric-Two Sample	Official Results: Yes			
Batch ID: 17-6337-9998	Test Type: Survival-Reburial	Analyst: Joe Freas			
Start Date: 19 Aug-16 13:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater			
Ending Date: 29 Aug-16 13:00	Species: Eohaustorius estuarius	Brine: Not Applicable			
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:			
Sample ID: 06-1320-5009	Code: ANC0816.326	Client: Anchor QEA			
Sample Date: 16 Aug-16 08:50	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report				
Sample Age: 76h	Station: CM-SS-10-0-5-20160816				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	5.20%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	29.5	n/a	2	8	Exact	0.7778	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0012877	0.0012877	1	0.1448	0.7135	Non-Significant Effect
Error	0.0711497	0.0088937	8			
Total	0.0724374		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.1179	11.26	0.7402	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.1515	13.75	0.7105	Equal Variances
Variances	Variance Ratio F Test	1.022	23.15	0.9835	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.493	3.878	1.9E-04	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	1.936	2.576	0.0529	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3814	0.3025	1.8E-04	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.722	0.7411	0.0016	Non-Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	1.0000	0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	-1.03%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512	1.459	1.249	1.459	0.04241	6.80%	0.00%
100		5	1.417	1.3	1.533	1.459	1.249	1.459	0.04194	6.62%	-1.63%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	1.0000	0.9000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.459	1.459	1.249	1.459	1.459

CETIS Analytical Report

Report Date: 30 Nov-16 13:28 (p 2 of 2)
Test Code: ANC0816.326 | 00-1312-5177

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

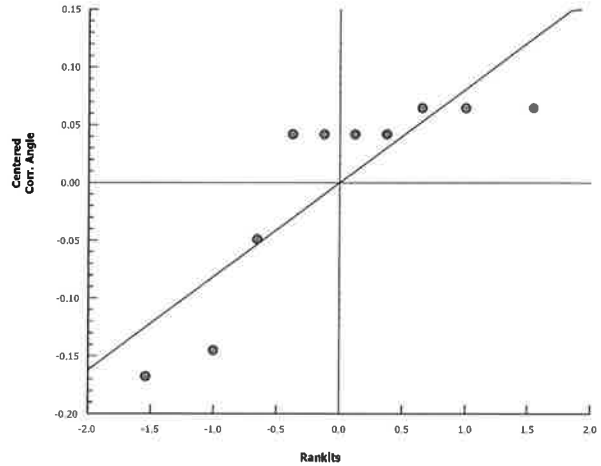
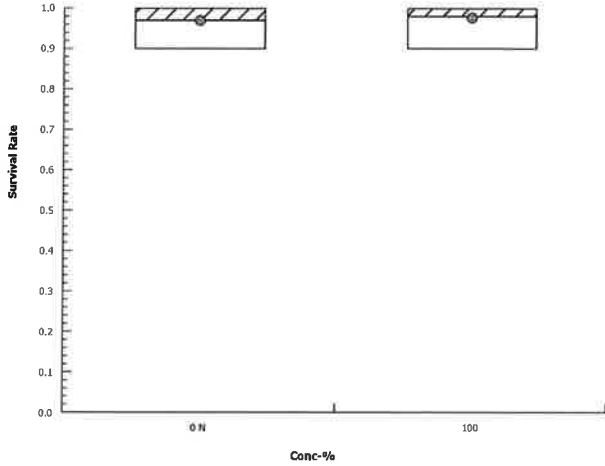
Analysis ID: 02-6943-9854 Endpoint: Survival Rate
Analyzed: 30 Nov-16 9:35 Analysis: Nonparametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		20/20	20/20	18/20	20/20	20/20

Graphics



CETIS Measurement Report

Report Date: 30 Nov-16 13:28 (p 1 of 1)
 Test Code: ANC0816.326 | 00-1312-5177

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 17-6337-9998 Test Type: Survival-Reburial
 Start Date: 19 Aug-16 13:00 Protocol: EPA/600/R-94/025 (1994)
 Ending Date: 29 Aug-16 13:00 Species: Eohaustorius estuarius
 Duration: 10d 0h Source: Northwestern Aquatic Science, OR

Analyst: Joe Freas
 Diluent: Laboratory Seawater
 Brine: Not Applicable
 Age:

Sample ID: 06-1320-5009 Code: ANC0816.326
 Sample Date: 16 Aug-16 08:50 Material: Sediment
 Receipt Date: 18 Aug-16 09:30 Source: Bioassay Report
 Sample Age: 76h Station: CM-SS-10-0-5-20160816

Client: Anchor QEA
 Project: GWMA Sediment Sampling

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10.2	8.929	11.47	10.1	10.3	0.1	0.1414	1.39%	0
Overall		4	10.13	9.925	10.33	10	10.3	0.06292	0.1258	1.24%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	7.8	6.529	9.071	7.7	7.9	0.1	0.1414	1.81%	0
Overall		4	7.775	7.623	7.927	7.7	7.9	0.04787	0.09574	1.23%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		10.3	10.1

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		7.9	7.7

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.9
100		14.8	14.9

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	CB-SS-11-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.327

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 02 Dec-16 09:04 (p 2 of 2)

Test Code: ANC0813.327 | 11-3940-8834

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-6069-5370

Endpoint: Survival Rate

CETIS Version: CETISv1.9.2

Analyzed: 02 Dec-16 9:03

Analysis: Parametric-Two Sample

Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 02 Dec-16 09:04 (p 1 of 1)
 Test Code: ANC0813.327 | 11-3940-8834

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 20-7539-7147	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:01	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 09-9540-8023	Code: ANC0816.327	Client: Anchor QEA
Sample Date: 16 Aug-16 09:35	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 75h	Station: CB-SS-11-0-5-20160816	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	9.4	3.047	15.75	8.9	9.9	0.5	0.7071	7.52%	0
Overall		4	9.725	8.84	10.61	8.9	10.1	0.278	0.556	5.72%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	7.55	1.832	13.27	7.1	8	0.45	0.6364	8.43%	0
Overall		4	7.65	7.034	8.266	7.1	8	0.1936	0.3873	5.06%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	16.35	-3.345	36.04	14.8	17.9	1.55	2.192	13.41%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	15.6	13.16	18.04	14.8	17.9	0.767	1.534	9.83%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		9.9	8.9

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		7.1	8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	17.9	14.8
100		14.9	14.8



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	OA-SS-09-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.328

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Measurement Report

Report Date: 30 Nov-16 13:34 (p 1 of 1)
 Test Code: ANC0816.328 | 04-5291-6091

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-7522-1236	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:02	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:02	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 14-9869-5518	Code: ANC0816.328	Client: Anchor QEA
Sample Date: 16 Aug-16 10:36	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 74h	Station: OA-SS-09-0-5-20160916	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	9.4	3.047	15.75	8.9	9.9	0.5	0.7071	7.52%	0
Overall		4	9.725	8.84	10.61	8.9	10.1	0.278	0.556	5.72%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	8.05	7.415	8.685	8	8.1	0.05001	0.07073	0.88%	0
Overall		4	7.9	7.609	8.191	7.7	8.1	0.09129	0.1826	2.31%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		9.9	8.9

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		8.1	8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

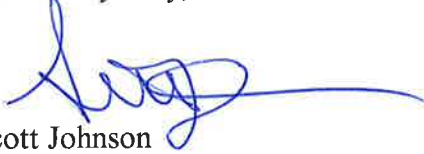
CLIENT: Anchor QEA
SAMPLE I.D.: FH-SS-07-0-5-20160816
DATE RECEIVED: 8/18/2016
ABC LAB. NO.: ANC0816.329

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = <100.00 %
TU_c = >1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 30 Nov-16 13:38 (p 1 of 2)
 Test Code: ANC0816.329 | 07-0709-1761

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 15-7664-7358	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2	Analyzed: 30 Nov-16 9:59	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 19-7086-8813	Test Type: Survival-Reburial	Analyst: Joe Freas	Start Date: 19 Aug-16 13:03	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:03	Species: Eohaustorius estuarius	Brine: Not Applicable	Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 19-2041-5727	Code: ANC0816.329	Client: Anchor QEA	Sample Date: 16 Aug-16 11:46	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report		Sample Age: 73h	Station: FH-SS-07-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed survival rate	3.85%

Equal Variance t Two-Sample Test									
Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	7.491	1.86	0.086	8	CDF	3.5E-05	Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.299535	0.299535	1	56.12	7.0E-05	Significant Effect
Error	0.0426977	0.0053372	8			
Total	0.342232		9			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Levene Equality of Variance Test	5.919	11.26	0.0410	Equal Variances	
Variances	Mod Levene Equality of Variance Test	0.9438	13.75	0.3688	Equal Variances	
Variances	Variance Ratio F Test	5.343	23.15	0.1335	Equal Variances	
Distribution	Anderson-Darling A2 Normality Test	0.6403	3.878	0.0955	Normal Distribution	
Distribution	D'Agostino Skewness Test	1.461	2.576	0.1440	Normal Distribution	
Distribution	Kolmogorov-Smirnov D Test	0.2048	0.3025	0.2974	Normal Distribution	
Distribution	Shapiro-Wilk W Normality Test	0.863	0.7411	0.0827	Normal Distribution	

Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.7500	0.7061	0.7939		0.7000	0.8000	0.0158	4.71%	22.68%

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.048	0.997	1.099		0.9912	1.107	0.01835	3.91%	24.83%

Survival Rate Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		0.7500	0.7500	0.8000	0.7500	0.7000

Angular (Corrected) Transformed Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.047	1.047	1.107	1.047	0.9912

CETIS Analytical Report

Report Date: 30 Nov-16 13:38 (p 2 of 2)
Test Code: ANC0816.329 | 07-0709-1761

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-7664-7358 Endpoint: Survival Rate
Analyzed: 30 Nov-16 9:59 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 30 Nov-16 13:38 (p 1 of 1)
 Test Code: ANC0816.329 | 07-0709-1761

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 19-7086-8813	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:03	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:03	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 19-2041-5727	Code: ANC0816.329	Client: Anchor QEA
Sample Date: 16 Aug-16 11:46	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 73h	Station: FH-SS-07-0-5-20160816	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10	8.729	11.27	9.9	10.1	0.1	0.1414	1.41%	0
Overall		4	10.03	9.873	10.18	9.9	10.1	0.04787	0.09574	0.96%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	7.8	7.787	7.813	7.8	7.8	0	0	0.0%	0
Overall		4	7.775	7.695	7.855	7.7	7.8	0.025	0.05	0.64%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		9.9	10.1

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		7.8	7.8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-05-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.330

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Measurement Report

Report Date: 30 Nov-16 13:40 (p 1 of 1)

Test Code: ANC0816.330 | 00-7297-1325

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 02-2025-6721
Start Date: 19 Aug-16 13:04
Ending Date: 29 Aug-16 13:04
Duration: 10d 0h

Test Type: Survival-Reburial
Protocol: EPA/600/R-94/025 (1994)
Species: Eohaustorius estuarius
Source: Northwestern Aquatic Science, OR

Analyst: Joe Freas
Diluent: Laboratory Seawater
Brine: Not Applicable
Age:

Sample ID: 03-8535-0804
Sample Date: 16 Aug-16 13:39
Receipt Date: 18 Aug-16 09:30
Sample Age: 71h

Code: ANC0816.330
Material: Sediment
Source: Bioassay Report
Station: IA-SS-05-0-5-20160816

Client: Anchor QEA
Project: GWMA Sediment Sampling

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10.05	6.873	13.23	9.8	10.3	0.25	0.3535	3.52%	0
Overall		4	10.05	9.719	10.38	9.8	10.3	0.1041	0.2082	2.07%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	8.15	6.244	10.06	8	8.3	0.15	0.2121	2.6%	0
Overall		4	7.95	7.529	8.371	7.7	8.3	0.1323	0.2646	3.33%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		9.8	10.3

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		8.3	8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.9	14.8
100		14.9	14.8

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

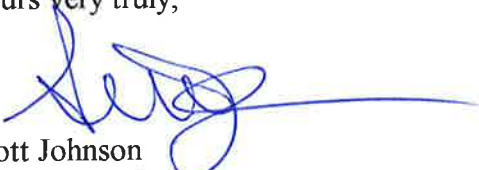
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-06-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.331

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 14:03 (p 1 of 1)
 Test Code: ANC0816.331 | 20-0751-3287

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 11-4428-5130	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:05	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 08-7558-4267	Code: ANC0816.331	Client: Anchor QEA
Sample Date: 16 Aug-16 14:17	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 71h	Station: IA-SS-06-0-5-20160816	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
04-2878-9376	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.6587	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
04-2878-9376	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	0.9500	0.9000	1.0000	1.0000

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		20/20	19/20	18/20	20/20	20/20

CETIS Analytical Report

Report Date: 30 Nov-16 14:02 (p 1 of 2)
 Test Code: ANC0816.331 | 20-0751-3287

Eohaustorius 10-d Survival and Reburial Sediment Test Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-2878-9376	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 30 Nov-16 10:11	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 11-4428-5130	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:05	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 08-7558-4267	Code: ANC0816.331	Client: Anchor QEA
Sample Date: 16 Aug-16 14:17	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 71h	Station: IA-SS-06-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	5.24%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	27.5	n/a	3	8	Exact	0.6587	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits			Decision
		Lower	Upper	Overlap	
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	0	1.0000	Non-Significant Effect
Error	0.0719321	0.0089915	8			
Total	0.0719321		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0	11.26	1.0000	Equal Variances
Variances	Mod Levene Equality of Variance Test	0	13.75	1.0000	Equal Variances
Variances	Variance Ratio F Test	1	23.15	1.0000	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.474	3.878	2.6E-04	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	1.355	2.576	0.1755	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3652	0.3025	4.6E-04	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.7199	0.7411	0.0015	Non-Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	0.9500	0.9000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.459	1.345	1.249	1.459	1.459

Analyst: QA:

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-03-0-5-20160816
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.332

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 14:06 (p 1 of 1)
 Test Code: ANC0816.332 | 14-7369-5468

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 15-5418-1303	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:06	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:06	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 18-1735-7670	Code: ANC0816.332	Client: Anchor QEA
Sample Date: 16 Aug-16 15:25	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 70h	Station: IA-SS-03-0-5-20160816	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
00-1085-3419	Survival Rate	Equal Variance t Two-Sample Test	0.6429	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
00-1085-3419	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9800	0.9460	1.0000	0.9500	1.0000	0.0123	0.0274	2.79%	-1.03%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		0.9500	1.0000	1.0000	1.0000	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		19/20	20/20	20/20	20/20	19/20

CETIS Analytical Report

Report Date: 30 Nov-16 14:05 (p 1 of 2)
 Test Code: ANC0816.332 | 14-7369-5468

Eohaustorius 10-d Survival and Reburial Sediment Test Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-1085-3419	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 30 Nov-16 11:35	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 15-5418-1303	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:06	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:06	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 18-1735-7670	Code: ANC0816.332	Client: Anchor QEA
Sample Date: 16 Aug-16 15:25	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 70h	Station: IA-SS-03-0-5-20160816	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	4.29%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.3796	1.86	0.094	8	CDF	0.6429	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0009262	0.0009262	1	0.1441	0.7141	Non-Significant Effect
Error	0.0514182	0.0064273	8			
Total	0.0523443		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	1.641	11.26	0.2361	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.1592	13.75	0.7037	Equal Variances
Variances	Variance Ratio F Test	2.328	23.15	0.4333	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.017	3.878	0.0113	Normal Distribution
Distribution	D'Agostino Skewness Test	1.29	2.576	0.1971	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3259	0.3025	0.0034	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8093	0.7411	0.0188	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9800	0.9460	1.0000		0.9500	1.0000	0.0123	2.79%	-1.03%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.413	1.336	1.491		1.345	1.459	0.0278	4.40%	-1.38%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		0.9500	1.0000	1.0000	1.0000	0.9500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.345	1.459	1.459	1.459	1.345

CETIS Measurement Report

Report Date: 30 Nov-16 14:05 (p 1 of 1)
 Test Code: ANC0816.332 | 14-7369-5468

Eohaustorius 10-d Survival and Reburial Sediment Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	15-5418-1303	Test Type:	Survival-Reburial	Analyst:	Joe Freas		
Start Date:	19 Aug-16 13:06	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater		
Ending Date:	29 Aug-16 13:06	Species:	Eohaustorius estuarius	Brine:	Not Applicable		
Duration:	10d 0h	Source:	Northwestern Aquatic Science, OR	Age:			
Sample ID:	18-1735-7670	Code:	ANC0816.332	Client:	Anchor QEA		
Sample Date:	16 Aug-16 15:25	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	18 Aug-16 09:30	Source:	Bioassay Report				
Sample Age:	70h	Station:	IA-SS-03-0-5-20160816				

Dissolved Oxygen-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10	8.729	11.27	9.9	10.1	0.1	0.1414	1.41%	0
Overall		4	10.03	9.873	10.18	9.9	10.1	0.04787	0.09574	0.96%	0 (0%)

pH-Units											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
Overall		4	7.825	7.673	7.977	7.7	7.9	0.04787	0.09574	1.22%	0 (0%)

Salinity-ppt											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L			
Conc-%	Code	1	2
0	N	10.1	10
100		9.9	10.1

pH-Units			
Conc-%	Code	1	2
0	N	7.7	7.8
100		7.9	7.9

Salinity-ppt			
Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C			
Conc-%	Code	1	2
0	N	14.8	14.9
100		14.8	14.9



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:


CLIENT: Anchor QEA
SAMPLE I.D.: IA-SS-04-0-5-20160817
DATE RECEIVED: 8/18/2016
ABC LAB. NO.: ANC0816.333

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %
TU_c = 1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 14:12 (p 1 of 1)
 Test Code: ANC0816.333 | 21-1221-3767

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 02-5443-8276	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:07	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:07	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 06-3510-5028	Code: ANC0816.333	Client: Anchor QEA
Sample Date: 17 Aug-16 08:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 53h	Station: IA-SS-04-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
17-7160-3943	Survival Rate	Equal Variance t Two-Sample Test	0.4737	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
17-7160-3943	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9700	0.9360	1.0000	0.9500	1.0000	0.0123	0.0274	2.82%	0.00%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	0.9500	1.0000	0.9500	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		20/20	19/20	20/20	19/20	19/20

CETIS Analytical Report

Report Date: 30 Nov-16 14:11 (p 1 of 2)
 Test Code: ANC0816.333 | 21-1221-3767

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 17-7160-3943	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2			
Analyzed: 30 Nov-16 11:51	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 02-5443-8276	Test Type: Survival-Reburial	Analyst: Joe Freas			
Start Date: 19 Aug-16 13:07	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater			
Ending Date: 29 Aug-16 13:07	Species: Eohaustorius estuarius	Brine: Not Applicable			
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:			
Sample ID: 06-3510-5028	Code: ANC0816.333	Client: Anchor QEA			
Sample Date: 17 Aug-16 08:10	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report				
Sample Age: 53h	Station: IA-SS-04-0-5-20160817				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	4.29%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.068	1.86	0.094	8	CDF	0.4737	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.972E-05	2.972E-05	1	0.004624	0.9475	Non-Significant Effect
Error	0.0514182	0.0064273	8			
Total	0.0514479		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	1.641	11.26	0.2361	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.1592	13.75	0.7037	Equal Variances
Variances	Variance Ratio F Test	2.328	23.15	0.4333	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.122	3.878	0.0062	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	0.9645	2.576	0.3348	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3038	0.3025	0.0094	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.7956	0.7411	0.0128	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9700	0.9360	1.0000		0.9500	1.0000	0.0123	2.82%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.391	1.314	1.468		1.345	1.459	0.0278	4.47%	0.25%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	0.9500	1.0000	0.9500	0.9500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.459	1.345	1.459	1.345	1.345

Analyst:  QA: 

CETIS Analytical Report

Report Date: 30 Nov-16 14:11 (p 2 of 2)
Test Code: ANC0816.333 | 21-1221-3767

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 17-7160-3943 Endpoint: Survival Rate
Analyzed: 30 Nov-16 11:51 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-02-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.334

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 14:21 (p 1 of 1)
 Test Code: ANC0816.334 | 21-0646-8458

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 11-8193-3641	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:08	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:08	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 03-8631-1863	Code: ANC0816.334	Client: Anchor QEA
Sample Date: 17 Aug-16 08:59	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 52h	Station: IA-SS-02-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
20-8611-8802	Survival Rate	Equal Variance t Two-Sample Test	0.6429	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
20-8611-8802	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9800	0.9460	1.0000	0.9500	1.0000	0.0123	0.0274	2.79%	-1.03%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	0.9500	1.0000	1.0000	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		20/20	19/20	20/20	20/20	19/20

CETIS Analytical Report

Report Date: 30 Nov-16 14:20 (p 1 of 2)
 Test Code: ANC0816.334 | 21-0646-8458

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 20-8611-8802	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 30 Nov-16 11:56	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 11-8193-3641	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:08	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:08	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 03-8631-1863	Code: ANC0816.334	Client: Anchor QEA
Sample Date: 17 Aug-16 08:59	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 52h	Station: IA-SS-02-0-5-20160817	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	4.29%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.3796	1.86	0.094	8	CDF	0.6429	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0009262	0.0009262	1	0.1441	0.7141	Non-Significant Effect
Error	0.0514182	0.0064273	8			
Total	0.0523443		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	1.641	11.26	0.2361	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.1592	13.75	0.7037	Equal Variances
Variances	Variance Ratio F Test	2.328	23.15	0.4333	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.017	3.878	0.0113	Normal Distribution
Distribution	D'Agostino Skewness Test	1.29	2.576	0.1971	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3259	0.3025	0.0034	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8093	0.7411	0.0188	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9800	0.9460	1.0000		0.9500	1.0000	0.0123	2.79%	-1.03%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.413	1.336	1.491		1.345	1.459	0.0278	4.40%	-1.38%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	0.9500	1.0000	1.0000	0.9500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.459	1.345	1.459	1.459	1.345

CETIS Analytical Report

Report Date: 30 Nov-16 14:20 (p 2 of 2)
Test Code: ANC0816.334 | 21-0646-8458

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 20-8611-8802 Endpoint: Survival Rate
Analyzed: 30 Nov-16 11:56 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 30 Nov-16 14:20 (p 1 of 1)
 Test Code: ANC0816.334 | 21-0646-8458

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 11-8193-3641
Start Date: 19 Aug-16 13:08
Ending Date: 29 Aug-16 13:08
Duration: 10d 0h

Test Type: Survival-Reburial
Protocol: EPA/600/R-94/025 (1994)
Species: Eohaustorius estuarius
Source: Northwestern Aquatic Science, OR

Analyst: Joe Freas
Diluent: Laboratory Seawater
Brine: Not Applicable
Age:

Sample ID: 03-8631-1863
Sample Date: 17 Aug-16 08:59
Receipt Date: 18 Aug-16 09:30
Sample Age: 52h

Code: ANC0816.334
Material: Sediment
Source: Bioassay Report
Station: IA-SS-02-0-5-20160817

Client: Anchor QEA
Project: GWMA Sediment Sampling

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10.2	8.929	11.47	10.1	10.3	0.1	0.1414	1.39%	0
Overall		4	10.13	9.925	10.33	10	10.3	0.06292	0.1258	1.24%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	8.2	6.929	9.471	8.1	8.3	0.1	0.1414	1.73%	0
Overall		4	7.975	7.537	8.413	7.7	8.3	0.1377	0.2754	3.45%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		10.1	10.3

