Chapter 3
Modifications to the Draft EIR

3.1 Introduction

This chapter of the Final EIR addresses modifications to the Draft EIR for the Berths 191-194 (Ecocem) Low-Carbon Cement Processing Facility Project (Proposed Project) at the Port of Los Angeles (Port). It presents all revisions related to public comments, as determined necessary by the lead agency (the Los Angeles Harbor Department or "LAHD"), for the following areas of the document:

- Executive Summary
- Chapter 2 Project Description
- Section 3.1 Air Quality
- Section 3.2, Biological Resources
- Section 3.5 Greenhouse Gases
- Section 3.8 Ground Transportation
- Chapter 4 Cumulative Analysis
- Appendix B Air Quality
- Appendix D-2 Noise Study
- Appendix E Soil Management Plan.

Any revisions to supporting documentation are also presented. The numbering format from the Draft EIR is maintained in the sections presented here. Only sections that have revisions are included; sections that have no revisions are not included. Readers are referred to the Draft EIR to view complete sections.

It should be noted that most of the changes are editorial in nature. None of the revisions results in changes to significance findings.

As provided in Section 15088(c) of the State California Environmental Quality Act (CEQA) Guidelines, responses to comments may take the form of a revision to a Draft EIR or may be a separate section in the Final EIR. This chapter complies with the latter of these two guidelines and provides changes to the Draft EIR in revision-mode text (i.e., deletions are shown with strikethrough and additions are shown with underline). These notations are meant to provide clarification, corrections, or minor revisions as needed as a result of public comments or because of changes in the Proposed Project since the release of the Draft EIR.

3.2 Changes to the Draft EIR

The following changes to the text as presented below are incorporated into the Final EIR.

3.2.1 Changes Made to the Executive Summary

In Sections ES.4.2.1 and 4.2.2 the following changes are made:

ES.4.2.1 Unavoidable Significant Impacts

This Draft EIR has determined that implementation of the Proposed Project would result in significant and unavoidable impacts related to:

- **Air Quality**: NOx emissions from operations for all analysis years; offsite ambient annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$ concentrations for all analysis years.
- ~~**Greenhouse Gases:** Greenhouse gas emissions would exceed the SCAQMD mass emissions thresholds in all three analysis years.~~
- **Noise:** Construction activities that would exceed ambient noise levels by 5dBA or more lasting more than 10 days in a 3-month period.

ES.4.2.2 Summary of Significant Impacts that Can Be Mitigated, Avoided, or Substantially Lessened

This Draft EIR has determined that implementation of the Proposed Project would result in significant impacts that can be mitigated related to:

- **Biological Resources**: substantial adverse effect, either directly or through habitat modification on any identified species. Implementation of MM BIO-1 ~~p~~Protect ~~m~~Marine ~~m~~Mammals would reduce a significant impact to less than significant.
- **Greenhouse Gases:** Greenhouse gas emissions would exceed the SCAQMD mass emissions thresholds in all three analysis years. Implementation of MM GHG-1 GHG Reduction Offsets would reduce a significant impact to less than significant.

In Section ES.4.2.4, Mitigation Measures, on page ES-28, three mitigation measures are added.

First, mitigation measures MM AQ-1 and MM AQ-2 (re-designated and revised from Lease Measures LM AQ-5 and LM AQ-6, respectively) are inserted in front of Biological Resources as shown:

Air Quality

~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP). ~~95~~100 percent of vessels calling at the Ecocem Dry Bulk Processing Facility ~~will~~shall comply with the expanded VSRP ~~at~~of 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area. Vessel speed is confirmed by the Marine Exchange. Any vessel

experiencing a maritime emergency[1] that prevents compliance with the expanded VSRP may be exempt from this measure. If a maritime emergency were to occur, the vessel operators shall provide substantial evidence of a qualifying event to LAHD.

~~L~~**MM AQ-~~6~~2: Front End Loader Replacement Schedule.** The tenant shall ~~maintain a replacement schedule of~~ replace the off-road diesel front end loader ~~of~~ every two years~~,~~. ~~where an~~ The equivalent new ~~piece that~~ front end loader shall meet~~s~~ operational requirements and meet~~s~~ Tier 4 ~~Final~~ standards or cleaner or as required by state and/or local agencies, whichever is stricter~~, would be procured~~. During replacement, the following preference will be used for consideration: first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for Tier 4 standards if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

Second, MM GHG-1 is inserted between Biological Resources and Noise as follows:

Greenhouse Gases

MM GHG-1: GHG Reduction Offsets. The Tenant shall be required to purchase and retire carbon offsets related to activities that reduce, avoid, destroy, or sequester an amount of GHG emissions in an off-site location to offset the equivalent amount of GHG emissions generated by the Project, with the exception of electricity consumption. The Tenant shall purchase and retire carbon offsets in an amount that would be the equivalent of the Project's GHG Emissions of 4,985 Metric Tons (MT) from first year of operation until 2049 and 4,073 MT from 2049 through the end of the term of the Permit. The Tenant shall purchase and retire carbon offsets on an annual basis, commencing after construction is complete and during the first year of operation. The LAHD is in the process of developing a Greenhouse Gas Program. The Program shall be used for GHG-reducing projects and programs approved by the Port of Los Angeles. If that Program is established during the term of the Permit, the Tenant shall have the option to offset the required amount of GHG emissions through a funding contribution to the Greenhouse Gas Program rather than towards purchasing carbon offsets from a CARB-recognized registry.

While the LAHD Greenhouse Gas Program is currently under development, the Tenant shall purchase and retire carbon offsets from a CARB-recognized offset registry as follows:

Carbon offsets: The Tenant shall purchase and retire carbon offsets from a CARB-recognized registry to ensure that offsets will result in real, permanent, additional, quantifiable, verifiable, and enforceable reductions. The carbon offsets shall be verifiable by LAHD and enforceable in accordance with the registry's applicable standards, practices, or protocols.

[1] Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard (USCG) safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.

The order of priority for purchasing (any one or more) carbon offsets shall be considered as follows:

i. Originating within the local area;

ii. Originating within the South Coast Air Basin;

iii. Originating within the state of California; or

iv. If sufficient local and in-state offsets are not available, the Tenant shall purchase conforming national offsets registered with a CARB-recognized registry.

Adjustment of Tenant's Required Offsets through Other Verified GHG Emission Reductions: The Tenant may pursue the following modifications to the Project's total estimated GHG emissions identified in this measure. These modifications may be pursued in conjunction with or independent of each other on an annual basis.

(a) Adjustment in Natural Gas Consumption

In the event natural gas consumption differs from the assumptions or is offset in the future due to changes in technology, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required offsets based on actual natural gas consumption, as verified through utility bills, rather than projected future usage. To adjust the Tenant's required number of offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the time period under consideration and shall provide copies of utility bills showing the amount of natural gas consumed at the project site along with a revised greenhouse gas emission calculation performed by an independent, qualified third-party verifier.

or

(b) Adjustment in GHG Emissions

In the event of changes in activities, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required carbon offsets based on an evaluation of actual GHG emissions rather than future projected GHG emission calculations. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the calendar year under consideration and shall submit a report within 60 days that quantifies the actual greenhouse gas emissions by an expert or an independent, qualified third-party. The evaluation of actual greenhouse gas emissions must be performed using acceptable industry standards and protocols for all sources that were included in the Project's GHG emissions calculations under MM GHG-1. LAHD review shall occur within 30 days of receipt of the submitted report. Any expenses incurred by LAHD in processing the Tenant's request, including retaining an independent third-party verifier to peer review the report, shall be borne by the Tenant.

or

(c) Implementation of Additional GHG Reduction Methods

In addition, the Tenant may request a reevaluation of required carbon offsets to be purchased according to this paragraph. The Tenant may implement different and additional GHG reduction methods that are equally or more effective if new technology and/or other feasible measures become available during the term of the Permit. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall identify such additional GHG reduction actions and must quantify the GHG emission reductions

from these GHG reduction actions by an independent, qualified third-party verifier. Once the GHG reduction actions are found to be feasible and are reviewed and approved by LAHD staff, the Tenant may request that LAHD reduce its required purchase of carbon offsets by the equivalent amount of demonstrated reduction. Any expenses incurred by LAHD in processing the Tenant's request, including retaining a third-party verifier, shall be borne by the Tenant.

Third, MM NOI-3 is added under Noise as follows:

MM NOI-3: Usage of Wooden Cushion Block. The construction contractor shall use a wooden cushion block to dampen the noise impact from pile driving. This wooden cushion block shall be placed between the pile and hammer. It shall only be applicable to driving concrete piles.

In Section ES.4.2.5, Lease Measures and Standard Conditions of Approval, the following changes are made

Air Quality

Lease measures LM AQ-1 through LM AQ-3 are revised as follows:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment. Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment~~,~~ that meets operating and safety requirements, any time new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. ~~Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible~~The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment~~,~~ and infrastructure, and ~~will~~shall update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph**.**

LM AQ-2: Periodic Review of New Technology and Regulations. The Tenant ~~will~~shall conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consulting with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant ~~will~~shall implement the new air quality technological advancements, subject to mutual agreement, which shall not be unreasonably withheld by the Tenant.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study. The Tenant ~~will~~shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel

emissions capture and control ~~system~~strategy within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant ~~will~~shall be required to implement the technology when operationally feasible as described in Tenant's pilot study. Implementation of the technology required under ~~T~~this measure will rely on the Tenant's pilot study evaluation and determination, and is subject to mutual agreement between the Tenant and LAHD, implementation of which shall not be unreasonably withheld or unreasonably required.

Lease measures LM-AQ-5 and LM AQ-6 are deleted, having been re-designated as mitigation measures as described above. New lease measures LM AQ-5 through LM AQ-7 are added as follows:

LM AQ-5: Fleet Modernization for On-Road Trucks During Construction.

1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:

    - From January 1, 2024, to December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available.
    - Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available.
    - A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

LM AQ-6: Fleet Modernization for Construction Equipment.

1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:

    - All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
    - A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists:

- A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement.
- A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available.
- A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.

LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks

The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during construction. The renewable diesel product that is used shall comply with American Society for Testing and Materials (ASTM) fuel standards.

In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ultra-low sulfur diesel (ULSD) as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.

Greenhouse Gas

LM GHG-1: GHG Credit Fund is deleted, having been replaced by MM GHG-1 GHG Reduction Offsets as described above.

On page ES-30, the final sentence of the Greenhouse Gas subsection is revised as follows:

LMs AQ-1~~,~~ through LM AQ-~~2~~7~~, LM AQ-3, LM AQ-4, LM AQ-5, and LM AQ-6~~ are also expected to have co-benefits for greenhouse gases.

Section ES.4.2.6 is revised to acknowledge that implementation of MM GHG-1 would reduce impacts to less than significant.

On p. ES-30:

The Proposed Project and/or the Alternatives would make cumulatively considerable contributions to significant cumulative impacts in the following resource areas under CEQA:

- Air Quality and Meteorology;
- Noise~~;~~
- ~~Greenhouse Gas Emissions~~.

On p. ES-31:

Proposed Project Cumulatively Considerable Impacts

The following are cumulatively considerable and unavoidable impacts for the Proposed Project after mitigation (if applicable, as described in section ES 5.2.4):

~~***Greenhouse Gas Emissions***~~

- ~~GHG emissions would add to existing global GHG levels and, therefore, would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact relative to climate change.~~

On page ES-32:

- The Reduced Project Alternative (Alternative 2) would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for cancer risk for residential, sensitive, and occupational receptors, for occupational chronic and acute hazard indices, and for population cancer burden.

~~***Greenhouse Gas Emissions***~~

- ~~GHG emissions from the Reduced Project Alternative (Alternative 2) would add to existing levels and, therefore, would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact relative to climate change…~~.

Alternative 3 (Product Import Terminal Alternative) Cumulatively Considerable Impacts

Like the Proposed Project, the Product Import Terminal (Alternative 3) would make cumulatively considerable and unavoidable contributions to significant cumulative impact after mitigation in the following resource areas:

Air Quality and Meteorology

- Emissions from the Product Import Terminal Alternative (Alternative 3) construction would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for NOx emissions.
- Emissions from the Product Import Terminal Alternative (Alternative 3) operations would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for NOx emissions and for offsite ambient pollutant concentrations of PM_{10}.
- The Product Import Terminal Alternative (Alternative 3) would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for cancer risk for residential, sensitive, and occupational receptors, for occupational chronic and acute hazard indices, and for population cancer burden.

~~***Greenhouse Gas Emissions***~~

- ~~GHG emissions from the Reduced Project Alternative (Alternative 2) would add to existing levels and, therefore, would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact relative to climate change.~~

On p. ES-33 <u>Greenhouse Gases</u> is added to the bulleted list after Geology and Soils.

Table ES-2 is revised as follows:

Table ES-2: Summary of Impacts and Mitigation for the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
3.1 Air Quality				
Proposed Project	**AQ-1:** The Proposed Project would result in construction-related emissions that exceed an SCAQMD localized threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although lease measures LM AQ-4: Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied.	Less than significant
	AQ-2: Proposed Project construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although lease measures LM AQ-4: Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied.	Less than significant
	AQ-3: The Proposed Project would result in operational emissions that exceed an SCAQMD regional threshold of significance in Table 3.1-7	Operation emissions would be significant for NOx in all operational years	~~L~~MM AQ-1~~5~~: Vessel Speed Reduction Program (VSRP) ~~L~~MM AQ-2~~6~~: Front End Loader Replacement Schedule LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~	Impacts would remain significant and unavoidable for NOx in all operational years

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	AQ-4: Proposed Project operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant in all years for annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$	MM AQ-1: Vessel Speed Reduction Program (VSRP) MM AQ-2: Front End Loader Replacement Schedule No additional mitigation measures applied; control measures AP-42 guidance and BACT for dust collection and bag filters applied LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology. LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations in all years for annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$
	AQ-5: The Proposed Project would expose receptors to significant levels of TACs	Less than significant	Mitigation not required although mitigation measures MM AQ-1 and MM AQ-2 and lease measures LM AQ-1, LM AQ-2, LM AQ-3, and LM AQ-4~~, LM AQ-5 and LM AQ-6~~ would be applied	Less than significant
	AQ-6: The Proposed Project would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation is required	Less than significant
Alternative 1 – No Project	**AQ-1:** Alternative 1 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	No impact	Not applicable	No impact
	AQ-2: Alternative 1 construction would not result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	No impact	Not applicable	No impact
	AQ-3: Alternative 1 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	No impact	Not applicable	No impact

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	AQ-4: Alternative 1 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	No impact	Not applicable	No impact
	AQ-5: Alternative 1 would not expose receptors to significant levels of TACs	No impact	Not applicable	No impact
	AQ-6: Alternative 1 would not conflict with or obstruct implementation of an applicable AQMP	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**AQ-1:** Alternative 2 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although lease measures LM AQ-4: Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied.	Less than significant
	AQ-2: Alternative 2 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although lease measures LM AQ-4: Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied.	Less than significant
	AQ-3: Alternative 2 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	Operational emissions would be significant for NOx in all years	~~L~~MM AQ-15~~:~~ Vessel Speed Reduction Program (VSRP) ~~L~~MM AQ-26~~:~~ Front End Loader Replacement Schedule LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology	Operational emissions would remain significant and unavoidable for NOx in all years

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
			LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~	
	AQ-4: Alternative 2 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant for annual and 24-hr PM_{10} in all years and 24-hr $PM_{2.5}$ in 2027 and 2049	MM AQ-1: Vessel Speed Reduction Program (VSRP) MM AQ-2: Front End Loader Replacement Schedule No additional mitigation measures applied~~;~~ control measures AP-42 guidance and BACT for dust collection and bag filters already applied LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations for annual and 24-hr PM_{10} in all years and 24-hr $PM_{2.5}$ in 2027 and 2049
	AQ-5: Alternative 2 would not expose receptors to significant levels of TACs	Health risks would be below the significance threshold for all receptor types.	Mitigation not required although mitigation measures MM AQ-1 and MM AQ-2 and lease measures LM AQ-1, LM AQ-2, LM AQ-3, and LM AQ-4~~, LM AQ-5 and LM AQ-6~~ would be applied	Less than significant
	AQ-6: Alternative 2 would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation required	Less than significant
Alternative 3 – Product Import Terminal	**AQ-1:** Alternative 3 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although lease measures LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
			Construction Equipment and On-Road Trucks would be applied	
	AQ-2: Alternative 3 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied	Less than significant
	AQ-3: Alternative 3 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	Operational emissions would be significant for NOx in all years	LM AQ-5: Vessel Speed Reduction Program (VSRP) LM AQ-6: Front End Loader Replacement Schedule LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~	Impacts would remain significant and unavoidable for NOx in all years
	AQ-4: Alternative 3 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant for annual and 24-hour PM_{10} in all years	MM AQ-1: Vessel Speed Reduction Program (VSRP) MM AQ-2: Front End Loader Replacement Schedule No additional mitigation measures applied; control measure BACT for dust collection and bag filters already applied LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations for annual and 24-hour PM_{10} in all years

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
			~~LM AQ-6: Front End Loader Replacement Schedule~~ ~~LM AQ-5: Vessel Speed Reduction Program (VSRP~~)	
	AQ-5: Alternative 3 would not expose receptors to significant levels of TACs	Less than significant	Mitigation not required although mitigation measure MM AQ-1 and lease measures LM AQ-1, LM AQ-2, LM AQ-3, and LM AQ-4~~, and LM AQ-5~~ would be applied	Less than significant
	AQ-6: Alternative 3 would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation required	Less than significant
3.2 Biological Resources				
Proposed Project	**BIO-1:** Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Potentially significant impact	MM BIO-1: Protect marine mammals~~, would be applied~~	Less than significant
Alternative 1 – No Project	**BIO-1:** Would Alternative 1 have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**BIO-1:** Would Alternative 2 have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the	Potentially significant impact	MM BIO-1: Protect Marine Mammals	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			
Alternative 3 – Product Import Terminal	**BIO-1:** Would Alternative 3 have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Potentially significant impact	MM BIO-1: Protect Marine Mammals	Less than significant
3.3 Energy				
Proposed Project	**EN-1:** Would the Proposed Project result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	No mitigation is required	Less than significant
Alternative 1 – No Project	**EN-1:** Would Alternative 1 result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**EN-1:** Would Alternative 2 result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	No mitigation is required.	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
Alternative 3 – Product Import Terminal	**EN-1:** Would Alternative 3 result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	No mitigation is required.	Less than significant
3.4 Geology and Soils				
Proposed Project	**GEO-1:** Would the Proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?	Less than significant	No mitigation is required	Less than significant
Alternative 1 – No Project	**GEO-1:** Would Alternative 1 be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**GEO-1:** Would Alternative 2 be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?	Less than significant	No mitigation is required	Less than significant
Alternative 3 – Product Import Terminal	**GEO-1:** Would Alternative 3 be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?	Less than significant	No mitigation is required	Less than significant
3.5 Greenhouse Gases				

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
Proposed Project	**GHG-1:** Would the Proposed Project generate GHG emissions, either directly or indirectly, may have a significant impact on the environment?	GHG emissions would be significant under CEQA in 2025, 2027 and 2049 analysis years	~~L~~MM GHG-1: GHG ~~Credit Fund~~ Reduction Offsets MM AQ-1: Vessel Speed Reduction Program (VSRP) MM AQ-2: Front End Loader Replacement Schedule LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~	~~GHG emissions impacts would be significant and unavoidable for all analyzed years~~ Less than significant
Alternative 1 – No Project	**GHG-1:** Would Alternative 1 generate GHG emissions, either directly or indirectly, may have a significant impact on the environment?	No Impact	Not applicable	No Impact
Alternative 2 – Reduced Project	**GHG-1:** Would Alternative 2 generate GHG emissions, either directly or indirectly, may have a significant impact on the environment?	GHG emissions would be significant under CEQA in 2025, 2027 and 2049 analysis years	~~L~~MM GHG-1: GHG ~~Credit Fund~~ Reduction Offsets LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines M~~L~~M AQ-1~~5~~: Vessel Speed Reduction Program (VSRP) M~~L~~M AQ-26: Front End Loader Replacement Schedule	~~GHG emissions impacts would be significant and unavoidable for analysis year 2027~~ Less than significant
Alternative 3 – Product Import Terminal	**GHG-1:** Would Alternative 3 generate GHG emissions, either directly or indirectly, may have a significant impact on the environment?	Less than significant	Mitigation not required; however, the following lease measures would be applied: LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
			LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines would be applied M~~L~~M AQ-1~~5~~: Vessel Speed Reduction Program (VSRP)	
3.6 Land Use				
Proposed Project	**LU-1:** Would the Proposed Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact?	Less than significant	No mitigation is required	Less than significant
Alternative 1 – No Project	**LU-1:** Would Alternative 1 cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact?	Less than significant	Not applicable	Less than significant
Alternative 2 – Reduced Project	**LU-1:** Would Alternative 2 cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact?	Less than significant	No mitigation is required	Less than significant
Alternative 3 – Product Import Terminal	**LU-1:** Would Alternative 3 cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact?	Less than significant	No mitigation is required	Less than significant
3.7 Noise				
Proposed Project	**NOI-1:** Would the Proposed Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or			

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	noise ordinance, or applicable standards of other agencies?			
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-3: Usage of Wooden Cushion Block	Significant and unavoidable
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-3: Usage of Wooden Cushion Block	Significant and unavoidable
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater	Less than significant	No mitigation is required	Less than significant
	NOI-1d: Would the Proposed Project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is required	Less than significant
Alternative 1 – No Project	**NOI-1:** Would Alternative 1 result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise			

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	ordinance, or applicable standards of other agencies?			
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor	No impact	Not applicable	No impact
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday	No impact	Not applicable	No impact
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater	No impact	Not applicable	No impact
	NOI-1d: Would Alternative 1 result in generation of excessive groundborne vibration or groundborne noise levels?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**NOI-1:** Would Alternative 2 result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-3: Usage of Wooden Cushion Block	Significant and unavoidable
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-3: Usage of Wooden Cushion Block	Significant and unavoidable
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater	Less than significant	No mitigation is required	Less than significant
	NOI-1d: Would Alternative 2 result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is required	Less than significant
Alternative 3 – Product Import Terminal	**NOI-1:** Would Alternative 3 result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-3: Usage of Wooden Cushion Block	Significant and unavoidable
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-2: Usage of Wooden Cushion Block	Significant and unavoidable
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater	Less than significant	No mitigation is required	Less than significant
	NOI-1d: Would Alternative 3 result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is required	Less than significant
3.8 Ground Transportation				
Proposed Project	**TRANS-1:** Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No impact	No mitigation is required	No impact
	TRANS-2: Would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No impact	No mitigation is required	No impact

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	TRANS-3: Would the Proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No impact	No mitigation is required	No impact
	TRANS-4: Would the Proposed Project result in inadequate emergency access?	No impact	No mitigation is required	No impact
Alternative 1 – No Project	**TRANS-1:** Would Alternative 1 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No impact	Not applicable	No impact
	TRANS-2: Would Alternative 1 conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No impact	Not applicable	No impact
	TRANS-3: Would Alternative 1 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No impact	Not applicable	No impact
	TRANS-4: Would Alternative 1 result in inadequate emergency access?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**TRANS-1:** Would Alternative 2 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No Impact	No mitigation is required	No Impact
	TRANS-2: Would Alternative 2 conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No impact	No mitigation is required	No impact

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	TRANS-3: Would Alternative 2 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No impact	No mitigation is required	No impact
	TRANS-4: Would Alternative 2 result in inadequate emergency access?	No impact	No mitigation is required	No impact
Alternative 3 – Product Import Terminal	**TRANS-1:** Would Alternative 3 conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No Impact	No mitigation is required	No Impact
	TRANS-2: Would Alternative 3 conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No impact	No mitigation is required	No impact
	TRANS-3: Would Alternative 3 substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No impact	No mitigation is required	No impact
	TRANS-4: Would Alternative 3 result in inadequate emergency access?	No impact	No mitigation is required	No impact
3.9 Tribal Cultural Resources				
Proposed Project	**TCR-1:** Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is i. listed or eligible for listing in the California Register of	Less than significant	No mitigation is required but SC TCR-1 would be employed	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).?			
	TCR-2: Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	Less than significant	No mitigation is required but SC TCR-1 would be employed	Less than significant
Alternative 1 – No Project	**TCR-1:** Would Alternative 1 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local	No impact	Not applicable	No impact

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	register of historical resources as defined in Public Resources Code Section 5020.1(k).?			
	TCR-2: Would Alternative 1 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	**TCR-1:** Would Alternative 2 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as	Less than significant	No mitigation is required but SC TCR-1 would be employed	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	defined in Public Resources Code Section 5020.1(k).?			
	TCR-2: Would Alternative 2 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.?	Less than significant	No mitigation is required but SC TCR-1 would be employed	Less than significant
Alternative 3 – Product Import Terminal	**TCR-1:** Would Alternative 3 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local	Less than significant	No mitigation is required but SC TCR-1 would be employed	Less than significant

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation~~/~~ and Lease Measures or Controls	Residual Impacts
	register of historical resources as defined in Public Resources Code Section 5020.1(k).?			
	TCR-2: Would Alternative 3 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	Less than significant	No mitigation is required but SC TCR-1 would be employed	Less than significant

1

3.2.2 Changes Made to Chapter 2 Project Description

Section 2.5.1 Overview

The second sentence is revised as follows:

… and issuance by the LAHD of a ~~30-year entitlement for the site~~ 32-year entitlement for the site that would include 30 years of operation and two years of construction, as well as access to Berth 191.

Section 2.5.2 Project Construction

The last paragraph of Section 2.5.2.1 (p. 2-14) is revised as follows:

Construction would last approximately 18 months and require up to 75 construction workers on a peak construction day. Construction-phase traffic would include worker vehicles and a variety of medium- and heavy-duty vehicles hauling debris and excavated material and bringing in imported soil, supplies, equipment, and construction materials. Construction is assumed to take place between 7 a.m. and 5 p.m. five days per week (Monday through Friday) except national holidays. Construction staging, parking, and laydown would occur either on the site or at a nearby offsite location.

In response to Comment CDFW-2, Section 2.5.2.1 (p. 2-15) is revised as follows:

The concrete piles would be repaired by installing reinforcing jackets, but the damaged timber piles would need to be pulled out and replaced with new timber piles. Some damaged timber piles may end up being broken off at the mudline instead of being pulled, but the goal would be to completely remove ~~all of~~ each pile. At the edge of the existing wharf, 11 timber fender piles would be replaced with new timber piles. In addition, 47 new timber piles would be driven along the wharf's edge to support the floating fender panel and Yokohama fenders necessary to hold vessels several feet away from the wharf. The replacement timber piles would be wrapped with a 6-millimeter polyethylene inner wrap and a 30-mil outer PVC wrap.

3.2.3 Changes Made to Section 3.1 Air Quality

Section 3.1.5 Impact Determination

On page 3.1-32, the following change is made to the text:

Lastly, the analysis assumes the natural future turnover of the current average (as of 2021) engine age mix of the Port's assist tug fleet (harbor craft category), per the Port's 2021 Emissions Inventory (POLA 2022). CARB recently approved the 2022 Amendments to the Commercial Harbor Craft (CHC) Regulation, which may result in a quicker turnover, and therefore lower future emissions, for harbor craft sources in California. On January 10, 2025, CARB received partial authorization for the 2022 CHC Amendments. However, because there is not yet an enforceable mechanism for this rule, the analysis does not quantify potential reductions benefits of it.

On page 3.1-33, LM AQ-1 through LM AQ-3 are revised and three new lease measures are added as follows:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment. Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment, that meets operating and safety requirements, any time new

or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. ~~Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible~~. The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment, and infrastructure, and ~~will~~shall update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph**.**

LM AQ-2: Periodic Review of New Technology and Regulations. The Tenant ~~will~~shall conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consulting with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant ~~will~~shall implement the new air quality technological advancements, subject to mutual agreement, which shall not be unreasonably withheld by the Tenant.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study. The Tenant ~~will~~shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel emissions capture and control ~~system~~strategy within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant ~~will~~shall be required to implement the technology when operationally feasible as described in Tenant's pilot study. Implementation of the technology required under ~~T~~this measure will rely on the Tenant's pilot study evaluation and determination, and is subject to mutual agreement between the Tenant and LAHD, implementation of which shall not be unreasonably withheld or unreasonably required.

LM AQ-5: Fleet Modernization For On-Road Trucks During Construction

1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:
    - From January 1, 2024, to December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available.

- Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available.
- A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

LM AQ-6: Fleet Modernization for Construction Equipment.

1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards.

2. Idling shall be restricted to a maximum of 5 minutes when not in use.

3. Tier Specifications:

- All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists:

- A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement.
- A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available.
- A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.

LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks

The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during construction. The renewable diesel product that is used shall comply with American Society for Testing and Materials (ASTM) fuel standards.

In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ultra-low sulfur diesel (ULSD) as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.

On page 3.1-33, LM AQ-5 and LM AQ-6 have been re-designated as mitigation measures (MM AQ-1 and MM AQ-2, respectively), and revised, and three new mitigation measures have been added, as shown below.

~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP). ~~95~~100 percent of vessels calling at the Ecocem Dry Bulk Processing Facility ~~will~~shall be required to comply with the expanded VSRP ~~at~~of 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area. Speed is confirmed by the Marine Exchange. Any vessel experiencing a maritime emergency[2] that prevents compliance with the expanded VSRP may be exempt from this measure. If a maritime emergency were to occur, the vessel operators shall provide substantial evidence of a qualifying event to LAHD.

~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule. The tenant shall ~~maintain a replacement schedule of~~ replace the off-road diesel front end loader ~~of~~ every two years~~,. where an~~ The equivalent new ~~piece that~~ front end loader shall meet~~s~~ operational requirements and meet~~s~~ Tier 4 ~~Final~~ standards or cleaner or as required by state and/or local agencies, whichever is stricter~~, would be procured~~. During replacement, the following preference will be used for consideration: first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for Tier 4 standards if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

The revision of MM AQ-2 recognizes that it is uncertain when Tier 4 Final-compliant equipment will become available, so that requiring that standard to be met could render the mitigation measure infeasible.

Page 3.1-39 contains an erroneous statement and is revised as follows:

Figure 3.1-2 shows the individual residential cancer risk contour of ~~one in a million~~ 1-in-1-million and the locations of the MEI residential receptor and the MEI non-residential sensitive receptor for the Proposed Project. ~~Because the individual cancer risk estimated at all residential and non-residential sensitive receptors for the Proposed Project is are below the significance threshold of 10 in a million, a contour for 10 in a million residential risk is not drawn in Figure 3.1-2~~. The 10-in-1 million residential risk contour is also included in Figure 3.1-2 even though no residential or non-residential sensitive receptor is located within the contour.

Table 3.1-24 is revised to reflect the revised lease measures and added mitigation measures as follows:

[2] Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard (USCG) safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
Proposed Project	**AQ-1:** The Proposed Project would result in construction-related emissions that exceed an SCAQMD localized threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied	Less than significant
	AQ-2: Proposed Project construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied	Less than significant
	AQ-3: The Proposed Project would result in operational emissions that exceed an			Impacts would remain significant and

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
	SCAQMD regional threshold of significance in Table 3.1-7	Operation emissions would be significant for NOx in all operational years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~L~~M AQ-~~5~~1: Vessel Speed Reduction Program (VSRP) ~~L~~M AQ-~~6~~2: Front End Loader Replacement Schedule	unavoidable for NOx in all operational years
	AQ-4: Proposed Project operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant in all years for annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~L~~M AQ-~~5~~1: Vessel Speed Reduction Program (VSRP) ~~L~~M AQ-~~6~~2: Front End Loader Replacement Schedule	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations in all years for annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$
	AQ-5: The Proposed Project would expose receptors to significant levels of TACs	Less than significant	Mitigation not required although LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4, ~~L~~M AQ-~~5~~1 and ~~L~~M AQ-~~6~~2 would be applied	Less than significant
	AQ-6: The Proposed Project would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	Mitigation not required	Less than significant
Alternative 1 – No Project Alternative	**AQ-1:** Alternative 1 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	No impact	Not applicable	No impact
	AQ-2: Alternative 1 construction would not result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	No impact	Not applicable	No impact

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
	AQ-3: Alternative 1 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	No impact.	Not applicable	No impact
	AQ-4: Alternative 1 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	No impact	Not applicable	No impact
	AQ-5: Alternative 1 would not expose receptors to significant levels of TACs	No impact	Not applicable	No impact
	AQ-6: Alternative 1 would not conflict with or obstruct implementation of an applicable AQMP	No impact	Not applicable	No impact
Alternative 2 – Reduced Project Alternative	**AQ-1:** Alternative 2 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied	Less than significant
	AQ-2: Alternative 2 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required though LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks	Less than significant

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
			would be applied	
	AQ-3: Alternative 2 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	Operational emissions would be significant for NOx in all years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP) ~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule	Operational emissions would remain significant and unavoidable for NOx in all years
	AQ-4: Alternative 2 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant for annual and 24-hr PM_{10} in all years and 24-hr $PM_{2.5}$ in 2027 and 2049	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP) ~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations for annual and 24-hr PM_{10} in all years and 24-hr $PM_{2.5}$ in 2027 and 2049
	AQ-5: Alternative 2 would not expose receptors to significant levels of TACs	Health risks would be below the significance threshold for all receptor types.	Mitigation not required although LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4, ~~L~~MM AQ-~~5~~1 and ~~L~~MM AQ-~~6~~2 would be applied	Less than significant.
	AQ-6: Alternative 2 would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation required	Less than significant
Alternative 3-Product Import Terminal Alternative	**AQ-1:** Alternative 3 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines,	Less than significant

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
			LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied	
	AQ-2: Alternative 3 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines, LM AQ-5: Fleet Modernization for On-Road Trucks During Construction, LM AQ-6: Fleet Modernization for Construction Equipment, and LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks would be applied	Less than significant
	AQ-3: Alternative 3 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	Operational emissions would be significant for NOx in all years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP).	Impacts would remain significant and unavoidable for NOx in all years
	AQ-4: Alternative 3 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant for annual and 24-hour PM_{10} and 24-hour $PM_{2.5}$ in all years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations for annual

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
			LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP)	and 24-hour PM_{10} and 24-hour $PM_{2.5}$ in all years
	AQ-5: Alternative 3 would not expose receptors to significant levels of TACs	Less than significant	Mitigation not required although LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4 and ~~L~~MM AQ-~~5~~1 would be applied	Less than significant
	AQ-6: Alternative 3 would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation required	Less than significant

On page 3.1-80, the following material is added:

3.2.3.1 Section 3.1.5.6 Discussion of Health Effects Related to Pollutant Impacts

This section includes a discussion of the potential health effects of air pollutant impacts. Potential health effects are described for the Proposed Project's significant operational emissions identified in Impact AQ-3, significant ambient concentrations associated with Proposed Project operations are identified in Impact AQ-4, and the health risk assessment is presented in Impact AQ-5 (Section 3.1.5.1). This discussion is not a new impact assessment but rather provides supplemental information related to the significant impacts already identified in Section 3.1.5.1. The discussion considers potential links between the Proposed Project's emissions of priority pollutants and human health effects. Information about health effects was acquired through a review of available literature published by the SCAQMD, CARB, and USEPA.

This discussion is also guided by the stepwise process depicted in Figure 3.1-6 that is used for assessing air quality impacts in the EIR. The first step, emissions analysis, is presented in Impact AQ-3 for Proposed Project operations and is indicative of *regional* air quality impacts because the analysis determines the quantity of pollutants released into the South Coast Air Basin (SCAB) from Proposed Project-related sources operating throughout the SCAB. The second step, dispersion modeling, is presented in Impact AQ-4 for Proposed Project operations. The analysis is indicative of *local* impacts because the analysis estimates the ambient pollutant concentrations to which persons would be exposed, and the highest concentrations are predicted to occur in close proximity to the Project site. Therefore, the health effects discussion considers both regional health effects (i.e., effects that could be experienced throughout the SCAB) and local health effects (i.e., effects in the vicinity of Berths 191-194) related to Proposed Project operation.

The third step, health risk assessment (HRA), is presented in Impact AQ-5. The results for individual cancer risk and population cancer burden presented in Table 3.1-14 of the DEIR are already direct estimates of the health effects associated with exposure to the Proposed Project's toxic air contaminant (TAC) emissions. In addition, as shown in Table 3.1-14, the HRA determined that health impacts related to TACs would be less than significant. Therefore, no further discussion of health effects is necessary for the HRA.

Regional Health Effects

This section discusses the relationship between the Proposed Project's regional criteria pollutant emissions and the potential for adverse health effects to occur for persons exposed to the emitted pollutants. The Proposed Project would produce significant regional emissions of nitrogen oxides (NO_X) in all operational years, but emissions of the other air pollutants of concern in the SCAB (i.e., CO, SO_X, lead [Pb], particulate matter (PM_{10} and $PM_{2.5}$), and volatile organic compounds [VOCs]) would not exceed significance thresholds. Accordingly, this discussion of regional health effects focuses on NO_X (because the primary component of NO_X is NO_2), a criteria pollutant. This discussion also focuses on ozone because NO_X is a precursor of ozone, which is a criteria pollutant that is photochemically formed from precursors in the atmosphere in the presence of sunlight; EPA 2018). The ozone discussion also considers VOCs because they, too, are a precursor of ozone.

In an *amicus curiae* brief submitted to the California Supreme Court in the *Sierra Club v. County of Fresno* ("*Friant Ranch*") case, the SCAQMD explained that it did not know of a way to accurately quantify health impacts caused by emissions produced on a scale as small as individual projects (SCAQMD, 2015c). The SCAQMD's observations on the infeasibility of linking project-specific emissions to specific health impacts were echoed by *amicus curiae* briefs submitted by other air pollution control authorities (see attachments 1 through 4 in City of Los Angeles 2019).

One existing tool, can model changes in ozone or PM concentrations on a regional scale and uses that data to calculate the number of the resulting air-pollution-related deaths and illnesses (USEPA 2019). The tool consists of the USEPA's Community Multiscale Air Quality Modeling System (CMAQS) and Environmental Benefits Mapping and Analysis Program (BenMAP) models used together. These models are designed to estimate health impacts over a large scale (e.g., city-wide, state-wide) and some of their data inputs are either not generally accessible or not relevant to project-level analyses (City of Los Angeles 2019). The expected changes in regional ozone concentrations associated with an individual project, such as the Proposed Project, would be so low that, as SCAQMD (2015c) and City of Los Angeles (2019) point out, BenMAP would likely produce estimates of health effects that are near zero, and thus would not be informative for the public.

The City of Los Angeles (2019) evaluated 11 other tools and models used in air quality and public health assessments and found that they all, for various reasons, do not connect mass emissions or pollutant concentrations with specific health effects. Accordingly, at this time, as stated in Attachment 4 of City of Los Angeles (2019), neither the SCAQMD, CARB, "nor any air district currently have methodologies that would provide Lead Agencies and CEQA practitioners with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions". As a result of expert agencies determining that any individual project's contribution to health effects will be so small that none of the existing models can provide helpful information and the lack of a reliable methodology for linking project-level pollutant concentrations attributable to an individual project to specific health effects in the regional population, the extent to which regional adverse health effects can be identified in this section is limited to (a) discussing the Proposed Project's potential impact on regional pollutant levels; and (b) generally describing the types of adverse health effects associated with exposure to the pollutants of concern.

Nitrogen Dioxide (NO_2)

Impact on Regional NO_2 Concentrations. The SCAB is currently designated as "in attainment" of NO_2 concentration standards. The most stringent state and federal NO_2 standards are: 0.18 ppm for a 1-hour average (state 1-hour standard), 0.100 ppm for a three-year average of the 98th percentile of the annual distributions of daily maximum 1-hour average concentrations (federal 1-hour standard), and 0.030 ppm for an annual average.

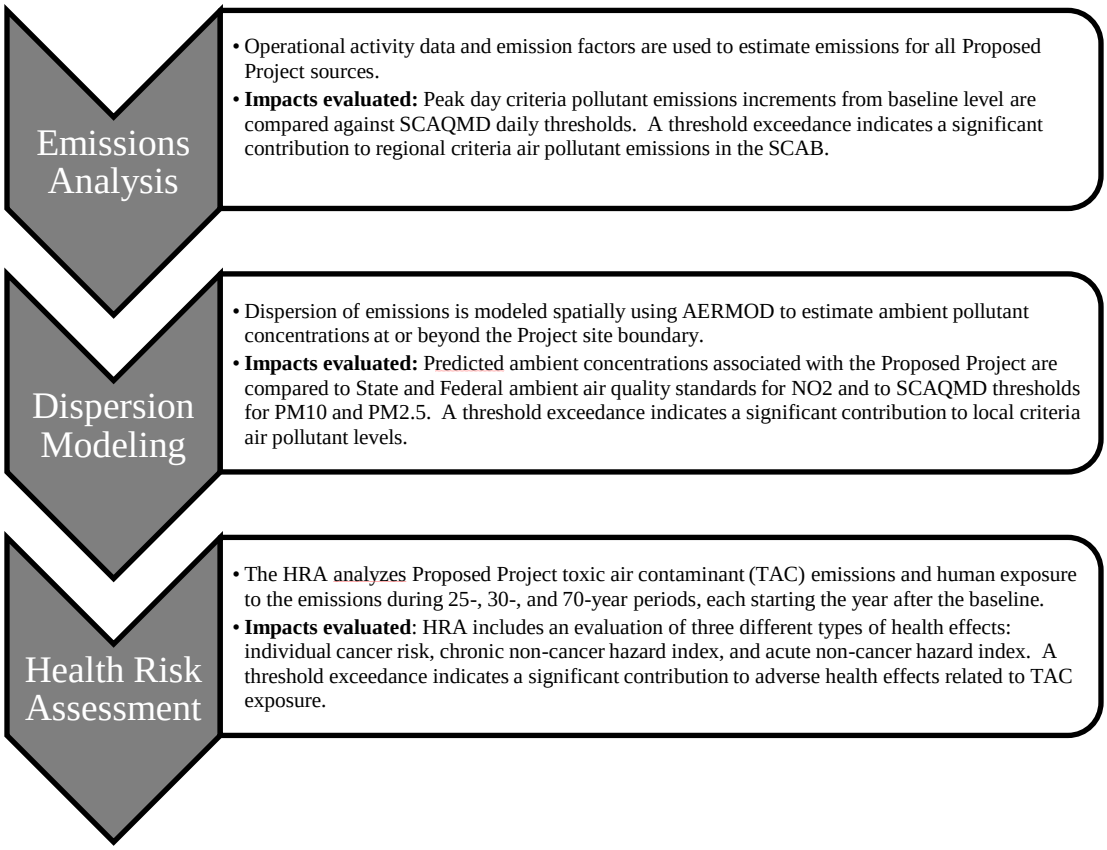
The highest NO_2 concentrations recorded anywhere in the SCAB over the 3-year period from 2020 to 2022 were 0.104 ppm for the state 1-hour average, 0.086 ppm for the federal 1-hour average, and 0.029 ppm for an annual average (SCAQMD 2024). These pollutant levels are 58, 86, and 97 percent of the state 1-hour, federal 1-hour, and annual standards, respectively. All of the maximum values occurred at a monitoring station along I-710 in north Long Beach (SCAQMD 2024).

According to the most recent USEPA-approved SCAB emissions inventory, NO_x emissions within the SCAB in 2018 averaged 351 tons/day (SCAQMD 2022). By comparison, the highest NO_x emissions increment associated with the Proposed Project was 0.42 tons/day on a peak day, which is 0.1 percent of the total SCAB emissions. Therefore, the Proposed Project's contribution to regional NO_2 levels would be insubstantial.

Potential Health Effects. In developing the NO_2 standards, the USEPA (USEPA 2016) and CARB (2007) have prepared comprehensive reports on the possible health effects associated with NO_2 exposure. The main conclusions of these agencies are:

- USEPA (2016) concluded that a causal relationship exists between short-term NO_2 exposure and respiratory effects such as asthma attacks. There is likely to be a causal relationship between long-term NO_2 exposure and respiratory effects based on the evidence for development of asthma. For short-term and/or long-term NO_2 exposure, evidence is suggestive of, but not sufficient to imply, a causal relationship with cardiovascular effects, diabetes, mortality, adverse birth outcomes, and cancer. People with asthma, children, and older adults are at increased risk for NO_2-related health effects.

Figure 3.1-6. Air Quality Analysis Key Elements and Progression



- CARB (2007) concluded that, in controlled human exposure studies, asthmatics appear to be especially sensitive to NO_2. Asthmatic volunteers have experienced short-term effects at NO_2 concentrations as low as 0.26 ppm. There is evidence that a subset of asthmatics may experience increased

airway reactivity at concentrations of 0.2 to 0.3 ppm for 30 minutes to 2 hours. Generally, no clinical effects are reported in non-asthmatic volunteers in conditions below 1 ppm. Epidemiological studies have shown an association between NO_2 and both hospital admissions and emergency room visits for asthma at 24-hour average concentrations ranging from 0.018 to 0.036 ppm. Less robust evidence suggests associations with mortality, hospitalization for cardiovascular disease, and low birth weight.

Ozone

As mentioned above, a discussion of ozone must include a consideration of NO_X and volatile organic carbon (VOC) emissions because those two pollutants are precursors to the formation of ozone in the atmosphere. However, because ozone is formed sometime later and downwind from its precursor emission source (USEPA 2024), ozone behaves as a regional pollutant rather than a local pollutant. For example, the highest ozone concentrations are not found in urban areas close to the concentrated sources of its precursors, but rather in suburban and rural areas downwind of these sources (USEPA 2020). The feasibility of considering potential health effects associated with ozone exposure were addressed under Regional Health Effects. The discussion below describes regional ozone concentrations and standards, considers whether the Proposed Project's emissions of ozone precursors would have a substantial impact on regional ozone concentrations, and discusses known human health effects of exposure to ozone.

Impact on Regional Ozone Concentrations. The SCAB is currently designated as in "nonattainment" of ozone concentration standards. The most stringent state and federal ozone standards are 0.09 ppm for a 1-hour average, 0.070 ppm for the three-year average of the fourth-highest 8-hour concentration each year (known as the federal 8-hour standard), and 0.07 ppm for an 8-hour average (known as the state 8-hour standard).

The highest 1-hour ozone concentration recorded in the SCAB over the 3-year period from 2020 through 2022 was 0.185 ppm, which is 2.05 times greater than the standard. This concentration occurred in 2020 at the Central Los Angeles monitoring site in downtown Los Angeles. The standard was exceeded somewhere in the SCAB on 28 percent of days during that same three-year period (SCAQMD 2024).

The highest federal 8-hour ozone concentration recorded in the SCAB over the 3-year period from 2020 through 2022 was 0.125 ppm, which is 1.8 times greater than the standard. This concentration also occurred in 2020, but at the East San Bernardino Valley monitoring site. The threshold of 0.070 ppm was exceeded at one or more locations in the SCAB on 40 percent of days during that same three-year period (SCAQMD 2024).

The highest state 8-hour ozone concentration recorded in the SCAB over the 3-year period from 2020 through 2022 was 0.139 ppm, which is 2.0 times greater than the standard. This concentration occurred in 2020 at the San Bernardino Mountains station. The standard was exceeded at one or more locations in the SCAB on 38 percent of days during that same three-year period (SCAQMD 2024).

According to the most recent EPA-approved SCAB emissions inventory, the total VOC emissions within the SCAB in 2018 were 406 tons/day (SCAQMD 2022). By comparison, the highest VOC emissions increment associated with the Proposed Project is anticipated to be 0.012 tons/day (Table 3.1-11), which comprises 0.003 percent of the total SCAB emissions. As discussed above, for NO_2, the Proposed Project's anticipated NO_x emissions increment makes up 0.1 percent of the total SCAB emissions. Given the Proposed Project's insubstantial contributions to the region's emissions of ozone

precursors, therefore, the Proposed Project's contribution to regional ozone levels would likely be insubstantial.

Potential Health Effects. In developing the ozone standards, USEPA (2020) and CARB (2005) have prepared comprehensive reports on the possible health effects associated with ozone exposure. The main conclusions of the agencies' reports are:

- EPA (USEPA 2020) concluded that a causal relationship exists between short-term ozone exposure and respiratory effects. A causal relationship is likely to exist between short-term ozone exposure and cardiovascular effects and mortality. Evidence is suggestive of a causal relationship between short-term ozone exposure and central nervous system effects. A causal relationship is likely to exist between long-term ozone exposure and respiratory effects. Evidence is suggestive of a causal relationship between long-term ozone exposure and cardiovascular effects, reproductive and developmental effects, central nervous system effects, and mortality. There is little evidence for a relationship between long-term ozone exposure and increased risk of lung cancer. The populations and life stages that have adequate evidence for increased ozone-related health effects are individuals with certain genotypes, individuals with asthma, younger and older age groups, individuals with reduced intake of Vitamins E and C, and outdoor workers.
- CARB (2005) concluded that ozone exposure can result in reduced lung function, increased respiratory symptoms, increased airway hyperreactivity and increased airway inflammation, increased mortality, hospitalization for cardiopulmonary causes, emergency room visits for asthma, and restrictions in activity. In controlled human exposure studies, exercising individuals exposed for one hour to an ozone concentration as low as 0.12 ppm or for 6.6 hours to a concentration as low as 0.08 ppm experienced lung function decrements and symptoms of respiratory irritation such as cough, wheeze, and pain upon deep inhalation. The lowest ozone concentrations at which airway hyperreactivity (an increase in the tendency of the airways to constrict in reaction to exposure to irritants) has been reported are 0.18 ppm ozone following 2-hour exposure in exercising subjects, 0.40 ppm following 2-hour exposure in resting subjects, and 0.08 ppm ozone in subjects exercising for 6.6 hours. Airway inflammation has been reported following 2-hour exposures to 0.20 ppm ozone and following 6.6-hour exposure to 0.08 ppm ozone. Children may be more affected by ozone than the general population due to effects on the developing lung and to relatively higher exposure than adults. Also, asthmatics may represent a sensitive sub-population for ozone.

In summary, the Proposed Project would produce emissions of NO_x that exceed SCAQMD's project significance threshold and emissions of VOCs that would not exceed those thresholds. In both cases, those emissions would make relatively small contributions to regional levels of NO_2 and ozone. There is currently no methodology available that can accurately quantify regional health effects from NO_2 or ozone exposure associated with an individual project's emissions. Therefore, the above discussion is limited to identifying the Proposed Project's potential contribution to regional pollutant levels and generally describing the types of adverse health effects associated with exposure to those pollutants.

Local Health Effects

This section discusses the relationship between the Proposed Project's local criteria pollutant emissions and the potential for adverse health effects to occur for persons exposed to those emissions in the Proposed Project's vicinity. The dispersion modeling results in Tables 3.1-12 and 3.1-13 show that operation of the Proposed Project would not result in significant off-site local concentration impacts for NO_2 but would result in local concentrations of PM_{10} and $PM_{2.5}$ above significance thresholds in all analysis years. Therefore, the criteria pollutants evaluated for local health effects are PM_{10} and $PM_{2.5}$.

As discussed in Section 3.1.5.1, LAHD has established a health effects quantification methodology based on speciating PM_{10} into toxic air contaminants (TACs), including $PM_{2.5}$ (a substantial component of PM_{10}). The health risk assessment (Section 3.1.5.1 Impact AQ-5) shows that health risks from the Proposed Project's TAC emissions, including those of $PM_{2.5}$, would not exceed the applicable significance thresholds.

There is currently no methodology available that can accurately quantify local health effects from ambient PM_{10} concentrations associated with an individual project. Therefore, the extent to which local adverse health effects of PM_{10} emissions can be identified is limited to generally describing the types of adverse health effects associated with exposure to PM_{10}.

Particulate Matter

The SCAB is currently classified as nonattainment for the state 24-hour and annual PM_{10} and the federal 24-hour $PM_{2.5}$ standards. Locally, Table 3.1-2 shows that the Wilmington Community Station, approximately one mile north of the Project site, exceeded the PM_{10} 24-hour standard on at least one day in two of the last three available years (i.e., 2020 and 2021). The highest observed 24-hour concentration of 70.6 ug/m3 is 41 percent higher than the standard of 50 ug/m3. The Wilmington Community Station exceeded the annual PM10 standard in all three years from 2020 to 2022. The highest observed annual PM10 concentration of 27.2 ug/m3 is 36 percent higher than the standard of 20 ug/m3. The Wilmington Community Station did not exceed the 24-hour or annual PM2.5 standards in any year.

Magnitude of Local Impact. The maximum PM_{10} concentrations to which individuals in the local area would be exposed were estimated by adding the Proposed Project's concentration increments from Table 3.1-13 to the highest background PM_{10} concentration measured at the Wilmington Community Station (70.6 ug/m^3; Table 3.1-2). This approach assumes that the background concentration at the Wilmington Station would remain at the maximum observed throughout the life of the Proposed Project, and therefore may overestimate future local concentrations. Accordingly, the maximum 24-hour PM_{10} local concentrations were determined to be 81.5 ug/m^3 in 2025, 92.2 ug/m^3 in 2027, and 92.1 ug/m^3 in 2049. Similarly, the maximum annual PM_{10} local concentrations were determined to be 28.2 ug/m^3 in 2025 and 34.2 ug/m^3 in 2027 and 2049. These maximum impact locations would be at the property line of the Proposed Project and exceedances of the significance thresholds would be limited to immediately adjacent industrial land uses; locations farther from the Project site would experience lower concentrations.

The maximum $PM_{2.5}$ concentrations to which individuals in the local area would be exposed were estimated by adding the Proposed Project 24-hour concentration increments from Table 3.1-13 to the highest background $PM_{2.5}$ concentration measured at the Wilmington Community Station (25.9 ug/m^3; Table 3.1-2); only 24-hour

concentrations are considered because SCAQMD does not have a standard for annual concentrations. This approach assumes that the background concentration at the Wilmington Station would remain at the maximum observed throughout the life of the Proposed Project, and therefore may overestimate future local concentrations. Accordingly, the maximum 24-hour $PM_{2.5}$ local concentrations were determined to be 30.5 ug/m^3 in 2025, 33.8 ug/m^3 in 2027, and 33.8 ug/m^3 in 2049. These maximum impact locations would be experienced at the property line of the Proposed Project; locations farther from the Project site would experience lower concentrations.

Potential Health Effects. In developing the PM_{10} standards, EPA (USEPA 2019b) and CARB (2002) have prepared comprehensive reports on the possible health effects associated with PM_{10} exposure. The SCAQMD also reviewed PM_{10}-related health effects in Appendix I of its *Final 2022 Air Quality Management Plan* (SCAQMD 2022). Most of the health effects findings made by these agencies focus on $PM_{2.5}$, which is a subset of PM_{10}. The main conclusions of the agencies and their reports are:

- EPA (USEPA 2019b) concluded that a causal relationship exists between $PM_{2.5}$ exposure (both short- and long-term) and cardiovascular effects and mortality. A causal relationship is likely to exist between $PM_{2.5}$ exposure (both short- and long-term) and respiratory effects. Evidence is suggestive of a causal relationship between long-term $PM_{2.5}$ exposure and reproductive and developmental effects, cancer, mutagenicity, and genotoxicity. For the portion of PM_{10} greater than 2.5 microns ($PM_{10-2.5}$), USEPA concluded that evidence is suggestive of a causal relationship between short-term $PM_{10-2.5}$ exposure and cardiovascular effects, respiratory effects, and mortality. Older adults have heightened responses for cardiovascular morbidity with PM exposure. Children are at an increased risk of PM-related respiratory effects. Individuals with underlying cardiovascular disease or asthma may be at an increased risk for adverse effects.
- CARB (2007) concluded that the potential health effects associated with PM exposure include mortality, increased hospital admissions for cardiopulmonary causes, acute and chronic bronchitis, asthma attacks and emergency room visits, respiratory symptoms, and days with some restriction in activity. These adverse health effects have been reported primarily in infants, children, the elderly, and those with preexisting cardiopulmonary disease. CARB also classifies the portion of PM_{10} produced by diesel engine exhaust (diesel particulate matter, or "DPM") as a toxic air contaminant exhibiting carcinogenic effects. A quantitative health risk assessment (HRA) of the Proposed Project's emissions of DPM and other toxic air contaminants is presented in Impact AQ-5.
- SCAQMD (2022) concluded that there is a causal relationship between $PM_{2.5}$ exposure and cardiovascular effects and mortality. Specific cardiovascular effects include cardiovascular deaths, hospital admissions for ischemic heart disease and congestive heart failure, changes in heart rate variability and markers of oxidative stress, and markers of atherosclerosis. A causal relationship is likely to exist between $PM_{2.5}$ exposure and respiratory effects, such as hospital admissions for chronic obstructive pulmonary disease (COPD) or respiratory infections, asthma development, asthma or allergy exacerbation, lung cancer, impacts on lung function, lung inflammation, oxidative stress, and airway hyperresponsiveness. Both short-term and long-term PM exposures are linked to health effects in humans. Young children, older adults, and people with pre-existing respiratory or cardiovascular health conditions are among those who may be more susceptible

to the adverse effects of PM. The SCAQMD also found that the DPM portion of PM_{10} is a significant contributor to the cancer risk associated with toxic air contaminants in the SCAB. For example, the average lifetime risk for excess cancer cases in the SCAB from all air toxics sources (i., multiple pathway exposure) is estimated to be 455 per million. SCAQMD's *Multiple Air Toxics Exposure Study V* (MATES V) determined that DPM is responsible for about 50 percent of the risk (SCAQMD 2021).

In summary, operation of the Proposed Project would produce significant local concentration impacts of PM_{10} and $PM_{2.5}$. The Proposed Project's significant impact areas would extend over industrial, commercial, and recreational land uses near the Berths 191-194 site. There is currently no methodology available that can accurately quantify local health effects from ambient PM concentrations associated with an individual project. Therefore, the above discussion is limited to presenting the magnitude of significant local impacts and generally describing the types of adverse health effects associated with exposure to PM. As guidance from the City of Los Angeles (2019) concludes:

"For local plans or projects that exceed any identified SCAQMD air quality threshold, City EIR documents typically identify and disclose generalized health effects of certain air pollutants but are currently unable to establish a reliable connection between any local plan or project and a particular health effect…A number of factors contribute to this uncertainty, including the regional scope of air quality monitoring and planning, technological limitations for modeling at a local plan- or project-level, and the intrinsically complex nature between air pollutants and health effects in conjunction with local environmental variables."

In Section 3.1.6, Mitigation Monitoring, LM AQ-1, LM AQ-2, and LM AQ-3are revised as follows:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment. Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment~~,~~ that meets operating and safety requirements, any time new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. ~~Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible~~The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment~~,~~ and infrastructure, and will update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph**.**

LM AQ-2: Periodic Review of New Technology and Regulations. The Tenant ~~will~~shall conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consulting with appropriate resources (e.g.,

consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant ~~will~~shall implement the new air quality technological advancements, subject to mutual agreement, which shall not be unreasonably withheld by the Tenant.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study. The Tenant ~~will~~shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel emissions capture and control ~~system~~strategy within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant ~~will~~shall be required to implement the technology when operationally feasible as described in Tenant's pilot study. Implementation of the technology required under ~~T~~this measure will rely on the Tenant's pilot study evaluation and determination, and is subject to mutual agreement between the Tenant and LAHD, implementation of which shall not be unreasonably withheld or unreasonably required.

LM AQ-5 and LM AQ-6 have been re-designated as mitigation measures (MM AQ-1 and MM AQ-2, respectively, and revised, and three new lease measures have been added, as shown below.

~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP). ~~95~~100 percent of vessels calling at the Ecocem Dry Bulk Processing Facility will be required to comply with the expanded VSRP at ~~12 knots between~~ 40 nautical miles (nm) from Point Fermin. Speed is confirmed by the Marine Exchange. Any vessel experiencing a maritime emergency[3] that prevents compliance with the expanded VSRP may be exempt from this measure. If a maritime emergency were to occur, the vessel operators shall provide substantial evidence of a qualifying event to LAHD.

~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule. The tenant shall ~~maintain a replacement schedule of~~ replace the off-road diesel front end loader ~~of~~ every two years~~,~~. ~~where an~~ The equivalent new ~~piece that~~ front end loader shall meet~~s~~ operational requirements and meet~~s~~ Tier 4 ~~Final~~ standards or cleaner or as required by state and/or local agencies, whichever is stricter~~, would be procured~~. During replacement, the following preference will be used for consideration: first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for Tier 4 standards if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

LM AQ-5: Fleet Modernization for On-Road Trucks During Construction.

1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.

[3] Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard (USCG) safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.

3. Tier Specifications:

- From January 1, 2024, to December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available.
- Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available.
- A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

LM AQ-6: Fleet Modernization for Construction Equipment.

1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards.

2. Idling shall be restricted to a maximum of 5 minutes when not in use.

3. Tier Specifications:

- All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists:

- A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement.
- A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available.
- A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.

LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks

The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during construction. The renewable diesel product that is used shall comply with American Society for Testing and Materials (ASTM) fuel standards.

In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ultra-low sulfur diesel (ULSD) as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.

3.2.4 Changes Made to Section 3.2 Biological Resources

Section 3.2.24, pages 3.2-29 and 3.2-32

In response to Comment CDFW-3, the following revisions are made:

p. 3.2-29, third paragraph: The current Level A harassment (injury) thresholds for impulsive sounds (e.g., pile driving) range from 185 dB to 218 dB for seals, and from 203 dB to 232 dB for sea lions (LAHD 2017b); cetaceans and sea turtles are not considered in this analysis, because as discussed in Section 3.2.2, none are likely to occur at or near the Project site.

p. 3.2-32: Accordingly, mitigation measure MM BIO-1 (Protect Marine Mammals) would be required. As common practice, the marine mammal observers would also note other marine wildlife, such as sea turtles. Accordingly, ~~With~~ implementation of this measure~~,~~ would reduce impacts on marine mammals and managed fish species ~~would be~~ to less than significant.

Section 3.2.24, page 3.2-32

Mitigation Measure MM BIO-1 is revised as follows:

MM BIO-1: Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the "soft start" of pile driving activities, as a precautionary measure, pile driving activities ~~will~~shall include establishment of a safety zone, by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) ~~will~~shall be monitored for marine mammals by a qualified marine mammal observer[4]. The pile driving site ~~will~~shall move with each new pile; therefore, the safety zones ~~will~~shall move accordingly.

3.2.5 Changes Made to Section 3.5 Greenhouse Gas Emissions

Section 3.5.3, page 3.5-4

In response to Comment E4SS-10, the following revisions are made:

[4] Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow the National Oceanic and Atmospheric Administration (NOAA) Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2018) in consultation with the Acoustic Threshold White paper prepared for this purpose by LAHD (LAHD 2017a). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions prior to commencement of pile driving.

The cumulative impact each pollutant has on global warming is based on the volume of emissions and its 100-year global warming potential (GWP). GWP is a unitless quantity that measures how much a gas will contribute to global warming relative to the same mass of CO_2. For example, CH_4 and N_2O have 100-year horizon GWPs of ~~27~~ 29.8 and 273, respectively (IPCC 202~~31~~). However, artificially derived pollutants such as SF_6, HFCs, and CFCs, have been found to have substantially larger GWP values. Sulfur hexafluoride has one of the largest GWP values at ~~25,184~~ 23,900, ~~whereas~~and CFCs and HFCs have GWPs as high as ~~13,902~~ 16,200 and~~14,590~~ 14,600, respectively (IPCC 202~~31~~). For consistency amongst pollutants, GHG emissions are typically reported in terms of metric tons ("tonnes," or "MTon," equivalent to 1,000 kilograms) of carbon dioxide equivalents (CO_2e). In this document, GHG emissions will be reported in metric tons.

On page 3.5-21, Table 3.5-2 is revised as follows to reflect updated GWP values.

Table 3.5-2: Amortized Construction and Operational GHG Emissions – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				273
Year – 2025				
OGV - Transit	1,199	<1	<1	1,208~~1,211~~
OGV – Hoteling/Anchoring	346	<1	<1	348~~349~~
Harbor Craft	43	<1	<1	43~~44~~
Trucks	3,009	<1	<1	3,023~~3,044~~
Worker Vehicles	30	<1	<1	30
Offroad Equipment	281	<1	<1	284
Dryer Combustion	2,484	<1	<1	2,497
Electricity Consumption	–	–	–	5,314~~4,639~~
Total Operations with Proposed Project Amortized Construction	**-**	**<1**	**<1**	**13,020~~12,371~~**
Total GHG emissions above SCAQMD's 10,000 MT CO_2e threshold?				Yes
Year – 2027				
OGV - Transit	2,399	<1	<1	2,417~~2,423~~
OGV – Hoteling/Anchoring	690	<1	<1	693~~695~~
Harbor Craft	87	<1	<1	87
Trucks	5,889	<1	<1	5,916~~5,958~~
Worker Vehicles	37	<1	<1	37
Offroad Equipment	562	<1	<1	568~~569~~
Dryer Combustion	4,968	<1	<1	4,994~~5~~
Electricity Consumption	--	--	--	7,171~~6,261~~
Total Operations with Proposed Project Amortized Construction	**-**	**<1**	**<1**	**22,156~~21,298~~**
Total GHG emissions above SCAQMD's 10,000 MT CO_2e threshold?				Yes

Table 3.5-2: Amortized Construction and Operational GHG Emissions – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Year – 2049				
OGV - Transit	2,399	<1	<1	2,417 ~~2,423~~
OGV – Hoteling/Anchoring	690	<1	<1	693 ~~695~~
Harbor Craft	87	<1	<1	87
Trucks	4,986	<1	<1	5,009 ~~5,045~~
Worker Vehicles	31	<1	<1	32
Offroad Equipment	562	<1	<1	568
Dryer Combustion	4,968	<1	<1	4,9945
Electricity Consumption	--	--	--	10793 ~~93~~
Total Operations with Proposed Project Amortized Construction	**-**	**<1**	**< 1**	**14,180 ~~14,210~~**
Total GHG emissions above SCAQMD's 10,000 MT CO_2e threshold?				Yes

Notes:
1. Truck and vessel travel emissions include transport within the California State Boundary.
2. Emissions might not precisely add due to rounding.

Section 3.5.6.1, page 3.5-24 and 3.5-25

The text and air quality lease measures are revised as follows:

The Proposed Project and alternatives would implement the following mitigation and lease measures for greenhouse gases and air quality; although some were not quantified within the analysis (except for LM AQ-4, ~~L~~MM AQ-~~5~~1, and ~~L~~MM AQ-~~6~~) these measures would generate further reductions of GHG emissions as a co-benefit:

MM GHG-1: GHG Reduction Offsets. The Tenant shall be required to purchase and retire carbon offsets related to activities that reduce, avoid, destroy, or sequester an amount of GHG emissions in an off-site location to offset the equivalent amount of GHG emissions generated by the Project, with the exception of electricity consumption. The Tenant shall purchase and retire carbon offsets in an amount that would be the equivalent of the Project's GHG Emissions of 4,985 Metric Tons (MT) from first year of operation until 2049 and 4,073 MT from 2049 through the end of the term of the Permit. The Tenant shall purchase and retire carbon offsets on an annual basis, commencing after construction is complete and during the first year of operation. The LAHD is in the process of developing a Greenhouse Gas Program. The Program shall be used for GHG-reducing projects and programs approved by the Port of Los Angeles. If that Program is established during the term of the Permit, the Tenant shall have the option to offset the required amount of GHG emissions through a funding contribution to the Greenhouse Gas Program rather than towards purchasing carbon offsets from a CARB-recognized registry.