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		8.3	8.1

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.9
100		14.8	14.9

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IA-SS-01-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.335

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	<100.00 %
TUc =	>1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,


Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 30 Nov-16 14:23 (p 1 of 2)
 Test Code: ANC0816.335 | 15-5206-9030

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 15-5176-9022	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2	Analyzed: 30 Nov-16 12:09	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 06-9487-5685	Test Type: Survival-Reburial	Analyst: Joe Freas	Start Date: 19 Aug-16 13:09	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:09	Species: Eohaustorius estuarius	Brine: Not Applicable	Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 08-0661-4687	Code: ANC0816 335	Client: Anchor QEA	Sample Date: 17 Aug-16 09:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report		Sample Age: 51h	Station: IA-SS-01-0-5-20160817	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed survival rate	4.68%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	12.63	1.86	0.102	8	CDF	7.3E-07	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.18955	1.18955	1	159.5	1.5E-06	Significant Effect
Error	0.0596559	0.007457	8			
Total	1.24921		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.3781	11.26	0.5557	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.007741	13.75	0.9328	Equal Variances
Variances	Variance Ratio F Test	1.518	23.15	0.6957	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.7469	3.878	0.0515	Normal Distribution
Distribution	D'Agostino Skewness Test	0.7811	2.576	0.4348	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2864	0.3025	0.0197	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8585	0.7411	0.0733	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.4200	0.3258	0.5142		0.3500	0.5000	0.0339	18.05%	56.70%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	0.7043	0.6088	0.7999		0.6331	0.7854	0.03442	10.93%	49.48%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		0.5000	0.4000	0.5000	0.3500	0.3500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		0.7854	0.6847	0.7854	0.6331	0.6331

CETIS Analytical Report

Report Date: 30 Nov-16 14:23 (p 2 of 2)

Test Code: ANC0816.335 | 15-5206-9030

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-5176-9022

Endpoint: Survival Rate

CETIS Version: CETISv1.9.2

Analyzed: 30 Nov-16 12:09

Analysis: Parametric-Two Sample

Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 30 Nov-16 14:23 (p 1 of 1)
 Test Code: ANC0816.335 | 15-5206-9030

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-9487-5685 Test Type: Survival-Reburial
 Start Date: 19 Aug-16 13:09 Protocol: EPA/600/R-94/025 (1994)
 Ending Date: 29 Aug-16 13:09 Species: Eohaustorius estuarius
 Duration: 10d 0h Source: Northwestern Aquatic Science, OR

Analyst: Joe Freas
 Diluent: Laboratory Seawater
 Brine: Not Applicable
 Age:

Sample ID: 08-0661-4687 Code: ANC0816.335
 Sample Date: 17 Aug-16 09:50 Material: Sediment
 Receipt Date: 18 Aug-16 09:30 Source: Bioassay Report
 Sample Age: 51h Station: IA-SS-01-0-5-20160817

Client: Anchor QEA
 Project: GWMA Sediment Sampling

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
Overall		4	10.05	9.958	10.14	10	10.1	0.02887	0.05774	0.57%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
Overall		4	7.8	7.67	7.93	7.7	7.9	0.04082	0.08165	1.05%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		10	10.1

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		7.9	7.8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.9
100		14.8	14.9

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-12-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.336

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = <100.00 %
TUc = >1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 30 Nov-16 14:37 (p 1 of 2)
 Test Code: ANC0816.336 | 19-2153-1064

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-5370-0287	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 30 Nov-16 12:15	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 05-6098-3195	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:10	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:10	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 10-7711-2521	Code: ANC0816 336	Client: Anchor QEA
Sample Date: 17 Aug-16 11:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 50h	Station: IB-SS-12-0-5-20160817	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed survival rate	6.90%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	3.807	1.86	0.14	8	CDF	0.0026	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.20524	0.20524	1	14.49	0.0052	Significant Effect
Error	0.113315	0.0141644	8			
Total	0.318556		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.1612	11.26	0.6986	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.07423	13.75	0.7944	Equal Variances
Variances	Variance Ratio F Test	2.151	23.15	0.4765	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.4259	3.878	0.3195	Normal Distribution
Distribution	D'Agostino Skewness Test	1.315	2.576	0.1884	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1823	0.3025	0.5108	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9222	0.7411	0.3755	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.7900	0.6706	0.9094		0.7000	0.9500	0.0430	12.17%	18.56%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.108	0.9349	1.28		0.9912	1.345	0.06219	12.56%	20.55%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		0.7500	0.9500	0.7000	0.8000	0.7500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.047	1.345	0.9912	1.107	1.047

CETIS Analytical Report

Report Date: 30 Nov-16 14:37 (p 2 of 2)

Test Code: ANC0816.336 | 19-2153-1064

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-5370-0287

Endpoint: Survival Rate

CETIS Version: CETISv1.9.2

Analyzed: 30 Nov-16 12:15

Analysis: Parametric-Two Sample

Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-13-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.337

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 14:43 (p 1 of 1)

Test Code: ANC0816.337 | 12-9976-5340

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 15-8749-4277	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:11	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:11	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 04-1569-6781	Code: ANC0816.337	Client: Anchor QEA
Sample Date: 17 Aug-16 13:00	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 48h	Station: IB-SS-13-0-5-20160817	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
02-2490-2123	Survival Rate	Equal Variance t Two-Sample Test	0.2629	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-2490-2123	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9500	0.8879	1.0000	0.9000	1.0000	0.0224	0.0500	5.26%	2.06%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	1.0000	0.9000	0.9500	0.9000

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	18/20	20/20	20/20	20/20	19/20
100		20/20	20/20	18/20	19/20	18/20

CETIS Analytical Report

Report Date: 30 Nov-16 14:41 (p 1 of 2)
 Test Code: ANC0816 337 | 12-9976-5340

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 02-2490-2123	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2			
Analyzed: 30 Nov-16 12:35	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 15-8749-4277	Test Type: Survival-Reburial	Analyst: Joe Freas			
Start Date: 19 Aug-16 13:11	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater			
Ending Date: 29 Aug-16 13:11	Species: Eohaustorius estuarius	Brine: Not Applicable			
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:			
Sample ID: 04-1569-6781	Code: ANC0816.337	Client: Anchor QEA			
Sample Date: 17 Aug-16 13:00	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report				
Sample Age: 48h	Station: IB-SS-13-0-5-20160817				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	5.58%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.6631	1.86	0.118	8	CDF	0.2629	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004398	0.004398	1	0.4398	0.5259	Non-Significant Effect
Error	0.080005	0.0100006	8			
Total	0.084403		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.08734	11.26	0.7751	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.2238	13.75	0.6529	Equal Variances
Variances	Variance Ratio F Test	1.224	23.15	0.8492	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.5819	3.878	0.1337	Normal Distribution
Distribution	D'Agostino Skewness Test	0.5316	2.576	0.5950	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2535	0.3025	0.0679	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8853	0.7411	0.1499	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9500	0.8879	1.0000		0.9000	1.0000	0.0224	5.26%	2.06%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.352	1.222	1.482		1.249	1.459	0.04692	7.76%	3.01%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	1.0000	0.9000	0.9500	0.9000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.459	1.459	1.249	1.345	1.249

CETIS Analytical Report

Report Date: 30 Nov-16 14:41 (p 2 of 2)

Test Code: ANC0816.337 | 12-9976-5340

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-2490-2123

Endpoint: Survival Rate

CETIS Version: CETISv1.9.2

Analyzed: 30 Nov-16 12:35

Analysis: Parametric-Two Sample

Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 30 Nov-16 14:41 (p 1 of 1)
 Test Code: ANC0816.337 | 12-9976-5340

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 15-8749-4277	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:11	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:11	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 04-1569-6781	Code: ANC0816.337	Client: Anchor QEA
Sample Date: 17 Aug-16 13:00	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 48h	Station: IB-SS-13-0-5-20160817	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10.2	8.929	11.47	10.1	10.3	0.1	0.1414	1.39%	0
Overall		4	10.13	9.925	10.33	10	10.3	0.06292	0.1258	1.24%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
100		2	8.05	7.415	8.685	8	8.1	0.05001	0.07073	0.88%	0
Overall		4	7.9	7.609	8.191	7.7	8.1	0.09129	0.1826	2.31%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	10
100		10.1	10.3

pH-Units

Conc-%	Code	1	2
0	N	7.7	7.8
100		8.1	8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.9
100		14.8	14.9



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-14-0-5-20160817
DATE RECEIVED:	8/18/2016
ABC LAB. NO.:	ANC0816.338

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 30 Nov-16 14:44 (p 1 of 2)
 Test Code: ANC0816.338 | 16-2330-9339

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 12-8722-8573	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 30 Nov-16 12:44	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 19-0899-4082	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 19 Aug-16 13:12	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 29 Aug-16 13:12	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 17-6633-3350	Code: ANC0816.338	Client: Anchor QEA
Sample Date: 17 Aug-16 14:15	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 18 Aug-16 09:30	Source: Bioassay Report	
Sample Age: 47h	Station: IB-SS-14-0-5-20160817	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	4.04%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	-0.872	1.86	0.089	8	CDF	0.7957	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004398	0.004398	1	0.7604	0.4086	Non-Significant Effect
Error	0.0462675	0.0057834	8			
Total	0.0506654		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	3.548	11.26	0.0964	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.8164	13.75	0.4010	Equal Variances
Variances	Variance Ratio F Test	3.491	23.15	0.2533	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.8935	3.878	0.0224	Normal Distribution
Distribution	D'Agostino Skewness Test	1.683	2.576	0.0923	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3242	0.3025	0.0037	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8283	0.7411	0.0319	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9900	0.9622	1.0000		0.9500	1.0000	0.0100	2.26%	-2.06%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.436	1.373	1.499		1.345	1.459	0.02269	3.53%	-3.01%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9000	1.0000	1.0000	1.0000	0.9500
100		1.0000	1.0000	0.9500	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.249	1.459	1.459	1.459	1.345
100		1.459	1.459	1.345	1.459	1.459

CETIS Analytical Report

Report Date: 30 Nov-16 14:44 (p 2 of 2)
Test Code: ANC0816.338 | 16-2330-9339

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 12-8722-8573 Endpoint: Survival Rate
Analyzed: 30 Nov-16 12:44 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

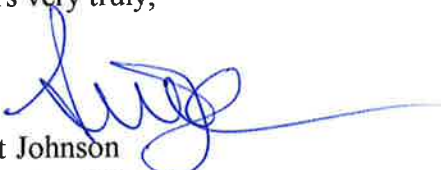
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	OB-SS-17-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.339

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	<100.00 %
TUc =	>1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 29 Nov-16 15:49 (p 1 of 1)
 Test Code: ANC0816.339 | 15-5018-9296

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-6054-2782	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:00	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 08-8853-9728	Code: ANC0816.339	Client: Anchor QEA
Sample Date: 18 Aug-16 08:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 4h	Station: OB-SS-17-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
17-4090-3895	Survival Rate	Equal Variance t Two-Sample Test	0.0068	100% failed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
17-4090-3895	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.8800	0.8245	0.9355	0.8500	0.9500	0.0200	0.0447	5.08%	9.28%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.8500	0.9500	0.9000	0.8500	0.8500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		17/20	19/20	18/20	17/20	17/20

CETIS Analytical Report

Report Date: 29 Nov-16 15:48 (p 1 of 2)
 Test Code: ANC0816.339 | 15-5018-9296

Eohaustorius 10-d Survival and Reburial Sediment Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID: 17-4090-3895	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2					
Analyzed: 29 Nov-16 9:38	Analysis: Parametric-Two Sample	Official Results: Yes					
Batch ID: 08-6054-2782	Test Type: Survival-Reburial	Analyst: Joe Freas					
Start Date: 26 Aug-16 13:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater					
Ending Date: 05 Sep-16 13:00	Species: Eohaustorius estuarius	Brine: Not Applicable					
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:					
Sample ID: 08-8853-9728	Code: ANC0816.339	Client: Anchor QEA					
Sample Date: 18 Aug-16 08:50	Material: Sediment	Project: GWMA Sediment Sampling					
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report						
Sample Age: 8d 4h	Station: OB-SS-17-0-5-20160818						

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed survival rate	4.66%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	3.154	1.86	0.101	8	CDF	0.0068	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0734424	0.0734424	1	9.947	0.0135	Significant Effect
Error	0.0590681	0.0073835	8			
Total	0.132511		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.5766	11.26	0.4694	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.08322	13.75	0.7827	Equal Variances
Variances	Variance Ratio F Test	1.557	23.15	0.6785	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.5763	3.878	0.1380	Normal Distribution
Distribution	D'Agostino Skewness Test	0.3414	2.576	0.7328	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2267	0.3025	0.1614	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9165	0.7411	0.3287	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	1.0000	0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.8800	0.8245	0.9355	0.8500	0.8500	0.9500	0.0200	5.08%	9.28%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512	1.459	1.249	1.459	0.04241	6.80%	0.00%
100		5	1.223	1.128	1.317	1.173	1.173	1.345	0.03399	6.22%	12.29%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.8500	0.9500	0.9000	0.8500	0.8500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.459	1.459	1.345	1.249
100		1.173	1.345	1.249	1.173	1.173

CETIS Measurement Report

Report Date: 29 Nov-16 15:48 (p 1 of 1)
Test Code: ANC0816.339 | 15-5018-9296

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Table with 3 columns: Parameter, Value, and Unit. Includes Batch ID, Start Date, Ending Date, Duration, Test Type, Protocol, Species, Source, Analyst, Diluent, Brine, Age, Sample ID, Code, Material, Station, Client, and Project.

Dissolved Oxygen-mg/L

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0, 100, and Overall.

pH-Units

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0, 100, and Overall.

Salinity-ppt

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0, 100, and Overall.

Temperature-°C

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0, 100, and Overall.

Dissolved Oxygen-mg/L

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0 and 100.

pH-Units

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0 and 100.

Salinity-ppt

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0 and 100.

Temperature-°C

Table with 12 columns: Conc-%, Code, Count, Mean, 95% LCL, 95% UCL, Min, Max, Std Err, Std Dev, CV%, QA Count. Rows for 0 and 100.

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	SP-SS-20-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.340

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = <100.00 %
TUc = >1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,


Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 29 Nov-16 15:52 (p 1 of 1)
 Test Code: ANC0816.340 | 02-0374-6359

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-0502-7805	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:01	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 08-6541-8814	Code: ANC0816.340	Client: Anchor QEA
Sample Date: 18 Aug-16 09:40	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 3h	Station: SP-SS-20-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
00-4964-5529	Survival Rate	Equal Variance t Two-Sample Test	0.0069	100% failed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
00-4964-5529	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.8700	0.7992	0.9408	0.8000	0.9500	0.0255	0.0570	6.55%	10.31%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.9500	0.9000	0.8000	0.8500	0.8500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		19/20	18/20	16/20	17/20	17/20

CETIS Analytical Report

Report Date: 29 Nov-16 15:51 (p 1 of 2)
 Test Code: ANC0816.340 | 02-0374-6359

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 00-4964-5529	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2			
Analyzed: 29 Nov-16 11:06	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 08-0502-7805	Test Type: Survival-Reburial	Analyst: Joe Freas			
Start Date: 26 Aug-16 13:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater			
Ending Date: 05 Sep-16 13:01	Species: Eohaustorius estuarius	Brine: Not Applicable			
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:			
Sample ID: 08-6541-8814	Code: ANC0816.340	Client: Anchor QEA			
Sample Date: 18 Aug-16 09:40	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report				
Sample Age: 8d 3h	Station: SP-SS-20-0-5-20160818				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed survival rate	5.11%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	3.14	1.86	0.109	8	CDF	0.0069	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0851806	0.0851806	1	9.863	0.0138	Significant Effect
Error	0.0690931	0.0086366	8			
Total	0.154274		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.07711	11.26	0.7883	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.001356	13.75	0.9718	Equal Variances
Variances	Variance Ratio F Test	1.086	23.15	0.9384	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.3782	3.878	0.4119	Normal Distribution
Distribution	D'Agostino Skewness Test	0.3009	2.576	0.7635	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.174	0.3025	0.6093	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9473	0.7411	0.6368	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	1.0000	0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.8700	0.7992	0.9408	0.8500	0.8000	0.9500	0.0255	6.55%	10.31%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512	1.459	1.249	1.459	0.04241	6.80%	0.00%
100		5	1.21	1.097	1.323	1.173	1.107	1.345	0.0407	7.52%	13.24%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.9500	0.9000	0.8000	0.8500	0.8500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.459	1.459	1.345	1.249
100		1.345	1.249	1.107	1.173	1.173

CETIS Analytical Report

Report Date: 29 Nov-16 15:51 (p 2 of 2)
 Test Code: ANC0816.340 | 02-0374-6359

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

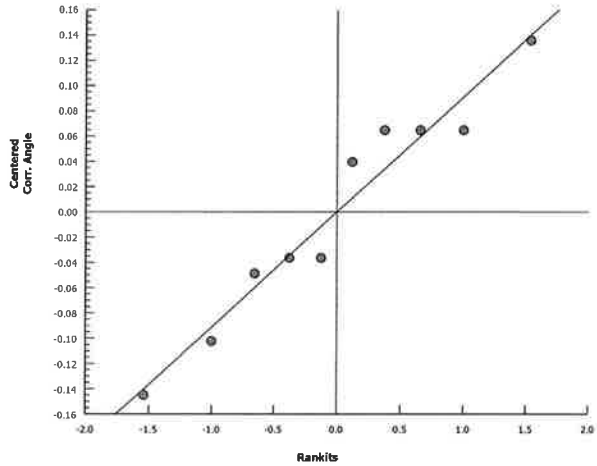
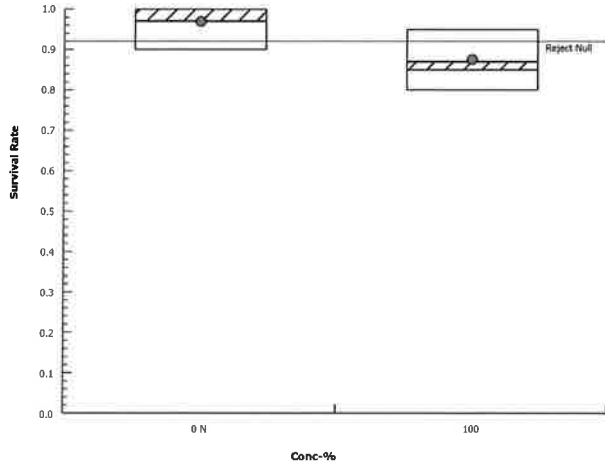
Analysis ID: 00-4964-5529 Endpoint: Survival Rate
 Analyzed: 29 Nov-16 11:06 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
 Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		19/20	18/20	16/20	17/20	17/20

Graphics



CETIS Measurement Report

Report Date: 29 Nov-16 15:51 (p 1 of 1)
 Test Code: ANC0816.340 | 02-0374-6359

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-0502-7805	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:01	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 08-6541-8814	Code: ANC0816.340	Client: Anchor QEA
Sample Date: 18 Aug-16 09:40	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 3h	Station: SP-SS-20-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.95	8.044	11.86	9.8	10.1	0.15	0.2121	2.13%	0
100		2	10.2	8.929	11.47	10.1	10.3	0.1	0.1414	1.39%	0
Overall		4	10.08	9.747	10.4	9.8	10.3	0.1031	0.2062	2.05%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	8	5.459	10.54	7.8	8.2	0.2	0.2828	3.54%	0
Overall		4	7.95	7.674	8.226	7.8	8.2	0.0866	0.1732	2.18%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
Overall		4	14.8	14.8	14.8	14.8	14.8	0	0	0.00%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	9.8
100		10.3	10.1

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		8.2	7.8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.8
100		14.8	14.8



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	SP-SS-19-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.341

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 29 Nov-16 16:02 (p 1 of 1)
 Test Code: ANC0816.341 | 02-0244-2600

Eohaustorius 10-d Survival and Reburial Sediment Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	12-7908-6379	Test Type:	Survival-Reburial	Analyst:	Joe Freas		
Start Date:	26 Aug-16 13:02	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater		
Ending Date:	05 Sep-16 13:02	Species:	Eohaustorius estuarius	Brine:	Not Applicable		
Duration:	10d 0h	Source:	Northwestern Aquatic Science, OR	Age:			
Sample ID:	09-3460-3783	Code:	ANC0816.341	Client:	Anchor QEA		
Sample Date:	18 Aug-16 10:38	Material:	Sediment	Project:	GWMA Sediment Sampling		
Receipt Date:	20 Aug-16 10:25	Source:	Bioassay Report				
Sample Age:	8d 2h	Station:	SP-SS-19-0-5-2016-0818				

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
19-9490-9866	Survival Rate	Equal Variance t Two-Sample Test	0.2629	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
19-9490-9866	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9500	0.8879	1.0000	0.9000	1.0000	0.0224	0.0500	5.26%	2.06%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		1.0000	1.0000	0.9000	0.9500	0.9000

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		20/20	20/20	18/20	19/20	18/20

CETIS Analytical Report

Report Date: 29 Nov-16 16:00 (p 1 of 2)
 Test Code: ANC0816.341 | 02-0244-2600

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-9490-9866	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 29 Nov-16 11:56	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 12-7908-6379	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:02	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:02	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 09-3460-3783	Code: ANC0816.341	Client: Anchor QEA
Sample Date: 18 Aug-16 10:38	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 2h	Station: SP-SS-19-0-5-2016-0818	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	5.58%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	0.6631	1.86	0.118	8	CDF	0.2629	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004398	0.004398	1	0.4398	0.5259	Non-Significant Effect
Error	0.080005	0.0100006	8			
Total	0.084403		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.08734	11.26	0.7751	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.2238	13.75	0.6529	Equal Variances
Variances	Variance Ratio F Test	1.224	23.15	0.8492	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.5819	3.878	0.1337	Normal Distribution
Distribution	D'Agostino Skewness Test	0.5316	2.576	0.5950	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.2535	0.3025	0.0679	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.8853	0.7411	0.1499	Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9500	0.8879	1.0000		0.9000	1.0000	0.0224	5.26%	2.06%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.352	1.222	1.482		1.249	1.459	0.04692	7.76%	3.01%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		1.0000	1.0000	0.9000	0.9500	0.9000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.459	1.459	1.345	1.249
100		1.459	1.459	1.249	1.345	1.249

CETIS Measurement Report

Report Date: 29 Nov-16 16:00 (p 1 of 1)
 Test Code: ANC0816.341 | 02-0244-2600

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 12-7908-6379	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:02	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:02	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 09-3460-3783	Code: ANC0816.341	Client: Anchor QEA
Sample Date: 18 Aug-16 10:38	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 2h	Station: SP-SS-19-0-5-2016-0818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.95	8.044	11.86	9.8	10.1	0.15	0.2121	2.13%	0
100		2	10	8.729	11.27	9.9	10.1	0.1	0.1414	1.41%	0
Overall		4	9.975	9.736	10.21	9.8	10.1	0.075	0.15	1.50%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
Overall		4	7.825	7.673	7.977	7.7	7.9	0.04787	0.09574	1.22%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
Overall		4	14.8	14.8	14.8	14.8	14.8	0	0	0.00%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	9.8
100		10.1	9.9