While the LAHD Greenhouse Gas Program is currently under development, the Tenant shall purchase and retire carbon offsets from a CARB-recognized offset registry as follows:

Carbon offsets: The Tenant shall purchase and retire carbon offsets from a CARB-recognized registry to ensure that offsets will result in real, permanent, additional, quantifiable, verifiable, and enforceable reductions. The carbon offsets shall be verifiable by the LAHD and enforceable in accordance with the registry's applicable standards, practices, or protocols.

The order of priority for purchasing (any one or more) carbon offsets shall be considered as follows:

v. Originating within the local area;

vi. Originating within the South Coast Air Basin;

vii. Originating within the state of California; or

viii. If sufficient local and in-state offsets are not available, the Tenant shall purchase conforming national offsets registered with a CARB-recognized registry.

Adjustment of Tenant's Required Offsets through Other Verified GHG Emission Reductions: The Tenant may pursue the following modifications to the Project's total estimated GHG emissions identified in this measure. These modifications may be pursued in conjunction with or independent of each other on an annual basis.

(d) Adjustment in Natural Gas Consumption

In the event natural gas consumption differs from the assumptions or is offset in the future due to changes in technology, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required offsets based on actual natural gas consumption, as verified through utility bills, rather than projected future usage. To adjust the Tenant's required number of offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the time period under consideration and shall provide copies of utility bills showing the amount of natural gas consumed at the project site along with a revised greenhouse gas emission calculation performed by an independent, qualified third-party verifier.

or

(e) Adjustment in GHG Emissions

In the event of changes in activities, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required carbon offsets based on an evaluation of actual GHG emissions rather than future projected GHG emission calculations. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the calendar year under consideration and shall submit a report within 60 days that quantifies the actual greenhouse gas emissions by an expert or an independent, qualified third-party. The evaluation of actual greenhouse gas emissions must be performed using acceptable industry standards and protocols for all sources that were included in the Project's GHG emissions calculations under MM GHG-1. LAHD review shall occur within 30 days of receipt of the submitted report. Any expenses incurred by LAHD in processing the Tenant's request, including retaining an independent third-party verifier to peer review the report, shall be borne by the Tenant.

or

(f) Implementation of Additional GHG Reduction Methods

In addition, the Tenant may request a reevaluation of required carbon offsets to be purchased according to this paragraph. The Tenant may implement different and additional GHG reduction methods that are equally or more effective if new technology and/or other feasible measures become available during the term of the Permit. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall identify such additional GHG reduction actions and must quantify the GHG emission reductions from these GHG reduction actions by an independent, qualified third-party verifier. Once the GHG reduction actions are found to be feasible and are reviewed and approved by LAHD staff, the Tenant may request that LAHD reduce its required purchase of carbon offsets by the equivalent amount of demonstrated reduction. Any expenses incurred by LAHD in processing the Tenant's request, including retaining a third-party verifier, shall be borne by the Tenant.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment. Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment~~,~~ that meets operating and safety requirements, any time new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. ~~Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible~~The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment~~,~~ and infrastructure, and will update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph**.**

LM AQ-2: Periodic Review of New Technology and Regulations. The Tenant ~~will~~shall conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consulting with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant ~~will~~shall implement the new air quality technological advancements, subject to mutual agreement, which shall not be unreasonably withheld by the Tenant.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study. The Tenant ~~will~~shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel emissions capture and control ~~system~~strategy within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant ~~will~~shall be required to implement the technology when operationally feasible as described in Tenant's pilot study. Implementation of the technology required under ~~T~~this measure will rely on the Tenant's pilot study evaluation and determination, and is subject

to mutual agreement between the Tenant and LAHD; which agreement shall not be unreasonably withheld nor implementation of technology unreasonably required.

LM AQ-5 and LM AQ-6 have been re-designated as mitigation measures (MM AQ-1 and MM AQ-2, respectively), and revised, and three new mitigation measures have been added, as shown below.

~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP). ~~95100~~ percent of vessels calling at the Ecocem Dry Bulk Processing Facility will be required to comply with the expanded VSRP at ~~12 knots between~~ 40 nautical miles (nm) from Point Fermin. Speed is confirmed by the Marine Exchange. Any vessel experiencing a maritime emergency[5] that prevents compliance with the expanded VSRP may be exempt from this measure. If a maritime emergency were to occur, the vessel operators shall provide substantial evidence of a qualifying event to LAHD.

~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule. The tenant shall ~~maintain a replacement schedule of~~ replace the off-road diesel front end loader ~~of~~ every two years~~,~~. ~~where an~~ The equivalent new ~~piece that~~ front end loader shall meet~~s~~ operational requirements and meet~~s~~ Tier 4 ~~Final~~ standards or cleaner or as required by state and/or local agencies, whichever is stricter~~, would be procured~~. During replacement, the following preference will be used for consideration: first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for Tier 4 standards if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.

LM AQ-5: Fleet Modernization for On-Road Trucks During Construction.

1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property.

2. Idling shall be restricted to a maximum of 5 minutes when not in use.

3. Tier Specifications:

- From January 1, 2024, to December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available.
- Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available.
- A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit

[5] Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard (USCG) safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.

shall be provided at the time of mobilization of each applicable unit of equipment.

LM AQ-6: Fleet Modernization for Construction Equipment.

1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards.

2. Idling shall be restricted to a maximum of 5 minutes when not in use.

3. Tier Specifications:

- All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists:

- A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement.
- A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available.
- A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.

LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks

The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during construction. The renewable diesel product that is used shall comply with American Society for Testing and Materials (ASTM) fuel standards.

In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ultra-low sulfur diesel (ULSD) as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.

On page 3.5-25, LM GHG-1 is replaced by MM GHG-1 as follows:

~~**LM GHG-1: GHG Credit Fund:** LAHD shall establish a Greenhouse Gas Fund, which LAHD shall have the option to accomplish through a Memorandum of Understanding (MOU) with the California Air Resources Board (CARB) or another appropriate entity. The fund shall be used for GHG-reducing projects and programs approved by the Port of Los Angeles, or through the purchase of emission reduction credits from a CARB approved offset registry. It shall be the responsibility of the Tenant to contribute to the fund to mitigate emissions over the threshold (11,298 MT) at the existing market rate of $35.20 per carbon credit. Fund contribution shall be a one-time payment of $397,690 payable upon substantial completion of Project construction. If LAHD is unable to establish the fund within one year prior to when payment is due, the Tenant shall instead purchase emission reduction credits from a CARB approved GHG offset registry.~~

MM GHG-1: GHG Reduction Offsets. The Tenant shall be required to purchase and retire carbon offsets related to activities that reduce, avoid, destroy, or sequester an amount of GHG emissions in an off-site location to offset the equivalent amount of GHG emissions generated by the Project, with the exception of electricity consumption. The Tenant shall purchase and retire carbon offsets in an amount that would be the equivalent of the Project's GHG Emissions of 4,985 Metric Tons (MT) from first year of operation until 2049 and 4,073 MT from 2049 through the end of the term of the Permit. The Tenant shall purchase and retire carbon offsets on an annual basis, commencing after construction is complete and during the first year of operation. The LAHD is in the process of developing a Greenhouse Gas Program. The Program shall be used for GHG-reducing projects and programs approved by the Port of Los Angeles. If that Program is established during the term of the Permit, the Tenant shall have the option to offset the required amount of GHG emissions through a funding contribution to the Greenhouse Gas Program rather than towards purchasing carbon offsets from a CARB-recognized registry.

While the LAHD Greenhouse Gas Program is currently under development, the Tenant shall purchase and retire carbon offsets from a CARB-recognized offset registry as follows:

Carbon offsets: The Tenant shall purchase and retire carbon offsets from a CARB-recognized registry to ensure that offsets will result in real, permanent, additional, quantifiable, verifiable, and enforceable reductions. The carbon offsets shall be verifiable by the LAHD and enforceable in accordance with the registry's applicable standards, practices, or protocols.

The order of priority for purchasing (any one or more) carbon offsets shall be considered as follows:

ix. Originating within the local area;

x. Originating within the South Coast Air Basin;

xi. Originating within the state of California; or

xii. If sufficient local and in-state offsets are not available, the Tenant shall purchase conforming national offsets registered with a CARB-recognized registry.

Adjustment of Tenant's Required Offsets through Other Verified GHG Emission Reductions: The Tenant may pursue the following modifications to the Project's total estimated GHG emissions identified in this measure. These modifications may be pursued in conjunction with or independent of each other on an annual basis.

(g) Adjustment in Natural Gas Consumption

In the event natural gas consumption differs from the assumptions or is offset in the future due to changes in technology, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required offsets based on actual natural gas consumption, as verified through utility bills, rather than projected future usage. To adjust the Tenant's required number of offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the time period under consideration and shall provide copies of utility bills showing the amount of natural gas consumed at the project site along with a revised greenhouse gas emission calculation performed by an independent, qualified third-party verifier.

or

(h) Adjustment in GHG Emissions

In the event of changes in activities, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required carbon offsets based on an evaluation of actual GHG emissions rather than future projected GHG emission calculations. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the calendar year under consideration and shall submit a report within 60 days that quantifies the actual greenhouse gas emissions by an expert or an independent, qualified third-party. The evaluation of actual greenhouse gas emissions must be performed using acceptable industry standards and protocols for all sources that were included in the Project's GHG emissions calculations under MM GHG-X. LAHD review shall occur within 30 days of receipt of the submitted report. Any expenses incurred by LAHD in processing the Tenant's request, including retaining an independent third-party verifier to peer review the report, shall be borne by the Tenant.

or

(i) Implementation of Additional GHG Reduction Methods

In addition, the Tenant may request a reevaluation of required carbon offsets to be purchased according to this paragraph. The Tenant may implement different and additional GHG reduction methods that are equally or more effective if new technology and/or other feasible measures become available during the term of the Permit. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall identify such additional GHG reduction actions and must quantify the GHG emission reductions from these GHG reduction actions by an independent, qualified third-party verifier. Once the GHG reduction actions are found to be feasible and are reviewed and approved by LAHD staff, the Tenant may request that LAHD reduce its required purchase of carbon offsets by the equivalent amount of demonstrated reduction. Any expenses incurred by LAHD in processing the Tenant's request, including retaining a third-party verifier, shall be borne by the Tenant.

On p. 3.5-26 the following change is made:

Residual Impacts

GHG emissions impacts under the Proposed Project would be less than significant ~~and unavoidable~~ for all analyzed years.

Section 3.5.6.3, page 3.5-29

The text is revised as follows:

Mitigation Measures

~~Feasible mitigation measures are not available as described in 3.5.6.1.~~ The Reduced Project (Alternative 2) would implement the following mitigation and lease measures for air quality and greenhouse gases; although some were not quantified within the analysis (except only LM AQ-4 and ~~L~~MM AQ-~~5~~1 and ~~L~~MM AQ-~~6~~2) these measures would generate further reductions of GHG emissions as a co-benefit:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.

~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSPR).

~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule.

~~L~~MM GHG-1: GHG ~~Credit Fund~~Reduction Offsets.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.5.6.1 and the description of measures can be found in Section 3.5.10 Mitigation Monitoring.

Section 3.5.6.4, page 3.5-32

The text is revised to change LM AQ-5 to MM AQ-1 and LM AQ-6 to MM AQ-2.

Section 3.5.8.3, page 3.5-38

To clarify an issue raised by the California Coastal Commission's comment on the NOP, the following is added as the second paragraph of subsection 3.5.8.3:

Sea level rise, and possibly storm surge, could potentially cause groundwater elevations on the site to rise, potentially mobilizing existing soil and groundwater contamination. However, that phenomenon would occur whether or not the Proposed Project is implemented and would thus not be a consequence of the Proposed Project. Furthermore, the soil management plan (SMP; see FEIR Appendix E) for construction activities would require remediation of any contamination encountered on the site. By reducing the amount of site contamination, that remediation would reduce, compared to baseline conditions, the possibility of contamination being mobilized in the future by sea level rise or storm surge.

Table 3.5-10

Lease measures LM AQ-5 and LM AQ-6 are re-designated MM AQ-1 and MM AQ-2, respectively, lease measures LM AQ-5, LM AQ-6, and LM AQ-7 are added to the Proposed Project and alternatives 2 and 3, and MM GHG-1 is added to the Proposed Project and Alternative 2 as follows:

1

Table 3.5-10: Summary Matrix of Impacts and Mitigation Measures Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation /Lease Measures or Controls	Residual Impacts
Proposed Project	**GHG-1**: The Proposed Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	GHG emissions would be significant under CEQA in 2025, 2027 and 2049 analysis years	MM GHG-1: GHG Reduction Offsets MM AQ-1: Vessel Speed Reduction Program (VSRP) MM AQ-2: Front End Loader Replacement Schedule LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~Mitigation not required although~~ LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines ~~would be applied~~ ~~LM AQ-5: Vessel Speed Reduction Program (VSRP) LM AQ-6: Front End Loader Replacement Schedule LM GHG-1: GHG Credit Fund~~ LM AQ-5: Fleet Modernization for On-Road Trucks During Construction LM AQ-6: Fleet Modernization for Construction Equipment LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks	~~GHG emissions impacts would be significant and unavoidable for all analyzed years~~ Less than significant impact

Table 3.5-10: Summary Matrix of Impacts and Mitigation Measures Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation /Lease Measures or Controls	Residual Impacts
Alternative 1 – No Project Alternative	**GHG-1**: No Project Alternative (Alternative 1) would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	No Impact	Not applicable	No Impact
Alternative 2 – Reduced Project Alternative	**GHG-1**: Reduced Project Alternative (Alternative 2) would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	GHG emissions would be significant under CEQA in analysis year 2027	MM GHG-1: GHG Reduction Offsets MM AQ-1: Vessel Speed Reduction Program (VSRP) MM AQ-2: Front End Loader Replacement Schedule LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study ~~Mitigation not required although~~ LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines ~~would be applied~~ ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ ~~LM AQ-6: Front End Loader Replacement Schedule~~ ~~LM GHG-1: GHG Credit Fund~~ LM AQ-5: Fleet Modernization for On-Road Trucks During Construction LM AQ-6: Fleet Modernization for Construction Equipment LM AQ-7: Renewable Diesel Fuel for	~~GHG emissions impacts would be significant and unavoidable for analysis year 2027~~ Less than significant impact

Table 3.5-10: Summary Matrix of Impacts and Mitigation Measures Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation /Lease Measures or Controls	Residual Impacts
			Construction Equipment and On-Road Trucks	
Alternative 3 – Product Import Terminal Alternative	**GHG-1**: Product Import Terminal Alternative (Alternative 3) would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant impact	Mitigation not required; however, the following lease measures would be applied: LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines would be applied ~~LM AQ-5: Vessel Speed Reduction Program (VSRP)~~ LM AQ-5: Fleet Modernization for On-Road Trucks During Construction LM AQ-6: Fleet Modernization for Construction Equipment LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks	Less than significant impact

1

Section 3.5.10, p. 3.5-41 through 3.5-43

The text has been revised as follows:

The mitigation monitoring program below ~~does not contain any mitigation measures, as none were found feasible. Instead, this section~~ summarizes implementation of the applicable lease and mitigation measures.

The mitigation monitoring table is revised as follows:

Lease Measure	**LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.** Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment, that meets operating and safety requirements, anytime new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. ~~Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible~~The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure. Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment, and infrastructure, and will update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with the ~~t~~Tenant~~s~~.

Lease Measure	**LM AQ-2: Periodic Review of New Technology and Regulations.** The Tenant ~~will~~shall conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consulting with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant ~~will~~shall implement the new air quality technological advancements, subject to mutual agreement, which shall not be unreasonably withheld by the Tenant.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with the tTenants.

~~Mitigation~~Lease Measure	**LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.** The Tenant shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel emissions capture and control system within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant will be required to implement the technology when operationally feasible as described in Tenant's pilot study. Implementation of the technology required under ~~T~~this measure will rely on the Tenant's pilot study evaluation and determination and is subject to mutual agreement between the Tenant and LAHD, which agreement shall not be unreasonably withheld nor implementation of technology unreasonably required.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with the ~~t~~Tenants.

~~Mitigation~~Lease Measure	**LM AQ-4: ~~Port of~~ Los Angeles Harbor Department (LAHD) Sustainable Construction Guidelines.** The project shall implement and comply with all measures as required by the Los Angeles Harbor Department's Sustainable Construction Guidelines adopted in February 2008 and updated in November 2009 during Project construction activities. These requirements shall be stipulated in the construction contracts and bid documents.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with the ~~t~~Tenant~~s~~.

Mitigation Measure	**~~L~~MM AQ-~~5~~1: Vessel Speed Reduction Program (VSRP):** ~~95~~100 percent of vessels calling at the Ecocem Dry Bulk Processing Facility ~~will be required to~~ shall comply with the expanded VSRP at ~~12 knots between~~ 40 nautical miles (nm) from Point Fermin. Vessel ~~S~~speed is confirmed by the Marine Exchange. Vessels experiencing a maritime emergency[6] that prevents compliance with the expanded VSRP may be exempt from this measure. If a maritime emergency were to occur, the vessel operators shall provide substantial evidence of a qualifying event to LAHD.
Timing	During operation.
Methodology	LAHD will include this ~~lease~~mitigation measure in lease agreements with the ~~t~~Tenant~~s~~.

Mitigation Measure	**~~L~~MM AQ-~~6~~2: Front End Loader Replacement Schedule.** The tenant shall ~~maintain a replacement schedule of~~ replace the off-road diesel front end loader ~~of~~ every two years~~,~~. ~~where an~~ The equivalent new ~~piece that~~ front end loader shall meet~~s~~ operational requirements and meet~~s~~ Tier 4 ~~Final~~ standards or cleaner or as required by state and/or local agencies, whichever is stricter~~, would be procured~~. During

[6] Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard (USCG) safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.

	replacement, the following preference will be used for consideration: first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for Tier 4 standards if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. The Tenant shall provide substantial evidence including, but not limited to, inventory reports of available equipment from manufacturers, to verify the availability and feasibility of equipment sought to be purchased in accordance with this measure.
Timing	During operation.
Methodology	LAHD will include this ~~lease~~mitigation measure in lease agreements with the ~~t~~Tenant~~s~~.
Mitigation Measure	**LM AQ-5: Fleet Modernization for On-Road Trucks During Construction.** 1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property. 2. Idling shall be restricted to a maximum of 5 minutes when not in use. 3. Tier Specifications: • From January 1, 2024, to December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available. • Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available. • A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.
Timing	During construction
Methodology	LAHD will include this lease measure in the Tenant's construction permit.
Mitigation Measure	**LM AQ-6: Fleet Modernization for Construction Equipment.** 1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards. 2. Idling shall be restricted to a maximum of 5 minutes when not in use. 3. Tier Specifications: • All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. • A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

	The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists: • A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement. • A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available. • A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.
Timing	During construction
Methodology	LAHD will include this lease measure in the Tenant's construction permit.
Mitigation Measure	**LM AQ-7: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks** The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during construction. The renewable diesel product that is used shall comply with American Society for Testing and Materials (ASTM) fuel standards. In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ultra-low sulfur diesel (ULSD) as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.
Timing	During construction
Methodology	LAHD will include this lease measure in the Tenant's construction permit.
Mitigation Measure	~~**LM GHG-1: GHG Credit Fund:** LAHD shall establish a Greenhouse Gas Fund, which LAHD shall have the option to accomplish through a Memorandum of Understanding (MOU) with the California Air Resources Board (CARB) or another appropriate entity. The fund shall be used for GHG-reducing projects and programs approved by the Port of Los Angeles, or through the purchase of emission reduction credits from a CARB approved offset registry. It shall be the responsibility of the Tenant to contribute to the fund to mitigate 11,298 MT at the existing market rate of $35.20 per carbon credit. Fund contribution shall be a one time payment of $397,690 payable upon substantial completion of Project construction. If LAHD is unable to establish the fund within one year prior to when payment is due, the Tenant shall instead purchase emission reduction credits from a CARB approved GHG offset registry.~~ **MM GHG-1: GHG Reduction Offsets.** The Tenant shall be required to purchase and retire carbon offsets related to activities that reduce, avoid, destroy, or sequester an amount of GHG emissions in an off-site location to offset the equivalent amount of GHG emissions

	generated by the Project, with the exception of electricity consumption. The Tenant shall purchase and retire carbon offsets in an amount that would be the equivalent of the Project's GHG Emissions of 4,985 Metric Tons (MT) from first year of operation until 2049 and 4,073 MT from 2049 through the end of the term of the Permit. The Tenant shall purchase and retire carbon offsets on an annual basis, commencing after construction is complete and during the first year of operation. The LAHD is in the process of developing a Greenhouse Gas Program. The Program shall be used for GHG-reducing projects and programs approved by the Port of Los Angeles. If that Program is established during the term of the Permit, the Tenant shall have the option to offset the required amount of GHG emissions through a funding contribution to the Greenhouse Gas Program rather than towards purchasing carbon offsets from a CARB-recognized registry. While the LAHD Greenhouse Gas Program is currently under development, the Tenant shall purchase and retire carbon offsets from a CARB-recognized offset registry as follows: **Carbon offsets**: The Tenant shall purchase and retire carbon offsets from a CARB-recognized registry to ensure that offsets will result in real, permanent, additional, quantifiable, verifiable, and enforceable reductions. The carbon offsets shall be verifiable by the LAHD and enforceable in accordance with the registry's applicable standards, practices, or protocols. The order of priority for purchasing (any one or more) carbon offsets shall be considered as follows: i. Originating within the local area; ii. Originating within the South Coast Air Basin; iii. Originating within the state of California; or iv. If sufficient local and in-state offsets are not available, the Tenant shall purchase conforming national offsets registered with a CARB-recognized registry. **Adjustment of Tenant's Required Offsets through Other Verified GHG Emission Reductions:** The Tenant may pursue the following modifications to the Project's total estimated GHG emissions identified in this measure. These modifications may be pursued in conjunction with or independent of each other on an annual basis. *a) Adjustment in Natural Gas Consumption* In the event natural gas consumption differs from the assumptions or is offset in the future due to changes in technology, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required offsets based on actual natural gas consumption, as verified through utility bills, rather than projected future usage. To adjust the Tenant's required number of offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the time period under consideration and shall provide copies of utility bills showing the amount of natural gas consumed at the project site along with a revised greenhouse gas emission calculation performed by an independent, qualified third-party verifier.

	or *b) Adjustment in GHG Emissions* In the event of changes in activities, efficiency, reduced operations, or for any other purpose, the Tenant may request an adjustment of the required carbon offsets based on an evaluation of actual GHG emissions rather than future projected GHG emission calculations. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall make a request in writing to the LAHD for review and approval for the calendar year under consideration and shall submit a report within 60 days that quantifies the actual greenhouse gas emissions by an expert or an independent, qualified third-party. The evaluation of actual greenhouse gas emissions must be performed using acceptable industry standards and protocols for all sources that were included in the Project's GHG emissions calculations under MM GHG-1. LAHD review shall occur within 30 days of receipt of the submitted report. Any expenses incurred by LAHD in processing the Tenant's request, including retaining an independent third-party verifier to peer review the report, shall be borne by the Tenant. or *c) Implementation of Additional GHG Reduction Methods* In addition, the Tenant may request a reevaluation of required carbon offsets to be purchased according to this paragraph. The Tenant may implement different and additional GHG reduction methods that are equally or more effective if new technology and/or other feasible measures become available during the term of the Permit. To adjust the Tenant's required number of carbon offsets for purchase, the Tenant shall identify such additional GHG reduction actions and must quantify the GHG emission reductions from these GHG reduction actions by an independent, qualified third-party verifier. Once the GHG reduction actions are found to be feasible and are reviewed and approved by LAHD staff, the Tenant may request that LAHD reduce its required purchase of carbon offsets by the equivalent amount of demonstrated reduction. Any expenses incurred by LAHD in processing the Tenant's request, including retaining a third-party verifier, shall be borne by the Tenant.
Timing	Payable ~~upon substantial completion of Project construction~~ annually during operation.
Methodology	LAHD will include this lease measure in lease agreements with the ~~t~~Tenant~~s~~.

3.2.6 Changes Made to Section 3.7 Noise

On page 3.7-1, line 20, the sentence is revised as follows:

Mitigation measures NOI-1, ~~and~~ NOI-2, and NOI-3 would reduce construction noise, but…

On page 3.7-18, MM NOI-3 is added after MM NOI-2 as follows:

MM NOI-3: Usage of Wooden Cushion Block. The construction contractor shall use a wooden cushion block to dampen the noise impact from pile driving. This wooden cushion block shall be placed between the pile and hammer. It shall only be applicable to driving concrete piles.

On page 3.7-19, the first sentence is revised as follows:

Mitigation measures MM NOI-1 and MM NOI-2 are expected to reduce sound levels from pile driving activity by at least 5 dBA where they are ~~it is~~ feasible to apply. The degree of sound level reduction that MM NOI-3 might achieve is unknown.

On page 3.7-24 the same revisions applied to the Proposed Project text, above, are applied to Alternative 2, Reduced Project.

On pages 3.7-25 and 3.7-26, the same revisions applied to the Proposed Project text, above, are applied to Alternative 3, Product Import Project.

3.2.7 Changes Made to Section 3.8 Ground Transportation.

In response to Comment SCAQMD-1, Table 3.8-4 is modified as follows to reconcile a discrepancy in the number of operational truck trips between the air quality analysis and the informational ground transportation analysis.

Table 3.8-4: Truck Trip Generation by the Proposed Project and Alternatives

Activity	CEQA Baseline	Proposed Project	Alternative 1 – No Project Alternative	Alternative 2 – Reduced Project	Alternative 3 – Product Import Terminal
Annual Truck trips (one-way trips/year)	0	~~66,000~~ 65,950	0	44,500	62,000
Daily Truck Trips (one-way trips/day)	0	263	0	178	248
Average trip length (VMT, miles/one-way trip)	0	73	N/A	73	73

Note: number of trips represent at-capacity operations of the facility.
Daily trips derived from annual trips divided by 50 weeks per year, 5 days per week.

To reflect updated project schedules, Table 3.8-5 is revised as follows:

Table 3.8-5: Planned Transportation Improvement Projects in the Project Area

Project	Construction Start	Construction Completion
Ecocem Project (operational Q1 2027~~6~~)	~~07/2024~~06/30/2025	~~12/31/2025~~11/30/2026
Berth 200 Roadway[1]	09/2026	~~01/01/2027~~03/01/2028
Closed Avalon Blvd., Harry Bridges Blvd. to S. Broad Ave. (part of Avalon Gateway project currently under design)[1,2]	03/01/2026	N/A
Realigned Water St.[1]	Completed	
Closed Avalon Blvd., S. Broad Ave. to Water St.	~~12/31/2026~~03/02/2028	N/A
Avalon Pedestrian Bridge and Gateway	~~12/31/2026~~03/01/2026	~~01/2027~~08/31/2028

Source:

[1]Port of Los Angeles (2023)
[2] This route will be permanently closed after completion of the Avalon Pedestrian Bridge and Gateway project.

3.2.8 Changes Made to Chapter 4 Cumulative Analysis

In response to Comment E4SS-34, the second sentence of the last paragraph on p. 4-23 (Section 4.2.2) is revised as follows:

> This increase is assumed on the basis of the increased size of vessels, as vessel ~~numbers~~calls are not expected to increase substantially (for example, in years 2001 through 2005, vessel calls to the Port of Los Angeles averaged approximately 2,750 calls per year, whereas vessel calls in years 2019 through 2023 averaged approximately 1,800 calls per year, a decrease of approximately 30 percent. In the same period, however, annual container cargo throughput [the major category for the Port and a surrogate for total cargo] increased by nearly 50 percent).

Section 4.3.1 is revised to eliminate the Greenhouse Gas Emissions bullet from sections 4.3.1, 4.3.3, and 4.3.4.

Table 4-2 is revised as follows:

Table 4-2 Summary Matrix of Residual Impacts, Cumulative Analysis and Mitigation Measures for the Proposed Project and Alternatives.

Resource Area	Environmental Impacts	Proposed Project Residual Impacts	Applied Mitigation/Lease Measures or Controls	Cumulative Analysis for Proposed Project	Cumulative Analysis for build Alternatives 2 and 3
4.2.1 Air Quality	**AQ-1:** Would the Proposed Project or alternatives result in construction-related emissions that would make a cumulatively considerable contribution to a significant cumulative impact from exceedance of the SCAQMD threshold of significance in Table 3.1-4?	Less than significant	LM AQ-4: POLA Sustainable Construction Guidelines would be applied.	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
	AQ-2: Would the Proposed Project or alternatives construction result in off-site ambient air pollutant concentrations that would make a cumulatively considerable contribution to a significant cumulative impact from exceedance of a SCAQMD threshold of significance in Table 3.1-5?	Less than significant	No mitigation required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
	AQ-3: Would operation of the Proposed Project or alternatives result in operational emissions that would make a cumulatively considerable contribution to a significant cumulative impact from exceedance of a SCAQMD threshold of significance in Table 3.1-6?	Operation emissions would be significant for NOx in all operational years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology and Regulations LM AQ-3: At-Berth Vessel Control Pilot Project LM AQ-5: Vessel Speed Reduction Program would be applied LM AQ-6: Front End Loader Replacement Schedule	**Cumulatively considerable and unavoidable contribution to a significant cumulative impact related to operational NOx emissions**	**Similar contributions as the Proposed Project to a lesser extent**

Resource Area	Environmental Impacts	Proposed Project Residual Impacts	Applied Mitigation/Lease Measures or Controls	Cumulative Analysis for Proposed Project	Cumulative Analysis for build Alternatives 2 and 3
	AQ-4: Would operation of the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative impact related to offsite ambient air pollutant concentrations exceeding a SCAQMD threshold of significance?	Operation-related ambient pollutant concentrations would be significant in all years for annual and 24-hr PM_{10}, and 24-hr $PM_{2.5}$	LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-5; LM AQ-6 is applicable only to Proposed Project and Reduced Project	**Cumulatively considerable and unavoidable contribution to an existing significant cumulative impact related to ambient concentrations of PM_{10} and $PM_{2.5}$**	**Similar contributions as the Proposed Project to a lesser extent**
	AQ-5: Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative impact from exposure of receptors to significant levels of toxic air contaminants?	Health risks would be below the significance threshold for all receptor types	LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4, LM AQ-5; LM AQ-6 is applicable only to Proposed Project and Reduced Project	**Cumulatively considerable and unavoidable contribution to an existing significant cumulative impact related to residential, non-residential sensitive, and occupational cancer risk, occupational chronic and acute hazard indices**	**Similar contributions as the Proposed Project to a lesser extent**
	AQ-6: Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative impact from conflict with or obstruction of the implementation of an applicable AQMP?	Less than significant	No mitigation required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
4.2.2 Biological Resources	**BIO-1**: Would the Proposed Project or alternatives contribute to a cumulative substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less than significant after mitigation	MM BIO-1: Protect marine mammals	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project

Resource Area	Environmental Impacts	Proposed Project Residual Impacts	Applied Mitigation/Lease Measures or Controls	Cumulative Analysis for Proposed Project	Cumulative Analysis for build Alternatives 2 and 3
4.2.3 Energy	**EN-1:** Would the Proposed Project make a cumulatively considerable contribution to a significant cumulative impact related to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	Less than significant	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
4.2.4 Geology and Soils	**GEO-1:** Would the Proposed Project make a cumulatively considerable contribution to a significant cumulative impact related to geologic units or soils that are unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?	Less than significant	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
4.2.5 Greenhouse Gases	**GHG-1**: Would the Proposed Project or alternatives generate GHG emissions, either directly or indirectly, that would make a cumulatively considerable contribution to a significant cumulative impact?	GHG emissions would be significant under CEQA in 2025, 2027 and 2049 analysis years	LM AQ-1, LM AQ-2, LM AQ-4, and MM GHG-1: GHG Reduction Offsets	No ~~C~~cumulatively considerable ~~and unavoidable~~ contribution to an existing significant cumulative impact ~~related to GHG and global climate change~~	Similar contributions as the Proposed Project to a lesser extent
4.2.6 Land Use	**LU-1:** Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative impact related to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact?	Less than significant	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
4.2.7 Noise	**NOI-1:** Would the Proposed Project or alternatives result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project that would result in a cumulatively considerable exceedance of				

Resource Area	Environmental Impacts	Proposed Project Residual Impacts	Applied Mitigation/Lease Measures or Controls	Cumulative Analysis for Proposed Project	Cumulative Analysis for build Alternatives 2 and 3
	standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor.	Significant and unavoidable	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving MM NOI-3: Usage of a Wooden Cushion Block	**Cumulatively considerable and unavoidable contribution to a significant cumulative impact related to daytime construction noise**	**Similar contributions as the Proposed Project to a lesser extent**
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.	Significant and unavoidable	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities Noise Reduction of Landside Pile Driving MM NOI-3: Usage of a Wooden Cushion Block	**Cumulatively considerable and unavoidable contribution to a significant cumulative impact related to night-time construction noise**	**Similar contributions as the Proposed Project to a lesser extent**
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater.	Less than significant	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact relayed to operational noise	Same as the Proposed Project
	NOI-2: Would the Proposed Project or alternatives result in a considerable contribution to a cumulatively significant	Less than significant	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact related to	Same as the Proposed Project

Resource Area	Environmental Impacts	Proposed Project Residual Impacts	Applied Mitigation/Lease Measures or Controls	Cumulative Analysis for Proposed Project	Cumulative Analysis for build Alternatives 2 and 3
	generation of excessive groundborne vibration or groundborne noise levels?			groundborne noise or vibration	
4.2.8 Ground Transportation	**TRANS-1:** Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No impact	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
	TRANS-2: Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative conflict or inconsistency with CEQA Guidelines section 15064.3, subdivision (b)?	No Impact	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
	TRANS-3: Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative impact related to hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No impact	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
	TRANS-4: Would the Proposed Project or alternatives make a cumulatively considerable contribution to a significant cumulative impact related to inadequate emergency access?	No impact	No mitigation is required	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project
4.2.9 Tribal Cultural Resources	**TCR-1:** Would the Proposed Project or alternatives have a potential to make a cumulatively considerable contribution to a significant cumulative impact related to substantial adverse changes in the significance of a tribal cultural resource,	Less than significant	No mitigation is required but SC TCR-1 would be employed SC TCR-1: Stop Work in the Area if	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project

Resource Area	Environmental Impacts	Proposed Project Residual Impacts	Applied Mitigation/Lease Measures or Controls	Cumulative Analysis for Proposed Project	Cumulative Analysis for build Alternatives 2 and 3
	defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?		Prehistoric and/or Archaeological Resources are Encountered		
	TCR-2: Would the Proposed Project or alternatives have a potential to make a cumulatively considerable contribution to a significant cumulative impact related to substantial adverse changes in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?	Less than significant	No mitigation is required but SC TCR-1 would be employed SC TCR-1: Stop Work in the Area if Prehistoric and/or Archaeological Resources are Encountered	No cumulatively considerable contribution to an existing significant cumulative impact	Same as the Proposed Project

1

The Initial Study (IS) for the Proposed Project, published in March, 2022, evaluated the environmental issues in accordance with CEQA Guidelines Appendix G, which is intended to focus the EIR on potentially significant impacts. The IS concluded that the Proposed Project would have no impact in a number of resource areas, and those issue areas were not considered in the DEIR. In other resource areas, the IS concluded that the Proposed Project's impacts would be less than significant and similarly eliminated those areas from further analysis in the DEIR. After publication of the DEIR, LAHD determined that it is appropriate to consider the potential for those less-than-significant impacts to make cumulatively considerable contributions to existing significant cumulative impacts. Accordingly, LAHD has prepared an additional section in Chapter 4 Cumulative Analysis to include an analysis of those cases. The FEIR is revised to include that section as follows:

Section 4.2.10 Other Cumulative Impacts

The IS for the Proposed Project, published in March 2022, evaluated the environmental issues in accordance with CEQA Guidelines Appendix G, which is intended to focus the EIR on potentially significant impacts. The IS concluded that the Proposed Project would have no impact in a number of resource areas, and those resource areas were therefore not considered in the DEIR. In other resource areas, the IS concluded that the Proposed Project's impacts would be less than significant and thus similarly eliminated those areas from further discussion in the DEIR. LAHD has determined that it is appropriate to consider whether those less-than-significant impacts could potentially make cumulatively considerable contributions to significant cumulative impacts. This analysis summarizes LAHD's conclusions in that regard.