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.7	7.8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.8
100		14.8	14.8



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	SP-SS-18-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.342

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 08:52 (p 1 of 1)
 Test Code: ANC0816.342 | 04-2229-2936

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 01-7134-3269	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:03	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:03	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 08-9747-1138	Code: ANC0816.342	Client: Anchor QEA
Sample Date: 18 Aug-16 12:22	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 1h	Station: SP-SS-18-05-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
17-6802-3798	Survival Rate	Equal Variance t Two-Sample Test	0.1251	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
17-6802-3798	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9300	0.8592	1.0000	0.8500	1.0000	0.0255	0.0570	6.13%	4.12%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		1.0000	0.9000	0.8500	0.9500	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		20/20	18/20	17/20	19/20	19/20

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

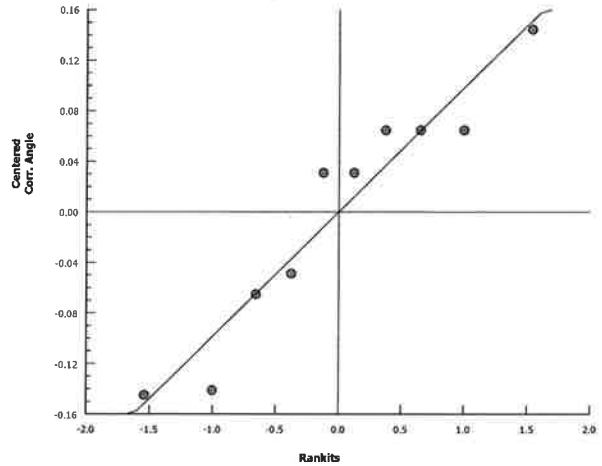
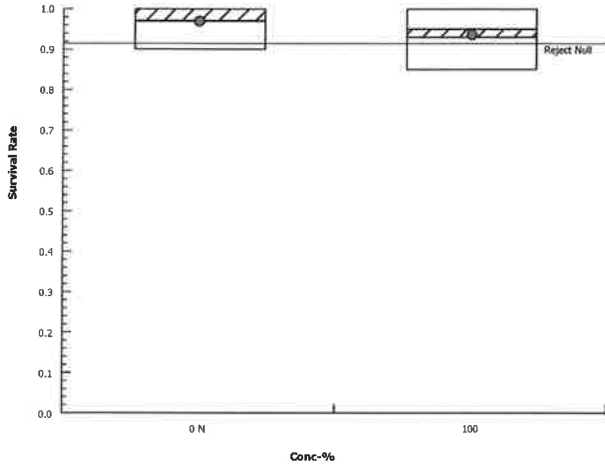
Analysis ID: 17-6802-3798 Endpoint: Survival Rate
 Analyzed: 29 Nov-16 14:03 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
 Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		20/20	18/20	17/20	19/20	19/20

Graphics



CETIS Measurement Report

Report Date: 30 Nov-16 08:50 (p 1 of 1)
 Test Code: ANC0816.342 | 04-2229-2936

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 01-7134-3269	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:03	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:03	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 08-9747-1138	Code: ANC0816.342	Client: Anchor QEA
Sample Date: 18 Aug-16 12:22	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 8d 1h	Station: SP-SS-18-05-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.95	8.044	11.86	9.8	10.1	0.15	0.2121	2.13%	0
100		2	10.25	9.615	10.89	10.2	10.3	0.04999	0.07069	0.69%	0
Overall		4	10.1	9.756	10.44	9.8	10.3	0.108	0.216	2.14%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.65	7.015	8.285	7.6	7.7	0.05	0.07071	0.92%	0
Overall		4	7.775	7.536	8.014	7.6	7.9	0.075	0.15	1.93%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
Overall		4	14.8	14.8	14.8	14.8	14.8	0	0	0.00%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	9.8
100		10.2	10.3

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.7	7.6

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.8
100		14.8	14.8

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	LE-SS-21-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.343

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 30 Nov-16 08:54 (p 1 of 2)
 Test Code: ANC0816.343 | 12-9438-4903

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-0407-5629	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2
Analyzed: 30 Nov-16 8:53	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 07-4496-7488	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:04	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:04	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 01-8932-8355	Code: ANC0816.343	Client: Anchor QEA
Sample Date: 18 Aug-16 13:46	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 20:25	Source: Bioassay Report	
Sample Age: 7d 23h	Station: LE-SS-21-0-5-2016-0818	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	5.20%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	29.5	n/a	2	8	Exact	0.7778	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0012877	0.0012877	1	0.1448	0.7135	Non-Significant Effect
Error	0.0711497	0.0088937	8			
Total	0.0724374		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.1179	11.26	0.7402	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.1515	13.75	0.7105	Equal Variances
Variances	Variance Ratio F Test	1.022	23.15	0.9835	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.493	3.878	1.9E-04	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	1.936	2.576	0.0529	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3814	0.3025	1.8E-04	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.722	0.7411	0.0016	Non-Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	1.0000	0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	-1.03%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512	1.459	1.249	1.459	0.04241	6.80%	0.00%
100		5	1.417	1.3	1.533	1.459	1.249	1.459	0.04194	6.62%	-1.63%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		1.0000	1.0000	0.9000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.459	1.459	1.345	1.249
100		1.459	1.459	1.249	1.459	1.459

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	LE-SS-22-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.344

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 08:57 (p 1 of 1)
Test Code: ANC0816.344 | 16-0778-1265

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 07-4496-7488	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:04	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:04	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 03-0964-9335	Code: ANC0819.344	Client: Anchor QEA
Sample Date: 18 Aug-16 14:55	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 7d 22h	Station: LE-SS-22-0-5-20190818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
14-4488-8755	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.0556	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
14-4488-8755	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9200	0.8645	0.9755	0.8500	0.9500	0.0200	0.0447	4.86%	5.15%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.9500	0.9500	0.9000	0.8500	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		19/20	19/20	18/20	17/20	19/20

CETIS Analytical Report

Report Date: 30 Nov-16 08:56 (p 1 of 2)
 Test Code: ANC0816.344 | 16-0778-1265

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 14-4488-8755	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2			
Analyzed: 29 Nov-16 14:49	Analysis: Nonparametric-Two Sample	Official Results: Yes			
Batch ID: 07-4496-7488	Test Type: Survival-Reburial	Analyst: Joe Freas			
Start Date: 26 Aug-16 13:04	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater			
Ending Date: 05 Sep-16 13:04	Species: Eohaustorius estuarius	Brine: Not Applicable			
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:			
Sample ID: 03-0964-9335	Code: ANC0819.344	Client: Anchor QEA			
Sample Date: 18 Aug-16 14:55	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report				
Sample Age: 7d 22h	Station: LE-SS-22-0-5-20190818				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed survival rate	4.72%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100	20	n/a	2	8	Exact	0.0556	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0262772	0.0262772	1	3.477	0.0992	Non-Significant Effect
Error	0.0604655	0.0075582	8			
Total	0.0867427		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.3587	11.26	0.5658	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.04356	13.75	0.8416	Equal Variances
Variances	Variance Ratio F Test	1.468	23.15	0.7190	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.17	3.878	0.0047	Non-Normal Distribution
Distribution	D'Agostino Skewness Test	1.354	2.576	0.1756	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.3438	0.3025	0.0014	Non-Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.7766	0.7411	0.0075	Non-Normal Distribution

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.9200	0.8645	0.9755		0.8500	0.9500	0.0200	4.86%	5.15%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.292	1.194	1.389		1.173	1.345	0.035	6.06%	7.35%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.9500	0.9500	0.9000	0.8500	0.9500

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.459	1.459	1.345	1.249
100		1.345	1.345	1.249	1.173	1.345

CETIS Analytical Report

Report Date: 30 Nov-16 08:56 (p 2 of 2)
Test Code: ANC0816.344 | 16-0778-1265

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 14-4488-8755 Endpoint: Survival Rate CETIS Version: CETISv1.9.2
Analyzed: 29 Nov-16 14:49 Analysis: Nonparametric-Two Sample Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	IB-SS-15-0-5-20160818
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.345

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	<100.00 %
TU _c =	>1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 09:00 (p 1 of 1)
 Test Code: ANC0816.345 | 06-4116-0289

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 09-2115-3364	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:05	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 06-7594-5180	Code: ANC0816.345	Client: Anchor QEA
Sample Date: 18 Aug-16 15:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 7d 21h	Station: IB-SS-15-0-5-20160818	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
13-8776-4873	Survival Rate	Equal Variance t Two-Sample Test	6.0E-05	100% failed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
13-8776-4873	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.7800	0.7460	0.8140	0.7500	0.8000	0.0123	0.0274	3.51%	19.59%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.8000	0.7500	0.8000	0.8000	0.7500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		16/20	15/20	16/20	16/20	15/20

CETIS Analytical Report

Report Date: 30 Nov-16 08:59 (p 1 of 2)
 Test Code: ANC0816.345 | 06-4116-0289

Eohaustorius 10-d Survival and Reburial Sediment Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 13-8776-4873	Endpoint: Survival Rate	CETIS Version: CETISv1.9.2			
Analyzed: 29 Nov-16 14:57	Analysis: Parametric-Two Sample	Official Results: Yes			
Batch ID: 09-2115-3364	Test Type: Survival-Reburial	Analyst: Joe Freas			
Start Date: 26 Aug-16 13:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater			
Ending Date: 05 Sep-16 13:05	Species: Eohaustorius estuarius	Brine: Not Applicable			
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:			
Sample ID: 06-7594-5180	Code: ANC0816.345	Client: Anchor QEA			
Sample Date: 18 Aug-16 15:50	Material: Sediment	Project: GWMA Sediment Sampling			
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report				
Sample Age: 7d 21h	Station: IB-SS-15-0-5-20160818				

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed survival rate	3.73%

Equal Variance t Two-Sample Test									
Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		100*	6.929	1.86	0.083	8	CDF	6.0E-05	Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.241729	0.241729	1	48.01	1.2E-04	Significant Effect
Error	0.040279	0.0050349	8			
Total	0.282008		9			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Levene Equality of Variance Test	7.86	11.26	0.0231	Equal Variances	
Variances	Mod Levene Equality of Variance Test	0.9026	13.75	0.3788	Equal Variances	
Variances	Variance Ratio F Test	8.339	23.15	0.0639	Equal Variances	
Distribution	Anderson-Darling A2 Normality Test	0.6366	3.878	0.0975	Normal Distribution	
Distribution	D'Agostino Skewness Test	1.636	2.576	0.1019	Normal Distribution	
Distribution	Kolmogorov-Smirnov D Test	0.24	0.3025	0.1067	Normal Distribution	
Distribution	Shapiro-Wilk W Normality Test	0.8642	0.7411	0.0855	Normal Distribution	

Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000		0.9000	1.0000	0.0200	4.61%	0.00%
100		5	0.7800	0.7460	0.8140		0.7500	0.8000	0.0123	3.51%	19.59%

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.394	1.276	1.512		1.249	1.459	0.04241	6.80%	0.00%
100		5	1.083	1.042	1.124		1.047	1.107	0.01468	3.03%	22.30%

Survival Rate Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		0.8000	0.7500	0.8000	0.8000	0.7500

Angular (Corrected) Transformed Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.459	1.459	1.459	1.345	1.249
100		1.107	1.047	1.107	1.107	1.047

CETIS Analytical Report

Report Date: 30 Nov-16 08:59 (p 2 of 2)
Test Code: ANC0816.345 | 06-4116-0289

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-8776-4873 Endpoint: Survival Rate
Analyzed: 29 Nov-16 14:57 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 30 Nov-16 08:59 (p 1 of 1)
 Test Code: ANC0816.345 | 06-4116-0289

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 09-2115-3364	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:05	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 06-7594-5180	Code: ANC0816.345	Client: Anchor QEA
Sample Date: 18 Aug-16 15:50	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 7d 21h	Station: IB-SS-15-0-5-20160818	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.95	8.044	11.86	9.8	10.1	0.15	0.2121	2.13%	0
100		2	10.4	9.129	11.67	10.3	10.5	0.1	0.1414	1.36%	0
Overall		4	10.18	9.7	10.65	9.8	10.5	0.1493	0.2986	2.94%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
Overall		4	7.875	7.795	7.955	7.8	7.9	0.025	0.05	0.63%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
Overall		4	14.8	14.8	14.8	14.8	14.8	0	0	0.00%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	9.8
100		10.5	10.3

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		7.9	7.8

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.8
100		14.8	14.8



December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	Anchor QEA
SAMPLE I.D.:	OB-SS-16-0-5-20160819
DATE RECEIVED:	8/20/2016
ABC LAB. NO.:	ANC0816.346

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 09:03 (p 1 of 1)
 Test Code: ANC0816.346 | 04-2222-0529

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-8558-5511	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:06	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:06	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 10-1864-1345	Code: ANC0816.346	Client: Anchor QEA
Sample Date: 19 Aug-16 08:33	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 7d 5h	Station: OB-SS-16-0-5-20160819	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
02-5867-8480	Survival Rate	Equal Variance t Two-Sample Test	0.6429	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-5867-8480	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9800	0.9460	1.0000	0.9500	1.0000	0.0123	0.0274	2.79%	-1.03%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		1.0000	1.0000	1.0000	0.9500	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		20/20	20/20	20/20	19/20	19/20

CETIS Analytical Report

Report Date: 30 Nov-16 09:02 (p 2 of 2)
Test Code: ANC0816.346 | 04-2222-0529

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-5867-8480
Analyzed: 29 Nov-16 15:16

Endpoint: Survival Rate
Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

December 2, 2016

Andrew Martin
Anchor QEA
1119 Pacific Avenue, Suite 1600
Tacoma, CA 98402

Dear Mr. Martin:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT: Anchor QEA
SAMPLE I.D.: OA-SS-08-0-5-20160819
DATE RECEIVED: 8/20/2016
ABC LAB. NO.: ANC0816.347

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %
TUc = 1.00

EC25 = >100.00 %
EC50 = >100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 30 Nov-16 09:10 (p 1 of 1)
 Test Code: ANC0816.347 | 12-9216-1568

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-7006-6087	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:07	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:07	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 10-7877-8977	Code: ANC0816.347	Client: Anchor QEA
Sample Date: 19 Aug-16 09:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 7d 4h	Station: OA-SS-08-0-5-20160819	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
03-2862-2881	Survival Rate	Equal Variance t Two-Sample Test	0.3532	100% passed survival rate

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
03-2862-2881	Survival Rate	Control Resp	0.97	0.9	>>	Yes	Passes Acceptability Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9700	0.9145	1.0000	0.9000	1.0000	0.0200	0.0447	4.61%	0.00%
100		5	0.9600	0.9081	1.0000	0.9000	1.0000	0.0187	0.0418	4.36%	1.03%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	0.9500	0.9000
100		1.0000	0.9000	0.9500	1.0000	0.9500

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	19/20	18/20
100		20/20	18/20	19/20	20/20	19/20

CETIS Analytical Report

Report Date: 30 Nov-16 09:09 (p 2 of 2)
Test Code: ANC0816.347 | 12-9216-1568

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 03-2862-2881
Analyzed: 29 Nov-16 15:46

Endpoint: Survival Rate
Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N					
100						

CETIS Measurement Report

Report Date: 30 Nov-16 09:09 (p 1 of 1)
 Test Code: ANC0816.347 | 12-9216-1568

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-7006-6087	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 26 Aug-16 13:07	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 05 Sep-16 13:07	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 10-7877-8977	Code: ANC0816.347	Client: Anchor QEA
Sample Date: 19 Aug-16 09:10	Material: Sediment	Project: GWMA Sediment Sampling
Receipt Date: 20 Aug-16 10:25	Source: Bioassay Report	
Sample Age: 7d 4h	Station: OA-SS-08-0-5-20160819	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	9.95	8.044	11.86	9.8	10.1	0.15	0.2121	2.13%	0
100		2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
Overall		4	10	9.775	10.23	9.8	10.1	0.07071	0.1414	1.41%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100		2	8.2	6.929	9.471	8.1	8.3	0.1	0.1414	1.73%	0
Overall		4	8.05	7.745	8.355	7.9	8.3	0.09574	0.1915	2.38%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
Overall		4	14.8	14.8	14.8	14.8	14.8	0	0	0.00%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	N	10.1	9.8
100		10	10.1

pH-Units

Conc-%	Code	1	2
0	N	7.9	7.9
100		8.3	8.1

Salinity-ppt

Conc-%	Code	1	2
0	N	20	20
100		20	20

Temperature-°C

Conc-%	Code	1	2
0	N	14.8	14.8
100		14.8	14.8

Appendix F

Benthic Community Data Summary

December 8th, 2016

Andrew Martin
Anchor QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691



Dear Mr. Martin:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed data report for benthic infauna analysis.

Please contact me with any questions or issues you may have regarding this report.

Yours very truly,



Scott Johnson
Environmental Programs
(805) 643-5621 ex.11

Project ID: GWMA Sediment Sampling
 Client: Anchor QEA
 Analysis: Benthic Infauna Taxonomy Metrics
 Delivered: December 8, 2016



Benthic Infauna Community Metrics

Station ID	BRI	IBI	RBI	RIVPAC
CB-SS-11	28.16	1	0.22	0.74
CM-SS-10	26.19	1	0.14	0.35
CS-SS-01	43.21	1	0.18	0.38
FH-SS-07	23.04	1	0.20	0.59
IA-SS-02	30.18	1	0.15	0.57
IA-SS-03	15.95	1	0.14	0.35
IA-SS-04	14.49	1	0.13	0.43
IA-SS-05	1.65	1	0.27	0.41
IA-SS-06	12.70	1	0.16	0.41
IB-SS-12	26.67	1	0.12	0.41
IB-SS-13	9.26	1	0.13	0.26
IB-SS-14	11.77	1	0.20	0.49
IB-SS-15	12.27	1	0.18	0.41
LE-SS-21	45.20	1	0.11	0.80
LE-SS-22	69.12	2	0.02	0.16
OA-SS-08	-1.18	1	0.19	0.49
OA-SS-09	3.03	1	0.21	0.62
OB-SS-16	4.89	1	0.17	0.42
OB-SS-17	5.30	0	0.19	0.43
SP-SS-18	2.82	0	0.16	0.69
SP-SS-19	7.66	0	0.11	0.00
SP-SS-20	2.20	1	0.24	0.47

Integrated Benthic Community Indices

Station ID	BRI Category	IBI Category	RBI Category	RIVPAC Category	Integrated Category Score	Category
CB-SS-11	1	2	2	3	2	Low Dist
CM-SS-10	1	2	3	3	3	Mod Dist
CS-SS-01	2	2	2	3	2	Low Dist
FH-SS-07	1	2	2	3	2	Low Dist
IA-SS-02	1	2	3	3	3	Mod Dist
IA-SS-03	1	2	3	3	3	Mod Dist
IA-SS-04	1	2	3	3	3	Mod Dist
IA-SS-05	1	2	2	3	2	Low Dist
IA-SS-06	1	2	2	3	2	Low Dist
IB-SS-12	1	2	3	3	3	Mod Dist
IB-SS-13	1	2	3	4	3	Mod Dist
IB-SS-14	1	2	2	3	2	Low Dist
IB-SS-15	1	2	2	3	2	Low Dist
LE-SS-21	2	2	3	2	2	Low Dist
LE-SS-22	3	3	4	4	4	High Dist
OA-SS-08	1	2	2	3	2	Low Dist
OA-SS-09	1	2	2	3	2	Low Dist
OB-SS-16	1	2	2	3	2	Low Dist
OB-SS-17	1	1	2	3	2	Low Dist
SP-SS-18	1	1	3	3	2	Low Dist
SP-SS-19	1	1	3	4	2	Low Dist
SP-SS-20	1	2	2	3	2	Low Dist

Benthic Infauna Abundances

Phylum	Species	CB-SS-11	CM-SS-10	CS-SS-01	FH-SS-07	IA-SS-02	IA-SS-03	IA-SS-04	IA-SS-05	IA-SS-06	IB-SS-12	IB-SS-13	IB-SS-14	IB-SS-15	LE-SS-21	LE-SS-22	OA-SS-08	OA-SS-09	OB-SS-16	OB-SS-17	SP-SS-18	SP-SS-19	SP-SS-20
Annelida	Aglaophamus verrilli																	2					
	Amaeana occidentalis							2															
	Amage scutata						2				1	1	2	1			2	3					
	Ampharete labrops						3	13	13	6				1	1		1	2			1		
	Ampharete sp			1																			
	Ampharetidae								1		2												
	Amphicteis scaphobranchiata						2	2	2			2	4	1							1		1
	Amphisamytha bioculata						1	4	1		1												
	Ancistrosyllis groenlandica																						1
	Aphelochaeta glandaria Cmplx					2				1	8												
	Aphelochaeta petersenae						1	2					1										
	Aphelochaeta sp HYP2						1				1												
	Arcteobia cf anticostiensis												1										
	Bipalponephtys cornuta			1																			
	Boccardia sp						2																
	Capitella capitata Cmplx															3							
	Chaetozone corona						3	1		2			1					1	2		3		3
	Chaetozone hartmanae							3	2					1									
	Chaetozone sp													1									
	Chloeia pinnata			1																			
	Cirratulidae					2						5		1									
	Cossura candida											10							1		9		
	Cossura sp	3		24	11	61	1				1							3		1			
	Cossura sp A	46	4	17	26	1	3	4			8							1		4			
	Diopatra sp								1			1											
	Diopatra splendidissima														1							1	
	Diopatra tridentata								2	1			1				1		1				1
	Diplocirrus sp SD1																						1
	Dipolydora socialis								1									1					
	Drilonereis nuda								1														
	Drilonereis sp			8			1																
	Euchone limnicola	2		180	6	4	3	1		1	2		4	2	5					1			1

Benthic Infauna Abundances (Continued)

Phylum	Species	CB-SS-11	CM-SS-10	CS-SS-01	FH-SS-07	IA-SS-02	IA-SS-03	IA-SS-04	IA-SS-05	IA-SS-06	IB-SS-12	IB-SS-13	IB-SS-14	IB-SS-15	LE-SS-21	LE-SS-22	OA-SS-08	OA-SS-09	OB-SS-16	OB-SS-17	SP-SS-18	SP-SS-19	SP-SS-20
	Monticellina cryptica	1								1				1				1					
	Monticellina siblina			2		3		7		8	6		4				3	2	5	1	3		3
	Nephtys caecoides	3	1																				
	Nephtys ferruginea			1			1											1		2			
	Nereis sp A								1		1			2				3					
	Ninoe tridentata																	2	2	3			1
	Notomastus hemipodus												2					1	1	1			1
	Notomastus sp													1									
	Oligochaeta	7		1							1				1								
	Onuphis sp A								1														
	Paradoneis sp SD1								1					1									
	Paraprionospio alata	1		2	9	4			6	4		2	2	3	12	11			6		2		1
	Parasabella pallida													3									
	Petaloclymene pacifica							4					2				2	2			1		
	Phyllodoce hartmanae							1															
	Pilargis sp A							1													1		1
	Pista brevirbranchiata								1	1			4				1	7					
	Pista sp											1											
	Pista wui								4														
	Podarkeopsis sp A			1							1							1					
	Poecilochaetus johnsoni					1						5											
	Poecilochaetus martini						1	2		17			25				8	6	83	36	5		5
	Poecilochaetus sp						2	5		5							1	4	18	4			
	Polydora cirrosa																					3	
	Praxillella pacifica																1						
	Prionospio dubia	1																					
	Prionospio heterobranchia		1	1	4																		
	Prionospio jubata	1				1			2														
	Prionospio lighti	35		1	6					2												1	
	Pseudopolydora paucibranchiata			9												3							
	Sabellidae			1																			
	Sabellides manriquei				1		2	1	11									2					
	Scalibregma californicum								3														
	Scoletoma sp			1	4		2	3	2	1			2	8			3	1		1	8		3