Aesthetics -1a: The IS concluded that the Proposed Project's aesthetic impacts would be less than significant with regard to having a substantial adverse effect on a scenic vista, conflict with zoning and regulations regarding scenic quality, and addition of light or glare. As described in the IS, the Project site is in a remote, industrial portion of the Port that is not readily visible to the public and is not part of a scenic vista, the Proposed Project's physical features would be consistent with the existing visual character of the immediate area, and the existing nighttime light environment is characterized by bright industrial lighting. None of the related projects in the immediate area would substantially alter the existing view. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Air Quality -3d: The IS concluded that the Proposed Project's impacts with regard to odors would be less than significant. The LAHD is not aware that the Project site currently experiences a significant odor impact, and as described in the IS, any additional odors generated by the Proposed Project and the nearby Vopak project (primarily diesel exhaust fumes) would be consistent with the existing odor environment and would not be adjacent to sensitive receptors. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Biology -4b: The IS concluded that the Proposed Project's impacts with regard to riparian habitat or sensitive natural communities would be less than significant. The Port supports sensitive natural communities, including eelgrass and kelp beds, and non-native species are a component of the marine biota of the Port. However, as described in the IS, construction and operation of the Proposed Project would not adversely affect eelgrass or kelp, and the small number of vessels and the existing biofouling and ballast water programs minimize the potential for the Proposed Project to introduce invasive species.

Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Cultural Resources -5a, -5b: The IS concluded that the Proposed Project's impacts on historical and archeological resources would be less than significant. As described in the IS, a cultural resources study determined that the Proposed Project does not have the potential to adversely affect the historical resources in the general area. Because the Project site is on engineered fill placed early in the 20th Century, archaeological resources would not be encountered during construction. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Energy -6b: The IS concluded that the Proposed Project's impacts with respect to state or local energy plans for renewable energy or energy efficiency would be less than significant because the Proposed Project would be required to comply with applicable renewable energy and energy efficiency plans, standards, and regulations pursuant to the California Building Code, California Green Building Standards, and the City of Los Angeles Green Building Code, which would reduce long-term energy demand. The Proposed Project would also be required to comply with the Port's Climate Action Plan, Executive Directive No. 10, the Sustainable City pLAn, LAHD's Sustainable Construction guidelines, and the San Pedro Bay CAAP. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Geology -7a - d: The IS concluded that the Proposed Project's impacts with regard to seismic risks, soil erosion, and expansive soils would be less than significant. As described in the IS, project design and construction would take geological risk factors into account, incorporating appropriate geotechnical and engineering methods. Furthermore, seismic and soil issues are site-specific, meaning that a significant cumulative impact does not exist. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Hazards and Hazardous Materials -9a, -9b: The IS concluded that the Proposed Project's impacts with regard to the routine use or upset of hazardous materials would be less than significant. The IS described the control measures that would be employed during construction and operation to control the small amounts of hazardous materials that would be used and to minimize potential releases of hazardous materials and hazardous wastes from vessels and on-site equipment. Furthermore, the LAHD is not aware that the Project site or the surrounding area currently experiences a significant cumulative impact with regard to the routine use of hazardous materials.

As a result of a comment on the Draft EIR by the Department of Toxic Substances Control, the LAHD is aware of existing subsurface contamination at the nearby Gibson Environmental site, which is undergoing RCRA remediation. However, construction activities at the Project site would not disturb the Gibson site, and the IS described the routine measures that would be employed during construction to minimize the exposure of workers and the environment to hazardous wastes at the Project site. In addition, the Soil Management Plan prepared for the Proposed Project (FEIR Appendix *) includes additional measures to ensure that any contaminated soils that the construction work may encounter is managed properly and accordance with all applicable laws and regulations. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Hydrology and Water Quality -10a, -10b, 10c.iii, 10-d: The IS concluded that the Proposed Project's impacts with respect to water quality standards, groundwater,

stormwater treatment, and flooding would be less than significant. Although areas of Los Angeles Harbor are listed as impaired due to sediment contamination, water quality in the Harbor meets standards set by the Regional Water Quality Control Board; accordingly, LAHD considers that a significant cumulative impact does not exist. The IS described the controls that would be in place for the Proposed Project, including construction-related controls required by the Construction General Permit and Waste Discharge Requirements, operational controls required by the NPDES Industrial General Permit, and structural controls required by the Low-Impact Development and the City's stormwater permit. Groundwater underlying the Project site has no beneficial uses and would not be substantially affected by the Proposed Project. The Proposed Project includes a new stormwater system designed to accommodate anticipated flood flows and manage runoff pollutants. As described in the IS, the Project site is not vulnerable to substantial flooding. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Public Services -15a.v: The IS concluded that the Proposed Project's impacts with respect to the U.S. Coast Guard's vessel traffic safety facilities would be less than significant. The Proposed Project and the adjacent Vopak project would add oceangoing vessel traffic to the overall vessel traffic in the Port, but the increase would be negligible in the context of total traffic volumes. Furthermore, the existing facilities are adequate to manage vessel traffic safely, such that a significant cumulative impact does not exist. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Transportation/Traffic -17d, 17-e: The IS concluded that the Proposed Project's impacts with respect to the emergency access and vessel traffic safety would be less than significant. The Proposed Project in concert with other nearby projects such as the Vopak terminal, would not alter emergency access and would not, given the local roadways' capacity, substantially hinder access to Fire Station 49. Vessel traffic at Berth 191, including that serving the Vopak terminal, would be too infrequent to hinder fireboat operations or increase vessel safety risks. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

Utilities and Service Systems: The IS concluded that the Proposed Project's impacts with respect to utility systems and solid waste generation would be less than significant. As discussed in the IS, the existing utility infrastructure is adequate to serve the Proposed Project and no off-site construction would occur. Accordingly, no relocation or construction of water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities would be necessary. The existing infrastructure is adequate to serve the related projects in the area of the Proposed Project; accordingly, a significant cumulative impact does not exist. The IS concluded that existing solid waste disposal facilities are adequate to accommodate the Proposed Project's small amount of solid waste, and that the Proposed Project would comply with federal, state, and city solid waste regulations and codes and with state and city waste minimization, diversion, and recycling regulations and policies. Accordingly, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact.

3.2.9 Changes Made to Chapter 5 Comparison of Alternatives

In Section 5.3.1 the following changes are made:

As shown in Table 5-2, the Proposed Project, the Reduced Project Alternative (Alternatives 2) and the Product Import Terminal Alternative (Alternative 3) would have significant unavoidable impacts on air quality~~, greenhouse gases (GHG),~~ and noise. Alternative 1 (No Project Alternative) would have no significant impacts in any resource area.

Table 5-2: Number of Unavoidable Significant Impacts by Alternative

Environmental Resource Area	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project	Alternative 3 Product Import Terminal
Air Quality	4	0	4	3
~~Greenhouse Gases~~	~~1~~	~~0~~	~~1~~	~~1~~
Noise	2	0	2	2

Notes:
The analysis includes only project-level impacts after mitigation has been applied, not cumulatively considerable contributions to significant cumulative impacts.
Alternatives eliminated from further consideration are not included.

~~For GHG emissions, the Proposed Project, Reduced Project Alternative (Alternative 2), and Product Import Terminal Alternative (Alternative 3) would have significant and unavoidable impacts. The Proposed Project would have the highest amount of combined GHG emissions during construction and operations. The Product Import Terminal Alternative (Alternative 3) because of its lower construction activity levels than the Proposed Project and Reduced Project Alternative (Alternative 2), and due to the shifting of binder production (and associated GHGs) to overseas would emit the lowest amount of greenhouse gases under this CEQA analysis.~~

In Section 5.3.2 the following change is made:

However, the Product Import Terminal Alternative (Alternative 3), because of its lower operational activity levels, would have overall the lowest severity of impacts related to noise~~,~~ and air quality ~~and greenhouse gases~~. Accordingly, the Product Import Terminal Alternative (Alternative 3) is deemed to be the environmentally superior alternative.

3.2.10 Changes Made to Chapter 11 References

The following are added to the references for Section 3.1:

CARB, 2005e. Review of the California Ambient Air Quality Standard for Ozone. October 2005 Revision.

City of Los Angeles. 2019. Air Quality and Health Effects. Sierra Club v. County of Fresno. Prepared for City of Los Angeles Department of City Planning. October.

IPCC. 2023. Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115, doi: 10.59327/IPCC/AR6-9789291691647.

LAHD. 2021. Environmental Guidance for Industrial Fill Material. 13p. December.

SCAQMD. 2015c. Application of the South Coast Air Quality Management District for Leave to File Brief of *Amicus Curiae* in Support of Neither Party and [Proposed] Brief of

Amicus Curiae. In the Supreme Court of California. *Sierra Club v. County of Fresno*. Supreme Court Case No. S219783. April 13, 2015.

SMAQMD (Sacramento Metropolitan Air Quality Management District). 2019. Friant Ranch Interim Recommendation. Attachment 4 in City of Los Angeles 2019.

USEPA. 2016. Integrated Science Assessment (ISA) for Oxides of Nitrogen – Health Criteria (Final Report, 2016). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-15/068, 2016. https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879.

USEPA. 2019a. Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE). https://www.epa.gov/benmap.

USEPA. 2019b. Integrated Science Assessment for Particulate Matter (EPA/600/R-19/188).

USEPA. 2020. Integrated Science Assessment for Ozone and Related Photochemical Oxidants. Office of Research and Development. EPA/600/R-20/012. April. www.epa.gov/isa.

USEPA, 2024. Ozone Pollution and Your Patients Health. https://www.epa.gov/ozone-pollution-and-your-patients-health/what-ozone#:~:text=It%20is%20also%20formed%20in,air%20quality%20advisories%20for%20ozone.

3.2.11 Changes Made to Appendix B-1 Air Quality

On page B1-10 the description of the Advanced Clean Fleet Regulation is updated as follows:

Additionally, in April 2023, the Advanced Clean Fleets (ACF) regulation was proposed by CARB, with the goal of achieving a zero-emission truck and bus California fleet by 2045 for certain market segments such as government fleets, last mile delivery, and drayage applications. However, since the ACF rule does not specify cement truck fleets and has yet to receive a waiver by the USEPA; no emissions reduction credits from this rule, as well as the Advanced Clean Trucks (ACT) rule, were quantified in the analysis. Per the Clean Air Act, California must seek a waiver from the USEPA to enact emissions standards that are more stringent than those enacted at the federal level. California is granted this ability because of its unique air quality issues, but for each California regulation CARB must seek a waiver from USEPA. On January 13, 2025, CARB withdrew its request for a waiver and authorization to USEPA for its Advanced Clean Fleets Regulation.

On page B-1-10 the description of the Commercial Harbor Craft Regulation is updated as follows:

The 2022 amendments to this regulation declare that effective January 2023, all commercial harbor craft operating within regulated California Waters must comply with the renewable diesel fuel requirements as laid forth in Section 93118.5. Similarly, under the amendment, new and newly acquired engines are required to meet the most stringent marine standards (Tier 4 for most applications, and Tier 3 or cleaner for commercial fishing) based on the rule's implementation schedule that begins in 2024 (CARB, 2023). In addition, the regulation has been expanded to include more classes of harbor craft, including pilot boats.

On January 10, 2025, CARB received partial authorization for the 2022 CHC Amendments. In addition, on January 13, 2025, CARB withdrew its request for a waiver and authorization to USEPA for its Advanced Clean Fleets Regulation. Therefore, this analysis conservatively does not take credit for potential emissions reductions. ~~For purposes of the current study, because there is not yet an enforceable mechanism for this rule, the analysis does not quantify potential reductions benefits of the 2022 CHC rule amendments.~~

In response to Comment E4SS-10, the following changes are made:

On Appendix B1, page B1-60, Note 7 is revised as follows:

[7] $PM_{2.5}$ is ~~89~~92% of PM_{10}, per SCAQMD 2006 Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds, Table 5.

As explained in the Response to Comment E4SS-10, this change does not alter the significance determinations or the HRA calculations presented in the DEIR.

On Appendix B1, page B1-110, in response to Comment E4SS-10, the global warming potential values and note 7 in the Conversion Factors and Constants table were updated as follows to be consistent with the analysis performed in the DEIR:

Ecocem Materials Ltd.
Port of Los Angeles

DRAFT

Conversion Factors and Constants:

Parameter	Value	Unit of Measure	Notes
Maximum rated heat input capacity	36	MMBTU/hr	Based on Ecocem correspondence in 2018
Natural Gas HHV	1050	MMBtu/MMscf	SCAQMD Rule 2012 Appendix A Chapter 3 Table 3-D
Average heat input	12.39	MMBTU/hr	8% moisture content; correspondence with the Ecocem on March 2, 2023.
Maximum heat input	28.09	MMBTU/hr	12% moisture content; correspondence with the Ecocem on March 2, 2023.
K	1.19SE-07	ppm NOx per lb/scf	40 CFR 60 Appendix A Method 19 (SCAQMD Rule 2012 Appendix A Chapter 4 Equation 28a)
O_2	3	%	Standard
F	8710	dscf/MMBtu	40 CFR 60 App A Method 19
Conversion factor	35.3147	ft^3/m^3	--
Conversion factor	453,592	mg/lb	--
Conversion factor	453.592	g/lb	--
Normal Operating Schedule for Dryer	24	hours/day	Correspondence with Ecocem on March 2, 2023.
	7	days/week	Correspondence with Ecocem on March 2, 2023.
	45	weeks/year	Correspondence with Ecocem on March 2, 2023.
Maximum Operating Schedule for Dryer	24	hours/day	Email correspondence with Ecocem team on November 8, 2022
	7	days/week	Correspondence via phone with Clive Moutray and David Mulhall, Ecocem, on September 29, 2022.
	52	weeks/year	Ecocem correspondence received on May 26, 2022.
Monthly heat input limit (proposed)	11,000	MMBtu/month	Correspondence with Ecocem on March 2, 2023.
Annual heat input limit (proposed)	195,000	MMBtu/year	Correspondence with Ecocem on March 2, 2023.
Carbon Dioxide (CO_2) GWP	1	--	See note 7
Methane (CH_4) GWP	~~25~~ 29.8	--	See note 7
Nitrous Oxide (N_2O) GWP	~~298~~ 273	--	See note 7

Notes:

[1] CO, SOx, and VOC emission factors were referenced from SCAQMD's AER Default Emission Factors for Natural Gas/Other Equipment dated January 2022 Accessed at https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/default-combustion-emission-factors.pdf?sfvrsn=12.

[2] NOx guarantee from manufacturer provided via phone correspondence with Ecocem, Coen, Thyssenkrupp, and Bay City Boilers on October 4, 2022.

[3] TAC emissions were estimated using the AER Reporting Tool Default Combustion Emission Factors for Toxic Air Contaminants. Available online at:

[4] The emission factor for PAHs represents a combined default emission factor for toxic compounds within the PAH family.

[5] The ammonia emission factor corresponds to equipment without Selective Non Catalytic Reduction (SNCR).

[6] CO_2, CH_4, and N_2O emission factors were estimated using SCAQMD's 400-CEQA Greenhouse Gas Estimator. Available online at: https://www.aqmd.gov/docs/default-source/permitting/ceqa-2017/ghg-estimator-(2017-11).xlsx?sfvrsn=8

[7] GHG emissions in CO_2e were estimated using GWP values as referenced from the ~~SCAQMD Greenhouse Gas Estimator~~ Intergovernmental Panel On Climate Change (IPCC) 6th Assessment Report.

[8] AHU and AHC were calculated as the average rated heat input capacity multiplied by the emissions factor. MHU and MHC were calculated as the maximum rated heat input capacity multiplied by the emission factor. The emissions were uncontrolled.

[9] MDU and MDC were calculated as MHU and MHC multiplied by the maximum operating schedule, respectively. The emissions were uncontrolled.

[10] Annual PTE and MAC were calculated as the proposed annual fuel consumption multiplied by the emission factor.

[11] 30DA was calculated as the proposed monthly heat input limit multiplied by the emission factor divided by 4.3 weeks per month multiplied by the maximum operating schedule.

[12] AA was calculated as the AHC multiplied by the normal operating schedule.

[13] GBFS entered the dryer with a moisture content of 12%, based on Ecocem written correspondence received on November 8, 2022.

[14] Gypsum entered the dryer with a moisture content of 2.5%, based on the technical specification provided by Ecocem correspondence on May 20, 2022.

Abbreviations

30DA - 30 days daily average
AA - annual average
AHC - average hourly controlled
AHU - average hourly uncontrolled
CEQA- California Environmental Quality Act
CH_4 - Methane
CO_2 - Carbon Dioxide
dscf - dry standard cubic feet
ft - feet
GBFS - granulated blast furnace slag
GHG - greenhouse gas
GWP - global warming potential
hr - hour
lb - pound
HHV- higher heating value
m - meter
MAC- maximum annual controlled
MDC - maximum daily controlled
MDU - maximum daily uncontrolled
mg - 10^{-3} gram
MHC - maximum hourly controlled
MHU - maximum hourly uncontrolled
MMBTU - 10^6 British thermal unit
MMscf - 10^6 standard cubic feet
Nm^3 - normal cubic meter
N_2O - nitrous oxide
NOx - nitrogen oxides
PAHs - polycyclic aromatic hydrocarbons
ppm- parts per million
PTE - potential to emit
SCAQMD - South Coast Air Quality Management District
scf - standard cubic feet
SOx - oxides of sulfur
TAC - toxic air contaminant
tpy - tons per year
VOC - volatile organic compounds
yr - year

1

3.2.12 Changes Made to Appendix B-3 Health Risk Assessment

In response to Comment E4SS-24, p. B3-4 and the reference to SCAQMD (2005) in Section 8.0 of Appendix B3 (p. B3-49) are revised as follows:

p. B3-4: In accordance with SCAQMD guidance (SCAQMD ~~2005~~2008), for the construction emissions,...

p. B3-49: SCAQMD, ~~2005. Personal communication with J. Koizumi. September 21st~~ 2008. Localized Significance Threshold Methodology. July. http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds...

In response to Comment E4SS-26, Profile 6239 for cobalt in Table B3-1 is revised as shown below.

Table B3-1. Speciation Profiles for PM_{10} and TOG

	Weight Fraction of PM_{10}									Weight Fraction of TOG[a]		
Toxic Air Contaminant [b]	**HARP TAC ID**	**Profile 9901: Diesel IC Engine Exhaust [c]**	**Profile 4251: Marine Vessels - MGO (0.1 PCT S) [d]**	**Profile 6239: 2023 Offroad Diesel Vehicle Exht [c,d,e]**	**Profile 7231: 2023 Heavy-Duty Diesel Truck-idle [c,d,e]**	**Profile 7233: 2023 Heavy-Duty Diesel Truck-transient [c,d,e]**	**Profile 472: Tire Wear [c]**	**Profile 473: Brake Wear [c]**	**Profile 400: Gasoline Vehicles**	**Profile 2303: Gasoline Vehicles**	**Profile 719: Natural Gas IC Engines**	**Profile 818: Diesel IC Engine Exhaust [d]**
DPM	9901	1	0	0	0	0	0	0	0	0	0	0
Arsenic	7440382	0	0	0.000002	0	0	0	0.00001	0	0	0	0
Beryllium	7440417	0	0	0	0	0	0	0	0	0	0	0
Bromine	7726956	0	0	0	0	0	0.000015	0.00004	0.0005	0	0	0
Cadmium	7440439	0	0	0.000026	0	0	0	0	0	0	0	0
Chlorine	7782505	0	0	0.000029	0.000073	0.00018	0.0078	0.0015	0.07	0	0	0
Chromium III	16065831	0	0	0.000077	0.000059	0.00017	0.000029	0.0011	0	0	0	0
Chromium VI	18540299	0	0	0.0000041	0.0000031	0.0000090	0.0000015	0.00006	0.000025	0	0	0
Cobalt	1216	0	0	0.0000050	0	0	0	0	0	0	0	0
Copper	7440508	0	0	0.000094	0.000031	0.00015	0.00049	0.011	0.0005	0	0	0
Lead	7439921	0	0	0.000011	0.000001	0.000054	0.00016	0.00005	0	0	0	0
Manganese	7439965	0	0	0.000047	0.000024	0.000064	0.0001	0.0017	0.0005	0	0	0
Mercury	7439976	0	0	0.000008	0	0.000001	0	0	0	0	0	0
Nickel	7440020	0	0	0.000009	0.000023	0.00007	0.00005	0.00066	0.0005	0	0	0
Selenium	7782492	0	0	0.000009	0.000002	0.000006	0.00002	0.00002	0	0	0	0
Sulfates	9960	0	0.08	0.050	0.026	0.098	0.0025	0.033	0.45	0	0	0
Vanadium	7440622	0	0	0.000001	0	0.000005	0	0.00066	0	0	0	0
1,3-Butadiene	106990	0	0	0	0	0	0	0	0	0.0024	0	0.0022
Acetaldehyde	75070	0	0	0	0	0	0	0	0	0.0090	0.0003	0.084
Acrolein	107028	0	0	0	0	0	0	0	0	0.000014	0	0
Benzene	71432	0	0	0	0	0	0	0	0	0.039	0.0011	0.023

	Weight Fraction of PM_{10}									Weight Fraction of TOG[a]		
Toxic Air Contaminant [b]	**HARP TAC ID**	**Profile 9901: Diesel IC Engine Exhaust [c]**	**Profile 4251: Marine Vessels - MGO (0.1 PCT S) [d]**	**Profile 6239: 2023 Offroad Diesel Vehicle Exht [c,d,e]**	**Profile 7231: 2023 Heavy-Duty Diesel Truck-idle [c,d,e]**	**Profile 7233: 2023 Heavy-Duty Diesel Truck-transient [c,d,e]**	**Profile 472: Tire Wear [c]**	**Profile 473: Brake Wear [c]**	**Profile 400: Gasoline Vehicles**	**Profile 2303: Gasoline Vehicles**	**Profile 719: Natural Gas IC Engines**	**Profile 818: Diesel IC Engine Exhaust [d]**
Chlorobenzene	108907	0	0	0	0	0	0	0	0	0	0	0
Ethyl Benzene	100414	0	0	0	0	0	0	0	0	0.011	0.0001	0.0035
Formaldehyde	50000	0	0	0	0	0	0	0	0	0.021	0.0081	0.17
Hexane	110543	0	0	0	0	0	0	0	0	0.0078	0.0002	0.0018
Methanol	67561	0	0	0	0	0	0	0	0	0.00020	0	0.00034
Methyl tert-butyl ether	1634044	0	0	0	0	0	0	0	0	0.0047	0	0
Methyl Ethyl Ketone	78933	0	0	0	0	0	0	0	0	0.0015	0	0.017
Naphthalene	91203	0	0	0	0	0	0	0	0	0.0037	0	0.00097
Propylene	115071	0	0	0	0	0	0	0	0	0.022	0.017	0.030
Styrene	100425	0	0	0	0	0	0	0	0	0.0022	0	0.00066
Toluene	108883	0	0	0	0	0	0	0	0	0.048	0.00040	0.017
Xylenes	1330207	0	0	0	0	0	0	0	0	0	0.00040	0.012
Applicable Sources		All diesel IC engines - harbor craft, marine vessel, truck, offroad equipment (CANCER/ CHRONIC)	Ship main & auxiliary engines (ACUTE ONLY[f])	Construction equipment, onsite mobile equipment, harbor craft (ACUTE ONLY[f])	Diesel truck idling exhaust (ACUTE ONLY[f])	Diesel truck driving exhaust (ACUTE ONLY[f])	Tire wear (CANCER/ CHRONIC/ ACUTE)	Brake wear (CANCER/ CHRONIC/ ACUTE)	Onroad operative and pickup trucks (CANCER/ CHRONIC/ ACUTE)	Onroad operative and pickup trucks (CANCER/CHRONIC/ACUTE)	Dryer Combustion (CANCER/CHRONIC/ACUTE)	All diesel IC engines (ACUTE ONLY[f])
Source Group ID	FENDER, HC1 to HC3, OFF01A and OFF01B, OFFROAD1 and OFFROAD2, TUGBOATS, ANCHOR, OGV2 to OGV5,	OGVBERTH	OFF01A and OFF01B, OFFROAD1 and OFFROAD2, TUGBOATS	GBFSIDLE, GYPSIDLE, TRUCKS1 and TRUCKS2	GBFS_RUN, GYPS_RUN, TRUCKS1 to TRUCKS39	DUST1, DUST2, GBFS_RUN, GYPS_RUN, TRUCKS3 to TRUCKS39, TWEAR3 to TWEAR39	DUST1 and DUST2, GBFS_RUN, GYPS_RUN, TRUCKS3 to TRUCKS39, TWEAR3 to TWEAR39	TRUCKS1 and TRUCKS2	TRUCKS1 and TRUCKS2	EP0102	GBFS_RUN, GBFSIDLE, GYPS_RUN, GYPSIDLE, OFF01A and OFF01B, OFFROAD1 and OFFROAD2, OGVBERTH, TRUCKS1 to	Source Group ID

	Weight Fraction of PM_{10}									Weight Fraction of TOG[a]		
Toxic Air Contaminant [b]	**HARP TAC ID**	**Profile 9901: Diesel IC Engine Exhaust [c]**	**Profile 4251: Marine Vessels - MGO (0.1 PCT S) [d]**	**Profile 6239: 2023 Offroad Diesel Vehicle Exht [c,d,e]**	**Profile 7231: 2023 Heavy-Duty Diesel Truck-idle [c,d,e]**	**Profile 7233: 2023 Heavy-Duty Diesel Truck-transient [c,d,e]**	**Profile 472: Tire Wear [c]**	**Profile 473: Brake Wear [c]**	**Profile 400: Gasoline Vehicles**	**Profile 2303: Gasoline Vehicles**	**Profile 719: Natural Gas IC Engines**	**Profile 818: Diesel IC Engine Exhaust [d]**
	OGVBERTH, GBFS_RUN, GBFSIDLE, GYPS_RUN, GYPSIDLE, TRUCKS1 to TRUCKS39										TRUCKS39, TUGBOATS	

Source for speciation profiles except #9901: Speciation Profiles Used in ARB Modeling. Available: https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling. Accessed July 2022. See notes for Profiles #9901.
Notes:

[a] TOG speciation profiles were converted to VOC by dividing by the following VOC/TOG ratios: 0.8785 for Profile 818; 0.7276 for Profile 2303; and 0.0931 for Profile 719.
[b] Only TACs that have OEHHA/CARB toxicity factors are shown in the table.
[c] Profile 9901 represents diesel particulate matter (DPM) emissions from diesel internal combustion engines. This profile was used for the determination of cancer risk and the chronic hazard index because the health values for DPM are representative of whole diesel IC engine exhaust.
[d] Profiles No. 4251, 6239, 7231, 7233, and 818 are associated with diesel IC engines and therefore were only used for the determination of the acute hazard index.
[e] Where indicated, hexavalent chromium was assumed to be 5 percent of total chromium, according to CARB's AB2588 Technical Support Document (CARB 1989), page 57. CARB 1989. Technical Guidance Document for the Emission Inventory Criteria and Guidelines Regulation for AB 2588. Technical Support Division. August. Available: https://ww3.arb.ca.gov/ab2588/tgd1989.pdf. The other 95 percent was assumed to be trivalent chromium.
[f] Profiles for the diesel or diesel-like marine vessel MGO sources were used to speciate the one-hour maximum emissions from these sources for the acute HI evaluations only.
Source for speciation profiles except 9901: Speciation Profiles used in ARB Modeling. Available: https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling. Accessed July 2022. See notes for Profiles 9901.

1

In response to Comment E4SS-31, Table B3-4 is revised as follows:

Table B3-4. Toxicity Values Used In the HRA

Toxic Air Contaminant	CASRN	Inhalation Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Chronic Inhalation REL ($\mu g/m^3$)	Target Organ for Chronic Exposure [b]	Acute Inhalation REL ($\mu g/m^3$)	Target Organ for Acute Exposure [b]	Multipath Chemicals [c]
Acetaldehyde	75-07-0	0.01	140	I	470	D, I	No
Acrolein	107-02-8	--	0.35	I	2.5	D, I	No
Arsenic [a]	7440-38-2	12	0.015	B, C, G, I, J	0.2	B, C, G	Yes
Benzene	71-43-2	0.1	3	E	27	C, E, F	No
Beryllium	7440-41-7	8.4	0.007	--	--	--	Yes
1,3-Butadiene	106-99-0	0.6	2	C	660	C	No
Cadmium [a]	7440-43-9	15	0.02	I, M	--	--	Yes
Chlorine	7782-50-5	--	0.2	I	210	D, I	No
Chromium III	16065-83-1	--	0.06	--	0.48	--	No
Cobalt	1-21-6	27	--	--	--	--	No
Copper	7440-50-8	--	--	--	100	I	No
DPM	9-90-1	1.1	5	I	--	--	No
Ethyl benzene	100-41-4	0.0087	2,000	A, C, L, M	--	--	No
Formaldehyde	50-00-0	0.021	9	I	55	D	No
Hexane	110-54-3	--	7,000	G	--	--	No
Hexavalent Chromium [a]	18540-29-9	510	0.2	E, I	--	--	Yes
Lead [a]	7439-92-1	0.042	--	--	--	--	Yes
Manganese	7439-96-5	--	0.09	G	--	--	No
Mercury	7439-97-6	--	0.03	--	0.6	--	Yes
Methanol	67-56-1	--	4,000	C	28,000	G	No
Methyl ethyl ketone	78-93-3	--	--	--	13,000	D, I	No
Methyl tert-butyl ether	1634-04-4	0.0018	8000	A, D, M	--	--	No
Naphthalene	91-20-3	0.12	9	I	--	--	No
Nickel [a]	7440-02-0	0.91	0.014	C, E, I	0.2	F	Yes
Propylene	115-07-1	--	3,000	I	--	--	No
Selenium [a]	7782-49-2	--	20	A, B, G	--	--	No
Silica quartz	14808-60-7	--	3	--	--	--	No
Styrene	100-42-5	--	900	G	21,000	C, D, I	No
Sulfates	9-96-0	--	--	--	120	I	No
Toluene	108-88-3	--	~~300~~420	C, G, I	~~37,000~~5000	C, D, G, I	No
Vanadium	7440-62-2	--	--	--	30	D, I	No
Xylenes	1330-20-7	--	700	D, G, I	22,000	D, G, I	No

Source: ARB 2022a. Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. October 2

Notes:
-- = not available
CASRN = Chemical Abstract Services Registry Number

[a] Arsenic, cadmium, hexavalent chromium, lead, mercury and nickel were evaluated for non-inhalation exposure pathways. For arsenic, the cancer risk oral slope factor is 1.5 $(mg/kg/day)^{-1}$, and the noncancer chronic oral REL is 0.0000035 mg/kg/day. For cadmium, the noncancer chronic oral REL is 0.0005 mg/kg/day. For hexavalent chromium, the cancer risk oral slope factor is 0.5 $(mg/kg/day)^{-1}$, and the noncancer chronic oral REL is 0.02 mg/kg/day. For lead, the cancer risk oral slope factor is 0.0085 $(mg/kg/day)^{-1}$. For nickel, the noncancer chronic oral REL is 0.011 mg/kg/day. For selenium, the noncancer chronic oral REL is 0.005 mg/kg/day.
[b] Key to non-cancer acute and chronic exposure target organs:

A = Alimentary Tract
B = Cardiovascular System
C = Reproductive/Developmental System
D = Eye
E = Hematologic System
F = Immune System
G = Nervous System
I = Respiratory System
J = Skin
K = Bone
L = Endocrine System
M = Kidney

[c] Based on the multipath chemicals recommended by OEHHA (2015) for evaluation of health impacts through the non-inhalation pathways.