Benthic Infauna Abundances (Continued)

Phylum	Species	CB-SS-11	CM-SS-10	CS-SS-01	FH-SS-07	IA-SS-02	IA-SS-03	IA-SS-04	IA-SS-05	IA-SS-06	IB-SS-12	IB-SS-13	IB-SS-14	IB-SS-15	LE-SS-21	LE-SS-22	OA-SS-08	OA-SS-09	OB-SS-16	OB-SS-17	SP-SS-18	SP-SS-19	SP-SS-20
	Kurtiella sp D					1	1												2				
	Kurtiella tumida																2			3			
	Kurtzia arteaga								1														
	Kurtziella plumbea																					1	
	Laevicardium substriatum			1				2		1					3								
	Leptopecten latiauratus							1						1									
	Lucinisca nuttalli																						2
	Lyonsia californica	1			1																		
	Macoma sp	1																					
	Macoma yoldiformis	3							2								6	4			1		4
	Mactrotoma californica	1		1	1	1			1												5		20
	Modiolinae								1														
	Modiolus carpenteri			1																			
	Musculista senhousia			1											1								
	Nassarius tiarula														4								
	Neverita reclusiana																1						
	Nuculana taphria																14	2		15	2		8
	Odostomia sp														1								
	Parvilucina tenuisculpta																1	2		1			
	Periploma discus				1						1	4	2	1			2		28	22			6
	Philine ornatissima			3				1				2	1				1	3					
	Polycera sp																		1				
	Rhamphidonta retifera						1						1							2			
	Rictaxis punctocaelatus																1						
	Saxidomus nuttalli																1						
	Tagelus affinis	14	1	1	7	1			4														
	Tellina modesta	3	1		1																		
	Tellina sp B	1							1								7	1	4	1			
	Theora lubrica	11		57	12	49	18	17	4	20	1	40	12	6	7	3	46	18	2	15	14		29
	Thracia trapezoides	3																					
	Thyasira flexuosa					1		4			2	5	2				5	1	3	3			4
	Turbonilla sp HYP3											2	1										
	Veneridae	1						1						1									
	Vitrinella oldroydi					3											2		1		2		

Quality Assurance/Quality Control

Taxonomic QC Report on Anchor POLA Samples IB-SS-14, OB-SS-16, and CB-SS-11

Submitted by: Lawrence L. Lovell (llpolytax@gmail.com)
Senior Projects Coordinator, Dancing Coyote Environmental

Date: December 5, 2016

OVERVIEW

Dancing Coyote Environmental (DCE) performed the following tasks following Bight'13 protocols: primary taxonomic identification of all stations; re-identification of the selected QC stations; comparison of original and QC datasets; resolution of non-matching species identifications and/or counts; presentation of a final resolved dataset; calculation of the three Bight'13 QC efficiency equations and one additional equation from historical Bight programs; and QC report preparation. Primary and QC taxonomy work on each phyletic group was performed by different DCE taxonomists. Review of Not-match taxa, coding, and resolution of final data was performed during a third review of each sample by the primary taxonomist, followed by discussion of results with the QC taxonomist. In addition to this report, additional supporting documentation is presented in an Excel file containing spreadsheets by station with details of the resolution process and the calculation spreadsheet including a summary table of the resulting resolutions and final calculations. Listings of the Discrepancy Classification and Resolution Codes are provided below (Tables 1 and 2, respectively).

METHODS

The results of the Taxonomic QC performed on the above referenced samples are presented in the appropriate spreadsheets. The columns of each spreadsheet are organized as follows: Columns A–G contain the original taxonomic data (Station / Phyla / Species ID / Abundance / Exclude / Voucher / Comments) and Columns H–K contain the QC taxonomic data (QC Abundance / Exclude / Voucher / Comments). All of the species identified by either the original and QC taxonomist are listed in Column C. Abundance values in Columns D (original) and H (QC) are compared to generate the Match/Not-Match results found in Column L. Columns M–T contain the resolution information used to track the errors and resolutions: Discrepancy type, Lines Involved in Resolution, Discrepancy Class, Resolution Code, Taxa Changed (add/remove), Abundance Changes (+/-), Taxa Changed (note with X), # individuals Mis-ID'd (counts change), and # Individuals mis-counted. Columns U–W contain the final resolved data (Resolved Species, Resolved Abundance, and Resolution Comments).

The QC resolution process is applied to the lines of data listed as “Not-Match” for either the name or count. The lines involved in the resolution identify which species were involved in the resolution of Not-Match data. Discrepancy classifications codes (Table 1) are used to categorize each Not-Match result.

Taxonomic QC Report on Anchor POLA Samples IB-SS-14, OB-SS-16, and CB-SS-11

Table 1. Discrepancy classifications codes.

Discrepancy Classifications	Description
E	Error (identification or count)
J	Judgmental difference (difference in level of expertise)
N	Nomenclatural difference (naming convention usage)
L	Apparent specimen loss (sample handling)
P	Processing error (data entry, animal from another vial)

Resolution codes (Table 2) are defined describing the Resolution, note the Error type, and Action required.

Table 2. Taxonomic resolution codes

Code	Resolution Description	Error type	Action
1	Primary taxonomist misidentification	True	TRC, Training
2	QC taxonomist misidentification	True	Training
3	Primary taxonomist miscount	True	TRC, Review best practices
4	QC taxonomist miscount	True	Review best practices
5	Primary taxonomist data entry error	Random	TRC, Review best practices
6	QC taxonomist data entry error	Random	Review best practices
7	Primary naming convention discrepancy	True	TRC, Review best practices
8	QC naming convention discrepancy	True	Review best practices
9	Primary variation in level of expertise	Non-Error	Training
10	QC variation in level of expertise	Non-Error	Training
11	organism added from another vial	Random	Review best practices
12	specimen lost	Random	Review best practices
13	specimen vouchered	Non-Error	Data tracking

Taxonomic QC Report on Anchor POLA Samples IB-SS-14, OB-SS-16, and CB-SS-11

14 specimen damaged during primary ID, not identifiable by QC taxonomist Non-Error No Action

Taxonomic efficiency calculation equations follow Bight'13 QC protocols. Three criteria are assessed: Taxa Richness Accuracy, Abundance Accuracy, and Taxonomic Accuracy. A fourth historical Bight efficiency equation, Accuracy Identified Taxa, also was added. The efficiency calculations use data from the total number of taxa and total abundance values from the original/final data sets and number individuals and taxa mis-identified (Mis-ID) at each station. The taxonomic efficiency target for all assessment criteria is $\geq 90.0\%$ accuracy (or $\leq 10.0\%$ error rate). The % Taxa Richness Accuracy (previously termed # of Taxa Discriminated) calculates overall speciation accuracy. The % Abundance Accuracy (previously termed Count Accuracy) addresses the count accuracy. The % Taxonomic Accuracy (previously termed Identification Accuracy) calculates the percentage error caused by all misidentifications at a station. The fourth and additional equation % Accuracy Identified Taxa calculates the percentage of accurately identified taxa. Efficiency error rates are presented in the Efficiency Calculations Table worksheet of the accompanying Excel file. Errors attributed to the QC taxonomist are not included in the calculations as the QC process is intended to assess the primary taxonomists' data. Taxonomic efficiencies at low diversity and/or low abundance stations are more readily impacted by identification and count errors, and low efficiencies at such stations can be misleading.

RESULTS

Three samples, IB-SS-14, OB-SS-16, and CB-SS-11, were selected for taxonomic quality control (QC) assessment. DCE taxonomists exceeded the taxonomic QC efficiency targets for Taxa Richness Accuracy, Abundance Accuracy, Taxonomic Accuracy, and Accuracy Identified Taxa (Table 3). Final resolved data sets for IB-SS-14, OB-SS-16, and CB-SS-11 will be submitted by Karin Wisenbaker. Should you have any questions regarding the information contained in this report, the accompanying spreadsheets, or the formatting changes, please contact me.

Table 3. Taxonomic QC Efficiency Calculations

Station	Taxa Richness Accuracy	Abundance Accuracy	Taxonomic Accuracy	Accuracy Identified Taxa
IB-SS-14	95.7%	97.4%	95.7%	98.7%
OB-SS-16	100%	98.7%	94.3%	99.1%
CB-SS-11	95.3%	97.0%	100%	99.1%

Chain of Custody

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:

Date: 8/16/16 + 8/17/16

Project Name: 14205-D1.03

Project Number: GWMA Sediment Sampling

Project Manager: Andrew Martin

Phone Number: 949-347-2780

Shipment Method:

Test Parameters



Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Benthic community analysis	Comments/Preservation
1	CA-SS-15-01-16-20160816	8/16/16 0807	SED	1	X	10% Formalin sampled not sent ↓ received samples - keep
2	CB-SS-14-01-16-20160816	0935	SED	1	X	
3	CA-SS-07-01-16-20160816	1030	SED	1	X	
4	FA-SS-07-01-16-20160816	1146	SED	1	X	
5	IA-SS-05-01-16-20160816	1323	SED	1	X	
6	JA-SS-06-01-16-20160816	1417	SED	1	X	
7	IA-SS-03-01-16-20160816	1525	SED	1	X	
8	JA-SS-04-01-16-20160817	8/17/16 0810	SED	1	X	
9	JA-SS-02-01-16-20160817	0859	SED	1	X	
10	CS-SS-01-01-16-20160817	0950	SED	1	X	
11	IB-SS-12-01-16-20160817	1110	SED	1	X	
12	IB-SS-13-01-15-20160817	1244	SED	1	X	
13	IB-SS-14-01-16-20160817	1415	SED	1	X	
14						
15						

Notes:

Metrics of IBI, RMI, BRI, and RIVPACS will be calculated as specified in attachment to subagreement

Preserved in 10% formalin


Relinquished By: Company: Anchor QEA
Signature/Printed Name: Clare Dolphin Date/Time: 8/18/16

Received By: Company:
Signature/Printed Name: Albert-Mulis Date/Time: 8-18-16 6145

Relinquished By: Company:
Signature/Printed Name: Albert Mulis Date/Time: 8-18-16 9130

Received By: Company:
Signature/Printed Name: Kay J. Miller Date/Time: 8-18-16 0930

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: _____ Date: <u>8/19/16</u> Project Name: <u>GWMA-TMDL Compliance Monitoring</u> Project Number: <u>141205-01.01</u> Project Manager: <u>Andy Martin</u> Phone Number: <u>(949) 334 9630</u> Shipment Method: _____				No. of Containers Benthic Community Analysis	Test Parameters																		
Line	Field Sample ID	Collection Date/Time	Matrix																				
✓ 1	OB-SS-17-0-16-20160818	8/18/16 0850	Benthic	1	X																		10% Formalin
✓ 2	SP-SS-20-0-16-20160818	0940		1	X																		
✓ 3	SP-SS-19-0-9-20160818	1110		1	X																		
✓ 4	SP-SS-18-0-16-20160818	1203		1	X																		
✓ 5	LE-SS-21-0-16-20160818	1346		1	X																		
✓ 6	LE-SS-22-0-16-20160818	1435		1	X																		
✓ 7	IB-SS-15-0-9-20160818	1535		1	X																		
✓ 8	OB-SS-16-0-16-20160819	8/19/16 0805		1	X																		
✓ 9	OA-SS-08-0-16-20160819	0910		1	X																		
✓ 10	OA-SS-09-0-16-20160819	1005		1	X																		
✓ 11	JA-SS-05-0-16-20160819	1020		1	X																		
✓ 12	FH-SS-07-0-16-20160819	1040		1	X																		
✓ 13	CB-SS-11-0-16-20160819	1057		2	X																		
✓ 14	CM-SS-10-0-16-20160819	1110		1	X																		
✓ 15	IA-SS-06-0-16-20160819	1140		1	X																		

Notes:
 Metrics of BI, RBI, BRI and RIVPACS will be calculated as specified in attachment to subagreement.


Relinquished By: Claire Dolphin Company: Anchor QEA
 Signature/Printed Name: _____ Date/Time: 8/20/16

Received By: Albert M. Mulla Company: A
 Signature/Printed Name: _____ Date/Time: 8/20/16 6:30

Relinquished By: [Signature] Company: _____
 Signature/Printed Name: _____ Date/Time: 08-20-16 10:35

Received By: [Signature] Company: _____
 Signature/Printed Name: _____ Date/Time: 8/20/16 10:35

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: Date: <u>8/19/16</u> Project Name: <u>GWMA Sediment Sampling</u> Project Number: <u>141205-01.03</u> Project Manager: <u>Andrew Martin</u> Phone Number: <u>949-347-2780</u> Shipment Method: <u>Carrier</u>				Test Parameters														
Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	10-day amphipod survival test	48-hour SWI test	Benthic Community Analysis											Comments/Preservation
1	JA-55003-016-20160819	8/19/16 1330	Benthic	1			X											10% Formalin
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Notes: METRICS of BIERBI, BIRE and RIVPAOS will be calculated as specified in

Bioassay testing as outlined in work order attachment to subagreement

Relinquished By: [Signature] Company: Anchor QEA
 Signature/Printed Name: Claire Dolphin Date/Time: 8/20/16

Received By: [Signature] Company: A
 Signature/Printed Name: Albert-Muk Date/Time: 8-20-16 6130

Relinquished By: [Signature] Company:
 Signature/Printed Name: 8-20-16 10135 Date/Time:

Received By: [Signature] Company:
 Signature/Printed Name: Am Date/Time: 8/20/16 1045

Appendix G
Data Validation Reports

Data Validation Report – EPA Stage 2A

November 28, 2016

Project: GWMA – TMDL Compliance Monitoring – 2016 Sediment

Project Number: 141205-01.01

This report summarizes the review of analytical results for 22 sediment samples, two field duplicates, one rinsate blank, and one field blank collected from August 16 to 19, 2016. The samples were collected by Anchor QEA, LLC, and submitted to Eurofins Calscience, Inc (ECI). Sediment metals and mercury analyses were subcontracted to Eurofins Frontier Global Sciences. The samples were analyzed for the following parameters:

- Polycyclic aromatic hydrocarbons by United States Environmental Protection Agency (USEPA) method 8270C – select ion monitoring (SIM)
- Polychlorinated biphenyl (PCB) congeners by USEPA method 8270C – SIM
- Chlorinated pesticides by USEPA method 8270C – SIM
- Toxaphene by USEPA method 8081A
- Metals by USEPA methods 1638, 1640, and 1631E
- Total organic carbon (TOC) by USEPA method 9060A
- Total solids by Standard Method 2540B
- Grain size by ASTM method D4464 modified

ECI sample data group (SDG) numbers 16-08-1268, 16-08-1239_s1, 16-08-1364, and 16-08-1487 were reviewed in this report. Sample IDs, matrices, and analyses conducted are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
IA-SS-04-0-5-20160817	16-08-1268-1	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IA-SS-02-0-5-20160817	16-08-1268-2	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
CS-SS-01-0-5-20160817	16-08-1268-3	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IB-SS-12-0-5-20160817	16-08-1268-4	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IB-SS-13-0-5-20160817	16-08-1268-5	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IB-SS-14-0-5-20160817	16-08-1268-6	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
CM-SS-10-0-5-20160816	16-08-1269-1	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS

Sample ID	Lab Sample ID	Matrix	Analyses
FB-20160816	16-08-1269-10	Water	Metals
CB-SS-11-0-5-20160816	16-08-1269-2	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
OA-SS-09-0-5-20160816	16-08-1269-3	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
FH-SS-07-0-5-20160816	16-08-1269-4	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IA-SS-05-0-5-20160816	16-08-1269-5	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IA-SS-06-0-5-20160816	16-08-1269-6	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IA-SS-03-0-5-20160816	16-08-1269-7	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IA-SS-1006-0-5-20160816	16-08-1269-8	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
EB-20160816	16-08-1269-9	Water	Metals
OB-SS-17-0-5-20160818	16-08-1364-1	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
SP-SS-20-0-5-20160818	16-08-1364-2	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
SP-SS-19-0-5-20160818	16-08-1364-3	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
SP-SS-18-0-5-20160818	16-08-1364-4	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
LE-SS-21-0-5-20160818	16-08-1364-5	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
LE-SS-22-0-5-20160818	16-08-1364-6	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
IB-SS-15-0-5-20160818	16-08-1364-7	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
OB-SS-16-0-5-20160819	16-08-1487-1	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
OB-SS-08-0-5-20160819	16-08-1487-2	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS
OB-SS-1016-0-5-20160819	16-08-1487-3	Sediment	PAHs, PCBs, toxaphene, pesticides, metals, TOC, TS, GS

Notes:

GS: grain size

PAH: polycyclic aromatic hydrocarbon

PCB: polychlorinated biphenyl

TOC: total organic carbon

TS: total solids

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QC) guidelines outlined in the analytical procedures and data quality objective sections of the Sampling and Analysis Plans (Anchor QEA 2014). Laboratory results were reviewed using the following guidelines:

- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2016a)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2016b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by ECI at the time of sample receipt; the samples were received within the recommended temperature range and in good condition.

Holding Times and Sample Preservation

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. All method blanks were free of target analytes, with the following exceptions:

- SDG 16-08-1268 Metals: Zinc was detected in both method blanks reported in this SDG, and mercury was detected in all three method blanks. Associated sample results were significantly greater than (more than five times) the levels detected in the blanks, so no data were qualified.
- SDG 16-08-1239_s1 Metals: Cadmium, copper, and zinc were detected in the method blank associated with the equipment and field blanks. Associated results that were not significantly greater than (more than five times) the levels detected in the blank have been qualified as non-detects. Zinc was detected in both method blanks associated with the sediment samples, and mercury was detected in all three method blanks. Associated sample results were significantly greater than the levels detected in the blanks, so no data were qualified.

See Table 4 for qualified data.

Field Quality Control

Field Blanks and Equipment Blanks

One field blank and one equipment rinsate blank were collected and analyzed in association with these sample sets. The blank results were below detection, except for some low-level metals detection. Detected results are summarized in Table 2.

Table 2
Field Blank and Equipment Blank Detections Summary

Blank ID	Analyte	Result
EB-20160816	Mercury	0.00206 µg/L
	Lead	0.29 µg/L
	Chromium	1.88 µg/L
	Copper	3.08 µg/L
	Zinc	2.36 µg/L
FB-20160816	Lead	0.0368 µg/L
	Copper	9.2 µg/L

Note:
µg/L: microgram per liter

No sample results were qualified based on field or equipment blank results.

Field Duplicates

Two field duplicates were collected in association with these sample sets. Detected results are summarized in Table 3.

Table 3
Field Duplicate Summary

Analyte	IA-SS-06-0-5-20160816	IA-SS-1006-0-5-20160816	RPD	Difference
1-Methylphenanthrene	17J µg/kg	31 µg/kg	--	14 µg/kg
2,4'-DDE	9.4 µg/kg	8.6 µg/kg	9%	--
2,6-Dimethylnaphthalene	50 µg/kg	56 µg/kg	--	6 µg/kg
2-Methylnaphthalene	5.9J µg/kg	5.8J µg/kg	--	0.1 µg/kg
4,4'-DDE	53 µg/kg	54 µg/kg	2%	--
Acenaphthene	5.2J µg/kg	5.2J µg/kg	--	0 µg/kg
Anthracene	130 µg/kg	130 µg/kg	0%	--
Benzo(a)anthracene	170 µg/kg	170 µg/kg	0%	--
Benzo(a)pyrene	250 µg/kg	310 µg/kg	21%	--
Benzo(e)pyrene	180 µg/kg	200 µg/kg	11%	--
Chrysene	330 µg/kg	280 µg/kg	16%	--

Analyte	IA-SS-06-0-5-20160816	IA-SS-1006-0-5-20160816	RPD	Difference
Clay, <5 micron	12.88%	12.83%	0%	--
Dibenzo(a,h)anthracene	38 µg/kg	56 µg/kg	--	18 µg/kg
Fluoranthene	300 µg/kg	270 µg/kg	11%	--
Fluorene	13J µg/kg	12J µg/kg	--	1 µg/kg
PCB-028	0.4U µg/kg	1.1 µg/kg	--	0.7 µg/kg
PCB-044	1.6 µg/kg	1.9 µg/kg	--	0.3 µg/kg
PCB-049	0.99 µg/kg	1.1 µg/kg	--	0.11 µg/kg
PCB-052	2.5 µg/kg	2.1 µg/kg	17%	--
PCB-066	2.2 µg/kg	2.1 µg/kg	5%	--
PCB-070	2.6 µg/kg	2.1 µg/kg	21%	--
PCB-074	1.4 µg/kg	1.1 µg/kg	--	0.3 µg/kg
PCB-077	1.8 µg/kg	0.42U µg/kg	--	1.38 µg/kg
PCB-087	3.8 µg/kg	3.1 µg/kg	20%	--
PCB-099	3.1 µg/kg	2.6 µg/kg	18%	--
PCB-101	6.7 µg/kg	5.6 µg/kg	18%	--
PCB-105	5 µg/kg	2.8 µg/kg	56%	--
PCB-110	6.9 µg/kg	5.5 µg/kg	23%	--
PCB-118	6.7 µg/kg	6.1 µg/kg	9%	--
PCB-128	2.1 µg/kg	1.2 µg/kg	--	0.9 µg/kg
PCB-132/153	11 µg/kg	10 µg/kg	10%	--
PCB-138/158	9.8 µg/kg	7.8 µg/kg	23%	--
PCB-149	5.6 µg/kg	4.4 µg/kg	24%	--
PCB-151	2.4 µg/kg	2 µg/kg	--	0.4 µg/kg
PCB-156	1.3 µg/kg	0.42U µg/kg	--	0.88 µg/kg
PCB-170	1.8 µg/kg	1.8 µg/kg	--	0 µg/kg
PCB-177	0.95 µg/kg	1 µg/kg	--	0.05 µg/kg
PCB-180	4 µg/kg	4 µg/kg	0%	--
PCB-183	0.88 µg/kg	0.99 µg/kg	--	0.11 µg/kg
PCB-187	2.2 µg/kg	2 µg/kg	--	0.2 µg/kg
PCB-194	0.82 µg/kg	1 µg/kg	--	0.18 µg/kg
Perylene	250 µg/kg	270 µg/kg	8%	--
Phenanthrene	80 µg/kg	56 µg/kg	--	24 µg/kg
Pyrene	280 µg/kg	220 µg/kg	24%	--
Sand, fine	8.43%	8.97%	6%	--
Sand, very fine	15.4%	14.5%	6%	--
Silt	63.3%	63.7%	1%	--
Total organic carbon	1.5%	1.4%	7%	--
Total solids	49.8%	47.1%	6%	--

Analyte	OB-SS-16-0-5-20160819	OB-SS-1016-0-5-20160819	RPD	Difference
1-Methylphenanthrene	19U µg/kg	5J µg/kg	--	14 µg/kg
2,4'-DDE	4.5 µg/kg	4.2 µg/kg	7%	--
2,6-Dimethylnaphthalene	32 µg/kg	38 µg/kg	--	6 µg/kg
4,4'-DDE	32 µg/kg	26 µg/kg	21%	--
Anthracene	18J µg/kg	12J µg/kg	--	6 µg/kg
Benzo(a)anthracene	31 µg/kg	29 µg/kg	--	2 µg/kg
Benzo(a)pyrene	54 µg/kg	53 µg/kg	--	1 µg/kg
Benzo(e)pyrene	38 µg/kg	38 µg/kg	--	0 µg/kg
Chrysene	46 µg/kg	41 µg/kg	--	5 µg/kg
Clay, <5 micron	11.87%	10.82%	9%	--
Dibenzo(a,h)anthracene	19U µg/kg	7.6J µg/kg	--	11.4 µg/kg
Fluoranthene	43 µg/kg	43 µg/kg	--	0 µg/kg
PCB-028	0.61 µg/kg	0.91 µg/kg	--	0.3 µg/kg
PCB-066	1.3 µg/kg	1.4 µg/kg	--	0.1 µg/kg
PCB-070	0.92 µg/kg	0.92 µg/kg	--	0 µg/kg
PCB-087	1.3 µg/kg	1.4 µg/kg	--	0.1 µg/kg
PCB-099	1.2 µg/kg	1.2 µg/kg	--	0 µg/kg
PCB-101	1.2 µg/kg	1.9 µg/kg	--	0.7 µg/kg
PCB-105	1.1 µg/kg	1.6 µg/kg	--	0.5 µg/kg
PCB-110	1.8 µg/kg	2 µg/kg	--	0.2 µg/kg
PCB-118	2.1 µg/kg	2.4 µg/kg	13%	--
PCB-132/153	3.8 µg/kg	4.1 µg/kg	8%	--
PCB-138/158	3 µg/kg	3.2 µg/kg	--	0.2 µg/kg
PCB-149	1.7 µg/kg	1.9 µg/kg	--	0.2 µg/kg
PCB-151	0.38U µg/kg	0.6 µg/kg	--	0.22 µg/kg
PCB-170	0.83 µg/kg	1 µg/kg	--	0.17 µg/kg
PCB-180	1.5 µg/kg	1.6 µg/kg	--	0.1 µg/kg
PCB-187	1.1 µg/kg	1.2 µg/kg	--	0.1 µg/kg
Perylene	38 µg/kg	39 µg/kg	--	1 µg/kg
Phenanthrene	19J µg/kg	18J µg/kg	--	1 µg/kg
Pyrene	63 µg/kg	60 µg/kg	--	3 µg/kg
Sand, fine	4.9%	7.43%	41%	--
Sand, medium	0.01U%	0.46%	--	0.45%
Sand, very fine	17.49%	18.2%	4%	--
Silt	65.75%	63.1%	4%	--
Total organic carbon	0.94%	0.76%	21%	--
Total solids	52.6%	53.5%	2%	--

Notes:

--: not applicable

µg/kg: microgram per kilogram

J: indicates an estimated value

RPD: relative percent difference

PCB: polychlorinated biphenyl

U: indicates the compound or analyte was analyzed for but not detected at or above the specified limit

Results that were less than five times the reporting limit (RL) were evaluated by the difference between the results. Results were within the 25% relative percent difference (RPD) value or were within the $\pm 2 \times$ RL control limits with a few exceptions. PCB-077, PCB -128, PCB-105, and PCB-156 results were outside of control limits in the duplicate analyses of sample IA-SS-06-0-5-20160816, and fine and medium sand results were outside of control limits in the duplicate analyses of sample OB-SS-16-0-5-20160819. No data were qualified based on field duplicate results.

Surrogate Recoveries

Surrogate recoveries were within laboratory control limits, except for one or both surrogates in the pesticides toxaphene analyses of several samples. The surrogates recovered above the control limits and sample results were below detection, so no data were qualified.

Column Confirmation

No column confirmation results were necessary because all toxaphene results were below detection in the method 8081A analyses.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies. Not all analytes were reported in some LCS/LCSD analyses. All LCS/LCSD analyses resulted in recoveries and/or RPD values within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at required frequencies or LCSs/LCSDs were analyzed in place of MS/MSD samples except for the toxaphene analyses. If the parent sample concentration was significantly greater than (more than four times) the spike concentration, percent recoveries were not calculated and no data were qualified. MS/MSD analyses conducted on non-project samples and results not associated with reported data were not evaluated. MS/MSD recoveries and/or RPD values were within project-required control limits, with the following exceptions:

- SDG 16-08-1268 and 16-08-1487 Conventionals: TOC did not recover in the MS or MSD analyzed on sample IB-SS-13-0-5-20160817. Associated sample results have been qualified "J" to indicate a potentially low bias.
- SDG 16-08-1268 Pesticides: 4,4'-DDT and dieldrin did not recover in the MS or MSD analyzed on sample IB-SS-13-0-5-20160817. Associated parent sample results have been rejected. Alpha (cis-) chlordane, 4,4'-DDD, and gamma (trans-) chlordane recovered below the control

limit in the MSD, and the MS/MSD RPD value was above the control limit for 4,4'-DDD.

Associated parent sample results have been qualified "UJ" to indicate a potentially low bias.

- SDGs 16-08-1268 and 16-08-1269_s1
 - Metals: Some analytes recovered outside of control limits, and some RPD values were outside of control limits in the initial MS and MSD analyses conducted on samples IA-SS-04-0-5-20160817 and CM-SS-10-0-5-20160816. The second MS/MSD analyses conducted on these samples were spiked at more appropriate concentrations and results were within control limits, so no data were qualified.
- SDG 16-08-1364
 - Pesticides: 4,4'-DDD, cis-chlordane, and trans chlordane recovered below the control limit in the MS and MSD analyzed on sample OB-SS-17-0-5-20160818. Associated parent sample results have been qualified "UJ" to indicate a potentially low bias. 4,4'-DDT and dieldrin did not recover in the MS or MSD, and associated parent sample results have been rejected.
 - Metals: The first set of MS and/or MSD analyses conducted on sample OB-SS-17-0-5-20160818 resulted in recoveries below the control limit for chromium, copper, zinc, and lead. The second set analyzed on the same sample were spiked at a more appropriate level and recoveries were within control limits, so no data were qualified. The first cadmium MS analyzed on the same sample recovered below the control limit, and the MS/MSD RPD value was above the control limit. The second set of MS and MSD results were within control limits, so no data were qualified.

See Table 4 for qualified data.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequencies or MSDs or LCSDs were analyzed in place of laboratory duplicates. All duplicate results were within required limits.

Method Detection Limits

Detection limits were acceptable as reported. All values were reported using the laboratory detection limits. Values were reported as undiluted, or when reported as diluted, the detection limit accurately reflects the dilution factor. Some detection limits were elevated due to sample moisture content, dilution factors, or matrix interference.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values, with the exceptions noted above. Precision was acceptable as demonstrated by the field and laboratory duplicates, MS/MSD, and LCS/LCSD RPD

values with the exceptions noted above. Some metals detection limits were elevated due to method blank contamination. Most data were acceptable as reported; most other data are acceptable as qualified. Four pesticides results from two samples were rejected due to no recoveries in the MS/MSD analyses. Table 4 summarizes the qualifiers applied to sample results reviewed in this report.

Data Qualifier Definitions

- U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit
- J Indicates an estimated value
- UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated
- R Indicates data are rejected and unusable

Table 4
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
CS-SS-01-0-5-20160817	Conventionals	TOC	0.62%	0.62J%	0 %R in MS and MSD
EB-20160816	Metals	Cadmium	0.0127BJ µg/L	0.0127U µg/L	Method blank contamination
FB-20160816	Metals	Cadmium	0.0085BJ µg/L	0.0085U µg/L	Method blank contamination
		Zinc	0.28BJ µg/L	0.28U µg/L	
IA-SS-02-0-5-20160817	Conventionals	TOC	0.37%	0.37J%	0 %R in MS and MSD
IA-SS-04-0-5-20160817	Conventionals	TOC	0.39%	0.39J%	0 %R in MS and MSD
IB-SS-12-0-5-20160817	Conventionals	TOC	1.4%	1.4J%	0 %R in MS and MSD
IB-SS-13-0-5-20160817	Conventionals	TOC	1%	1J%	0 %R in MS and MSD
	Pesticides	cis-Chlordane	0.13U µg/kg	0.13UJ µg/kg	%R below control limit in MSD
		trans-Chlordane	0.11U µg/kg	0.11UJ µg/kg	
		4,4'-DDT	0.1U µg/kg	R	0 %R in MS and MSD
		Dieldrin	0.21U µg/kg	R	
4,4'-DDD	0.079U µg/kg	0.079UJ µg/kg	MS/MSD %R below control limit; MS/MSD RPD value above control limit		
IB-SS-14-0-5-20160817	Conventionals	TOC	0.52%	0.52J%	0 %R in MS and MSD

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
OB-SS-08-0-5-20160819	Conventionals	TOC	2%	2J%	0 %R in MS and MSD
OB-SS-1016-0-5-20160819	Conventionals	TOC	0.76%	0.76J%	0 %R in MS and MSD
OB-SS-16-0-5-20160819	Conventionals	TOC	0.94%	0.94J%	0 %R in MS and MSD
OB-SS-17-0-5-20160818	Pesticides	4,4'-DDT	0.11U µg/kg	R	0 %R in MS and MSD
		Dieldrin	0.22U µg/kg	R	
		4,4'-DDD	0.083U µg/kg	0.083UJ µg/kg	MS/MSD %R below control limit
		cis-Chlordane	0.14U µg/kg	0.14UJ µg/kg	
		trans-Chlordane	0.11U µg/kg	0.11UJ µg/kg	

Notes:

%R: percent recovery

µg/kg: microgram per kilogram

MS: matrix spike

MSD: matrix spike duplicate

RPD: relevant percent difference

TOC: total organic carbon

References

Anchor QEA, 2014. *Sediment Sampling and Analysis Plan. Greater Los Angeles and Long Beach Harbor Waters*. September 2014.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. Office of Solid Waste and Emergency Response. EPA 530/SW-846.

USEPA, 2016a. *National Functional Guidelines for Superfund Organic Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-002. September 2016.

USEPA, 2016b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-001. September 2016.

Data Validation Report – EPA Stage 2A

December 19, 2016

Project: GWMA – 2016 Fish Tissue

Project Number: 141205-01.03

This report summarizes the review of analytical results for 30 tissue samples collected from August 20 to 21, 2016. The samples were collected by Anchor QEA, LLC and submitted to Eurofins Calscience, Inc. (ECI) in Garden Grove, California. The samples were composited and homogenized by the laboratory and analyzed for the following parameters:

- Polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) method 8270C – select ion monitoring
- Organochlorine pesticides by USEPA method 8081A
- Lipids by National Oceanic and Atmospheric Administration method 1993
- Percent moisture (%M) by American Society for Testing and Materials method D2216

ECI sample data group number 16-09-0039 was reviewed in this report. Sample IDs, matrices, and analyses are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
OA-FF-WC-C1-20160820	16-09-0039-1	Tissue	PCBs, pesticides, lipids, percent moisture
OA-FF-WC-C2-20160820	16-09-0039-2	Tissue	PCBs, pesticides, lipids, percent moisture
OA-FF-WC-C3-20160820	16-09-0039-3	Tissue	PCBs, pesticides, lipids, percent moisture
OA-FF-CH-C1-20160820	16-09-0039-4	Tissue	PCBs, pesticides, lipids, percent moisture
OA-FF-CH-C2-20160820	16-09-0039-5	Tissue	PCBs, pesticides, lipids, percent moisture
OA-FF-CH-C3-20160820	16-09-0039-6	Tissue	PCBs, pesticides, lipids, percent moisture
OA-WO-SS-C1-20160820	16-09-0039-7	Tissue	PCBs, pesticides, lipids, percent moisture
OA-WO-SS-C2-20160820	16-09-0039-8	Tissue	PCBs, pesticides, lipids, percent moisture
OA-WO-NA-C1-20160820	16-09-0039-9	Tissue	PCBs, pesticides, lipids, percent moisture
OB-FF-WC-C1-20160820	16-09-0039-11	Tissue	PCBs, pesticides, lipids, percent moisture
OB-FF-WC-C2-20160820	16-09-0039-12	Tissue	PCBs, pesticides, lipids, percent moisture
OB-FF-WC-C3-20160820	16-09-0039-13	Tissue	PCBs, pesticides, lipids, percent moisture
OB-FF-CH-C1-20160820	16-09-0039-14	Tissue	PCBs, pesticides, lipids, percent moisture
OB-FF-CH-C2-20160820	16-09-0039-15	Tissue	PCBs, pesticides, lipids, percent moisture
OB-FF-CH-C3-20160820	16-09-0039-16	Tissue	PCBs, pesticides, lipids, percent moisture
OB-WO-NA-C1-20160820	16-09-0039-17	Tissue	PCBs, pesticides, lipids, percent moisture
OB-WO-NA-C2-20160820	16-09-0039-18	Tissue	PCBs, pesticides, lipids, percent moisture

Sample ID	Lab Sample ID	Matrix	Analyses
OB-WO-NA-C3-20160820	16-09-0039-19	Tissue	PCBs, pesticides, lipids, percent moisture
SP-FF-WC-C1-20160821	16-09-0039-20	Tissue	PCBs, pesticides, lipids, percent moisture
SP-FF-WC-C2-20160821	16-09-0039-21	Tissue	PCBs, pesticides, lipids, percent moisture
SP-FF-WC-C3-20160821	16-09-0039-22	Tissue	PCBs, pesticides, lipids, percent moisture
SP-FF-CH-C1-20160821	16-09-0039-23	Tissue	PCBs, pesticides, lipids, percent moisture
SP-FF-CH-C2-20160821	16-09-0039-24	Tissue	PCBs, pesticides, lipids, percent moisture
SP-FF-CH-C3-20160821	16-09-0039-25	Tissue	PCBs, pesticides, lipids, percent moisture
SP-WO-NA-C1-20160821	16-09-0039-26	Tissue	PCBs, pesticides, lipids, percent moisture
SP-WO-NA-C2-20160821	16-09-0039-27	Tissue	PCBs, pesticides, lipids, percent moisture
SP-WO-NA-C3-20160821	16-09-0039-28	Tissue	PCBs, pesticides, lipids, percent moisture
CS-FF-WC-C1-20160821	16-09-0039-29	Tissue	PCBs, pesticides, lipids, percent moisture
CS-FF-WC-C2-20160821	16-09-0039-30	Tissue	PCBs, pesticides, lipids, percent moisture
CS-FF-WC-C3-20160821	16-09-0039-31	Tissue	PCBs, pesticides, lipids, percent moisture

Note:

PCB: polychlorinated biphenyl

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the laboratory control limits and the following guidelines:

- Fish Tissue Sampling and Analysis Plan (Anchor QEA 2014)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2016a)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2016b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by ECI at the time of sample receipt. Samples were received within the correct temperature range and in good condition.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. All method blanks were free of target analytes.

Field Quality Control

No field QC samples were collected with this sample set. Rinse blanks were not required. Field duplicates were required to be collected at a frequency of 5% of total project sample count. An additional sampling event will take place in 2018 and should include field duplicate collection.

Surrogate Recoveries

Surrogate recoveries were within the laboratory control limits with some exceptions in the pesticides analyses. Surrogate recoveries that were outside of control limits were due to the inability to accurately quantify surrogates when diluted $\geq 10x$.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies. Not all target analytes were spiked in the PCB and pesticide LCS/LCSD analyses, so instrument precision and accuracy could not be evaluated for all analytes. All LCS/LCSD recoveries and/or relative percent difference (RPD) values were within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequency. Not all target analytes were spiked into the PCB and pesticide MS/MSD samples, so matrix precision and accuracy could not be evaluated for all analytes. Recoveries and/or RPD values were within project-required control limits, with the following exceptions:

- Pesticides: 4,4'-DDD recovered above the control limit in the MS analyzed on sample SP-FF-CH-C2-20160821. The associated sample result was below detection, so it was not qualified. 4,4'-DDE recovered below the control limit in the MS and MSD analyzed on the same sample. The associated parent sample result has been qualified "J" to indicate a potentially low bias.
- PCBs: The MS/MSD RPD value for PCB-126 was above the control limit in the MS/MSD analyzed on sample SP-FF-CH-C2-20160821. Recoveries were within control limits and the parent sample result was below detection, so no data were qualified.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequency for percent moisture and lipids analyses and resulted in RPD values within control limits.

Method Reporting Limits

Reporting limits (RLs) were acceptable as reported. All values were reported using the laboratory RLs. Values were reported as undiluted or when diluted, the RL reflects the dilution factor. All RL goals for non-detected results were met.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Precision and accuracy could not be evaluated for some pesticide and PCB analytes. Accuracy for analytes that were spiked was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values, with the exceptions noted above. Precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and laboratory and field duplicate RPD values or difference values. Most data are acceptable as reported; all other data are acceptable as qualified. Table 3 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definition

J Indicates an estimated value

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
SP-FF-CH-C2-20160821	Pesticides	4,4'-DDE	19 µg/kg	19J µg/kg	MS/MSD %R below control limit

Note:

µg/kg: microgram per kilogram

%R: percent recovery

MS/MSD: matrix spike/matrix spike duplicate

References

Anchor QEA, 2014. *Fish Tissue Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2016a. *National Functional Guidelines for Superfund Organic Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-002. September 2016.

USEPA, 2016b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-001. September 2016.

Data Validation Report – EPA Stage 2A

December 29, 2016

Project: GWMA Water Quality – 2016 Summer Dry Weather Sampling Event

Project Number: 141205-01.01

This report summarizes the review of analytical results for 66 water samples, four field duplicates, one field blank, and one equipment blank collected on September 27, 2016. The samples were collected by Anchor QEA, LLC, and submitted to Eurofins Calscience, Inc. (ECI), in Garden Grove, California. The samples were analyzed for the following parameters:

- Polychlorinated biphenyl congeners (PCBs) by U.S. Environmental Protection Agency (USEPA) method 8270C – select ion monitoring
- Organochlorine pesticides by USEPA method 8081A
- Total and dissolved metals by USEPA methods 1640 and 1631E
- Total suspended solids (TSS) by Standard Method 2540D

ECI sample data group (SDG) numbers 16-09-1973 and 16-09-2007 were reviewed in this report. Sample IDs, matrices, and analyses conducted are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
LE-RW-22-G-S-20160927	16-09-1973-1	Water	PCBs, pesticides, total and dissolved metals, TSS
LE-RW-22-G-M-20160927	16-09-1973-2	Water	TSS
LE-RW-22-G-B-20160927	16-09-1973-3	Water	TSS
LE-RW-21-G-S-20160927	16-09-1973-4	Water	PCBs, pesticides, total and dissolved metals, TSS
LE-RW-21-G-M-20160927	16-09-1973-5	Water	TSS
LE-RW-21-G-B-20160927	16-09-1973-6	Water	TSS
LE-RW-1021-G-B-20160927	16-09-1973-7	Water	TSS
SP-RW-18-G-S-20160927	16-09-1973-8	Water	PCBs, pesticides, total and dissolved metals, TSS
SP-RW-18-G-M-20160927	16-09-1973-9	Water	TSS
SP-RW-18-G-B-20160927	16-09-1973-10	Water	TSS
SP-RW-19-G-S-20160927	16-09-1973-11	Water	PCBs, pesticides, total and dissolved metals, TSS
SP-RW-19-G-M-20160927	16-09-1973-12	Water	TSS
SP-RW-19-G-B-20160927	16-09-1973-13	Water	TSS
SP-RW-20-G-S-20160927	16-09-1973-14	Water	PCBs, pesticides, total and dissolved metals, TSS
SP-RW-20-G-M-20160927	16-09-1973-15	Water	TSS
SP-RW-20-G-B-20160927	16-09-1973-16	Water	TSS
IB-RW-17-G-S-20160927	16-09-1973-17	Water	PCBs, pesticides, total and dissolved metals, TSS

Sample ID	Lab Sample ID	Matrix	Analyses
OB-RW-17-G-M-20160927	16-09-1973-18	Water	TSS
OB-RW-17-G-B-20160927	16-09-1973-19	Water	TSS
FB-20160927	16-09-1973-20	Water	Total and dissolved metals
IA-RW-15-G-S-20160927	16-09-1973-21	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-15-G-M-20160927	16-09-1973-22	Water	TSS
IA-RW-15-G-B-20160927	16-09-1973-23	Water	TSS
IB-RW-16-G-S-20160927	16-09-1973-24	Water	PCBs, pesticides, total and dissolved metals, TSS
OB-RW-16-G-M-20160927	16-09-1973-25	Water	TSS
OB-RW-16-G-B-20160927	16-09-1973-26	Water	TSS
CM-RW-10-G-S-20160927	16-09-2007-1	Water	PCBs, pesticides, total and dissolved metals, TSS
CM-RW-10-G-M-20160927	16-09-2007-2	Water	TSS
CM-RW-10-G-B-20160927	16-09-2007-3	Water	TSS
CM-RW-1010-G-B-20160927	16-09-2007-4	Water	TSS
EB-20160927	16-09-2007-5	Water	Total and dissolved metals, pesticides, PCBs
OA-RW-08-G-S-20160927	16-09-2007-6	Water	PCBs, pesticides, total and dissolved metals, TSS
OA-RW-08-G-M-20160927	16-09-2007-7	Water	TSS
OA-RW-08-G-B-20160927	16-09-2007-8	Water	TSS
OA-RW-09-G-S-20160927	16-09-2007-9	Water	PCBs, pesticides, total and dissolved metals, TSS
OA-RW-09-G-M-20160927	16-09-2007-10	Water	TSS
OA-RW-09-G-B-20160927	16-09-2007-11	Water	TSS
CB-RW-11-G-S-20160927	16-09-2007-12	Water	PCBs, pesticides, total and dissolved metals, TSS
CB-RW-11-G-M-20160927	16-09-2007-13	Water	TSS
CB-RW-11-G-B-20160927	16-09-2007-14	Water	TSS
OA-RW-1009-G-M-20160927	16-09-2007-15	Water	TSS
IB-RW-12-G-S-20160927	16-09-2007-16	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-12-G-M-20160927	16-09-2007-17	Water	TSS
IB-RW-12-G-B-20160927	16-09-2007-18	Water	TSS
IB-RW-13-G-S-20160927	16-09-2007-19	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-13-G-M-20160927	16-09-2007-20	Water	TSS
IB-RW-13-G-B-20160927	16-09-2007-21	Water	TSS
IB-RW-14-G-S-20160927	16-09-2007-22	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-1014-G-S-20160927	16-09-2007-23	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-14-G-M-20160927	16-09-2007-24	Water	TSS
IB-RW-14-G-B-20160927	16-09-2007-25	Water	TSS
IA-RW-04-G-S-20160927	16-09-2007-27	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-04-G-M-20160927	16-09-2007-28	Water	TSS
IA-RW-04-G-B-20160927	16-09-2007-29	Water	TSS
IA-RW-05-G-S-20160927	16-09-2007-30	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-05-G-M-20160927	16-09-2007-31	Water	TSS

Sample ID	Lab Sample ID	Matrix	Analyses
IA-RW-05-G-B-20160927	16-09-2007-32	Water	TSS
IA-RW-06-G-S-20160927	16-09-2007-33	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-06-G-M-20160927	16-09-2007-34	Water	TSS
IA-RW-06-G-B-20160927	16-09-2007-35	Water	TSS
FH-RW-07-G-S-20160927	16-09-2007-36	Water	PCBs, pesticides, total and dissolved metals, TSS
FH-RW-07-G-M-20160927	16-09-2007-37	Water	TSS
FH-RW-07-G-B-20160927	16-09-2007-38	Water	TSS
CS-RW-01-G-S-20160927	16-09-2007-39	Water	PCBs, pesticides, total and dissolved metals, TSS
CS-RW-01-G-M-20160927	16-09-2007-40	Water	TSS
CS-RW-01-G-B-20160927	16-09-2007-41	Water	TSS
IA-RW-02-G-S-20160927	16-09-2007-42	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-02-G-M-20160927	16-09-2007-43	Water	TSS
IA-RW-02-G-B-20160927	16-09-2007-44	Water	TSS
IA-RW-03-G-S-20160927	16-09-2007-45	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-03-G-M-20160927	16-09-2007-46	Water	TSS
IA-RW-03-G-B-20160927	16-09-2007-47	Water	TSS

Notes:

PCB: polychlorinated biphenyl

TSS: total suspended solids

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the laboratory control limits and the following guidelines:

- Water Sampling and Analysis Plan (Anchor QEA 2014)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2016a)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2016b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by ECI at the time of sample receipt. Anomalies noted during sample receipt were reconciled prior to sample analyses. Samples were received within the recommended temperature range and in good condition.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. All method blanks were free of target analytes.