Source: CARB. 2023. Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. October.

Appendix D-2 Noise Study, was inadvertently omitted from the DEIR and is added to the FEIR as shown below (the addition is not shown in underline format because of the pdf format of the insert).

Appendix E Soil Management Plan is added to the FEIR as shown below. The addition supplements information presented in the DEIR but does not change the conclusions of the DEIR.

Appendix D-2

Illingworth & Rodkin Ambient Sound Survey

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Petaluma, California 94931
Tel: 707-794-0400 *Fax: 707-794-0405*
www.Illingworthrodkin.com *illro@illingworthrodkin.com*

December 1, 2022

DRAFT TECHNICAL MEMO

Port of Los Angeles Vopak Terminal Long Term Noise Measurement Results

Illingworth & Rodkin Inc. (I&R) was retained to conduct five (5) long term (24-hour) noise measurement surveys of ambient conditions at the Closest East Basin Marina to Project site, the Bannings Landing Community Center, Fire Station 49, on the Orcem property (Berths 191-194) and on the Vopak Project site (Berths 187-190). These measurement locations are shown in Figure 1, attached

The noise measurements were made between Monday November 21st and Tuesday November 22nd, 2022 with unmanned Larson Davis Model LxT Integrating Sound Level Meters (SLMs) set at "slow" response. The sound level meters were equipped with PCB Model 377B02 1/2" free-field, pre-polarized condenser microphones fitted with windscreens. The sound level meters were calibrated prior to the noise measurements using a Larson Davis Model CAL200 acoustical calibrator. The response of the systems was checked after each measurement session and was always found to be within 0.2 dBA. No calibration adjustments were made to the measured sound levels. At the completion of monitoring, the noise data were obtained from the SLM using the Larson Davis G4 software program. Weather conditions during the measurement period were generally good for noise monitoring. Meteorological conditions generally consisted of mostly clear skies, calm to light winds (0 to ~10 mph), and seasonable temperatures (~50° F to ~65° F average).

The A-weighted maximum (L_{max}), minimum (L_{min}), energy average (L_{eq}) noise levels, and the noise levels exceeded 1, 10, 50 and 90 percent of the time (indicated as L01, L10, L50 and L90) measured at these locations during the 24-hour survey are attached as 10 minute and hourly charts, and in tabular format with the measured 10-minute and calculated hourly noise levels during the 24-hour survey period. Additional tables showing the unweighted octave band L_{eq} levels measured during each 10-minute period are also attached. The calculated A-weighted 24-hour average Community Noise Equivalent Level (CNEL) is also shown in the hourly and 10-minute charts for each measurement location and a brief description of each of the measurement positions and overall results is also provided.

Measurement Position LT-V1

The noise measurement at this location was made on a wooden piling at the end of the westernmost finger pier at the California Yacht Harbor at a height of approximately 8 feet above the pier and at an approximate distance of 950 feet from the closest portion of the Vopak Terminal. The measurement began at 4:05 pm on November 21st and ended at 4:14 pm on November 22nd, 2022. The monitoring location is shown in Figure 1 and the monitor installation is shown in Figure 2, attached. The sound levels measured during the survey likely resulted from Port activities, the sound of wind, waves and dock movements, and occasional localized noise from marina residents and related boating activities. The results of the measurement showed daytime and nighttime average hourly (L_{eq}) noise levels ranging

from 54 to 66 dBA and 57 to 62 dBA, respectively, with an average daytime L_{eq} of 60 dBA and an average nighttime L_{eq} of 58 dBA. The measured CNEL at this location was 66 dBA.

Measurement Position LT-V2

The noise measurement at this location was made on a light pole adjacent to the Banning Community Center. The monitoring position was approximately 12 above the adjacent grade, 45 feet east of the Community Center building, 30 feet from the centerline of E. Water Street, and about 280 feet from the Vopak Administration Building. The measurement began at 2:32 pm on November 21st and ended at 3:28 pm on November 22nd, 2022. The monitoring location is shown in Figure 1 and the monitor installation is shown in Figure 3, attached. The sound levels measured during the survey likely resulted from traffic on E. Water Street, construction activities related to the Community Center and Wilmington Waterfront Promenade development, and Port related activities. The results of the measurement showed daytime and nighttime average hourly (L_{eq}) noise levels where similar to one another, ranging from 59 to 68 dBA and 59 to 70 dBA, respectively, with an average daytime L_{eq} of 64 dBA and an average nighttime L_{eq} of 63 dBA. The measured CNEL at this location was 71 dBA.

Measurement Position LT-V3

The noise measurement at this location was made on the trunk of an Avocado tree in the entry/parking area of Fire Station 49. The monitoring position was approximately 12 above the adjacent grade, 85 from the Fire Station Building, 60 feet from the centerline of Yacht Street, and about 120 feet from the Vopak Terminal Area. The measurement began at 1:42 pm on November 21st and ended at 2:29 pm on November 22nd, 2022. The monitoring location is shown in Figure 1 and the monitor installation is shown in Figure 4, attached. The sound levels measured during the survey likely resulted from fire station activities, traffic on Yacht Street and existing Port related activities. The results of the measurement showed daytime and nighttime average hourly (L_{eq}) noise levels where similar to one another, ranging from 53 to 62 dBA and 52 to 58 dBA, respectively, with an average daytime L_{eq} of 58 dBA and an average nighttime L_{eq} of 56 dBA. The measured CNEL at this location was 63 dBA.

Measurement Position LT-V4

The noise measurement at this location was made on a utility pole on the Orcem property on the opposite side of Yacht Street from the Vopak Project site. The monitoring position was approximately 12 above the adjacent grade and 25 feet from the centerline of Yacht Street. The measurement began at 1:22 pm on November 21st and ended at 2:20 pm on November 22nd, 2022. The monitoring location is shown in Figure 1 and the monitor installation is shown in Figure 5, attached. The sound levels measured during the survey likely primarily resulted from existing Port activities and occasional traffic on Yacht Street. The results of the measurement showed daytime and nighttime average hourly (L_{eq}) noise levels where similar to one another, ranging from 50 to 62 dBA and 51 to 57 dBA, respectively, with an average daytime L_{eq} of 57 dBA and an average nighttime L_{eq} of 54 dBA. The measured CNEL at this location was 62 dBA.

Measurement Position LT-V5

The noise measurement at this location was made on the Vopak project site with the monitor installed on a utility pole in the service area between Canal Street and the Berth 188 waterfront. The monitoring position was approximately 12 above the adjacent grade, 180 feet from the centerline of Canal Street and 80 feet from the waterfront. The measurement began at 2:05 pm on November 21st and ended at 3:15 pm on November 22nd, 2022. The monitoring location is shown in Figure 1 and the monitor installation is shown in Figure 6, attached. The sound levels measured during the survey are expected to have resulted primarily from existing Port activities. The results of the measurement showed daytime and nighttime average hourly (L_{eq}) noise levels where similar to one another, ranging from 57 to 66 dBA and 55 to 63 dBA, respectively, with an average daytime L_{eq} of 61 dBA and an average nighttime L_{eq} of 59 dBA. The measured CNEL at this location was 67 dBA.

This concludes I&R's Technical Memo summarizing the results of our noise measurement survey to conduct five (5) long term (24-hour) noise measurement surveys of ambient conditions at the Closest East Basin Marina to Project site, the Bannings Landing Community Center, Fire Station 49, on the Orcem property, and on the Vopak Project site. Please see the attached Figures, Charts and Tables for the full results of the measurement survey.

Sincerely,

Fred M. Svinth, INCE, Assoc, AIA
Senior Consultant, Principal
Illingworth & Rodkin, Inc.

Attachments: *Figure 1: Noise Measurement Locations*
Figure 2: LT-V1 Installation
Figure 3: LT-V2 Installation
Figure 4: LT-V3 Installation
Figure 5: LT-V4 Installation
Figure 6: LT-V5 Installation
Chart 1: Hourly Noise Levels at LT-V1
Chart 1a: 10-minute Measured & Average Hourly Noise Levels at LT-V1
Chart 2: Hourly Noise Levels at LT-V2
Chart 2a: 10-minute Measured & Average Hourly Noise Levels at LT-V2
Chart 3: Hourly Noise Levels at LT-V3
Chart 3a: 10-minute Measured & Average Hourly Noise Levels at LT-V3
Chart 4: Hourly Noise Levels at LT-V4
Chart 4a: 10-minute Measured & Average Hourly Noise Levels at LT-V4
Chart 5: Hourly Noise Levels at LT-V5
Chart 5a: 10-minute Measured & Average Hourly Noise Levels at LT-V5
Table 1: A-weighted Hourly Noise Levels at LT-V1
Table 1a: A-weighted 10-minute Noise Levels at LT-V1
Table 1b: Un-weighted 10-minute Octave Band L_{eq} Noise Levels at LT-V1
Table 2: A-weighted Hourly Noise Levels at LT-V2
Table 2a: A-weighted 10-minute Noise Levels at LT-V2
Table 2b: Un-weighted 10-minute Octave Band L_{eq} Noise Levels at LT-V2
Table 3: A-weighted Hourly Noise Levels at LT-V3
Table 3a: A-weighted 10-minute Noise Levels at LT-V3
Table 3b: Un-weighted 10-minute Octave Band L_{eq} Noise Levels at LT-V3
Table 4: A-weighted Hourly Noise Levels at LT-V4
Table 4a: A-weighted 10-minute Noise Levels at LT-V4
Table 4b: Un-weighted 10-minute Octave Band L_{eq} Noise Levels at LT-V4
Table 5: A-weighted Hourly Noise Levels at LT-V5
Table 5a: A-weighted 10-minute Noise Levels at LT-V5
Table 5b: Un-weighted 10-minute Octave Band L_{eq} Noise Levels at LT-V5