Field Quality Control

Field QC samples were collected at the required frequencies.

Equipment and Field Blanks

One equipment blank and one field blank were collected in association with this sampling event. Results were below detection with the exceptions of some metals detections. Detected results are summarized in Table 2.

Table 2
Equipment and Field Blank Detections

Blank ID	Analyte	Result
EB-20160927	Dissolved copper	3.68 µg/L
	Total copper	3.69 µg/L
	Dissolved lead	0.0451 µg/L
	Total lead	0.0355 µg/L
	Dissolved zinc	0.588 µg/L
	Total zinc	1.4 µg/L
FB-20160927	Dissolved copper	6.85 µg/L
	Total copper	8.73 µg/L
	Dissolved lead	0.0264J µg/L
	Total lead	0.0944 µg/L
	Dissolved zinc	2.01 µg/L
	Total zinc	3.18 µg/L
	Total mercury	0.00018J µg/L

Note:
µg/L: microgram per liter

No results were qualified based on equipment and field blank detections, except for total and dissolved copper. Copper was detected in both blanks, and the detections were significant. Because of this and because sample results were close to or below the same levels detected in the blanks,

field contamination is suspected and all sample results have been qualified as non-detects. See Table 4 for qualified data.

Field Duplicates

Four field duplicates were collected in association with this sampling event. Samples CM-RW-10-G-B-20160927 and OA-RW-09-G-S-20160927 and their duplicates were analyzed for TSS, and results were below detection. Detected results from the other two duplicates are summarized in Table 3.

Table 3
Field Duplicate Detections Summary

Analyte	IB-RW-14-G-S-20160927	IB-RW-1014-G-S-20160927	RPD	Difference
Dissolved mercury	0.000477J µg/L	0.0017 µg/L	--	0.001223
Total mercury	0.00434 µg/L	0.00229 µg/L	--	0.00205
Total cadmium	0.0382 µg/L	0.0368 µg/L	--	0.0014
Dissolved cadmium	0.0373 µg/L	0.0376 µg/L	--	0.0003
Total copper	0.796 µg/L	0.682 µg/L	15%	--
Dissolved copper	0.68 µg/L	0.669 µg/L	2%	--
Total lead	0.0777 µg/L	0.0783 µg/L	--	0.0006
Dissolved lead	0.0708 µg/L	0.0688 µg/L	--	0.002
Total zinc	2.09 µg/L	1.81 µg/L	--	0.28
Dissolved zinc	1.91 µg/L	2.08 µg/L	--	0.17

Analyte	LE-RW-21-G-B-20160927	LE-RW-1021-G-B-20160927	RPD	Difference
TSS	8.4 mg/L	8.8 mg/L	5%	--

Notes:

--: not applicable

µg/L: microgram per liter

mg/L: milligram per liter

RPD: relative percent difference

TSS: total suspended solids

Sample results that were less than five times the reporting limit (RL) were evaluated by the difference between the results. Results that were greater than five times the RL were evaluated using relative percent difference (RPD) values. All results were within project-required control limits, except for the total and dissolved mercury results in sample IB-RW-14-G-S-20160927 and its duplicate. The differences between these results were greater than two times the RL. No data were qualified based on field duplicate results.

Surrogate Recoveries

Surrogate recoveries were within the laboratory control limits.

Second Column Confirmation

No pesticides were detected in any samples, so second column confirmation was not necessary.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies. All LCS/LCSD recoveries and/or RPD values were within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequency with the exceptions of the PCB and pesticides analyses due to limited sample volume available. One set of MS/MSD samples were analyzed for these analyses. MS/MSD samples analyzed on non-project samples were not evaluated. Recoveries and/or RPD values were within project-required control limits with the following exceptions:

- SDG 16-09-1973 Metals: Copper recovered above the control limit in the MS analyzed on sample LE-RW-22-G-S-160927. Associated sample results were qualified as non-detects due to suspected field contamination, so no data were qualified. Zinc recovered below the control limit in the MS and MSD analyzed on the same sample. Associated sample results have been qualified "J" to indicate a potentially low bias.
- SDG 16-09-2007 Metals: Lead and zinc recovered below the control limit in the MS and MSD analyzed on sample CS-RW-01-G-S-160927. Associated sample results have been qualified "J" or "UJ" to indicate a potentially low bias. Copper recoveries in this MS/MSD could not be evaluated because the spike concentration was significantly greater than (more than four times) the parent sample concentration.

See Table 4 for qualified data.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequency and results were within control limits.

Method Reporting Limits

Reporting limits were acceptable as reported. All values were reported using the laboratory reporting limits. Values were reported as undiluted or when diluted, the reporting limit reflects the dilution factor. Reporting limit goals for non-detected results were met with the exceptions of cis-chlordane, cis-nonachlor, and toxaphene. All total and dissolved copper results were detected in the samples and qualified as non-detects, effectively raising the reporting limits for all samples.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values, with the exceptions noted above. Precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and laboratory and field duplicate RPD values or difference values. All total and dissolved copper results were qualified as non-detects due to suspected field contamination. All data are acceptable as reported or as qualified. Table 4 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit

J Indicates an estimated value

Table 4
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
CB-RW-11-G-S-20160927	Metals	Dissolved copper	2.39 µg/L	2.39U µg/L	Field and equipment blank contamination
		Total copper	2.52 µg/L	2.52U µg/L	
		Dissolved lead	0.0756 µg/L	0.0756J µg/L	MS/MSD %R below control limit
		Dissolved zinc	8.42 µg/L	8.42J µg/L	
		Total lead	0.0836 µg/L	0.0836J µg/L	
		Total zinc	7.25 µg/L	7.25J µg/L	
CM-RW-10-G-S-20160927	Metals	Dissolved copper	9.79 µg/L	9.79U µg/L	Field and equipment blank contamination
		Total copper	9.88 µg/L	9.88U µg/L	
		Dissolved lead	0.0769 µg/L	0.0769J µg/L	MS/MSD %R below control limit
		Dissolved zinc	35.2 µg/L	35.2J µg/L	
		Total lead	0.0884 µg/L	0.0884J µg/L	
		Total zinc	34.2 µg/L	34.2J µg/L	
CS-RW-01-G-S-20160927	Metals	Dissolved copper	2.2 µg/L	2.2U µg/L	Field and equipment blank contamination
		Total copper	3.08 µg/L	3.08U µg/L	
		Dissolved lead	0.215 µg/L	0.215J µg/L	MS/MSD %R below control limit
		Dissolved zinc	8.33 µg/L	8.33J µg/L	
		Total lead	0.486 µg/L	0.486J µg/L	
		Total zinc	9.68 µg/L	9.68J µg/L	
EB-20160927	Metals	Dissolved lead	0.0451 µg/L	0.0451J µg/L	MS/MSD %R below control limit
		Dissolved zinc	0.588 µg/L	0.588J µg/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		Total lead	0.0355 µg/L	0.0355J µg/L	
		Total zinc	1.4 µg/L	1.4J µg/L	
FB-20160927	Metals	Dissolved copper	6.85 µg/L	6.85J µg/L	MS %R above control limit
		Total copper	8.73 µg/L	8.73J µg/L	
		Dissolved zinc	2.01 µg/L	2.01J µg/L	MS/MSD %R below control limit
		Total zinc	3.18 µg/L	3.18J µg/L	
FH-RW-07-G-S-20160927	Metals	Dissolved copper	4.05 µg/L	4.05U µg/L	Field and equipment blank contamination
		Total copper	4.25 µg/L	4.25U µg/L	
		Dissolved lead	0.149 µg/L	0.149J µg/L	MS/MSD %R below control limit
		Dissolved zinc	11.4 µg/L	11.4J µg/L	
		Total lead	0.17 µg/L	0.17J µg/L	
		Total zinc	11.4 µg/L	11.4J µg/L	
IA-RW-02-G-S-20160927	Metals	Dissolved copper	2.06 µg/L	2.06U µg/L	Field and equipment blank contamination
		Total copper	2.22 µg/L	2.22U µg/L	
		Dissolved lead	0.11 µg/L	0.11J µg/L	MS/MSD %R below control limit
		Dissolved zinc	7.16 µg/L	7.16J µg/L	
		Total lead	0.113 µg/L	0.113J µg/L	
		Total zinc	6.66 µg/L	6.66J µg/L	
IA-RW-03-G-S-20160927	Metals	Dissolved copper	1.66 µg/L	1.66U µg/L	Field and equipment blank contamination
		Total copper	2.12 µg/L	2.12U µg/L	
		Dissolved lead	0.0763 µg/L	0.0763J µg/L	MS/MSD %R below control limit
		Dissolved zinc	4.42 µg/L	4.42J µg/L	
		Total lead	0.0897 µg/L	0.0897J µg/L	
		Total zinc	4.25 µg/L	4.25J µg/L	
IA-RW-04-G-S-20160927	Metals	Dissolved copper	1.53 µg/L	1.53U µg/L	Field and equipment blank contamination
		Total copper	7.82 µg/L	7.82U µg/L	
		Dissolved lead	0.0797 µg/L	0.0797J µg/L	MS/MSD %R below control limit
		Dissolved zinc	4.66 µg/L	4.66J µg/L	
		Total lead	0.0972 µg/L	0.0972J µg/L	
		Total zinc	5.83 µg/L	5.83J µg/L	
IA-RW-05-G-S-20160927	Metals	Dissolved copper	1.53 µg/L	1.53U µg/L	Field and equipment blank contamination
		Total copper	1.56 µg/L	1.56U µg/L	
		Dissolved lead	0.155 µg/L	0.155J µg/L	MS/MSD %R below control limit
		Dissolved zinc	5.26 µg/L	5.26J µg/L	
		Total lead	0.132 µg/L	0.132J µg/L	
		Total zinc	4.54 µg/L	4.54J µg/L	
IA-RW-06-G-S-20160927	Metals	Dissolved copper	0.643 µg/L	0.643U µg/L	Field and equipment blank contamination
		Total copper	1.32 µg/L	1.32U µg/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		Dissolved lead	0.0787 µg/L	0.0787J µg/L	MS/MSD %R below control limit
		Dissolved zinc	2.5 µg/L	2.5J µg/L	
		Total lead	0.0769 µg/L	0.0769J µg/L	
		Total zinc	2.55 µg/L	2.55J µg/L	
IA-RW-15-G-S-20160927	Metals	Dissolved copper	1.21 µg/L	1.21U µg/L	Field and equipment blank contamination
		Total copper	1.26 µg/L	1.26U µg/L	
		Dissolved zinc	6.1 µg/L	6.1J µg/L	MS/MSD %R below control limit
		Total zinc	5.89 µg/L	5.89J µg/L	
IB-RW-1014-G-S-20160927	Metals	Dissolved copper	0.669 µg/L	0.669U µg/L	Field and equipment blank contamination
		Total copper	0.682 µg/L	0.682U µg/L	
		Dissolved lead	0.0688 µg/L	0.0688J µg/L	MS/MSD %R below control limit
		Dissolved zinc	2.08 µg/L	2.08J µg/L	
		Total lead	0.0783 µg/L	0.0783J µg/L	
		Total zinc	1.81 µg/L	1.81J µg/L	
IB-RW-12-G-S-20160927	Metals	Dissolved copper	1.1 µg/L	1.1U µg/L	Field and equipment blank contamination
		Total copper	1.19 µg/L	1.19U µg/L	
		Dissolved lead	0.0921 µg/L	0.0921J µg/L	MS/MSD %R below control limit
		Dissolved zinc	4.26 µg/L	4.26J µg/L	
		Total lead	0.101 µg/L	0.101J µg/L	
		Total zinc	3.8 µg/L	3.8J µg/L	
IB-RW-13-G-S-20160927	Metals	Dissolved copper	0.789 µg/L	0.789U µg/L	Field and equipment blank contamination
		Total copper	0.857 µg/L	0.857U µg/L	
		Dissolved lead	0.0755 µg/L	0.0755J µg/L	MS/MSD %R below control limit
		Dissolved zinc	1.99 µg/L	1.99J µg/L	
		Total lead	0.0815 µg/L	0.0815J µg/L	
		Total zinc	2.09 µg/L	2.09J µg/L	
IB-RW-14-G-S-20160927	Metals	Dissolved copper	0.68 µg/L	0.68U µg/L	Field and equipment blank contamination
		Total copper	0.796 µg/L	0.796U µg/L	
		Dissolved lead	0.0708 µg/L	0.0708J µg/L	MS/MSD %R below control limit
		Dissolved zinc	1.91 µg/L	1.91J µg/L	
		Total lead	0.0777 µg/L	0.0777J µg/L	
		Total zinc	2.09 µg/L	2.09J µg/L	
IB-RW-16-G-S-20160927	Metals	Dissolved copper	0.771 µg/L	0.771U µg/L	Field and equipment blank contamination
		Total copper	0.868 µg/L	0.868U µg/L	
		Dissolved zinc	5.45 µg/L	5.45J µg/L	MS/MSD %R below control limit
		Total zinc	6.34 µg/L	6.34J µg/L	
IB-RW-17-G-S-20160927	Metals	Dissolved copper	0.654 µg/L	0.654U µg/L	Field and equipment blank contamination
		Total copper	0.562 µg/L	0.562U µg/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
		Dissolved zinc	3.44 µg/L	3.44J µg/L	MS/MSD %R below control limit
		Total zinc	4.25 µg/L	4.25J µg/L	
LE-RW-21-G-S-20160927	Metals	Dissolved copper	1.42 µg/L	1.42U µg/L	Field and equipment blank contamination
		Total copper	1.74 µg/L	1.74U µg/L	
		Dissolved zinc	7.07 µg/L	7.07J µg/L	MS/MSD %R below control limit
		Total zinc	8.51 µg/L	8.51J µg/L	
LE-RW-22-G-S-20160927	Metals	Dissolved copper	1.35 µg/L	1.35U µg/L	Field and equipment blank contamination
		Total copper	1.81 µg/L	1.81U µg/L	
		Dissolved zinc	8.44 µg/L	8.44J µg/L	MS/MSD %R below control limit
		Total zinc	11.6 µg/L	11.6J µg/L	
OA-RW-08-G-S-20160927	Metals	Dissolved copper	0.865 µg/L	0.865U µg/L	Field and equipment blank contamination
		Total copper	1.33 µg/L	1.33U µg/L	
		Dissolved lead	0.0944 µg/L	0.0944J µg/L	MS/MSD %R below control limit
		Dissolved zinc	3.87 µg/L	3.87J µg/L	
		Total lead	0.146 µg/L	0.146J µg/L	
		Total zinc	4.58 µg/L	4.58J µg/L	
OA-RW-09-G-S-20160927	Metals	Dissolved copper	1.02 µg/L	1.02U µg/L	Field and equipment blank contamination
		Total copper	1.56 µg/L	1.56U µg/L	
		Dissolved lead	0.0773 µg/L	0.0773J µg/L	MS/MSD %R below control limit
		Dissolved zinc	2.95 µg/L	2.95J µg/L	
		Total lead	0.105 µg/L	0.105J µg/L	
		Total zinc	3.54 µg/L	3.54J µg/L	
SP-RW-18-G-S-20160927	Metals	Dissolved copper	1.21 µg/L	1.21U µg/L	Field and equipment blank contamination
		Total copper	1.82 µg/L	1.82U µg/L	
		Dissolved zinc	5.17 µg/L	5.17J µg/L	MS/MSD %R below control limit
		Total zinc	5.67 µg/L	5.67J µg/L	
SP-RW-19-G-S-20160927	Metals	Dissolved copper	0.88 µg/L	0.88U µg/L	Field and equipment blank contamination
		Total copper	0.806 µg/L	0.806U µg/L	
		Dissolved zinc	3.55 µg/L	3.55J µg/L	MS/MSD %R below control limit
		Total zinc	3.79 µg/L	3.79J µg/L	
SP-RW-20-G-S-20160927	Metals	Dissolved copper	0.623 µg/L	0.623U µg/L	Field and equipment blank contamination
		Total copper	0.621 µg/L	0.621U µg/L	
		Dissolved zinc	3.21 µg/L	3.21J µg/L	MS/MSD %R below control limit
		Total zinc	3.61 µg/L	3.61J µg/L	

Notes:

µg/L: microgram per liter

%R: percent recovery

MS: matrix spike

MSD: matrix spike duplicate

References

Anchor QEA, 2014. *Water Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2016a. *National Functional Guidelines for Superfund Organic Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-002. September 2016.

USEPA, 2016b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-001. September 2016.

Data Validation Report – EPA Stage 2A

April 3, 2017

Project: GWMA Water Quality – 2016 Fall Wet Weather Sampling Event

Project Number: 141205-01.03

This report summarizes the review of analytical results for 62 water samples, four field duplicates, and one equipment blank collected on November 22, 2016. The samples were collected by Anchor QEA, LLC and submitted to Eurofins Calscience, Inc. (ECI), in Garden Grove, California. The samples were analyzed for the following parameters:

- Polychlorinated biphenyl (PCB) congeners by U.S. Environmental Protection Agency (USEPA) method 8270C – select ion monitoring
- Organochlorine pesticides by USEPA method 8081A
- Total and dissolved metals by USEPA methods 1640 and 1631E
- Total suspended solids (TSS) by Standard Method 2540D

ECI sample data group (SDG) numbers 16-11-2102 and 16-11-2108 were reviewed in this report. Sample IDs, matrices, and analyses conducted are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Analyses
CS-RW-01-G-S-20161122	16-11-2102-1	Water	PCBs, pesticides, total and dissolved metals, TSS
CS-RW-01-G-M-20161122	16-11-2102-2	Water	TSS
CS-RW-01-G-B-20161122	16-11-2102-3	Water	TSS
IA-RW-02-G-S-20161122	16-11-2102-4	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-02-G-M-20161122	16-11-2102-5	Water	TSS
IA-RW-02-G-B-20161122	16-11-2102-6	Water	TSS
IA-RW-03-G-S-20161122	16-11-2102-7	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-03-G-M-20161122	16-11-2102-8	Water	TSS
IA-RW-03-G-B-20161122	16-11-2102-9	Water	TSS
IA-RW-04-G-S-20161122	16-11-2102-10	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-04-G-M-20161122	16-11-2102-11	Water	TSS
IA-RW-04-G-B-20161122	16-11-2102-12	Water	TSS
IA-RW-1006-G-S-20161122	16-11-2102-13	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-05-G-S-20161122	16-11-2102-14	Water	PCBs, pesticides, total and dissolved metals, TSS
IA-RW-05-G-M-20161122	16-11-2102-15	Water	TSS
IA-RW-05-G-B-20161122	16-11-2102-16	Water	TSS
IA-RW-06-G-S-20161122	16-11-2102-17	Water	PCBs, pesticides, total and dissolved metals, TSS

Sample ID	Lab Sample ID	Matrix	Analyses
IA-RW-06-G-M-20161122	16-11-2102-18	Water	TSS
IA-RW-06-G-B-20161122	16-11-2102-19	Water	TSS
FH-RW-07-G-S-20161122	16-11-2102-20	Water	PCBs, pesticides, total and dissolved metals, TSS
FH-RW-07-G-M-20161122	16-11-2102-21	Water	TSS
FH-RW-07-G-B-20161122	16-11-2102-22	Water	TSS
CM-RW-10-G-S-20161122	16-11-2102-23	Water	PCBs, pesticides, total and dissolved metals, TSS
CM-RW-10-G-M-20161122	16-11-2102-24	Water	TSS
CM-RW-10-G-B-20161122	16-11-2102-25	Water	TSS
OA-RW-08-G-S-20161122	16-11-2102-26	Water	PCBs, pesticides, total and dissolved metals, TSS
OA-RW-08-G-M-20161122	16-11-2102-27	Water	TSS
OA-RW-08-G-B-20161122	16-11-2102-28	Water	TSS
OA-RW-09-G-S-20161122	16-11-2102-29	Water	PCBs, pesticides, total and dissolved metals, TSS
OA-RW-09-G-M-20161122	16-11-2102-30	Water	TSS
OA-RW-09-G-B-20161122	16-11-2102-31	Water	TSS
CB-RW-11-G-S-20161122	16-11-2102-32	Water	PCBs, pesticides, total and dissolved metals, TSS
CB-RW-11-G-M-20161122	16-11-2102-33	Water	TSS
CB-RW-11-G-B-20161122	16-11-2102-34	Water	TSS
OA-RW-1009-G-S-20161122	16-11-2102-35	Water	PCBs, pesticides, total and dissolved metals, TSS
EB-20161122	16-11-2102-36	Water	Total and dissolved metals, pesticides, PCBs
IB-RW-12-G-S-20161122	16-11-2102-37	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-12-G-M-20161122	16-11-2102-38	Water	TSS
IB-RW-12-G-B-20161122	16-11-2102-39	Water	TSS
CM-RW-1010-G-B-20161122	16-11-2102-40	Water	TSS
IB-RW-13-G-B-20161122	16-11-2108-1	Water	TSS
IB-RW-13-G-M-20161122	16-11-2108-2	Water	TSS
IB-RW-1013-G-B-20161122	16-11-2108-3	Water	TSS
IB-RW-13-G-S-20161122	16-11-2108-4	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-14-G-B-20161122	16-11-2108-5	Water	TSS
IB-RW-14-G-M-20161122	16-11-2108-6	Water	TSS
IB-RW-14-G-S-20161122	16-11-2108-7	Water	PCBs, pesticides, total and dissolved metals, TSS
IB-RW-15-G-B-20161122	16-11-2108-8	Water	TSS
IB-RW-15-G-M-20161122	16-11-2108-9	Water	TSS
IB-RW-15-G-S-20161122	16-11-2108-10	Water	PCBs, pesticides, total and dissolved metals, TSS
OB-RW-17-G-B-20161122	16-11-2108-11	Water	TSS
OB-RW-17-G-M-20161122	16-11-2108-12	Water	TSS
OB-RW-17-G-S-20161122	16-11-2108-13	Water	PCBs, pesticides, total and dissolved metals, TSS
SP-RW-20-G-B-20161122	16-11-2108-14	Water	TSS
SP-RW-20-G-M-20161122	16-11-2108-15	Water	TSS
SP-RW-20-G-S-20161122	16-11-2108-16	Water	PCBs, pesticides, total and dissolved metals, TSS
SP-RW-19-G-B-20161122	16-11-2108-17	Water	TSS

Sample ID	Lab Sample ID	Matrix	Analyses
SP-RW-19-G-M-20161122	16-11-2108-18	Water	TSS
SP-RW-19-G-S-20161122	16-11-2108-19	Water	PCBs, pesticides, total and dissolved metals, TSS
LE-RW-22-G-S-20161122	16-11-2108-20	Water	PCBs, pesticides, total and dissolved metals, TSS
OB-RW-16-G-B-20161122	16-11-2108-21	Water	TSS
OB-RW-16-G-M-20161122	16-11-2108-22	Water	TSS
OB-RW-16-G-S-20161122	16-11-2108-23	Water	PCBs, pesticides, total and dissolved metals, TSS
SP-RW-18-G-B-20161122	16-11-2108-24	Water	TSS
SP-RW-18-G-M-20161122	16-11-2108-25	Water	TSS
SP-RW-18-G-S-20161122	16-11-2108-26	Water	PCBs, pesticides, total and dissolved metals, TSS
LE-RW-21-G-S-20161122	16-11-2108-27	Water	PCBs, pesticides, total and dissolved metals, TSS
CS-RW-01-G-B-20161122	16-11-2102-3	Water	TSS
IA-RW-02-G-S-20161122	16-11-2102-4	Water	PCBs, pesticides, total and dissolved metals, TSS

Notes:

PCB: polychlorinated biphenyl

TSS: total suspended solids

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the laboratory control limits and the following guidelines:

- Water Sampling and Analysis Plan (SAP; Anchor QEA 2014)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, Third Edition; USEPA 1986)
- *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2016a)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2016b)

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by ECI at the time of sample receipt. Anomalies noted during sample receipt were reconciled prior to sample analyses. Samples were received within the recommended temperature range and in good condition.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. All method blanks were free of target analytes.

Field Quality Control

Field QC samples include field duplicates and an equipment blank. A field blank was also required by the SAP but was not collected.

Equipment Blank

One equipment blank was collected in association with this sampling event. Results were below detection, except for some metals detections. Detected results are summarized in Table 2.

Table 2
Equipment and Field Blank Detections

Blank ID	Analyte	Result
EB-20161122	Total mercury	0.000466J µg/L
	Dissolved copper	9.33 µg/L
	Total copper	10.2 µg/L
	Dissolved lead	0.109 µg/L
	Total lead	0.106 µg/L
	Dissolved zinc	0.324 µg/L
	Total zinc	0.322 µg/L

Notes:
µg/L: microgram per liter
J: estimated value

Copper was detected in both blanks, at significant concentrations. Further investigation identified the source of the copper contamination as the laboratory water treatment unit. Sample results were close to or below concentrations detected in the field and equipment blanks, so all results have been qualified as non-detects. See Table 4 for qualified data and Attachment A for results of the laboratory's investigation.

Field Duplicates

Four field duplicates were collected in association with this sampling event. Samples CM-RW-10-G-B-20161122 and OA-RW-09-G-S-20161122 and their duplicates were analyzed for TSS, and results were below detection. Detected results from the other two duplicates are summarized in Table 3.

Table 3
Field Duplicate Detections Summary

Analyte	IA-RW-06-G-S-20161122	IA-RW-1006-G-S-20161122	RPD	Difference
Dissolved mercury	0.000122J µg/L	0.00115 µg/L	--	0.001028
Total mercury	0.00223 µg/L	0.002 µg/L	--	0.00023
Total lead	0.112 µg/L	0.135 µg/L	--	0.023
Total cadmium	0.0537 µg/L	0.0554 µg/L	--	0.0017
Total chromium	0.317J µg/L	0.393J µg/L	--	0.076
Total zinc	9.75 µg/L	13 µg/L	29%	--
Dissolved lead	0.0761 µg/L	0.0656 µg/L	--	0.0105
Dissolved cadmium	0.0563 µg/L	0.0524 µg/L	--	0.0039
Dissolved chromium	0.279J µg/L	0.311J µg/L	--	0.032
Dissolved zinc	9.76 µg/L	10.1 µg/L	--	0.34
TSS	212 mg/L	195 mg/L	8%	--
Dissolved mercury	0.000122J µg/L	0.00115 µg/L	--	0.001028
Analyte	IB-RW-13-G-B-20161122	IB-RW-1013-G-B-20161122	RPD	Difference
TSS	212 mg/L	195 mg/L	8%	--

Notes:

µg/L: microgram per liter

J: estimated value

mg/L: milligram per liter

RPD: relative percent difference

TSS: total suspended solids

Sample results that were less than five times the reporting limit (RL) were evaluated by the difference between the results. Results that were greater than five times the RL were evaluated using relative percent difference (RPD) values. All results were within project-required control limits, with two exceptions. The difference in dissolved mercury results in sample IA-RW-06-G-S-20161122 and its duplicate was greater than two times the RL, and the total zinc RPD value was above the project control limit. No data were qualified based on field duplicate results.

Surrogate Recoveries

Surrogate recoveries were within the laboratory control limits.

Second Column Confirmation

No pesticides were detected in the samples, so second column confirmation was not necessary.

Laboratory Control Samples and Laboratory Control Sample Duplicates

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies. All LCS/LCSD recoveries and/or RPD values were within project-required control limits.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequency. Copper recoveries could not be evaluated because the parent sample concentrations were significantly greater than (more than four times) the spike concentrations. Recoveries and/or RPD values were within project-required control limits, with the following exceptions:

- SDG 16-11-2108 Metals – Chromium recovered above the control limit in the MS and MSD analyzed on sample IB-RW-13-G-S-20161122. Lead and zinc recovered above the control limit in the MSD analyzed on the same sample. Associated detected sample results have been qualified "J" to indicate a potentially high bias.
- SDG 16-11-2102 Metals – Chromium recovered above the control limit in the MS and MSD analyzed on samples CM-RW-10-G-S-20161122 and IB-RW-12-G-S-20161122. Associated sample results have been qualified "J" to indicate a potentially high bias.

See Table 4 for qualified data.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequency, and results were within control limits.

Method Reporting Limits

RLs were acceptable as reported. All values were reported using the laboratory RL. Values were reported as undiluted or when diluted, the RL reflects the dilution factor. RL goals for non-detected results were met, except for toxaphene. All total and dissolved copper results that were detected in the samples were qualified as non-detects, effectively raising the RLs for all samples.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values, with the exceptions noted above. Precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and laboratory and field duplicate RPD values or difference values, with the exceptions noted above. All total and dissolved copper results were qualified as non-detects due to suspected field contamination. All data are acceptable as reported or as qualified. Table 4 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

- U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit
- J Indicates an estimated value

Table 4
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
CB-RW-11-G-S-20161122	Dissolved metals	Copper	2.57 µg/L	2.57U µg/L	Equipment blank contamination
CM-RW-10-G-S-20161122			3.01 µg/L	3.01U µg/L	
CS-RW-01-G-S-20161122			5.7 µg/L	5.7U µg/L	
FH-RW-07-G-S-20161122			4.07 µg/L	4.07U µg/L	
IA-RW-02-G-S-20161122			5.1 µg/L	5.1U µg/L	
IA-RW-03-G-S-20161122			3.71 µg/L	3.71U µg/L	
IA-RW-04-G-S-20161122			4.41 µg/L	4.41U µg/L	
IA-RW-05-G-S-20161122			1.36 µg/L	1.36U µg/L	
IA-RW-06-G-S-20161122			2.88 µg/L	2.88U µg/L	
IA-RW-1006-G-S-20161122			2.75 µg/L	2.75U µg/L	
IB-RW-12-G-S-20161122			2.32 µg/L	2.32U µg/L	
IB-RW-13-G-S-20161122			1.54 µg/L	1.54U µg/L	
IB-RW-14-G-S-20161122			1.29 µg/L	1.29U µg/L	
IB-RW-15-G-S-20161122			1.36 µg/L	1.36U µg/L	
LE-RW-21-G-S-20161122			2.55 µg/L	2.55U µg/L	
LE-RW-22-G-S-20161122			2.74 µg/L	2.74U µg/L	
OA-RW-08-G-S-20161122			1.07 µg/L	1.07U µg/L	
OA-RW-09-G-S-20161122			2.16 µg/L	2.16U µg/L	
OB-RW-16-G-S-20161122			0.952 µg/L	0.952U µg/L	
OB-RW-17-G-S-20161122			1.33 µg/L	1.33U µg/L	
SP-RW-18-G-S-20161122			1.75 µg/L	1.75U µg/L	
SP-RW-19-G-S-20161122			0.826 µg/L	0.826U µg/L	
SP-RW-20-G-S-20161122			0.765 µg/L	0.765U µg/L	
CB-RW-11-G-S-20161122	Total metals	Copper	2.63 µg/L	2.63U µg/L	Equipment blank contamination
CM-RW-10-G-S-20161122			3.16 µg/L	3.16U µg/L	
CS-RW-01-G-S-20161122			6.75 µg/L	6.75U µg/L	
FH-RW-07-G-S-20161122			4.2 µg/L	4.2U µg/L	
IA-RW-02-G-S-20161122			5.36 µg/L	5.36U µg/L	
IA-RW-03-G-S-20161122			3.92 µg/L	3.92U µg/L	
IA-RW-04-G-S-20161122			3.78 µg/L	3.78U µg/L	
IA-RW-05-G-S-20161122			1.42 µg/L	1.42U µg/L	
IA-RW-06-G-S-20161122			2.81 µg/L	2.81U µg/L	
IA-RW-1006-G-S-20161122			3.17 µg/L	3.17U µg/L	
IB-RW-12-G-S-20161122			2.88 µg/L	2.88U µg/L	
IB-RW-13-G-S-20161122			5.43 µg/L	5.43U µg/L	
IB-RW-14-G-S-20161122			1.52 µg/L	1.52U µg/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
IB-RW-15-G-S-20161122			1.4 µg/L	1.4U µg/L	
LE-RW-21-G-S-20161122			3.41 µg/L	3.41U µg/L	
LE-RW-22-G-S-20161122			4.18 µg/L	4.18U µg/L	
OA-RW-08-G-S-20161122			1.19 µg/L	1.19U µg/L	
OA-RW-09-G-S-20161122			2.24 µg/L	2.24U µg/L	
OB-RW-16-G-S-20161122			0.949 µg/L	0.949U µg/L	
OB-RW-17-G-S-20161122			1.54 µg/L	1.54U µg/L	
SP-RW-18-G-S-20161122			2.02 µg/L	2.02U µg/L	
SP-RW-19-G-S-20161122			0.834 µg/L	0.834U µg/L	
SP-RW-20-G-S-20161122			0.763 µg/L	0.763U µg/L	
CB-RW-11-G-S-20161122			Dissolved metals	Chromium	
CM-RW-10-G-S-20161122	0.247J µg/L	0.247J µg/L			
CS-RW-01-G-S-20161122	0.452J µg/L	0.452J µg/L			
FH-RW-07-G-S-20161122	0.239J µg/L	0.239J µg/L			
IA-RW-02-G-S-20161122	0.357J µg/L	0.357J µg/L			
IA-RW-03-G-S-20161122	0.34J µg/L	0.34J µg/L			
IA-RW-04-G-S-20161122	0.348J µg/L	0.348J µg/L			
IA-RW-05-G-S-20161122	0.262J µg/L	0.262J µg/L			
IA-RW-06-G-S-20161122	0.279J µg/L	0.279J µg/L			
IA-RW-1006-G-S-20161122	0.311J µg/L	0.311J µg/L			
IB-RW-12-G-S-20161122	0.232J µg/L	0.232J µg/L			
IB-RW-13-G-S-20161122	0.331J µg/L	0.331J µg/L			
IB-RW-14-G-S-20161122	0.381J µg/L	0.381J µg/L			
IB-RW-15-G-S-20161122	0.376J µg/L	0.376J µg/L			
LE-RW-21-G-S-20161122	0.301J µg/L	0.301J µg/L			
LE-RW-22-G-S-20161122	0.292J µg/L	0.292J µg/L			
OA-RW-08-G-S-20161122	0.245J µg/L	0.245J µg/L			
OA-RW-09-G-S-20161122	0.288J µg/L	0.288J µg/L			
OB-RW-16-G-S-20161122	0.293J µg/L	0.293J µg/L			
OB-RW-17-G-S-20161122	0.368J µg/L	0.368J µg/L			
SP-RW-18-G-S-20161122	0.28J µg/L	0.28J µg/L			
SP-RW-19-G-S-20161122	0.299J µg/L	0.299J µg/L			
SP-RW-20-G-S-20161122	0.445J µg/L	0.445J µg/L			
CB-RW-11-G-S-20161122	Total metals	Chromium	0.306J µg/L	0.306J µg/L	MS/MSD %R above control limit
CM-RW-10-G-S-20161122			0.337J µg/L	0.337J µg/L	
CS-RW-01-G-S-20161122			0.889 µg/L	0.889J µg/L	
FH-RW-07-G-S-20161122			0.327J µg/L	0.327J µg/L	
IA-RW-02-G-S-20161122			0.538 µg/L	0.538J µg/L	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason			
IA-RW-03-G-S-20161122			0.451J µg/L	0.451J µg/L				
IA-RW-04-G-S-20161122			0.351J µg/L	0.351J µg/L				
IA-RW-05-G-S-20161122			0.334J µg/L	0.334J µg/L				
IA-RW-06-G-S-20161122			0.317J µg/L	0.317J µg/L				
IA-RW-1006-G-S-20161122			0.393J µg/L	0.393J µg/L				
IB-RW-12-G-S-20161122			0.35J µg/L	0.35J µg/L				
IB-RW-13-G-S-20161122			1.23 µg/L	1.23J µg/L				
IB-RW-14-G-S-20161122			0.462J µg/L	0.462J µg/L				
IB-RW-15-G-S-20161122			0.392J µg/L	0.392J µg/L				
LE-RW-21-G-S-20161122			0.531 µg/L	0.531J µg/L				
LE-RW-22-G-S-20161122			0.618 µg/L	0.618J µg/L				
OA-RW-08-G-S-20161122			0.258J µg/L	0.258J µg/L				
OA-RW-09-G-S-20161122			0.365J µg/L	0.365J µg/L				
OB-RW-16-G-S-20161122			0.394J µg/L	0.394J µg/L				
OB-RW-17-G-S-20161122			0.479J µg/L	0.479J µg/L				
SP-RW-18-G-S-20161122			0.409J µg/L	0.409J µg/L				
SP-RW-19-G-S-20161122			0.395J µg/L	0.395J µg/L				
SP-RW-20-G-S-20161122			0.4J µg/L	0.4J µg/L				
IB-RW-13-G-S-20161122			Dissolved metals	Lead		0.125 µg/L	0.125J µg/L	MSD %R above control limit
IB-RW-14-G-S-20161122						0.103 µg/L	0.103J µg/L	
IB-RW-15-G-S-20161122	0.0696 µg/L	0.0696J µg/L						
LE-RW-21-G-S-20161122	0.0779 µg/L	0.0779J µg/L						
LE-RW-22-G-S-20161122	0.108 µg/L	0.108J µg/L						
OB-RW-16-G-S-20161122	0.0585 µg/L	0.0585J µg/L						
OB-RW-17-G-S-20161122	0.0984 µg/L	0.0984J µg/L						
SP-RW-18-G-S-20161122	0.0788 µg/L	0.0788J µg/L						
SP-RW-19-G-S-20161122	0.0589 µg/L	0.0589J µg/L						
SP-RW-20-G-S-20161122	0.0732 µg/L	0.0732J µg/L						
IB-RW-13-G-S-20161122	Total metals	Lead	0.796 µg/L	0.796J µg/L	MSD %R above control limit			
IB-RW-14-G-S-20161122			0.184 µg/L	0.184J µg/L				
IB-RW-15-G-S-20161122			0.111 µg/L	0.111J µg/L				
LE-RW-21-G-S-20161122			0.478 µg/L	0.478J µg/L				
LE-RW-22-G-S-20161122			0.882 µg/L	0.882J µg/L				
OB-RW-16-G-S-20161122			0.132 µg/L	0.132J µg/L				
OB-RW-17-G-S-20161122			0.319 µg/L	0.319J µg/L				
SP-RW-18-G-S-20161122			0.39 µg/L	0.39J µg/L				
SP-RW-19-G-S-20161122			0.106 µg/L	0.106J µg/L				
SP-RW-20-G-S-20161122			0.089 µg/L	0.089J µg/L				

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
IB-RW-13-G-S-20161122	Dissolved metals	Zinc	6.06 µg/L	6.06J µg/L	MSD %R above control limit
IB-RW-14-G-S-20161122			9.43 µg/L	9.43J µg/L	
IB-RW-15-G-S-20161122			6.25 µg/L	6.25J µg/L	
LE-RW-21-G-S-20161122			8.83 µg/L	8.83J µg/L	
LE-RW-22-G-S-20161122			12.5 µg/L	12.5J µg/L	
OB-RW-16-G-S-20161122			3.81 µg/L	3.81J µg/L	
OB-RW-17-G-S-20161122			6.37 µg/L	6.37J µg/L	
SP-RW-18-G-S-20161122			6.63 µg/L	6.63J µg/L	
SP-RW-19-G-S-20161122			4.13 µg/L	4.13J µg/L	
SP-RW-20-G-S-20161122			2.85 µg/L	2.85J µg/L	
IB-RW-13-G-S-20161122			Total metals	Zinc	
IB-RW-14-G-S-20161122	8.38 µg/L	8.38J µg/L			
IB-RW-15-G-S-20161122	6.97 µg/L	6.97J µg/L			
LE-RW-21-G-S-20161122	11.6 µg/L	11.6J µg/L			
LE-RW-22-G-S-20161122	14.6 µg/L	14.6J µg/L			
OB-RW-16-G-S-20161122	3.73 µg/L	3.73J µg/L			
OB-RW-17-G-S-20161122	6.49 µg/L	6.49J µg/L			
SP-RW-18-G-S-20161122	7.24 µg/L	7.24J µg/L			
SP-RW-19-G-S-20161122	6.93 µg/L	6.93J µg/L			
SP-RW-20-G-S-20161122	2.97 µg/L	2.97J µg/L			

Notes:
µg/L: microgram per liter
%R: percent recovery
MS/MSD: matrix spike/matrix spike duplicate

References

- Anchor QEA, 2014. *Water Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.
- USEPA (U.S. Environmental Protection Agency), 1986. *Test methods for Evaluating Solid Waste: Physical/Chemical Methods*. Office of Solid Waste and Emergency Response. EPA-530/SW-846.
- USEPA, 2016a. *National Functional Guidelines for Superfund Organic Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-002. September 2016.
- USEPA, 2016b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-001. September 2016.

Attachment A

Laboratory Correspondence

June 2, 2017

Mr. Andrew Martin, Managing Environmental Scientist
Anchor QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, California 92691

Re: Field Blank copper contamination

Dear Mr. Martin:

First, we apologize for the delay in responding to your concerns. While we consider your inquiries quite important, this has proven to be a difficult problem to solve.

The source of the contamination appears to be the copper line that feeds the water treatment unit from which the water for equipment and field blanks is obtained. Most quality control samples we provide for the purpose of field contamination monitoring are used for organic analysis, so the system in our volatile organics building has been routinely used to provide all field and equipment blank water.

While the system was primarily designed to provide organic-free water, metal-free water is usually produced. The system is monitored and routinely provides 18 M Ω water. When the cartridges are new, no copper appears to make it through the system. However, the cartridges degrade over time and it appears that small amounts of copper begin to work through the system and into the final water at the end of the cartridge lifetime. Additionally, changes in the nature of the water obtained from the city may vary and occasionally rise above the threshold limit the system is designed to remove. When this happens, small amounts of metals are able to escape treatment. Our routine is to replace the cartridges when the resistivity falls below 18 M Ω . Our current theory is that at that point, some copper is in the water produced by the system, and is the source of the contamination you noted.

Please note that this water is not used in the analysis systems, including the preparation of ECI instrument blanks, rinses, dilutions, standards, etc. No contamination of internal laboratory QC samples has occurred due to this system.

Please let us know if you have any further questions regarding this issue.

Respectively submitted,



Terri Garcia
Quality Assurance Manager

Data Validation Report – EPA Stage 2A

April 12, 2017

Project: Gateway Water Management Authority TMDL Compliance Monitoring – 2017 Winter Wet

Project Number: 141205-01.03

This report summarizes the review of analytical results for 64 water samples, 4 field duplicate samples, 1 equipment blank sample, and 1 field blank collected on February 18, 2017. The samples were collected by Anchor QEA, LLC, and submitted to Eurofins Calscience, Inc (ECI). The following analytical parameter results were reviewed in this report:

- Chlorinated pesticides by United States Environmental Protection Agency (USEPA) method 8081A
- Polychlorinated biphenyl congeners (PCBs) by USEPA method 8270C selected ion monitoring
- Total and dissolved mercury by USEPA method 1631E
- Total and dissolved metals by USEPA 1640
- Total suspended solids (TSS) by Standard Method 2540D

ECI sample data group (SDG) 17-02-1758_s1 was reviewed in this report. Sample IDs, associated SDGs, matrices, and analyses are presented in Table 1.