Figure 1: Noise Measurement Locations

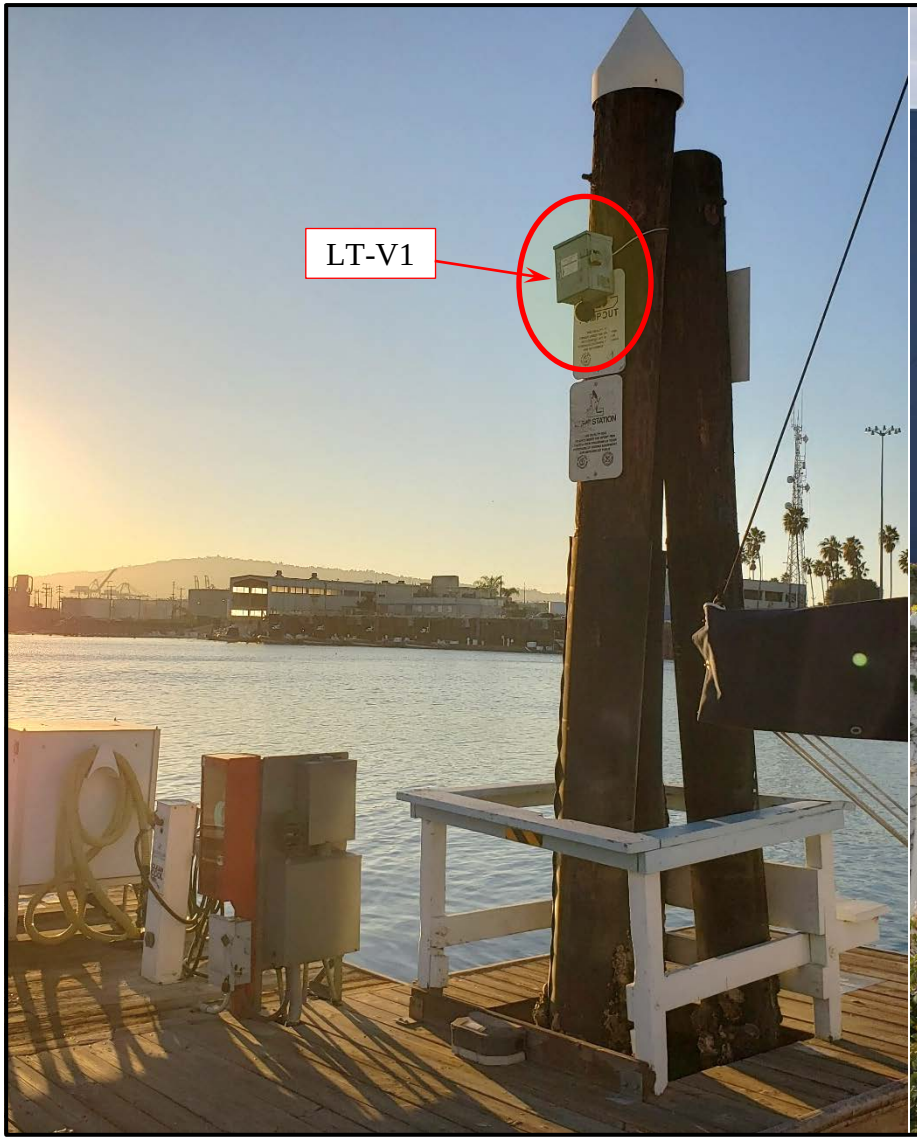


Figure 2: LT-V1 Installation

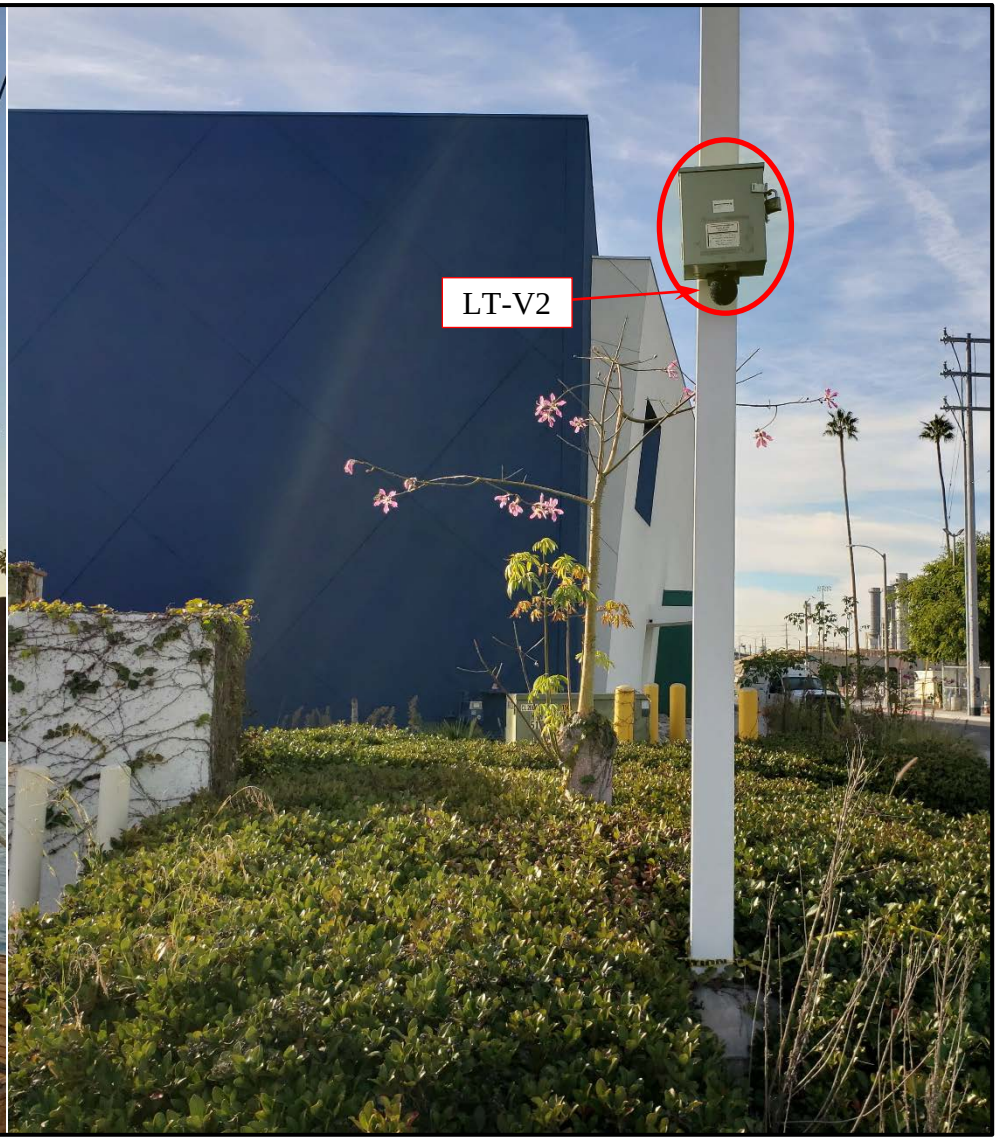


Figure 3: LT-V2 Installation



Figure 4: LT-V3 Installation



Figure 5: LT-V4 Installation



Figure 6: LT-V5 Installation

Chart 1: Hourly Noise Levels at LT-V1

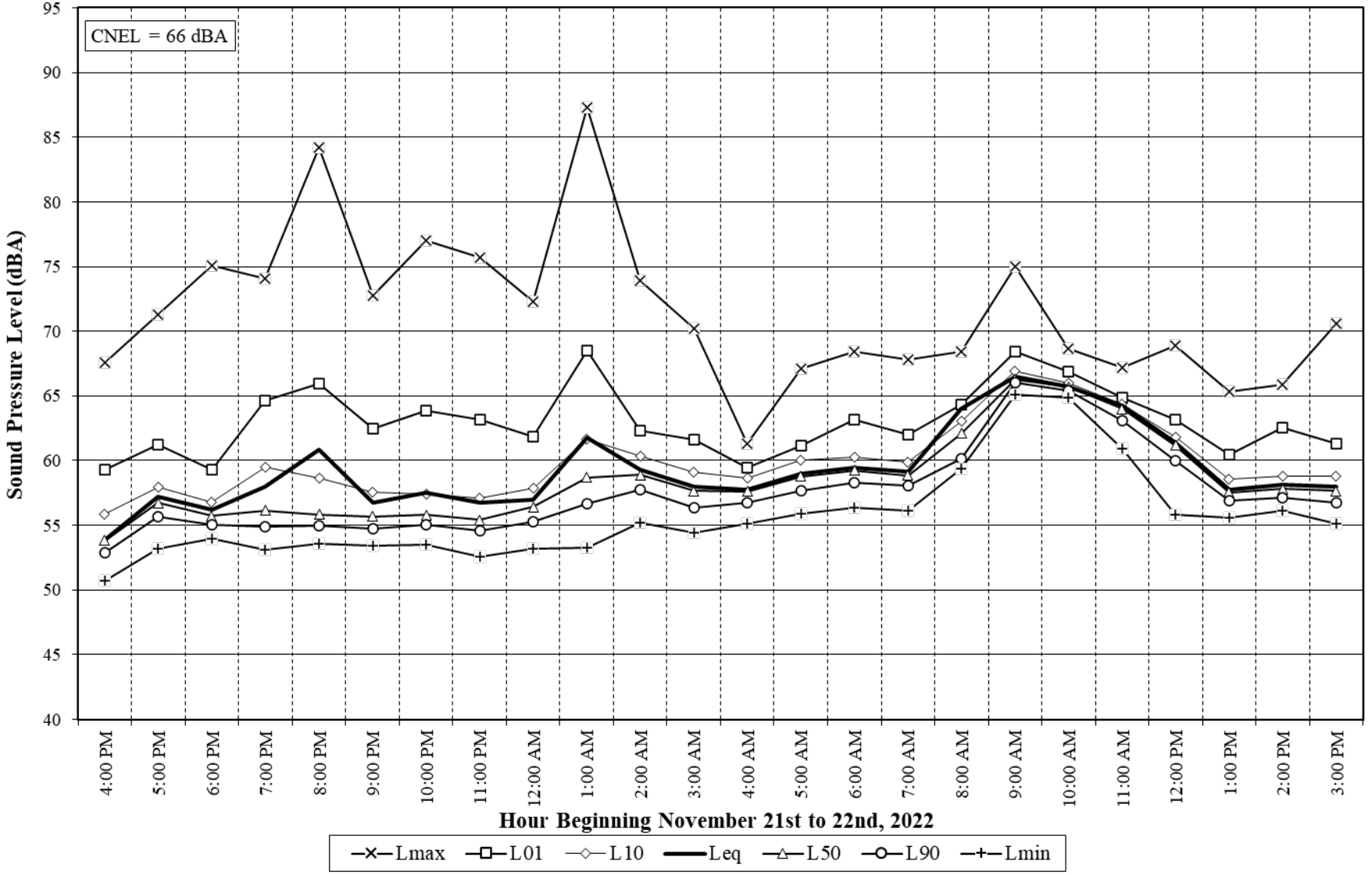


Chart 1a: 10-minute Measured & Average Hourly Noise Levels at LT-V1

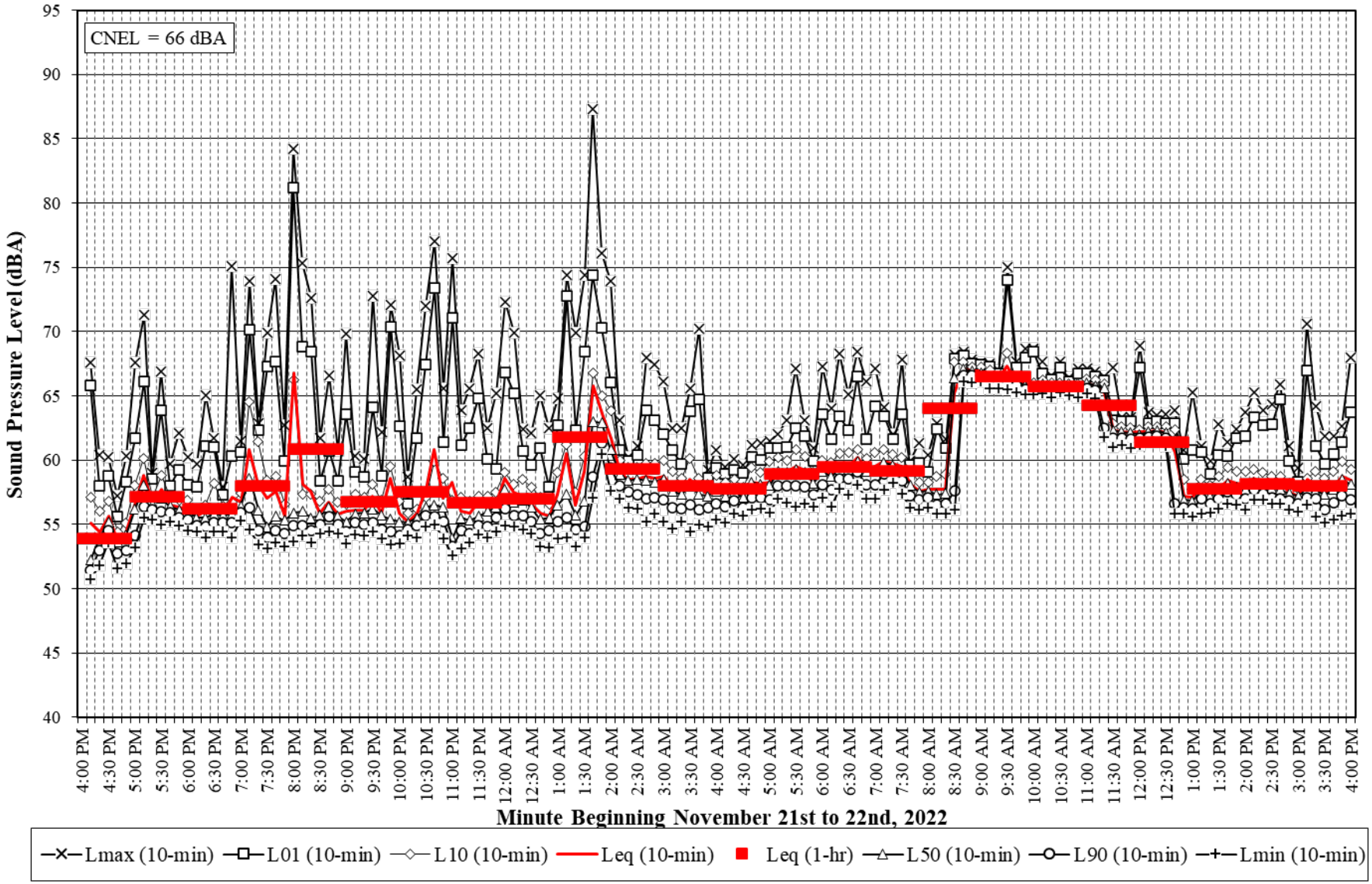


Chart 2: Hourly Noise Levels at LT-V2

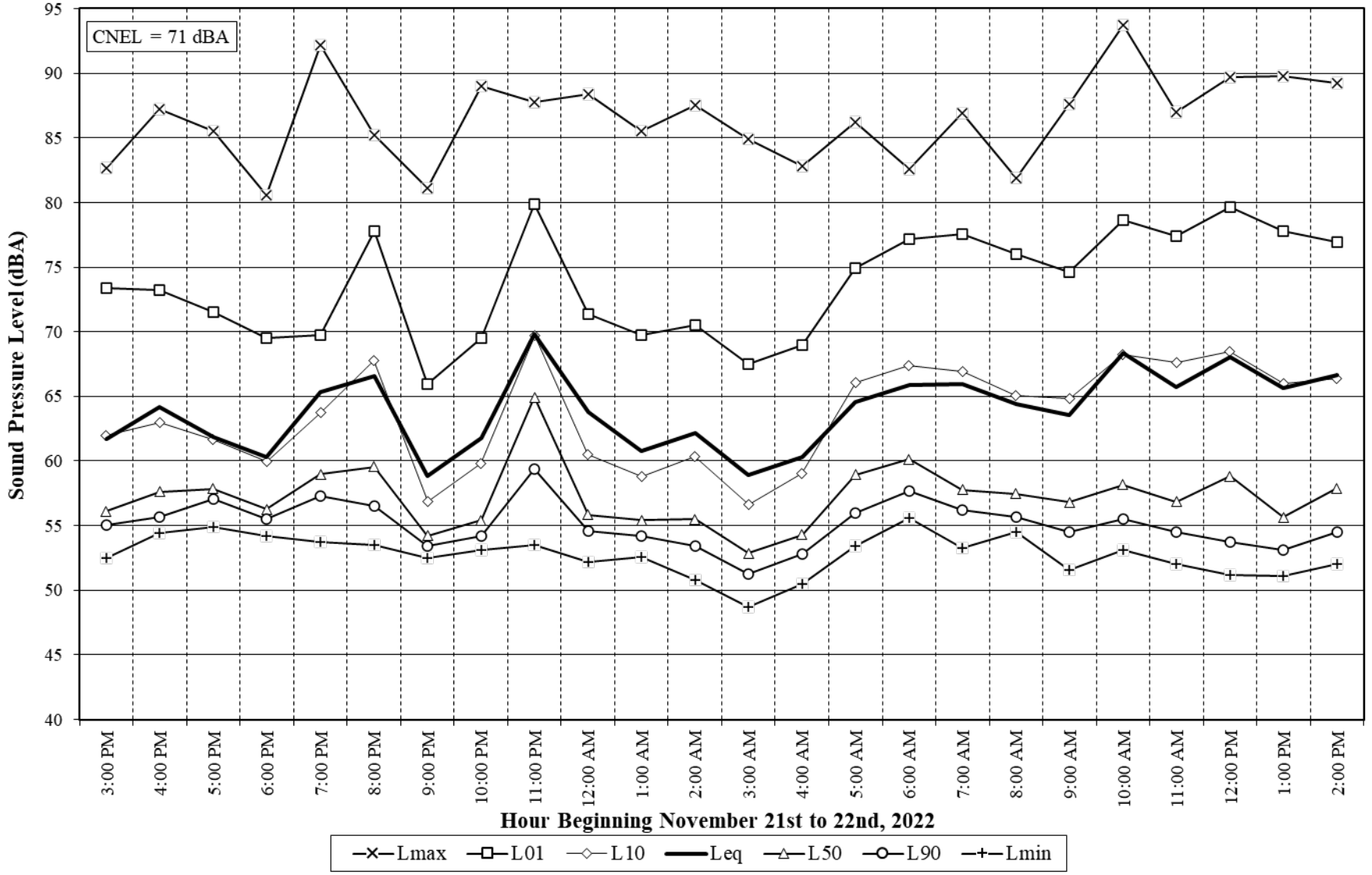


Chart 2a: 10-minute Measured & Average Hourly Noise Levels at LT-V2

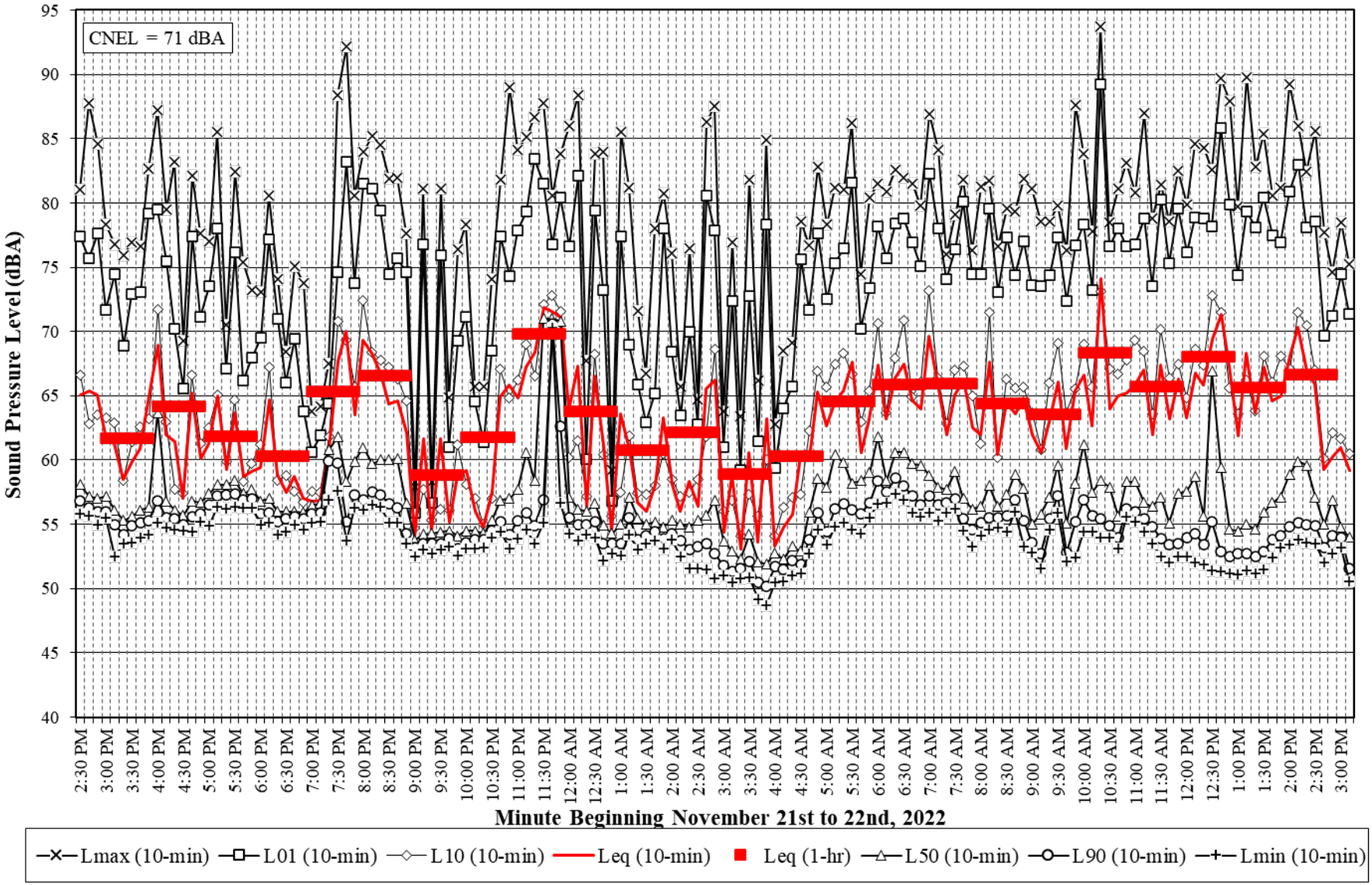


Chart 3: Hourly Noise Levels at LT-V3

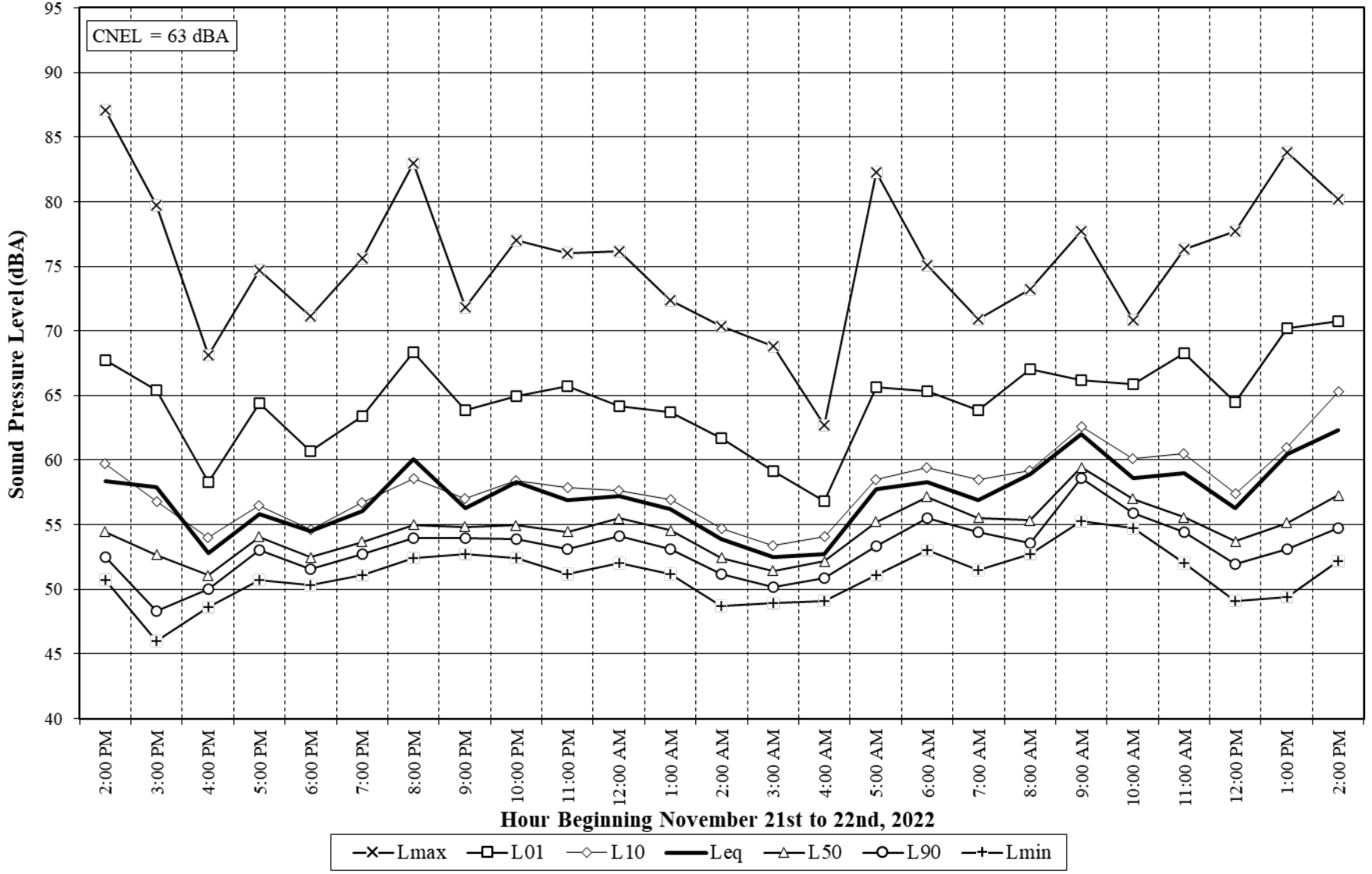


Chart 3a: 10-minute Measured & Average Hourly Noise Levels at LT-V3

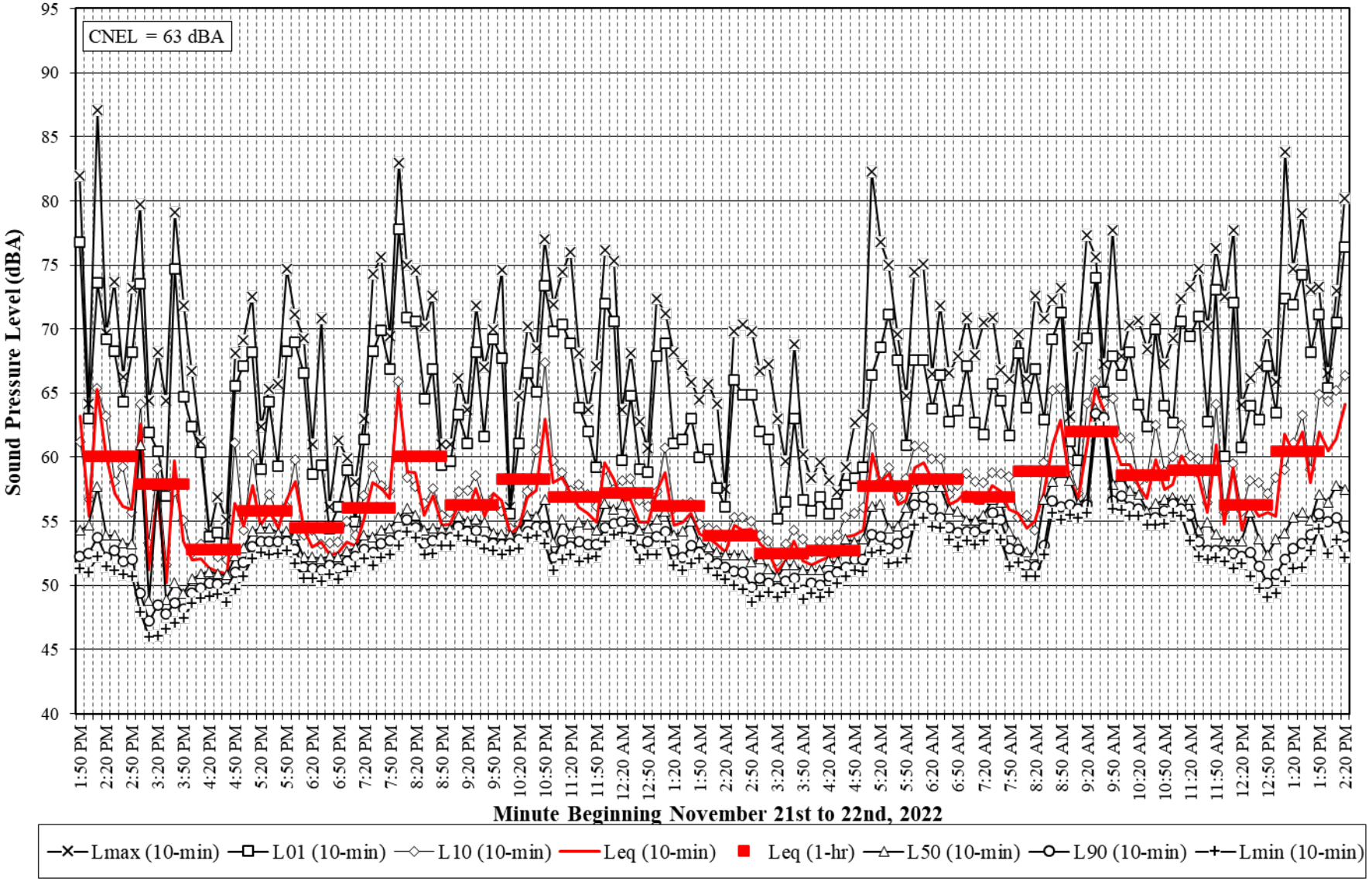


Chart 4: Hourly Noise Levels at LT-V4

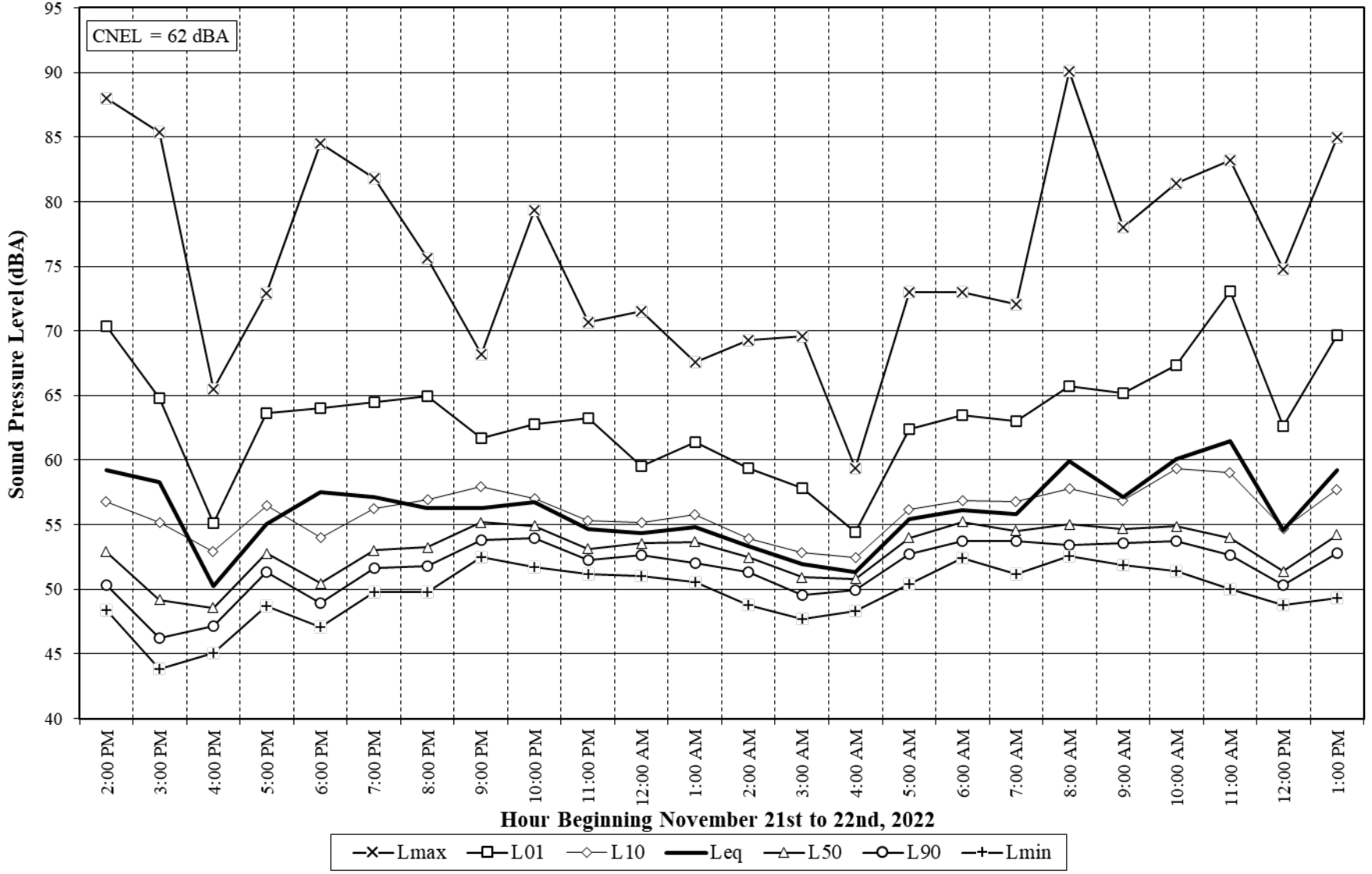


Chart 4a: 10-minute Measured & Average Hourly Noise Levels at LT-V4

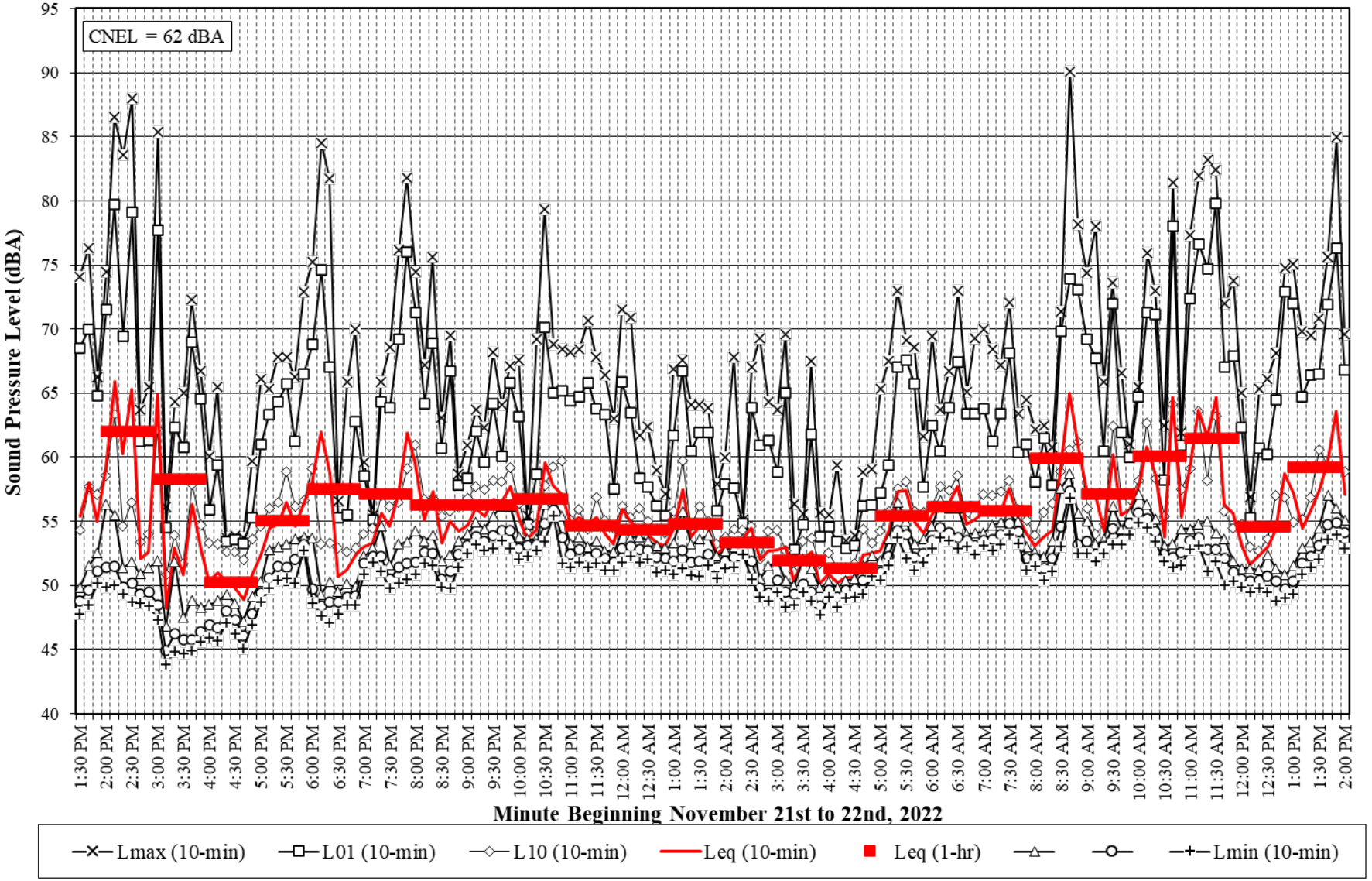


Chart 5: Hourly Noise Levels at LT-V5

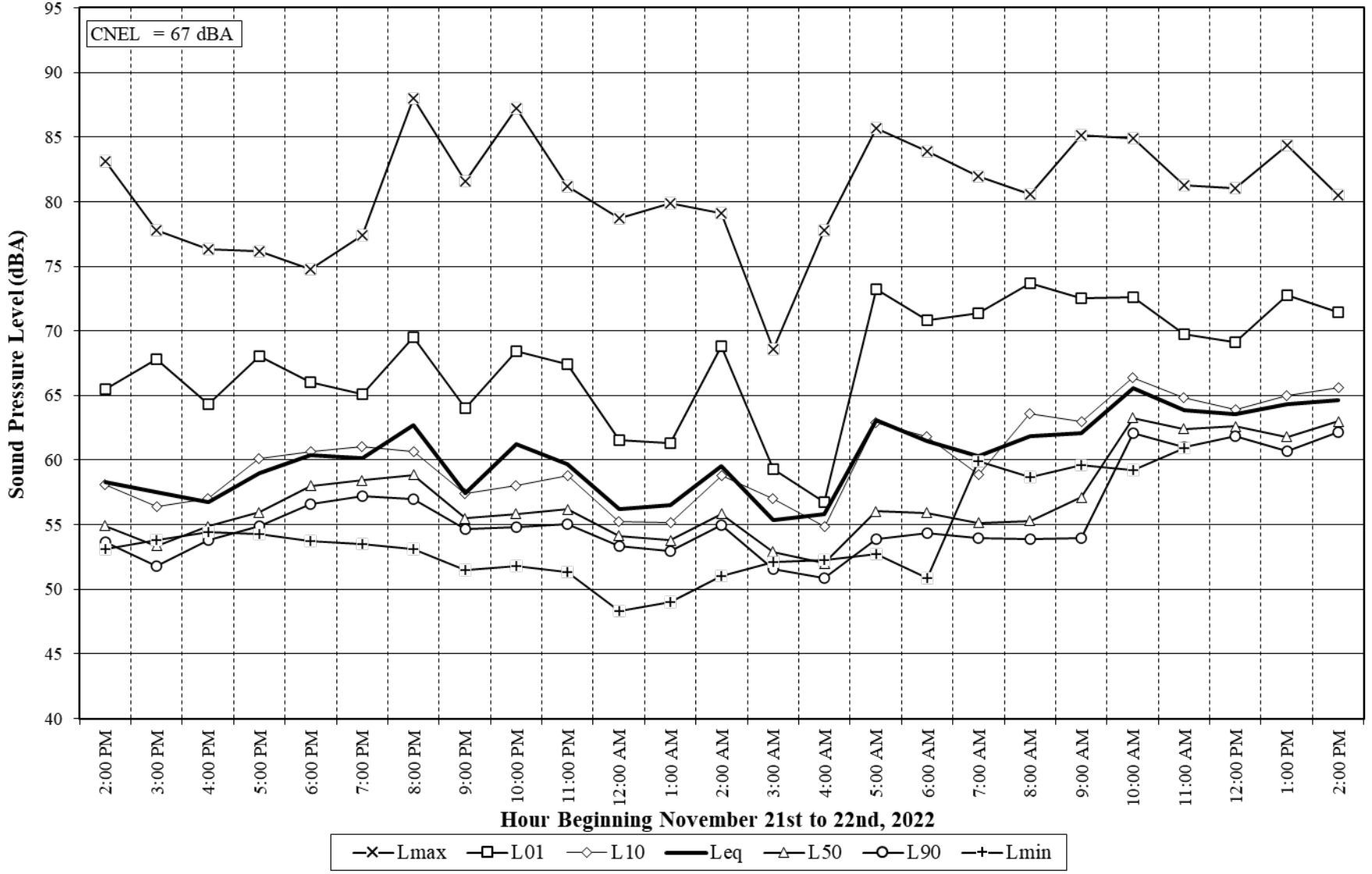


Chart 5a: 10-minute Measured & Average Hourly Noise Levels at LT-V5

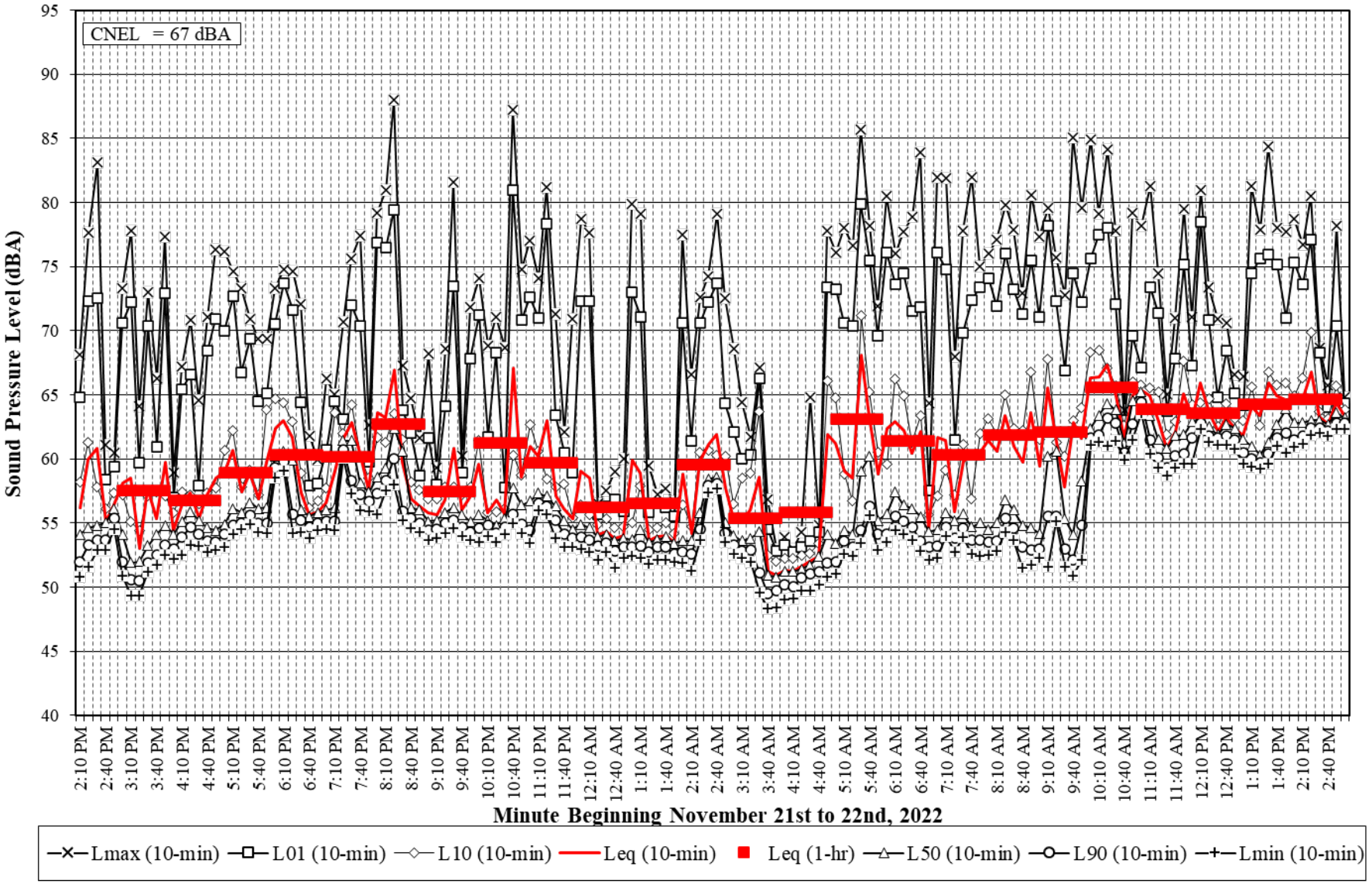


Table 1: A-weighted Hourly Noise Levels at LT-V1

Date	Hour beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	5:00 PM	67.6	58.1	52.6	52.1	48.5	46.2	41.0
21-Nov-22	6:00 PM	71.7	59.6	51.8	52.7	46.5	44.3	41.6
21-Nov-22	7:00 PM	72.4	58.1	53.2	52.9	48.5	46.9	44.5
21-Nov-22	8:00 PM	56.0	50.3	48.0	46.9	46.5	45.5	44.0
21-Nov-22	9:00 PM	63.9	53.8	48.4	47.5	45.8	44.7	42.2
21-Nov-22	10:00 PM	68.5	54.2	48.6	47.7	45.6	44.4	42.7
21-Nov-22	11:00 PM	67.6	51.8	48.3	47.7	46.8	45.7	43.6
22-Nov-22	12:00 AM	57.5	51.4	49.2	48.2	47.8	47.0	44.8
22-Nov-22	1:00 AM	61.5	51.5	48.8	47.9	47.3	46.3	44.4
22-Nov-22	2:00 AM	52.6	48.3	46.2	45.1	44.5	43.2	38.1
22-Nov-22	3:00 AM	57.1	46.5	43.7	42.4	41.8	40.8	39.0
22-Nov-22	4:00 AM	59.2	50.3	45.6	44.2	42.8	41.6	39.8
22-Nov-22	5:00 AM	66.7	54.2	48.7	48.6	45.2	43.6	41.7
22-Nov-22	6:00 AM	62.9	56.7	51.5	49.6	48.3	46.6	43.6
22-Nov-22	7:00 AM	84.5	65.0	57.8	63.8	52.7	50.2	45.9
22-Nov-22	8:00 AM	85.1	65.0	61.3	65.5	52.3	48.2	45.2
22-Nov-22	9:00 AM	67.4	61.8	58.5	55.0	52.7	46.5	40.2
22-Nov-22	10:00 AM	84.0	63.7	59.3	56.8	51.8	46.1	39.6
22-Nov-22	11:00 AM	70.2	58.8	54.7	51.8	48.3	44.8	41.5
22-Nov-22	12:00 PM	65.7	59.2	52.7	50.8	47.6	45.4	42.6
22-Nov-22	1:00 PM	77.7	64.1	58.1	58.4	50.7	47.3	44.6
22-Nov-22	2:00 PM	77.0	70.3	67.6	66.1	58.9	54.0	46.0
22-Nov-22	3:00 PM	76.3	64.8	60.8	60.4	56.9	52.5	48.2
22-Nov-22	4:00 PM	75.6	64.1	58.3	55.8	52.2	49.6	45.6

Table 1a: A-weighted 10-minute Noise Levels at LT-V1

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	4:10 PM	67.6	65.8	57.1	55.1	52.2	51.4	50.7
21-Nov-22	4:20 PM	60.4	58.0	56.0	54.4	53.9	53.0	51.8
21-Nov-22	4:30 PM	60.2	58.8	56.8	55.6	55.2	54.5	53.6
21-Nov-22	4:40 PM	57.2	55.6	54.4	53.6	53.6	52.7	51.6
21-Nov-22	4:50 PM	60.3	58.3	55.1	54.3	54.2	53.0	52.0
21-Nov-22	5:00 PM	67.6	61.7	58.0	56.5	56.2	54.1	53.2
21-Nov-22	5:10 PM	71.3	66.1	60.1	58.8	58.0	56.4	55.5
21-Nov-22	5:20 PM	59.0	58.5	57.1	56.7	56.6	56.1	55.4
21-Nov-22	5:30 PM	66.9	63.9	58.8	57.7	57.0	56.0	55.0
21-Nov-22	5:40 PM	59.7	58.0	57.0	56.5	56.4	55.9	55.2
21-Nov-22	5:50 PM	62.1	59.2	56.9	56.3	56.1	55.5	54.9
21-Nov-22	6:00 PM	60.2	58.1	56.9	56.1	56.0	55.4	54.5
21-Nov-22	6:10 PM	59.7	57.9	56.1	55.6	55.5	54.9	54.4
21-Nov-22	6:20 PM	65.0	61.1	56.5	56.0	55.5	54.8	54.0
21-Nov-22	6:30 PM	61.7	61.0	58.2	56.5	55.8	55.1	54.4

Table 1a (continued): A-weighted 10-minute Noise Levels at LT-V1

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	6:40 PM	57.9	57.3	56.4	55.8	55.7	55.1	54.4
21-Nov-22	6:50 PM	75.1	60.3	56.7	57.1	55.8	55.1	54.0
21-Nov-22	7:00 PM	61.5	60.6	57.4	56.7	56.4	55.9	55.3
21-Nov-22	7:10 PM	73.9	70.1	64.5	60.8	58.6	56.3	54.6
21-Nov-22	7:20 PM	62.9	62.3	61.4	58.1	56.1	54.5	53.4
21-Nov-22	7:30 PM	69.9	67.3	58.4	57.0	54.8	54.0	53.1
21-Nov-22	7:40 PM	74.1	67.7	58.7	57.6	55.6	54.5	53.6
21-Nov-22	7:50 PM	62.7	59.9	56.6	55.6	55.3	54.3	53.3
21-Nov-22	8:00 PM	84.2	81.2	66.2	66.8	55.9	54.9	53.7
21-Nov-22	8:10 PM	75.3	68.8	57.3	58.1	56.0	54.9	54.1
21-Nov-22	8:20 PM	72.6	68.4	57.3	57.6	55.5	54.5	53.6
21-Nov-22	8:30 PM	61.7	58.4	56.8	55.9	55.7	55.0	54.3
21-Nov-22	8:40 PM	66.6	60.7	57.7	56.7	56.3	55.6	54.4
21-Nov-22	8:50 PM	60.7	58.4	56.7	55.8	55.6	55.0	54.3
21-Nov-22	9:00 PM	69.8	63.6	56.6	56.0	55.2	54.4	53.5
21-Nov-22	9:10 PM	60.3	59.1	57.3	56.1	55.8	55.1	54.2
21-Nov-22	9:20 PM	60.1	58.7	57.1	56.1	55.9	55.0	54.1
21-Nov-22	9:30 PM	72.8	64.1	58.1	57.2	56.2	55.1	54.4
21-Nov-22	9:40 PM	62.2	58.8	56.9	55.9	55.7	54.6	53.9
21-Nov-22	9:50 PM	72.1	70.4	59.5	58.6	55.4	54.4	53.4
21-Nov-22	10:00 PM	68.1	62.6	56.8	55.9	55.2	54.1	53.5
21-Nov-22	10:10 PM	58.7	56.6	55.9	55.2	55.1	54.6	54.1
21-Nov-22	10:20 PM	65.5	61.7	56.2	55.9	55.5	54.9	54.0
21-Nov-22	10:30 PM	72.0	67.4	57.1	57.7	56.3	55.7	54.8
21-Nov-22	10:40 PM	77.0	73.4	59.9	60.8	56.5	55.6	55.0
21-Nov-22	10:50 PM	65.6	61.4	58.6	57.0	56.3	55.2	53.9
21-Nov-22	11:00 PM	75.7	71.1	56.9	58.3	53.9	53.3	52.6
21-Nov-22	11:10 PM	63.9	61.2	57.1	56.0	55.5	54.5	53.1
21-Nov-22	11:20 PM	65.6	62.5	56.8	55.9	55.3	54.3	53.6
21-Nov-22	11:30 PM	68.3	64.8	57.2	56.8	55.6	54.9	54.2
21-Nov-22	11:40 PM	62.5	60.1	57.2	56.2	56.0	54.8	54.0
21-Nov-22	11:50 PM	65.2	59.3	57.5	56.6	56.3	55.5	54.4
22-Nov-22	12:00 AM	72.3	66.8	59.0	58.6	57.7	56.2	54.9
22-Nov-22	12:10 AM	69.9	65.2	58.1	57.5	56.7	55.7	54.8
22-Nov-22	12:20 AM	62.4	60.7	58.5	57.2	56.9	55.7	54.6
22-Nov-22	12:30 AM	62.1	59.6	57.9	56.6	56.3	55.2	54.3
22-Nov-22	12:40 AM	65.0	60.9	57.1	55.9	55.4	54.3	53.3
22-Nov-22	12:50 AM	62.5	57.9	56.6	55.6	55.5	54.5	53.2
22-Nov-22	1:00 AM	64.8	62.7	59.0	57.3	56.5	55.2	53.9

Table 1a (continued): A-weighted 10-minute Noise Levels at LT-V1

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	1:10 AM	74.4	72.8	61.2	60.5	57.3	55.5	54.0
22-Nov-22	1:20 AM	69.9	62.3	57.5	56.5	55.7	54.6	53.3
22-Nov-22	1:30 AM	74.4	68.4	60.3	59.1	56.8	54.8	54.0
22-Nov-22	1:40 AM	87.3	74.4	66.8	65.8	63.0	58.7	57.1
22-Nov-22	1:50 AM	76.1	70.3	65.0	63.6	62.9	61.3	60.5
22-Nov-22	2:00 AM	73.9	66.0	63.8	61.7	60.8	59.4	57.6
22-Nov-22	2:10 AM	63.1	60.8	60.0	59.0	58.9	58.0	57.0
22-Nov-22	2:20 AM	60.2	59.9	59.4	58.5	58.4	57.5	56.3
22-Nov-22	2:30 AM	61.1	60.4	59.4	58.5	58.5	57.3	56.2
22-Nov-22	2:40 AM	68.0	63.9	59.7	58.7	58.4	57.0	55.2
22-Nov-22	2:50 AM	67.4	63.1	59.7	58.6	58.3	57.1	55.8
22-Nov-22	3:00 AM	66.1	62.0	60.0	58.7	58.5	56.9	55.2
22-Nov-22	3:10 AM	62.5	60.8	59.1	57.8	57.6	56.3	54.7
22-Nov-22	3:20 AM	62.5	59.7	58.6	57.5	57.3	56.2	55.2
22-Nov-22	3:30 AM	65.6	63.8	60.1	58.5	58.0	56.5	54.4
22-Nov-22	3:40 AM	70.2	64.7	58.6	57.9	57.3	56.1	55.0
22-Nov-22	3:50 AM	59.2	58.6	58.1	57.3	57.2	56.3	54.8
22-Nov-22	4:00 AM	60.8	59.4	58.8	57.7	57.6	56.6	55.4
22-Nov-22	4:10 AM	59.5	58.9	58.3	57.3	57.2	56.4	55.1
22-Nov-22	4:20 AM	60.1	59.2	58.5	57.7	57.5	56.8	55.8
22-Nov-22	4:30 AM	59.6	59.0	57.9	57.2	57.1	56.3	55.7
22-Nov-22	4:40 AM	61.2	60.2	59.4	58.3	58.3	57.1	56.1
22-Nov-22	4:50 AM	61.3	60.0	59.0	58.2	58.1	57.1	56.2
22-Nov-22	5:00 AM	61.5	60.9	59.9	58.3	58.0	56.9	55.9
22-Nov-22	5:10 AM	62.0	60.9	60.2	59.2	59.1	58.0	57.0
22-Nov-22	5:20 AM	63.1	61.0	60.0	59.1	59.0	58.0	56.7
22-Nov-22	5:30 AM	67.1	62.5	60.8	59.5	59.3	58.0	56.4
22-Nov-22	5:40 AM	63.1	61.9	60.3	59.2	59.0	57.9	56.6
22-Nov-22	5:50 AM	60.9	59.9	59.0	58.3	58.2	57.3	56.4
22-Nov-22	6:00 AM	67.3	63.6	60.0	59.3	59.1	58.1	57.1
22-Nov-22	6:10 AM	64.0	61.6	59.8	58.8	58.7	57.7	56.4
22-Nov-22	6:20 AM	68.3	63.4	60.5	59.7	59.3	58.5	57.8
22-Nov-22	6:30 AM	65.1	62.3	60.6	59.5	59.3	58.5	57.3
22-Nov-22	6:40 AM	68.4	66.5	60.8	60.2	59.9	59.1	58.1
22-Nov-22	6:50 AM	66.1	61.6	60.1	59.2	59.1	58.1	57.0
22-Nov-22	7:00 AM	67.1	64.2	60.6	59.5	59.1	58.1	57.0
22-Nov-22	7:10 AM	64.1	63.4	60.8	59.9	59.8	58.9	57.7
22-Nov-22	7:20 AM	62.0	61.6	60.4	59.7	59.6	58.8	58.2
22-Nov-22	7:30 AM	67.8	63.6	60.2	59.5	59.2	58.4	57.4