Table 1
Sample IDs, Matrices, and Analyses

Sample ID	Lab Sample ID	Matrix	Parameter
LE-RW-22-G-S-20170218	17-02-1758-1	Water	Pesticides, PCB, Metals, Hg, TSS
LE-RW-22-G-M-20170218	17-02-1758-2	Water	TSS
LE-RW-22-G-B-20170218	17-02-1758-3	Water	TSS
SP-RW-20-G-S-20170218	17-02-1758-4	Water	Pesticides, PCB, Metals, Hg, TSS
SP-RW-20-G-M-20170218	17-02-1758-5	Water	TSS
SP-RW-20-G-B-20170218	17-02-1758-6	Water	TSS
SP-RW-19-G-S-20170218	17-02-1758-7	Water	Pesticides, PCB, Metals, Hg, TSS
SP-RW-19-G-M-20170218	17-02-1758-8	Water	TSS
SP-RW-19-G-B-20170218	17-02-1758-9	Water	TSS
OB-RW-17-G-S-20170218	17-02-1758-10	Water	Pesticides, PCB, Metals, Hg, TSS
OB-RW-17-G-M-20170218	17-02-1758-11	Water	TSS
OB-RW-17-G-B-20170218	17-02-1758-12	Water	TSS
IB-RW-15-G-S-20170218	17-02-1758-13	Water	Pesticides, PCB, Metals, Hg, TSS
IB-RW-15-G-M-20170218	17-02-1758-14	Water	TSS
IB-RW-15-G-B-20170218	17-02-1758-15	Water	TSS
EB-20170218	17-02-1758-16	Water	Pesticides, PCB, Metals, Hg, TSS
SP-RW-1019-G-S-20170218	17-02-1758-17	Water	Pesticides, PCB, Metals, Hg

Sample ID	Lab Sample ID	Matrix	Parameter
CS-RW-01-G-S-20170218	17-02-1758-18	Water	Pesticides, PCB, Metals, Hg, TSS
CS-RW-01-G-M-20170218	17-02-1758-19	Water	TSS
CS-RW-01-G-B-20170218	17-02-1758-20	Water	TSS
IA-RW-02-G-S-20170218	17-02-1758-21	Water	Pesticides, PCB, Metals, Hg, TSS
IA-RW-02-G-M-20170218	17-02-1758-22	Water	TSS
IA-RW-02-G-B-20170218	17-02-1758-23	Water	TSS
IA-RW-03-G-S-20170218	17-02-1758-24	Water	Pesticides, PCB, Metals, Hg, TSS
IA-RW-03-G-M-20170218	17-02-1758-25	Water	TSS
IA-RW-03-G-B-20170218	17-02-1758-26	Water	TSS
IA-RW-04-G-S-20170218	17-02-1758-27	Water	Pesticides, PCB, Metals, Hg, TSS
IA-RW-04-G-M-20170218	17-02-1758-28	Water	TSS
IA-RW-04-G-B-20170218	17-02-1758-29	Water	TSS
IA-RW-05-G-S-20170218	17-02-1758-30	Water	Pesticides, PCB, Metals, Hg, TSS
IA-RW-05-G-M-20170218	17-02-1758-31	Water	TSS
IA-RW-05-G-B-20170218	17-02-1758-32	Water	TSS
IA-RW-06-G-S-20170218	17-02-1758-33	Water	Pesticides, PCB, Metals, Hg, TSS
IA-RW-06-G-M-20170218	17-02-1758-34	Water	TSS
IA-RW-06-G-B-20170218	17-02-1758-35	Water	TSS
FH-RW-07-G-S-20170218	17-02-1758-36	Water	Pesticides, PCB, Metals, Hg, TSS
FH-RW-07-G-M-20170218	17-02-1758-37	Water	TSS
FH-RW-07-G-B-20170218	17-02-1758-38	Water	TSS
OA-RW-09-G-S-20170218	17-02-1758-39	Water	Pesticides, PCB, Metals, Hg, TSS
OA-RW-09-G-M-20170218	17-02-1758-40	Water	TSS
OA-RW-09-G-B-20170218	17-02-1758-41	Water	TSS
CM-RW-10-G-S-20170218	17-02-1758-42	Water	Pesticides, PCB, Metals, Hg, TSS
CM-RW-10-G-M-20170218	17-02-1758-43	Water	TSS
CM-RW-10-G-B-20170218	17-02-1758-44	Water	TSS
CB-RW-11-G-S-20170218	17-02-1758-45	Water	Pesticides, PCB, Metals, Hg, TSS
CB-RW-11-G-M-20170218	17-02-1758-46	Water	TSS
CB-RW-11-G-B-20170218	17-02-1758-47	Water	TSS
CS-RW-1001-G-M-20170218	17-02-1758-48	Water	TSS
IA-RW-1006-G-B-20170218	17-02-1758-49	Water	TSS
IB-RW-12-G-S-20170218	17-02-1758-50	Water	Pesticides, PCB, Metals, Hg, TSS
IB-RW-12-G-M-20170218	17-02-1758-51	Water	TSS
IB-RW-12-G-B-20170218	17-02-1758-52	Water	TSS
IB-RW-13-G-S-20170218	17-02-1758-53	Water	Pesticides, PCB, Metals, Hg, TSS
IB-RW-13-G-M-20170218	17-02-1758-54	Water	TSS
IB-RW-13-G-B-20170218	17-02-1758-55	Water	TSS
IB-RW-14-G-S-20170218	17-02-1758-56	Water	Pesticides, PCB, Metals, Hg, TSS

Sample ID	Lab Sample ID	Matrix	Parameter
IB-RW-14-G-M-20170218	17-02-1758-57	Water	TSS
IB-RW-14-G-B-20170218	17-02-1758-58	Water	TSS
OA-RW-08-G-S-20170218	17-02-1758-59	Water	Pesticides, PCB, Metals, Hg, TSS
OA-RW-08-G-M-20170218	17-02-1758-60	Water	TSS
OA-RW-08-G-B-20170218	17-02-1758-61	Water	TSS
OB-RW-16-G-S-20170218	17-02-1758-62	Water	Pesticides, PCB, Metals, Hg, TSS
OB-RW-16-G-M-20170218	17-02-1758-63	Water	TSS
OB-RW-16-G-B-20170218	17-02-1758-64	Water	TSS
SP-RW-18-G-S-20170218	17-02-1758-65	Water	Pesticides, PCB, Metals, Hg, TSS
SP-RW-18-G-M-20170218	17-02-1758-66	Water	TSS
SP-RW-18-G-B-20170218	17-02-1758-67	Water	TSS
SP-RW-1018-G-M-20170218	17-02-1758-68	Water	TSS
LE-RW-21-G-S-20170218	17-02-1758-69	Water	Pesticides, PCB, Metals, Hg, TSS
FB-20170218	17-02-1758-70	Water	Metals, Hg

Notes:

Hg: mercury

PCB: polychlorinated biphenyl

TSS: total suspended solids

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QC) guidelines outlined in the analytical procedures. Laboratory results were reviewed using the laboratory control limits and the following guidelines:

- *Water Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters (SAP; Anchor QEA 2014)*
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846, Third Edition; USEPA 1986)*
- *National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2016a)*
- *National Functional Guidelines for Inorganic Superfund Data Review (USEPA 2016b)*

Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by ECI at the time of sample receipt. Samples were received in good condition and within the recommended temperature range.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. All method blanks were free of target analytes with the exceptions of several metals in the total and dissolved fractions. Associated detected sample results that were not significantly greater than (five times) the concentrations in the method blanks have been qualified as non-detects.

Field Quality Control

Equipment Blanks and Field Blanks

One equipment rinsate blank and one field blank were collected and analyzed in association with this sample set. The blank results were below detected, except for some low-level metals. Detected results are summarized in Table 2.

Table 2
Equipment Blank and Field Blank Summary

Blank ID	Analyte	Result
EB-20170218	Total mercury	0.00067 µg/L
	Dissolved mercury	0.000296J µg/L
	Total lead	0.167 µg/L
	Total copper	0.209 µg/L
	Dissolved lead	0.197 µg/L
	Dissolved copper	0.163B µg/L
FB-20170218	Total lead	0.0175J µg/L
	Total cadmium	0.00639J µg/L
	Total copper	0.0558 µg/L
	Dissolved lead	0.0274J µg/L
	Dissolved cadmium	0.00644J µg/L
	Dissolved copper	0.0875 µg/L

Notes:

µg/L: microgram per liter

B: lab qualifier indicating blank contamination

J: estimated value

No sample results were qualified based on equipment blank or field blank results.

Field Duplicates

Four water field duplicates were collected in association with this sample set. Detected results are summarized in Table 3.

Table 3
Field Duplicate Summary

Analyte	CS-RW-01-G-M-20170218	CS-RW-1001-G-M-20170218	RPD	Difference (mg/L)	Reporting Limit (mg/L)
Total suspended solids	49 mg/L	38 mg/L	25%	--	1.0

Analyte	IA-RW-06-G-B-20170218	IA-RW-1006-G-B-20170218	RPD	Difference (mg/L)	Reporting Limit (mg/L)
Total suspended solids	3.8 mg/L	4.0 mg/L	--	0.2	1.0

Analyte	SP-RW-18-G-M-20170218	SP-RW-1018-G-M-20170218	RPD	Difference (mg/L)	Reporting Limit (mg/L)
Total suspended solids	17 mg/L	16 mg/L	6%	--	1.0

Analyte	SP-RW-19-G-S-20170218	SP-RW-1019-G-S-20170218	RPD	Difference (µg/L)	Reporting Limit (µg/L)
Dissolved copper	0.79B µg/L	0.821B µg/L	4%	--	0.03
Dissolved lead	0.0895 µg/L	0.214 µg/L	82%	--	0.03
Dissolved mercury	0.00126 µg/L	0.000747 µg/L	--	0.000513	0.0005
Dissolved cadmium	0.0562 µg/L	0.0648 µg/L	--	0.0086	0.03
Dissolved zinc	5.44B µg/L	5.89B µg/L	8%	--	0.5
Total chromium	0.182B,J µg/L	0.279B,J µg/L	--	0.097	0.5
Total mercury	0.00167 µg/L	0.00133 µg/L	--	0.00034	0.0005
Total lead	0.994 µg/L	2.36 µg/L	81%	--	0.03
Total cadmium	0.049 µg/L	0.0527 µg/L	--	0.0037	0.03
Total copper	1.41 µg/L	1.54 µg/L	9%	--	0.03
Total zinc	6.87B µg/L	7.66B µg/L	11%	--	0.5

Notes:

--: not applicable

µg/L: microgram per liter

B: laboratory qualifier indicating blank contamination

J: estimated value

mg/L: milligram per liter

RPD: relative percent difference

Results less than five times the reporting limit (RL) were evaluated using the difference between the results and the control limit of $\pm 1 \times RL$. Field duplicate results were within the project-required

control limits or the project limit of $\leq 25\%$ relative percent difference (RPD) value for results greater than five times the RL with the exceptions of total and dissolved lead. No data were qualified based on the field duplicate results.

Surrogate Recoveries

Surrogate recoveries were within the laboratory control limits for all samples.

Column Confirmation

No column confirmation qualifiers were necessary because all pesticide results were below detection.

Laboratory Control Samples and Laboratory Control Duplicate Samples

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequency, and all LCS/LCSD analyses resulted in recoveries and/or RPD values within project-required control limits, except for total and dissolved zinc, which recovered above the control limit in the LCSD sample in batch 170227L03. Associated detected samples were qualified "J" to indicate a potentially high bias.

Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequency or LCS/LCSDs were analyzed in place of MS/MSD samples. No results were qualified for MS recoveries outside of control limits when the spike concentration was greater than four times the sample concentration.

MS and MSD recoveries were within project-required control limits, with the following exceptions in the metals analyses:

- Total chromium recovered above the control limits in the MS analyzed on sample LE-RW-22-G-S-20170218. Total cadmium recovered below the control limits in the MSD.
- Total lead recovered below the control limits in the MSD analyzed on sample IB-RW-12-G-S-20170218.
- Dissolved lead recovered below the control limits in the MSD and dissolved zinc recovered above the control limits in the MS/MSD, both analyzed on sample LE-RW-22-G-S-20170218.

Associated sample results have been qualified "J" or "UJ" to indicate a potentially high or low bias. See Table 4 for qualified data.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequency or MSDs or LCSDs were analyzed in place of laboratory duplicates. Parent and/or duplicate results that were less than five times the RL were evaluated by the difference between the results using the control limit of $\pm 1x$ RL. Duplicate

results from non-project samples were not evaluated. All duplicate results were within project-required control limits.

Method Reporting Limits and Analyte List

Detection limits were acceptable as reported. All values were reported using the laboratory detection limit. Values were reported as undiluted, or when diluted, the RL reflects the dilution factor. The following analyses resulted in detection limits or RLs above the requirements listed in SAP Table 4:

- TSS detection limits were above the California Surface Water Ambient Monitoring Program RL requirements but were at or below target detection limits.
- Some metals detection limits were elevated above target detection limits due to detections in the associated method blanks.
- PCB detection limits were above the Coordinated Compliance Monitoring and Reporting Plan RL requirements but met SWAMP and target RL requirements.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values, with the exceptions noted above. Precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and laboratory and field duplicate RPD values or difference values. Most data are acceptable as reported, and some metals data are acceptable as qualified. Table 4 summarizes the qualifiers applied to the sample results reviewed in this report.

Data Qualifier Definitions

- U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit
- J Indicates an estimated value
- UJ Indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated
- B Laboratory qualifier indicating blank contamination

Table 4
Data Qualification Summary

Sample ID	Analyte	Reported Result	Qualified Result	Reason
LE-RW-22-G-S-20170218	Dissolved chromium	0.65B µg/L	0.65U µg/L	Method blank contamination
	Total chromium	6.29B µg/L	6.29J µg/L	MS/MSD %R above control limit
	Total cadmium	0.901 µg/L	0.901J µg/L	MSD %R below control limit
	Dissolved lead	0.252 µg/L	0.252J µg/L	
	Dissolved zinc	7.86B µg/L	7.86J µg/L	MS/MSD %R above control limit
OB-RW-17-G-S-20170218	Dissolved chromium	0.664B µg/L	0.664U µg/L	Method blank contamination
	Total chromium	1.27B µg/L	1.27J µg/L	MS/MSD %R above control limit
	Total cadmium	0.204 µg/L	0.204J µg/L	MSD %R below control limit
	Dissolved lead	10 µg/L	10J µg/L	
	Dissolved zinc	6.51B µg/L	6.51J µg/L	MS/MSD %R above control limit
IB-RW-15-G-S-20170218	Dissolved chromium	0.166B,J µg/L	0.166U µg/L	Method blank contamination
	Total cadmium	0.0495µg/L	0.0495J µg/L	MSD %R below control limit
	Dissolved lead	0.233 µg/L	0.233J µg/L	
	Dissolved zinc	9.6B µg/L	9.6J µg/L	MS/MSD %R above control limit
EB-20170218	Dissolved copper	0.163B µg/L	0.163J µg/L	Method blank contamination
	Total zinc	0.641B µg/L	0.641J µg/L	
	Dissolved zinc	0.83B µg/L	0.83U µg/L	Method blank contamination
	Dissolved lead	0.197 µg/L	0.197J µg/L	MSD %R below control limit
	Total cadmium	0.00567U µg/L	0.00567UJ µg/L	
SP-RW-1019-G-S-20170218	Total chromium	0.279B,J µg/L	0.279U µg/L	Method blank contamination
	Dissolved lead	0.214 µg/L	0.214J µg/L	MSD %R below control limit
	Total cadmium	0.0527 µg/L	0.0527J µg/L	
	Dissolved zinc	5.89B µg/L	5.89J µg/L	MS/MSD %R above control limit
CS-RW-01-G-S-20170218	Total chromium	2.3B µg/L	2.3J µg/L	MS/MSD %R above control limit
	Total cadmium	0.133 µg/L	0.133J µg/L	MSD %R below control limit
	Dissolved lead	0.266 µg/L	0.266J µg/L	
	Dissolved zinc	65.3B µg/L	65.3J µg/L	MS/MSD %R above control limit
IA-RW-02-G-S-20170218	Dissolved chromium	0.835B µg/L	0.835U µg/L	Method blank contamination
	Total chromium	1.65B µg/L	1.65J µg/L	MS/MSD %R above control limit
	Dissolved lead	0.122 µg/L	0.122J µg/L	MSD %R below control limit
	Total cadmium	0.0796 µg/L	0.0796J µg/L	
	Dissolved zinc	39.4B µg/L	39.4J µg/L	MS/MSD %R above control limit

Sample ID	Analyte	Reported Result	Qualified Result	Reason
IA-RW-03-G-S-20170218	Dissolved chromium	0.767B µg/L	0.767U µg/L	Method blank contamination
	Total chromium	3.09B µg/L	3.09J µg/L	MS/MSD %R above control limit
	Total cadmium	0.182 µg/L	0.182J µg/L	MSD %R below control limit
	Dissolved lead	0.0245J µg/L	0.0245J µg/L	
	Dissolved zinc	11.1B µg/L	11.1J µg/L	MS/MSD %R above control limit
IA-RW-04-G-S-20170218	Dissolved chromium	0.798B µg/L	0.798U µg/L	Method blank contamination
	Total chromium	1.38B µg/L	1.38J µg/L	MS/MSD %R above control limit
	Total cadmium	0.0916 µg/L	0.0916J µg/L	MSD %R below control limit
	Dissolved lead	0.0726 µg/L	0.0726J µg/L	
	Dissolved zinc	30.3B µg/L	30.3J µg/L	MS/MSD %R above control limit
IA-RW-05-G-S-20170218	Dissolved mercury	0.00081B µg/L	0.00081U µg/L	Method blank contamination
	Total chromium	0.29B,J µg/L	0.500U µg/L	
	Dissolved zinc	4.15B µg/L	4.15U µg/L	Method blank contamination
	Dissolved lead	0.0979 µg/L	0.0979J µg/L	MSD %R below control limit
	Total cadmium	0.044 µg/L	0.044J µg/L	
IA-RW-06-G-S-20170218	Dissolved chromium	0.288B,J µg/L	0.288U µg/L	Method blank contamination
	Total chromium	0.399B,J µg/L	0.399U µg/L	
	Dissolved lead	0.165 µg/L	0.165J µg/L	MSD %R below control limit
	Total cadmium	0.0611 µg/L	0.0611J µg/L	
	Dissolved zinc	14.6B µg/L	14.6J µg/L	MS/MSD %R above control limit
FH-RW-07-G-S-20170218	Dissolved chromium	0.176B,J µg/L	0.176U µg/L	Method blank contamination
	Dissolved mercury	0.00109B µg/L	0.00109U µg/L	
	Dissolved lead	0.0933 µg/L	0.0933J µg/L	MSD %R below control limit
	Total cadmium	0.0396 µg/L	0.0396J µg/L	
	Dissolved zinc	9.86B µg/L	9.86J µg/L	MS/MSD %R above control limit
OA-RW-09-G-S-20170218	Dissolved chromium	0.195B,J µg/L	0.195U µg/L	Method blank contamination
	Dissolved zinc	3.63B µg/L	3.63U µg/L	Method blank contamination
	Dissolved lead	0.0821 µg/L	0.0821J µg/L	MSD %R below control limit
	Total cadmium	0.044 µg/L	0.044J µg/L	
SP-RW-20-G-S-20170218	Dissolved chromium	0.169B,J µg/L	0.169U µg/L	Method blank contamination
	Total chromium	0.341B,J µg/L	0.341U µg/L	
	Dissolved lead	0.17 µg/L	0.17J µg/L	MSD %R below control limit
	Total cadmium	0.0768 µg/L	0.0768J µg/L	
	Dissolved zinc	5.96B µg/L	5.96J µg/L	MS/MSD %R above control limit
CM-RW-10-G-S-20170218	Dissolved chromium	0.232B,J µg/L	0.232U µg/L	Method blank contamination
	Dissolved lead	0.14 µg/L	0.14J µg/L	MSD %R below control limit
	Total cadmium	0.076 µg/L	0.076J µg/L	MSD %R below control limit
	Dissolved zinc	41.6B µg/L	41.6J µg/L	MS/MSD %R above control limit

Sample ID	Analyte	Reported Result	Qualified Result	Reason
CB-RW-11-G-S-20170218	Dissolved chromium	0.204B,J µg/L	0.204U µg/L	Method blank contamination
	Total chromium	0.322B,J µg/L	0.322U µg/L	
	Dissolved lead	0.093 µg/L	0.093J µg/L	MSD %R below control limit
	Total cadmium	0.0656 µg/L	0.0656J µg/L	
	Dissolved zinc	6.41B µg/L	6.41J µg/L	MS/MSD %R above control limit
IB-RW-12-G-S-20170218	Dissolved mercury	0.000464B,J µg/L	0.000464U µg/L	Method blank contamination
	Total lead	1.02 µg/L	1.02J µg/L	MSD %R below control limit
	Total zinc	21.5 µg/L	21.5J µg/L	LCSD %R above control limit
	Dissolved zinc	15.2 µg/L	15.2J µg/L	
IB-RW-13-G-S-20170218	Total chromium	0.242B,J µg/L	0.242U µg/L	Method blank contamination
	Dissolved zinc	4.2B µg/L	4.2J µg/L	MS/MSD %R above control limit
	Dissolved lead	0.0803 µg/L	0.0803J µg/L	MSD %R below control limit
	Total cadmium	0.0613 µg/L	0.0613J µg/L	
IB-RW-14-G-S-20170218	Dissolved chromium	0.195B,J µg/L	0.195U µg/L	Method blank contamination
	Dissolved mercury	0.00137B µg/L	0.00137U µg/L	
	Total chromium	0.273B,J µg/L	0.273U µg/L	
	Dissolved zinc	4.27B µg/L	4.27U µg/L	Method blank contamination
	Dissolved lead	0.104 µg/L	0.104J µg/L	MSD %R below control limit
	Total cadmium	0.0668 µg/L	0.0668J µg/L	
OA-RW-08-G-S-20170218	Dissolved chromium	0.261B,J µg/L	0.261U µg/L	Method blank contamination
	Total chromium	0.576B µg/L	0.576U µg/L	
	Dissolved lead	0.035 µg/L	0.035J µg/L	MSD %R below control limit
	Total cadmium	0.0621 µg/L	0.0621J µg/L	
	Dissolved zinc	7.02B µg/L	7.02J µg/L	MS/MSD %R above control limit
OB-RW-16-G-S-20170218	Total lead	0.816 µg/L	0.816J µg/L	MSD %R below control limit
	Total zinc	7.88 µg/L	7.88J µg/L	LCSD %R above control limit
	Dissolved zinc	4.16 µg/L	4.16J µg/L	
SP-RW-18-G-S-20170218	Total lead	17.7 µg/L	17.7J µg/L	MSD %R below control limit
	Total zinc	35.4 µg/L	35.4J µg/L	LCSD %R above control limit
	Dissolved zinc	4.22 µg/L	4.22J µg/L	
SP-RW-19-G-S-20170218	Total chromium	0.182B,J µg/L	0.182U µg/L	Method blank contamination
	Dissolved lead	0.0895 µg/L	0.0895J µg/L	MSD %R below control limit
	Total cadmium	0.049 µg/L	0.049J µg/L	
	Dissolved zinc	5.44B µg/L	5.44J µg/L	MS/MSD %R above control limit
FB-20170218	Total lead	0.0175J µg/L	0.0175J µg/L	MSD %R below control limit
LE-RW-21-G-S-20170218	Total zinc	84.3 µg/L	84.3J µg/L	LCSD %R above control limit
	Dissolved zinc	5.17 µg/L	5.17J µg/L	
	Total chromium	10.4 µg/L	10.4J µg/L	MS/MSD %R above control limit

Sample ID	Analyte	Reported Result	Qualified Result	Reason
	Total cadmium	1.03 µg/L	1.03J µg/L	MSD %R below control limit
	Total lead	45.1 µg/L	45.1J µg/L	

Notes:

%R: percent recovery

µg/L: micrograms per liter

LCSD: laboratory control sample duplicate

MS: matrix spike

MSD: matrix spike duplicate

References

Anchor QEA, 2014. *Water Sampling and Analysis Plan, Greater Los Angeles and Long Beach Harbor Waters*. September 2014.

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA, 2016a. *National Functional Guidelines for Superfund Organic Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-002. September 2016.

USEPA, 2016b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-001. September 2016.