Table 1a (continued): A-weighted 10-minute Noise Levels at LT-V1

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	7:40 AM	59.9	59.6	59.1	58.1	58.0	57.2	56.3
22-Nov-22	7:50 AM	61.3	59.8	58.3	57.6	57.5	56.9	56.1
22-Nov-22	8:00 AM	60.4	59.1	58.3	57.7	57.6	57.1	56.3
22-Nov-22	8:10 AM	62.9	62.4	58.7	57.7	57.3	56.5	55.8
22-Nov-22	8:20 AM	61.6	60.9	58.9	57.7	57.4	56.6	55.8
22-Nov-22	8:30 AM	68.2	67.9	67.6	65.2	66.4	57.6	56.1
22-Nov-22	8:40 AM	68.4	68.1	67.6	67.1	67.1	66.6	66.1
22-Nov-22	8:50 AM	67.8	67.5	67.2	66.9	66.9	66.6	66.0
22-Nov-22	9:00 AM	67.6	67.4	67.2	66.9	66.8	66.5	66.1
22-Nov-22	9:10 AM	67.5	67.3	67.0	66.6	66.5	66.2	65.6
22-Nov-22	9:20 AM	67.0	66.7	66.5	66.2	66.2	66.0	65.6
22-Nov-22	9:30 AM	75.0	74.0	68.3	67.3	66.3	66.0	65.5
22-Nov-22	9:40 AM	67.7	67.2	66.4	66.1	66.1	65.8	65.3
22-Nov-22	9:50 AM	68.7	68.0	66.2	65.9	65.8	65.5	65.1
22-Nov-22	10:00 AM	68.7	68.4	66.0	65.8	65.7	65.5	65.1
22-Nov-22	10:10 AM	67.7	66.7	66.2	65.9	65.9	65.6	65.2
22-Nov-22	10:20 AM	66.6	66.3	66.0	65.7	65.7	65.4	64.9
22-Nov-22	10:30 AM	67.7	67.2	66.0	65.8	65.7	65.5	65.3
22-Nov-22	10:40 AM	66.4	66.1	65.9	65.7	65.7	65.4	65.0
22-Nov-22	10:50 AM	67.1	66.7	65.9	65.6	65.6	65.3	64.9
22-Nov-22	11:00 AM	67.1	66.7	66.3	66.0	66.0	65.6	65.2
22-Nov-22	11:10 AM	66.9	66.5	66.2	65.8	65.8	65.4	64.8
22-Nov-22	11:20 AM	66.5	66.2	65.9	65.2	65.6	62.5	61.8
22-Nov-22	11:30 AM	67.2	63.9	62.8	62.3	62.3	61.7	61.0
22-Nov-22	11:40 AM	63.3	63.0	62.6	62.2	62.2	61.7	61.2
22-Nov-22	11:50 AM	63.3	63.0	62.5	62.1	62.1	61.6	60.9
22-Nov-22	12:00 PM	68.9	67.2	62.4	62.2	62.0	61.7	61.2
22-Nov-22	12:10 PM	63.7	62.9	62.6	62.2	62.2	61.8	61.4
22-Nov-22	12:20 PM	63.5	63.0	62.6	62.3	62.3	61.9	61.4
22-Nov-22	12:30 PM	63.6	62.9	62.6	62.1	62.1	61.7	61.1
22-Nov-22	12:40 PM	63.9	62.9	62.4	60.6	61.6	56.6	55.8
22-Nov-22	12:50 PM	60.8	60.1	58.5	57.2	56.9	56.3	55.8
22-Nov-22	1:00 PM	65.3	60.8	57.7	57.1	56.8	56.2	55.6
22-Nov-22	1:10 PM	61.1	60.6	58.5	57.8	57.6	57.0	55.8
22-Nov-22	1:20 PM	59.9	58.9	58.0	57.3	57.2	56.6	55.9
22-Nov-22	1:30 PM	62.8	60.4	58.7	57.8	57.6	57.0	56.2
22-Nov-22	1:40 PM	61.4	60.3	59.4	58.4	58.2	57.5	56.6
22-Nov-22	1:50 PM	62.4	61.7	59.1	58.2	57.9	57.3	56.5
22-Nov-22	2:00 PM	63.7	61.9	59.1	58.1	57.7	57.0	56.1

Table 1a (continued): A-weighted 10-minute Noise Levels at LT-V1

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	2:10 PM	65.3	63.3	59.3	58.6	58.3	57.7	56.9
22-Nov-22	2:20 PM	63.9	62.7	59.0	58.3	58.0	57.4	56.9
22-Nov-22	2:30 PM	64.3	62.8	58.7	58.1	57.8	57.1	56.6
22-Nov-22	2:40 PM	65.9	64.7	58.7	58.2	57.7	57.0	56.6
22-Nov-22	2:50 PM	61.1	59.9	58.2	57.5	57.4	56.8	56.1
22-Nov-22	3:00 PM	59.4	58.3	57.7	57.2	57.2	56.6	56.0
22-Nov-22	3:10 PM	70.6	67.0	58.6	58.5	57.7	57.1	56.5
22-Nov-22	3:20 PM	64.2	61.1	59.1	58.0	57.6	57.0	55.6
22-Nov-22	3:30 PM	61.9	59.7	58.6	57.4	57.3	56.1	55.1
22-Nov-22	3:40 PM	61.9	60.5	59.1	57.9	57.7	56.7	55.4
22-Nov-22	3:50 PM	62.6	61.4	59.9	58.7	58.5	57.2	55.7
22-Nov-22	4:00 PM	68.0	63.7	59.3	58.4	58.1	56.9	55.8

Table 1b: un-weighted 10-minute Octave Band Leq Noise Levels at LT-V1

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	4:10 PM	66.5	63.6	58.0	53.1	48.6	39.8	34.0
21-Nov-22	4:20 PM	67.1	64.8	58.0	51.7	47.1	38.0	32.1
21-Nov-22	4:30 PM	68.7	67.0	58.4	52.5	49.4	34.6	24.6
21-Nov-22	4:40 PM	68.0	66.7	57.1	50.4	44.3	32.9	24.4
21-Nov-22	4:50 PM	66.7	65.9	57.5	51.9	46.0	36.2	26.3
21-Nov-22	5:00 PM	69.3	68.2	58.9	54.3	49.0	39.3	35.3
21-Nov-22	5:10 PM	71.2	69.5	61.0	57.2	51.2	43.5	42.8
21-Nov-22	5:20 PM	70.9	68.8	59.2	54.4	48.8	38.6	28.8
21-Nov-22	5:30 PM	71.8	69.3	59.7	56.3	49.6	38.9	27.8
21-Nov-22	5:40 PM	71.6	69.1	58.4	54.2	48.3	38.2	28.5
21-Nov-22	5:50 PM	71.1	68.4	58.8	54.2	47.6	36.0	25.5
21-Nov-22	6:00 PM	71.5	68.3	58.4	54.1	47.3	36.6	29.4
21-Nov-22	6:10 PM	71.8	68.3	58.1	53.3	45.6	36.5	30.7
21-Nov-22	6:20 PM	71.8	68.0	58.8	54.2	45.4	37.7	31.3
21-Nov-22	6:30 PM	72.6	68.6	58.5	54.9	46.3	40.3	30.3
21-Nov-22	6:40 PM	71.5	68.1	58.4	54.2	44.9	35.3	25.3
21-Nov-22	6:50 PM	71.8	68.0	58.4	54.2	45.2	50.2	29.1
21-Nov-22	7:00 PM	72.1	68.1	59.2	55.2	46.3	38.9	28.5
21-Nov-22	7:10 PM	72.6	68.9	62.0	58.6	52.9	52.9	35.8
21-Nov-22	7:20 PM	74.0	65.9	60.1	56.5	51.3	39.8	29.5
21-Nov-22	7:30 PM	67.1	64.0	60.9	56.4	48.4	34.1	23.7
21-Nov-22	7:40 PM	66.2	63.8	59.2	57.0	52.6	37.9	24.9
21-Nov-22	7:50 PM	65.2	61.5	59.1	55.1	48.9	36.7	26.3

Table 1b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V1

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	8:00 PM	65.5	62.6	60.2	67.3	63.3	47.6	27.4
21-Nov-22	8:10 PM	65.4	62.2	58.7	57.8	53.2	41.7	23.3
21-Nov-22	8:20 PM	64.3	61.7	58.3	56.9	53.0	40.7	22.5
21-Nov-22	8:30 PM	64.6	62.0	58.0	55.7	49.4	37.0	21.2
21-Nov-22	8:40 PM	66.3	63.4	58.9	56.6	49.4	37.8	26.4
21-Nov-22	8:50 PM	66.5	64.4	58.4	55.2	48.3	36.8	23.0
21-Nov-22	9:00 PM	66.8	65.1	58.0	54.4	50.7	37.5	23.1
21-Nov-22	9:10 PM	66.0	64.0	59.2	55.0	49.3	39.9	23.4
21-Nov-22	9:20 PM	66.5	64.3	59.0	55.0	49.3	38.7	22.5
21-Nov-22	9:30 PM	67.1	63.9	59.8	56.4	50.7	42.8	25.5
21-Nov-22	9:40 PM	68.1	63.8	59.0	54.9	48.5	40.2	26.3
21-Nov-22	9:50 PM	66.0	64.0	60.4	58.5	51.5	44.7	41.7
21-Nov-22	10:00 PM	64.4	64.1	58.6	54.9	49.4	39.3	24.0
21-Nov-22	10:10 PM	64.1	63.4	57.7	54.5	48.0	38.7	23.1
21-Nov-22	10:20 PM	64.7	63.5	57.2	55.4	49.2	39.9	26.8
21-Nov-22	10:30 PM	64.8	64.4	59.1	56.6	52.7	42.1	28.6
21-Nov-22	10:40 PM	64.4	63.3	58.4	61.2	55.3	43.5	27.8
21-Nov-22	10:50 PM	63.9	63.5	58.3	56.6	50.9	41.4	26.5
21-Nov-22	11:00 PM	62.6	62.6	57.5	57.1	55.5	41.4	23.1
21-Nov-22	11:10 PM	64.0	63.3	58.9	55.4	49.2	37.9	23.0
21-Nov-22	11:20 PM	63.4	63.6	58.6	55.3	48.9	39.1	26.7
21-Nov-22	11:30 PM	63.4	63.3	58.7	56.9	49.8	39.4	29.4
21-Nov-22	11:40 PM	64.3	63.6	58.3	56.0	49.5	38.5	27.6
21-Nov-22	11:50 PM	62.8	63.3	59.4	56.3	49.4	37.5	26.8
22-Nov-22	12:00 AM	64.6	63.8	61.1	58.7	52.0	39.6	26.8
22-Nov-22	12:10 AM	64.3	62.6	58.9	57.4	51.5	42.2	34.9
22-Nov-22	12:20 AM	63.6	63.3	59.8	57.0	50.1	40.2	32.5
22-Nov-22	12:30 AM	62.6	62.3	59.5	56.6	49.7	36.5	20.3
22-Nov-22	12:40 AM	61.6	61.2	58.4	56.1	48.4	36.4	19.8
22-Nov-22	12:50 AM	61.1	62.0	59.1	55.5	48.1	35.9	20.0
22-Nov-22	1:00 AM	61.9	62.8	60.2	57.4	50.7	35.7	17.7
22-Nov-22	1:10 AM	65.4	66.2	62.9	60.9	52.7	45.0	30.9
22-Nov-22	1:20 AM	62.2	63.3	59.5	57.0	47.5	34.0	24.0
22-Nov-22	1:30 AM	64.9	65.0	61.6	58.9	52.1	45.3	27.3
22-Nov-22	1:40 AM	77.3	72.4	65.9	61.6	55.2	61.2	41.3
22-Nov-22	1:50 AM	74.6	71.8	65.4	61.7	55.6	54.5	42.6
22-Nov-22	2:00 AM	72.0	68.0	63.2	61.1	54.6	49.3	41.0
22-Nov-22	2:10 AM	66.3	63.2	61.1	59.7	51.6	38.7	25.9
22-Nov-22	2:20 AM	63.6	62.7	60.5	59.2	51.2	38.3	24.3

Table 1b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V1

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	2:30 AM	62.7	63.1	60.3	59.3	51.1	38.7	26.0
22-Nov-22	2:40 AM	61.7	61.6	60.2	59.4	51.9	39.1	27.4
22-Nov-22	2:50 AM	62.2	62.2	60.1	59.4	51.6	38.8	26.5
22-Nov-22	3:00 AM	65.4	63.1	60.4	59.5	51.6	38.7	26.4
22-Nov-22	3:10 AM	60.9	61.0	59.4	58.7	50.6	38.6	26.7
22-Nov-22	3:20 AM	59.7	59.9	59.1	58.3	50.4	40.2	32.3
22-Nov-22	3:30 AM	66.4	64.4	59.5	59.1	51.1	39.4	27.4
22-Nov-22	3:40 AM	63.0	62.5	59.5	58.8	50.6	37.6	23.0
22-Nov-22	3:50 AM	60.4	60.9	59.0	58.1	50.6	37.8	23.1
22-Nov-22	4:00 AM	64.7	61.5	58.8	58.5	51.2	38.4	24.6
22-Nov-22	4:10 AM	60.8	61.0	58.8	58.0	50.6	38.0	23.9
22-Nov-22	4:20 AM	61.5	61.5	59.4	58.2	51.2	38.3	23.4
22-Nov-22	4:30 AM	61.9	60.9	58.5	57.9	50.4	38.1	23.1
22-Nov-22	4:40 AM	63.7	62.7	59.7	59.1	51.4	38.9	24.7
22-Nov-22	4:50 AM	64.2	62.5	59.4	58.8	51.3	38.8	23.9
22-Nov-22	5:00 AM	68.4	63.4	59.8	58.8	51.0	38.7	25.3
22-Nov-22	5:10 AM	69.3	64.9	60.3	59.7	51.9	39.9	26.2
22-Nov-22	5:20 AM	67.0	63.8	60.0	59.8	52.1	40.1	28.3
22-Nov-22	5:30 AM	66.0	63.8	60.3	60.4	52.1	40.1	28.3
22-Nov-22	5:40 AM	66.1	63.5	60.0	60.2	51.3	39.6	28.7
22-Nov-22	5:50 AM	66.3	63.1	60.1	58.8	50.5	38.0	24.2
22-Nov-22	6:00 AM	66.2	63.2	60.7	60.0	52.0	39.2	26.4
22-Nov-22	6:10 AM	66.1	63.5	60.3	59.4	51.3	38.7	26.0
22-Nov-22	6:20 AM	67.5	64.4	61.0	60.3	52.2	39.0	25.2
22-Nov-22	6:30 AM	66.6	64.9	61.5	59.9	51.9	39.3	27.0
22-Nov-22	6:40 AM	65.8	64.8	62.8	60.5	52.7	39.1	24.9
22-Nov-22	6:50 AM	65.8	64.8	61.6	59.5	52.0	39.5	29.8
22-Nov-22	7:00 AM	66.3	65.0	62.5	59.5	52.1	40.7	28.5
22-Nov-22	7:10 AM	68.6	65.4	63.5	59.8	52.0	40.4	28.4
22-Nov-22	7:20 AM	68.1	65.7	62.5	59.8	51.5	39.6	28.3
22-Nov-22	7:30 AM	67.9	65.6	62.0	59.8	52.0	37.6	22.8
22-Nov-22	7:40 AM	67.8	64.1	61.0	58.1	50.7	36.5	23.6
22-Nov-22	7:50 AM	67.6	63.8	60.4	57.6	50.3	37.0	25.3
22-Nov-22	8:00 AM	67.3	63.9	60.7	57.6	49.8	36.3	24.3
22-Nov-22	8:10 AM	66.1	63.4	60.4	58.1	49.0	38.7	33.1
22-Nov-22	8:20 AM	65.9	63.1	60.5	58.0	49.2	38.6	32.9
22-Nov-22	8:30 AM	66.3	67.6	65.2	66.5	57.0	45.1	31.7
22-Nov-22	8:40 AM	66.5	68.8	66.8	68.6	59.1	46.9	32.5
22-Nov-22	8:50 AM	65.9	68.5	66.7	68.3	59.0	46.7	32.4

Table 1b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V1

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	9:00 AM	65.0	68.1	66.8	68.3	58.9	46.5	31.9
22-Nov-22	9:10 AM	64.3	67.7	66.8	67.9	58.6	46.2	31.5
22-Nov-22	9:20 AM	64.1	67.3	67.0	67.4	58.2	46.2	33.4
22-Nov-22	9:30 AM	67.2	69.2	68.8	68.1	59.6	51.5	36.9
22-Nov-22	9:40 AM	65.4	67.6	67.5	67.0	58.2	45.7	31.2
22-Nov-22	9:50 AM	64.9	67.4	67.5	66.7	58.2	45.4	30.7
22-Nov-22	10:00 AM	65.7	68.3	67.8	66.5	58.4	45.2	30.7
22-Nov-22	10:10 AM	65.8	69.1	67.8	66.3	58.6	46.5	36.6
22-Nov-22	10:20 AM	64.3	68.0	67.8	66.2	58.3	45.9	32.6
22-Nov-22	10:30 AM	64.3	68.3	68.0	66.2	58.3	46.2	31.1
22-Nov-22	10:40 AM	64.3	67.6	67.9	66.2	58.0	45.8	30.7
22-Nov-22	10:50 AM	64.6	67.9	68.0	66.2	57.8	45.4	31.3
22-Nov-22	11:00 AM	64.4	68.4	68.0	66.7	58.3	46.1	30.8
22-Nov-22	11:10 AM	64.1	68.0	68.0	66.4	58.3	46.4	32.3
22-Nov-22	11:20 AM	65.1	67.9	67.2	65.7	57.6	46.2	31.1
22-Nov-22	11:30 AM	64.1	65.8	63.4	63.0	55.5	44.7	30.0
22-Nov-22	11:40 AM	63.2	66.3	63.4	62.7	55.6	43.8	30.3
22-Nov-22	11:50 AM	63.4	66.6	63.5	62.4	55.6	44.3	33.7
22-Nov-22	12:00 PM	63.0	66.4	63.7	62.6	55.6	42.9	28.1
22-Nov-22	12:10 PM	63.5	66.7	64.1	62.3	55.7	43.6	29.4
22-Nov-22	12:20 PM	62.8	66.3	64.0	62.4	55.8	44.0	28.8
22-Nov-22	12:30 PM	63.5	66.3	63.9	62.3	55.7	43.6	30.6
22-Nov-22	12:40 PM	64.5	66.1	62.7	60.5	53.8	41.9	27.5
22-Nov-22	12:50 PM	63.6	65.5	60.4	56.3	49.3	40.8	32.8
22-Nov-22	1:00 PM	64.6	65.5	59.4	56.2	49.8	43.4	32.1
22-Nov-22	1:10 PM	64.1	66.1	60.7	56.9	50.2	41.8	27.9
22-Nov-22	1:20 PM	63.5	65.2	59.8	56.5	50.1	42.7	26.6
22-Nov-22	1:30 PM	64.1	65.7	60.2	56.9	50.8	44.4	31.7
22-Nov-22	1:40 PM	65.2	66.1	61.2	57.4	51.3	44.8	35.0
22-Nov-22	1:50 PM	66.1	65.8	60.7	57.4	51.1	44.1	33.5
22-Nov-22	2:00 PM	65.2	65.9	60.6	57.1	50.9	44.5	32.0
22-Nov-22	2:10 PM	66.2	66.4	61.0	57.9	51.3	44.3	32.0
22-Nov-22	2:20 PM	65.6	66.4	60.9	57.5	50.8	43.8	30.2
22-Nov-22	2:30 PM	65.1	66.3	60.5	57.1	50.7	44.0	29.8
22-Nov-22	2:40 PM	65.2	66.2	60.8	57.3	50.6	44.0	30.2
22-Nov-22	2:50 PM	64.8	66.0	60.0	56.6	50.3	42.7	28.7
22-Nov-22	3:00 PM	64.7	65.8	59.8	56.3	49.7	41.1	28.5
22-Nov-22	3:10 PM	65.6	66.5	60.4	58.3	50.4	42.2	26.4
22-Nov-22	3:20 PM	65.2	66.2	61.6	57.1	49.6	40.8	27.9

Table 1b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V1

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	3:30 PM	64.5	63.8	60.0	57.3	49.8	39.6	28.4
22-Nov-22	3:40 PM	65.5	64.1	60.4	57.9	50.4	40.2	28.4
22-Nov-22	3:50 PM	67.9	66.9	61.0	58.1	51.1	42.3	32.8
22-Nov-22	4:00 PM	66.1	65.4	60.2	58.0	51.7	43.1	34.2

Table 2: A-weighted Hourly Noise Levels at LT-V2

Date	Hour beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	3:00 PM	82.7	73.4	62.0	61.7	56.1	55.1	52.5
21-Nov-22	4:00 PM	87.2	73.2	63.0	64.1	57.6	55.7	54.4
21-Nov-22	5:00 PM	85.5	71.5	61.7	61.9	57.9	57.1	54.9
21-Nov-22	6:00 PM	80.6	69.5	60.0	60.3	56.3	55.6	54.2
21-Nov-22	7:00 PM	92.2	69.8	63.8	65.3	59.0	57.3	53.7
21-Nov-22	8:00 PM	85.2	77.8	67.8	66.6	59.6	56.5	53.5
21-Nov-22	9:00 PM	81.1	65.9	56.9	58.8	54.2	53.5	52.5
21-Nov-22	10:00 PM	89.0	69.6	59.8	61.8	55.4	54.2	53.1
21-Nov-22	11:00 PM	87.8	79.9	69.7	69.9	64.9	59.4	53.5
22-Nov-22	12:00 AM	88.4	71.4	60.5	63.8	55.9	54.6	52.2
22-Nov-22	1:00 AM	85.5	69.7	58.8	60.8	55.4	54.2	52.6
22-Nov-22	2:00 AM	87.5	70.5	60.4	62.2	55.5	53.4	50.8
22-Nov-22	3:00 AM	84.9	67.5	56.7	58.9	52.9	51.3	48.7
22-Nov-22	4:00 AM	82.8	69.0	59.0	60.3	54.3	52.8	50.5
22-Nov-22	5:00 AM	86.2	74.9	66.1	64.6	59.0	56.0	53.4
22-Nov-22	6:00 AM	82.6	77.2	67.4	65.8	60.1	57.7	55.6
22-Nov-22	7:00 AM	86.9	77.6	67.0	66.0	57.8	56.2	53.3
22-Nov-22	8:00 AM	81.9	76.0	65.1	64.4	57.5	55.7	54.5
22-Nov-22	9:00 AM	87.6	74.7	64.8	63.5	56.8	54.5	51.6
22-Nov-22	10:00 AM	93.7	78.7	68.2	68.4	58.2	55.5	53.1
22-Nov-22	11:00 AM	87.0	77.4	67.6	65.7	56.8	54.5	52.0
22-Nov-22	12:00 PM	89.7	79.6	68.5	68.0	58.8	53.7	51.2
22-Nov-22	1:00 PM	89.8	77.8	66.0	65.6	55.6	53.1	51.1
22-Nov-22	2:00 PM	89.2	76.9	66.4	66.7	57.9	54.5	52.0

Table 2a: A-weighted 10-minute Noise Levels at LT-V2

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	2:30 PM	81.0	77.4	66.6	65.1	58.1	56.8	55.8
21-Nov-22	2:40 PM	87.8	75.7	62.8	65.4	57.2	56.3	55.7
21-Nov-22	2:50 PM	84.6	77.6	63.5	65.1	57.0	56.0	55.0
21-Nov-22	3:00 PM	78.3	71.7	63.3	61.6	57.2	56.0	55.5
21-Nov-22	3:10 PM	76.8	74.5	62.9	61.3	56.1	55.0	52.5
21-Nov-22	3:20 PM	75.9	68.9	58.4	58.5	55.3	54.2	53.5
21-Nov-22	3:30 PM	76.9	72.9	61.4	59.9	55.6	54.9	53.6

Table 2a(continued): A-weighted 10-minute Noise Levels at LT-V2

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	3:40 PM	76.6	73.1	62.6	60.9	56.1	55.1	54.0
21-Nov-22	3:50 PM	82.7	79.2	63.2	65.0	56.3	55.3	54.2
21-Nov-22	4:00 PM	87.2	79.5	71.7	68.9	63.7	56.8	55.1
21-Nov-22	4:10 PM	79.5	75.5	63.0	62.0	56.8	55.5	54.7
21-Nov-22	4:20 PM	83.2	70.2	57.7	61.4	56.1	55.4	54.6
21-Nov-22	4:30 PM	69.3	65.6	57.4	57.0	55.7	55.0	54.5
21-Nov-22	4:40 PM	82.1	77.4	66.6	65.2	56.8	55.6	54.4
21-Nov-22	4:50 PM	77.6	71.1	61.3	60.1	56.7	55.8	55.2
21-Nov-22	5:00 PM	77.0	73.5	62.5	61.3	57.4	56.5	54.9
21-Nov-22	5:10 PM	85.5	78.0	65.1	65.0	58.1	57.2	56.4
21-Nov-22	5:20 PM	70.5	67.1	59.9	59.3	58.1	57.3	56.2
21-Nov-22	5:30 PM	82.4	76.2	64.7	63.7	58.4	57.4	56.4
21-Nov-22	5:40 PM	75.4	66.2	58.3	58.7	57.4	56.9	56.3
21-Nov-22	5:50 PM	73.2	68.0	59.7	59.1	57.7	57.0	56.3
21-Nov-22	6:00 PM	73.1	69.5	61.2	59.4	56.8	55.8	55.0
21-Nov-22	6:10 PM	80.6	77.2	67.2	64.7	57.0	55.9	55.1
21-Nov-22	6:20 PM	74.1	71.0	58.4	58.9	56.0	55.2	54.2
21-Nov-22	6:30 PM	68.4	66.0	58.8	57.5	56.0	55.4	54.4
21-Nov-22	6:40 PM	75.1	69.4	57.6	58.7	56.0	55.6	55.0
21-Nov-22	6:50 PM	73.8	63.8	56.7	57.0	55.9	55.4	54.6
21-Nov-22	7:00 PM	63.8	60.6	57.6	56.8	56.5	55.8	55.1
21-Nov-22	7:10 PM	64.2	61.9	57.5	56.9	56.6	55.9	55.2
21-Nov-22	7:20 PM	67.5	64.4	61.8	61.0	60.8	59.9	56.9
21-Nov-22	7:30 PM	88.4	74.6	70.8	67.7	61.8	59.8	57.6
21-Nov-22	7:40 PM	92.2	83.2	69.3	70.0	58.3	55.2	53.7
21-Nov-22	7:50 PM	80.6	73.8	65.7	63.5	59.9	57.3	56.3
21-Nov-22	8:00 PM	84.0	81.5	72.4	69.3	61.0	56.9	56.1
21-Nov-22	8:10 PM	85.2	81.1	68.4	68.3	59.7	57.5	56.5
21-Nov-22	8:20 PM	84.5	79.4	67.8	66.7	60.0	57.3	56.4
21-Nov-22	8:30 PM	81.9	74.5	67.2	64.4	60.0	56.6	55.1
21-Nov-22	8:40 PM	82.0	75.7	66.3	64.6	60.1	56.3	55.1
21-Nov-22	8:50 PM	77.6	74.6	64.6	62.1	56.6	54.3	53.5
21-Nov-22	9:00 PM	57.9	55.9	54.7	54.0	53.8	53.2	52.5
21-Nov-22	9:10 PM	81.1	76.8	57.7	61.7	54.2	53.5	53.0
21-Nov-22	9:20 PM	58.3	56.7	55.3	54.5	54.3	53.5	52.7
21-Nov-22	9:30 PM	81.1	75.9	56.2	61.7	54.4	53.5	53.0
21-Nov-22	9:40 PM	64.9	61.0	56.1	55.2	54.5	53.9	53.3
21-Nov-22	9:50 PM	76.4	69.3	61.2	58.8	54.1	53.1	52.6
21-Nov-22	10:00 PM	78.3	71.1	58.1	59.2	54.5	53.6	53.1

Table 2a(continued): A-weighted 10-minute Noise Levels at LT-V2

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	10:10 PM	65.7	64.6	57.0	56.0	54.5	53.8	53.1
21-Nov-22	10:20 PM	65.7	61.4	55.0	54.8	54.3	53.8	53.2
21-Nov-22	10:30 PM	74.1	68.5	57.0	57.6	55.3	54.5	54.0
21-Nov-22	10:40 PM	81.8	77.4	67.1	64.9	56.9	55.2	54.4
21-Nov-22	10:50 PM	89.0	74.3	64.8	65.8	57.0	54.2	53.1
21-Nov-22	11:00 PM	84.1	77.9	66.2	64.8	57.7	55.3	53.9
21-Nov-22	11:10 PM	85.1	79.3	69.0	67.2	60.6	55.9	54.6
21-Nov-22	11:20 PM	86.7	83.4	66.5	68.4	58.4	54.9	53.5
21-Nov-22	11:30 PM	87.8	81.5	72.1	71.9	71.0	56.9	55.1
21-Nov-22	11:40 PM	80.6	76.8	72.8	71.6	71.0	70.6	70.3
21-Nov-22	11:50 PM	83.8	80.4	71.6	71.1	70.8	62.6	56.7
22-Nov-22	12:00 AM	86.0	76.6	60.2	63.9	57.1	55.5	54.3
22-Nov-22	12:10 AM	88.4	82.1	61.5	67.3	56.2	55.0	53.7
22-Nov-22	12:20 AM	67.7	60.1	57.2	56.4	56.0	55.0	54.2
22-Nov-22	12:30 AM	83.8	79.4	68.2	66.5	56.6	55.2	54.0
22-Nov-22	12:40 AM	84.0	73.2	60.4	61.1	54.9	53.5	52.2
22-Nov-22	12:50 AM	59.2	56.8	55.6	54.5	54.3	53.5	52.7
22-Nov-22	1:00 AM	85.5	77.4	57.5	63.6	55.0	53.5	52.6
22-Nov-22	1:10 AM	81.2	69.0	61.9	60.8	57.1	55.5	54.2
22-Nov-22	1:20 AM	71.6	65.9	57.4	56.7	55.5	53.8	53.0
22-Nov-22	1:30 AM	66.7	62.9	57.3	56.0	55.0	54.1	53.5
22-Nov-22	1:40 AM	78.0	65.2	58.0	58.1	55.2	54.4	53.7
22-Nov-22	1:50 AM	80.7	78.0	60.5	63.3	54.8	53.9	53.1
22-Nov-22	2:00 AM	76.1	68.4	58.5	58.1	55.3	54.3	53.8
22-Nov-22	2:10 AM	65.7	63.5	57.2	56.0	55.0	53.7	52.5
22-Nov-22	2:20 AM	76.5	70.0	57.5	58.3	54.8	53.0	51.6
22-Nov-22	2:30 AM	64.7	62.8	58.5	56.4	55.3	53.3	51.6
22-Nov-22	2:40 AM	86.3	80.6	61.8	65.5	55.7	53.5	51.5
22-Nov-22	2:50 AM	87.5	77.9	68.6	66.2	56.9	52.7	50.8
22-Nov-22	3:00 AM	63.8	61.0	56.0	54.4	53.7	51.8	51.0
22-Nov-22	3:10 AM	76.9	72.4	56.9	58.8	52.9	51.3	50.5
22-Nov-22	3:20 AM	63.4	59.2	54.1	53.1	52.3	51.6	50.8
22-Nov-22	3:30 AM	81.8	72.8	57.3	60.6	54.2	52.1	50.9
22-Nov-22	3:40 AM	66.2	61.5	55.6	53.6	52.1	50.5	49.2
22-Nov-22	3:50 AM	84.9	78.3	60.0	63.2	51.9	50.2	48.7
22-Nov-22	4:00 AM	62.8	59.4	54.1	53.3	52.8	51.7	50.5
22-Nov-22	4:10 AM	68.5	64.0	56.3	54.8	52.3	51.5	50.6
22-Nov-22	4:20 AM	69.1	65.7	57.1	55.8	53.3	52.2	51.0
22-Nov-22	4:30 AM	78.6	75.6	57.3	60.4	52.9	51.9	51.2

Table 2a(continued): A-weighted 10-minute Noise Levels at LT-V2

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	4:40 AM	76.7	71.7	62.3	60.2	55.9	53.8	52.7
22-Nov-22	4:50 AM	82.8	77.6	66.9	65.3	58.6	55.9	54.6
22-Nov-22	5:00 AM	78.3	72.5	65.7	62.7	57.9	54.4	53.4
22-Nov-22	5:10 AM	81.2	75.3	67.5	64.6	60.4	56.2	54.8
22-Nov-22	5:20 AM	81.0	76.5	68.3	65.4	59.8	56.6	55.1
22-Nov-22	5:30 AM	86.2	81.6	66.7	67.6	58.2	56.1	54.6
22-Nov-22	5:40 AM	74.5	70.2	63.0	60.6	58.4	55.8	54.3
22-Nov-22	5:50 AM	80.4	73.4	65.4	63.2	59.0	56.7	55.5
22-Nov-22	6:00 AM	81.5	78.2	70.6	67.4	61.8	58.4	56.6
22-Nov-22	6:10 AM	80.9	75.7	63.7	63.2	58.4	57.5	56.7
22-Nov-22	6:20 AM	82.6	78.4	67.9	66.4	60.6	58.6	57.4
22-Nov-22	6:30 AM	82.0	78.8	70.9	67.5	60.6	58.0	56.9
22-Nov-22	6:40 AM	81.5	76.9	64.9	64.7	59.7	57.2	55.9
22-Nov-22	6:50 AM	79.8	75.1	66.1	64.0	59.6	56.5	55.6
22-Nov-22	7:00 AM	86.9	82.3	73.2	69.6	58.8	57.2	55.9
22-Nov-22	7:10 AM	84.1	78.0	66.4	65.9	57.9	56.5	55.3
22-Nov-22	7:20 AM	76.0	74.1	62.8	62.0	57.7	56.7	55.9
22-Nov-22	7:30 AM	79.1	76.4	67.0	65.1	59.1	57.0	56.2
22-Nov-22	7:40 AM	81.8	80.1	67.3	66.2	57.0	55.4	54.5
22-Nov-22	7:50 AM	76.3	74.5	65.0	62.5	56.2	54.6	53.3
22-Nov-22	8:00 AM	81.3	74.5	61.3	62.0	56.4	55.1	54.1
22-Nov-22	8:10 AM	81.7	79.6	71.5	67.6	58.0	55.5	54.6
22-Nov-22	8:20 AM	76.6	73.1	60.2	60.4	56.4	55.5	54.7
22-Nov-22	8:30 AM	79.6	77.3	66.3	64.5	57.3	55.7	54.4
22-Nov-22	8:40 AM	79.3	74.4	65.6	63.6	58.9	56.9	56.0
22-Nov-22	8:50 AM	81.9	77.0	65.7	64.8	57.8	55.3	53.3
22-Nov-22	9:00 AM	81.1	73.6	63.7	62.0	55.0	53.6	52.8
22-Nov-22	9:10 AM	78.6	73.5	60.8	60.6	55.8	52.7	51.6
22-Nov-22	9:20 AM	78.6	74.4	66.0	63.0	57.1	55.4	54.6
22-Nov-22	9:30 AM	79.8	77.3	69.1	66.1	59.6	57.2	55.9
22-Nov-22	9:40 AM	76.3	72.4	63.7	60.9	55.1	52.8	52.1
22-Nov-22	9:50 AM	87.6	76.7	65.5	65.4	58.2	55.2	52.4
22-Nov-22	10:00 AM	83.8	78.3	69.0	66.6	61.2	56.9	54.4
22-Nov-22	10:10 AM	77.8	73.2	65.7	62.7	57.5	55.7	54.4
22-Nov-22	10:20 AM	93.7	89.2	73.1	74.1	58.4	55.4	54.0
22-Nov-22	10:30 AM	78.5	76.6	67.1	64.0	57.9	54.9	54.0
22-Nov-22	10:40 AM	81.1	78.0	66.7	65.0	55.6	54.0	53.1
22-Nov-22	10:50 AM	83.1	76.6	67.8	65.2	58.3	56.2	55.6
22-Nov-22	11:00 AM	80.8	76.8	69.3	65.8	58.3	56.0	55.2

Table 2a(continued): A-weighted 10-minute Noise Levels at LT-V2

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	11:10 AM	87.0	78.8	68.5	67.0	56.7	55.4	54.4
22-Nov-22	11:20 AM	78.8	73.5	63.6	62.0	56.4	54.8	53.5
22-Nov-22	11:30 AM	81.4	80.3	70.2	67.4	57.1	53.9	52.5
22-Nov-22	11:40 AM	78.6	75.3	66.4	63.2	55.1	53.4	52.0
22-Nov-22	11:50 AM	82.5	79.6	67.5	66.3	57.4	53.5	52.5
22-Nov-22	12:00 PM	79.9	76.2	64.8	63.3	57.6	54.0	52.5
22-Nov-22	12:10 PM	84.6	78.9	68.6	66.8	58.7	54.3	52.0
22-Nov-22	12:20 PM	84.3	78.8	67.4	65.8	55.6	53.4	51.9
22-Nov-22	12:30 PM	82.6	78.2	72.8	69.4	66.9	55.2	51.4
22-Nov-22	12:40 PM	89.7	85.8	71.5	71.3	59.4	52.9	51.3
22-Nov-22	12:50 PM	87.9	79.9	65.6	67.2	54.6	52.5	51.2
22-Nov-22	1:00 PM	79.7	74.4	63.6	61.9	54.5	52.7	51.1
22-Nov-22	1:10 PM	89.8	79.3	66.2	68.3	55.0	52.7	51.4
22-Nov-22	1:20 PM	82.8	78.1	63.8	63.7	54.6	52.5	51.2
22-Nov-22	1:30 PM	85.4	80.4	68.1	67.2	55.9	52.9	51.5
22-Nov-22	1:40 PM	80.6	77.5	66.1	64.6	56.7	53.8	52.4
22-Nov-22	1:50 PM	81.2	76.9	68.1	65.0	57.1	54.1	53.2
22-Nov-22	2:00 PM	89.2	80.9	67.1	68.1	58.9	54.8	53.4
22-Nov-22	2:10 PM	86.0	83.0	71.5	70.3	59.9	55.1	53.8
22-Nov-22	2:20 PM	82.4	78.1	70.5	66.9	59.6	55.0	53.6
22-Nov-22	2:30 PM	85.6	78.6	67.0	65.9	57.1	54.9	53.5
22-Nov-22	2:40 PM	77.7	69.7	60.1	59.3	55.0	53.2	52.0
22-Nov-22	2:50 PM	74.6	71.2	62.1	60.3	56.9	54.1	52.7
22-Nov-22	3:00 PM	78.5	74.5	61.7	61.0	54.8	54.0	53.2
22-Nov-22	3:10 PM	75.2	71.4	60.5	59.2	54.0	51.6	50.6

Table 2b: un-weighted 10-minute Octave Band Leq Noise Levels at LT-V2

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	2:30 PM	68.1	62.7	59.2	62.2	61.0	57.8	51.9
21-Nov-22	2:40 PM	62.4	61.1	56.5	60.7	59.3	61.1	53.2
21-Nov-22	2:50 PM	64.8	62.4	60.9	63.2	60.7	57.5	50.3
21-Nov-22	3:00 PM	64.6	62.6	59.0	60.0	57.2	53.0	45.3
21-Nov-22	3:10 PM	70.6	60.5	55.2	58.4	57.2	54.2	47.8
21-Nov-22	3:20 PM	62.1	58.0	54.9	56.2	55.2	49.2	42.1
21-Nov-22	3:30 PM	69.5	60.4	56.7	58.4	55.4	50.8	46.0
21-Nov-22	3:40 PM	66.2	61.7	57.7	58.9	56.7	52.7	46.3
21-Nov-22	3:50 PM	70.5	63.4	58.4	64.2	61.1	54.9	49.0
21-Nov-22	4:00 PM	77.4	74.4	66.6	66.3	64.8	59.3	54.4

Table 2b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V2

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	4:10 PM	65.2	64.6	60.9	60.6	57.1	53.3	47.1
21-Nov-22	4:20 PM	63.3	61.6	57.1	59.7	57.3	52.3	48.0
21-Nov-22	4:30 PM	62.6	59.7	55.3	54.7	53.1	47.6	40.2
21-Nov-22	4:40 PM	66.1	61.9	58.2	62.4	60.8	58.5	53.0
21-Nov-22	4:50 PM	63.1	61.1	57.8	58.0	56.2	50.9	42.8
21-Nov-22	5:00 PM	64.0	61.0	57.1	59.3	57.1	52.9	47.5
21-Nov-22	5:10 PM	65.0	63.3	59.3	62.3	62.2	55.9	49.8
21-Nov-22	5:20 PM	63.2	60.7	56.8	57.5	55.5	49.3	42.2
21-Nov-22	5:30 PM	64.7	63.2	58.8	61.3	59.7	55.4	51.1
21-Nov-22	5:40 PM	62.5	59.3	55.7	56.9	54.9	49.3	42.2
21-Nov-22	5:50 PM	65.9	61.5	56.8	57.4	55.1	49.6	41.6
21-Nov-22	6:00 PM	71.8	61.8	56.4	57.9	55.1	48.9	40.0
21-Nov-22	6:10 PM	68.4	63.8	61.4	62.2	60.0	55.9	53.9
21-Nov-22	6:20 PM	64.8	60.7	57.0	57.5	54.5	49.1	43.0
21-Nov-22	6:30 PM	64.7	61.0	56.4	56.4	52.8	47.1	38.2
21-Nov-22	6:40 PM	64.2	61.2	56.4	56.9	54.0	50.2	43.8
21-Nov-22	6:50 PM	62.3	59.6	55.7	56.2	52.6	45.7	36.1
21-Nov-22	7:00 PM	64.0	61.7	56.6	55.9	51.9	45.1	35.0
21-Nov-22	7:10 PM	62.6	61.8	56.1	55.9	52.2	45.9	35.6
21-Nov-22	7:20 PM	66.7	64.2	58.6	59.7	57.0	50.0	42.1
21-Nov-22	7:30 PM	74.5	68.1	64.8	66.5	63.1	59.5	52.0
21-Nov-22	7:40 PM	76.2	67.3	64.6	70.2	64.6	60.7	53.0
21-Nov-22	7:50 PM	76.7	66.5	61.3	60.8	57.6	54.8	52.7
21-Nov-22	8:00 PM	74.5	69.2	64.6	68.4	65.7	59.0	50.3
21-Nov-22	8:10 PM	71.8	66.6	63.4	67.0	64.8	58.3	49.8
21-Nov-22	8:20 PM	70.4	67.0	62.8	65.1	63.2	56.7	50.1
21-Nov-22	8:30 PM	71.2	67.5	62.6	62.7	60.0	55.2	48.8
21-Nov-22	8:40 PM	70.2	67.4	62.6	62.8	59.5	56.5	49.4
21-Nov-22	8:50 PM	68.0	64.7	59.2	60.2	58.0	52.6	47.3
21-Nov-22	9:00 PM	61.9	59.0	53.7	54.0	48.2	39.8	31.4
21-Nov-22	9:10 PM	65.5	59.8	57.4	58.9	58.2	53.7	49.0
21-Nov-22	9:20 PM	63.0	58.7	54.4	54.5	48.9	39.6	30.9
21-Nov-22	9:30 PM	63.3	58.6	55.4	59.6	59.6	49.8	37.1
21-Nov-22	9:40 PM	63.5	58.9	55.1	55.2	49.6	41.9	33.7
21-Nov-22	9:50 PM	63.2	60.2	56.8	57.3	54.0	49.9	44.4
21-Nov-22	10:00 PM	63.6	60.2	56.3	57.9	54.8	49.2	45.5
21-Nov-22	10:10 PM	63.2	59.1	54.8	55.6	50.4	45.5	38.0
21-Nov-22	10:20 PM	63.9	58.6	54.3	55.0	49.4	39.1	27.2
21-Nov-22	10:30 PM	63.8	58.9	55.2	57.6	52.8	45.5	32.3

Table 2b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V2

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	10:40 PM	67.6	65.5	60.9	63.9	61.3	54.1	46.1
21-Nov-22	10:50 PM	67.4	66.1	62.2	63.3	62.4	56.8	50.5
21-Nov-22	11:00 PM	69.0	65.8	61.8	62.9	60.8	55.5	48.6
21-Nov-22	11:10 PM	70.8	67.6	63.1	65.7	63.7	56.9	50.5
21-Nov-22	11:20 PM	68.5	65.2	61.7	68.1	65.1	56.3	45.8
21-Nov-22	11:30 PM	71.3	68.3	66.3	69.3	66.7	64.9	61.0
21-Nov-22	11:40 PM	77.3	67.7	65.9	69.1	65.9	65.2	61.0
21-Nov-22	11:50 PM	75.5	64.9	64.5	68.4	66.0	64.6	60.2
22-Nov-22	12:00 AM	65.7	61.0	57.6	63.7	60.2	48.8	35.2
22-Nov-22	12:10 AM	66.4	63.3	59.8	65.8	64.7	54.3	45.8
22-Nov-22	12:20 AM	64.8	61.0	56.4	56.6	50.9	40.2	28.5
22-Nov-22	12:30 AM	67.1	65.8	66.9	64.8	61.6	57.4	51.2
22-Nov-22	12:40 AM	64.5	62.0	56.8	57.7	55.1	53.2	51.7
22-Nov-22	12:50 AM	62.4	59.7	54.4	54.8	48.9	36.0	23.1
22-Nov-22	1:00 AM	64.9	60.0	57.1	62.8	61.2	47.3	31.4
22-Nov-22	1:10 AM	69.8	67.5	59.4	60.9	55.0	44.2	29.0
22-Nov-22	1:20 AM	65.5	62.9	56.3	57.2	50.2	40.5	28.8
22-Nov-22	1:30 AM	65.4	60.0	55.9	56.6	49.8	38.3	28.5
22-Nov-22	1:40 AM	66.7	61.5	55.9	57.7	53.6	46.0	36.8
22-Nov-22	1:50 AM	66.2	62.0	58.7	61.0	59.3	54.6	50.9
22-Nov-22	2:00 AM	66.8	69.0	59.0	56.9	50.9	43.3	35.7
22-Nov-22	2:10 AM	64.3	61.0	56.1	56.3	49.2	42.7	35.5
22-Nov-22	2:20 AM	65.0	62.5	56.3	57.1	53.4	48.5	41.9
22-Nov-22	2:30 AM	64.9	63.6	56.2	56.1	50.4	43.9	35.0
22-Nov-22	2:40 AM	65.9	62.7	58.4	64.2	62.8	52.6	44.9
22-Nov-22	2:50 AM	75.2	67.9	64.9	65.5	60.6	57.4	49.3
22-Nov-22	3:00 AM	66.4	61.9	54.9	53.9	47.8	40.2	29.1
22-Nov-22	3:10 AM	63.4	60.8	55.9	56.7	54.1	50.9	44.6
22-Nov-22	3:20 AM	61.3	58.8	53.3	53.5	46.8	37.6	27.7
22-Nov-22	3:30 AM	69.1	63.0	58.1	58.5	56.2	51.2	47.6
22-Nov-22	3:40 AM	63.3	59.8	54.2	54.2	46.3	35.3	28.3
22-Nov-22	3:50 AM	66.3	61.4	56.1	59.9	60.6	53.9	50.1
22-Nov-22	4:00 AM	66.8	60.5	53.6	53.5	46.1	34.8	24.9
22-Nov-22	4:10 AM	61.2	58.5	53.8	54.1	50.2	42.9	31.9
22-Nov-22	4:20 AM	62.4	59.4	54.6	55.0	51.3	44.1	37.1
22-Nov-22	4:30 AM	62.4	60.8	55.4	57.8	56.6	52.4	46.7
22-Nov-22	4:40 AM	66.5	64.7	57.7	58.6	55.7	50.7	43.6
22-Nov-22	4:50 AM	68.1	65.0	60.4	63.2	61.5	57.0	50.8
22-Nov-22	5:00 AM	70.6	67.1	60.0	60.5	58.6	53.1	45.4

Table 2b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V2

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	5:10 AM	73.7	70.9	62.8	62.5	60.2	54.3	46.0
22-Nov-22	5:20 AM	70.3	66.5	60.6	63.8	60.8	56.7	51.8
22-Nov-22	5:30 AM	66.3	62.7	60.5	66.5	64.5	57.0	46.2
22-Nov-22	5:40 AM	67.8	64.6	58.6	59.4	56.0	50.5	44.4
22-Nov-22	5:50 AM	71.2	65.2	59.6	61.1	58.5	54.9	49.2
22-Nov-22	6:00 AM	69.4	65.7	61.7	65.4	63.7	59.0	52.7
22-Nov-22	6:10 AM	70.6	64.4	60.1	62.3	59.4	52.3	44.4
22-Nov-22	6:20 AM	70.8	65.4	61.5	64.0	62.4	58.2	53.2
22-Nov-22	6:30 AM	71.1	67.9	63.1	64.9	63.2	59.7	54.9
22-Nov-22	6:40 AM	68.7	62.2	59.6	62.3	61.0	56.0	51.5
22-Nov-22	6:50 AM	67.3	62.9	59.6	62.3	59.6	55.8	48.3
22-Nov-22	7:00 AM	67.9	63.8	62.0	67.0	65.3	62.3	57.1
22-Nov-22	7:10 AM	70.3	63.3	61.9	64.0	62.3	56.6	51.2
22-Nov-22	7:20 AM	70.5	62.6	58.8	60.6	57.6	52.6	46.2
22-Nov-22	7:30 AM	72.6	68.4	63.0	63.5	59.5	55.9	52.6
22-Nov-22	7:40 AM	69.9	64.2	62.4	64.0	61.5	58.7	53.1
22-Nov-22	7:50 AM	71.4	64.4	60.6	61.1	57.9	53.0	47.2
22-Nov-22	8:00 AM	67.5	61.8	57.8	60.2	57.5	53.6	48.1
22-Nov-22	8:10 AM	73.5	65.3	61.9	64.9	63.3	60.1	54.8
22-Nov-22	8:20 AM	66.3	62.2	57.7	58.9	55.7	51.2	45.2
22-Nov-22	8:30 AM	73.4	67.8	62.8	62.7	59.3	56.3	49.4
22-Nov-22	8:40 AM	67.1	63.0	59.7	62.0	59.1	55.3	47.3
22-Nov-22	8:50 AM	71.7	64.2	63.1	63.7	59.4	56.1	49.1
22-Nov-22	9:00 AM	64.2	61.3	58.0	60.4	57.5	53.6	47.5
22-Nov-22	9:10 AM	65.3	62.3	56.5	59.0	56.0	52.1	45.6
22-Nov-22	9:20 AM	68.4	63.1	59.8	61.5	58.2	54.4	48.2
22-Nov-22	9:30 AM	70.7	66.4	63.7	65.6	60.3	57.2	49.3
22-Nov-22	9:40 AM	67.3	61.8	58.3	59.6	55.2	52.7	45.2
22-Nov-22	9:50 AM	72.8	72.2	65.6	62.5	60.4	55.9	50.6
22-Nov-22	10:00 AM	73.2	70.9	63.7	63.7	61.4	58.2	53.8
22-Nov-22	10:10 AM	68.0	65.0	60.6	61.0	57.4	54.6	49.1
22-Nov-22	10:20 AM	68.7	68.9	72.3	73.7	69.1	64.3	58.1
22-Nov-22	10:30 AM	68.5	68.2	61.8	61.8	59.6	55.3	49.2
22-Nov-22	10:40 AM	72.0	68.1	61.9	63.4	60.6	56.4	49.0
22-Nov-22	10:50 AM	67.8	67.8	61.5	63.3	60.7	57.2	51.0
22-Nov-22	11:00 AM	69.1	67.4	63.4	63.2	62.3	56.7	50.9
22-Nov-22	11:10 AM	69.9	66.4	65.6	65.4	63.5	56.2	50.1
22-Nov-22	11:20 AM	68.9	65.3	61.7	60.6	57.1	51.9	45.3
22-Nov-22	11:30 AM	79.3	65.7	64.7	65.7	63.0	58.9	52.6

Table 2b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V2

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	11:40 AM	67.9	62.7	58.4	60.8	59.3	54.8	49.9
22-Nov-22	11:50 AM	71.1	68.4	65.7	64.4	61.4	57.7	51.2
22-Nov-22	12:00 PM	69.2	65.2	59.2	60.3	58.2	55.8	53.1
22-Nov-22	12:10 PM	69.6	68.2	66.3	65.3	60.8	58.3	53.2
22-Nov-22	12:20 PM	68.5	65.1	60.2	63.4	61.9	58.0	51.3
22-Nov-22	12:30 PM	76.4	68.8	64.8	66.3	63.6	62.8	58.0
22-Nov-22	12:40 PM	71.9	66.7	65.6	70.4	66.9	60.5	55.1
22-Nov-22	12:50 PM	72.8	66.9	65.8	65.9	62.9	57.3	50.7
22-Nov-22	1:00 PM	67.5	63.5	57.3	59.4	57.5	53.8	48.8
22-Nov-22	1:10 PM	71.7	65.8	73.0	61.7	63.0	57.3	52.2
22-Nov-22	1:20 PM	64.6	62.1	57.9	60.6	60.3	55.6	50.4
22-Nov-22	1:30 PM	67.2	66.1	68.4	64.9	62.4	58.0	52.0
22-Nov-22	1:40 PM	68.2	65.3	61.0	62.6	60.2	56.4	50.2
22-Nov-22	1:50 PM	72.3	67.9	61.2	62.5	60.8	56.9	51.1
22-Nov-22	2:00 PM	70.3	70.3	66.5	66.6	63.9	58.4	53.1
22-Nov-22	2:10 PM	69.7	67.3	66.9	69.4	65.9	61.4	55.8
22-Nov-22	2:20 PM	68.7	66.8	62.7	64.3	62.2	59.0	55.2
22-Nov-22	2:30 PM	68.0	64.5	59.0	63.9	60.6	59.3	52.8
22-Nov-22	2:40 PM	69.5	62.7	56.8	57.7	55.0	49.7	43.6
22-Nov-22	2:50 PM	68.1	65.0	58.8	58.0	55.3	51.4	46.8
22-Nov-22	3:00 PM	69.3	64.2	59.8	59.5	55.9	52.2	47.1
22-Nov-22	3:10 PM	68.4	63.8	58.9	57.4	54.5	49.3	43.1

Table 3: A-weighted Hourly Noise Levels at LT-V3

Date	Hour beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	2:00 PM	87.1	67.8	59.7	58.4	54.5	52.5	50.7
21-Nov-22	3:00 PM	79.7	65.4	56.8	57.9	52.7	48.3	46.0
21-Nov-22	4:00 PM	68.1	58.3	54.0	52.8	51.1	50.1	48.6
21-Nov-22	5:00 PM	74.7	64.4	56.5	55.8	54.1	53.1	50.7
21-Nov-22	6:00 PM	71.1	60.7	54.7	54.5	52.5	51.6	50.3
21-Nov-22	7:00 PM	75.6	63.4	56.7	56.1	53.7	52.7	51.1
21-Nov-22	8:00 PM	83.0	68.4	58.6	60.1	55.0	54.0	52.4
21-Nov-22	9:00 PM	71.8	63.9	57.0	56.3	54.8	53.9	52.7
21-Nov-22	10:00 PM	77.0	64.9	58.4	58.3	55.0	53.9	52.4
21-Nov-22	11:00 PM	76.0	65.7	57.9	56.9	54.5	53.1	51.2
22-Nov-22	12:00 AM	76.2	64.2	57.6	57.2	55.5	54.2	52.0
22-Nov-22	1:00 AM	72.4	63.7	56.9	56.2	54.6	53.1	51.2
22-Nov-22	2:00 AM	70.4	61.7	54.7	53.9	52.4	51.2	48.7
22-Nov-22	3:00 AM	68.8	59.1	53.4	52.5	51.4	50.2	48.9
22-Nov-22	4:00 AM	62.7	56.8	54.1	52.7	52.2	50.9	49.1
22-Nov-22	5:00 AM	82.3	65.6	58.5	57.8	55.2	53.4	51.1
22-Nov-22	6:00 AM	75.1	65.3	59.4	58.3	57.2	55.5	53.0
22-Nov-22	7:00 AM	70.9	63.9	58.5	56.9	55.5	54.4	51.5
22-Nov-22	8:00 AM	73.2	67.1	59.2	58.9	55.3	53.6	52.7
22-Nov-22	9:00 AM	77.7	66.2	62.6	62.0	59.4	58.6	55.3
22-Nov-22	10:00 AM	70.8	65.9	60.2	58.6	57.0	55.9	54.7
22-Nov-22	11:00 AM	76.3	68.3	60.5	59.0	55.6	54.5	52.0
22-Nov-22	12:00 PM	77.7	64.5	57.4	56.3	53.7	52.0	49.1
22-Nov-22	1:00 PM	83.8	70.2	61.0	60.5	55.2	53.1	49.4
22-Nov-22	2:00 PM	80.2	70.8	65.3	62.3	57.3	54.7	52.2

Table 3a: A-weighted 10-minute Noise Levels at LT-V3

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	1:50 PM	82.0	76.8	61.2	63.2	54.3	52.3	51.3
21-Nov-22	2:00 PM	64.2	63.0	56.7	55.4	54.7	52.5	51.0
21-Nov-22	2:10 PM	87.1	73.6	65.4	65.3	57.7	53.7	52.3
21-Nov-22	2:20 PM	69.7	69.2	63.2	60.2	53.9	52.2	51.5
21-Nov-22	2:30 PM	73.7	68.3	58.1	57.2	53.9	52.7	51.2
21-Nov-22	2:40 PM	66.3	64.3	59.3	56.2	53.3	51.9	50.9
21-Nov-22	2:50 PM	73.2	68.2	55.7	55.9	53.2	52.0	50.7
21-Nov-22	3:00 PM	79.7	73.5	64.1	62.6	61.0	49.4	47.9
21-Nov-22	3:10 PM	64.4	61.9	53.3	51.2	48.8	47.2	46.0
21-Nov-22	3:20 PM	68.2	60.5	59.1	57.1	57.8	48.5	46.1
21-Nov-22	3:30 PM	64.4	57.0	51.6	50.2	48.9	47.8	46.6
21-Nov-22	3:40 PM	79.1	74.7	57.3	59.7	50.2	48.6	47.1
21-Nov-22	3:50 PM	71.8	64.7	55.1	53.5	49.4	48.2	47.5
21-Nov-22	4:00 PM	66.7	62.4	52.5	52.0	50.5	49.4	48.6

Table 3a (continued): A-weighted 10-minute Noise Levels at LT-V3

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	4:10 PM	61.2	60.4	53.2	52.1	50.9	49.8	49.0
21-Nov-22	4:20 PM	54.1	53.8	52.8	51.4	51.1	50.2	49.2
21-Nov-22	4:30 PM	56.9	54.1	52.2	51.1	50.9	50.1	49.3
21-Nov-22	4:40 PM	55.1	53.3	52.0	50.9	50.8	49.8	48.7
21-Nov-22	4:50 PM	68.1	65.6	61.1	56.4	52.3	51.0	49.7
21-Nov-22	5:00 PM	69.1	67.1	54.3	54.6	52.9	51.8	50.7
21-Nov-22	5:10 PM	72.5	68.2	60.2	57.8	54.2	53.0	52.1
21-Nov-22	5:20 PM	62.4	59.1	55.8	54.7	54.5	53.4	52.6
21-Nov-22	5:30 PM	65.3	64.3	57.1	55.8	54.5	53.4	52.4
21-Nov-22	5:40 PM	65.7	59.3	55.3	54.5	54.1	53.4	52.5
21-Nov-22	5:50 PM	74.7	68.3	56.2	56.6	54.2	53.4	52.7
21-Nov-22	6:00 PM	71.1	69.0	59.8	58.1	53.9	52.8	51.7
21-Nov-22	6:10 PM	69.3	66.6	53.9	54.3	52.2	51.4	50.6
21-Nov-22	6:20 PM	61.0	58.7	54.3	53.0	52.2	51.3	50.6
21-Nov-22	6:30 PM	70.8	59.4	53.2	53.4	52.1	51.2	50.3
21-Nov-22	6:40 PM	56.1	54.4	53.3	52.4	52.3	51.6	50.9
21-Nov-22	6:50 PM	61.3	56.1	53.4	52.5	52.2	51.3	50.5
21-Nov-22	7:00 PM	59.9	59.0	55.0	53.4	52.7	51.9	51.1
21-Nov-22	7:10 PM	58.1	55.0	53.9	53.1	52.9	52.3	51.5
21-Nov-22	7:20 PM	63.0	61.4	57.0	55.1	53.9	52.8	52.1
21-Nov-22	7:30 PM	74.3	68.3	59.3	58.0	53.8	52.6	51.6
21-Nov-22	7:40 PM	75.6	69.9	57.8	57.6	54.3	53.3	52.2
21-Nov-22	7:50 PM	69.4	66.9	57.3	56.8	54.5	53.5	52.4
21-Nov-22	8:00 PM	83.0	77.8	65.9	65.4	55.3	53.9	53.1
21-Nov-22	8:10 PM	75.0	70.9	58.4	58.9	56.0	55.1	54.2
21-Nov-22	8:20 PM	74.6	70.6	57.7	58.8	55.5	54.5	53.7
21-Nov-22	8:30 PM	70.2	64.6	56.4	55.5	54.3	53.3	52.4
21-Nov-22	8:40 PM	72.6	66.9	57.6	57.0	54.5	53.5	52.5
21-Nov-22	8:50 PM	61.0	59.4	55.5	54.7	54.4	53.7	53.1
21-Nov-22	9:00 PM	61.0	59.7	55.7	54.8	54.4	53.7	53.1
21-Nov-22	9:10 PM	66.2	63.3	57.3	56.3	55.4	54.6	53.9
21-Nov-22	9:20 PM	63.7	61.1	57.4	55.8	55.0	54.2	53.5
21-Nov-22	9:30 PM	71.8	68.2	58.6	57.6	55.2	54.3	53.4
21-Nov-22	9:40 PM	67.0	61.6	56.3	55.4	54.9	53.5	52.9
21-Nov-22	9:50 PM	70.0	69.2	56.9	57.2	54.1	53.3	52.7
21-Nov-22	10:00 PM	74.6	67.7	55.8	56.6	54.0	53.2	52.4
21-Nov-22	10:10 PM	56.1	55.6	54.5	54.0	53.9	53.3	52.7
21-Nov-22	10:20 PM	64.8	61.1	54.8	54.6	54.2	53.6	52.9
21-Nov-22	10:30 PM	70.2	66.6	57.3	56.9	55.5	54.2	53.7

Table 3a (continued): A-weighted 10-minute Noise Levels at LT-V3

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	10:40 PM	68.5	65.1	60.6	57.4	55.4	54.6	53.9
21-Nov-22	10:50 PM	77.0	73.4	67.4	63.0	56.7	54.6	53.3
21-Nov-22	11:00 PM	71.9	69.8	59.7	58.0	53.4	52.2	51.2
21-Nov-22	11:10 PM	74.5	70.4	58.8	58.4	55.2	53.5	52.0
21-Nov-22	11:20 PM	76.0	68.9	57.4	57.2	54.1	53.0	52.4
21-Nov-22	11:30 PM	68.1	63.9	57.9	56.1	54.9	53.4	51.9
21-Nov-22	11:40 PM	63.7	62.0	57.1	55.6	54.8	53.2	52.1
21-Nov-22	11:50 PM	67.1	59.2	56.2	54.9	54.3	53.2	52.3
22-Nov-22	12:00 AM	76.2	72.0	59.0	59.6	56.4	54.5	53.4
22-Nov-22	12:10 AM	75.3	70.6	57.5	58.3	55.9	54.8	54.0
22-Nov-22	12:20 AM	63.7	59.8	58.2	56.6	56.3	55.0	54.1
22-Nov-22	12:30 AM	68.1	64.8	58.3	56.7	55.6	54.4	53.5
22-Nov-22	12:40 AM	62.8	59.1	56.6	54.9	54.3	52.8	52.0
22-Nov-22	12:50 AM	60.7	58.8	56.2	54.9	54.5	53.4	52.4
22-Nov-22	1:00 AM	72.4	67.9	57.3	57.4	55.2	53.8	52.4
22-Nov-22	1:10 AM	71.2	68.9	60.7	58.8	55.8	54.2	53.4
22-Nov-22	1:20 AM	68.2	61.1	56.0	54.7	53.9	52.7	51.6
22-Nov-22	1:30 AM	67.2	61.4	56.3	54.9	54.2	52.2	51.2
22-Nov-22	1:40 AM	65.9	63.0	56.5	55.6	55.0	53.1	51.7
22-Nov-22	1:50 AM	64.5	60.0	54.8	54.0	53.4	52.6	52.1
22-Nov-22	2:00 AM	65.7	60.6	54.5	53.7	53.0	52.1	51.3
22-Nov-22	2:10 AM	64.2	57.6	54.3	53.2	52.6	51.7	50.8
22-Nov-22	2:20 AM	57.5	56.1	53.8	52.6	52.4	51.4	50.5
22-Nov-22	2:30 AM	69.8	66.0	55.3	54.7	52.4	51.1	50.0
22-Nov-22	2:40 AM	70.4	64.9	55.3	54.3	52.4	51.0	49.7
22-Nov-22	2:50 AM	69.8	64.9	55.0	54.4	51.8	49.9	48.7
22-Nov-22	3:00 AM	66.7	62.0	53.9	53.2	52.1	50.6	49.2
22-Nov-22	3:10 AM	67.3	61.4	53.5	52.7	51.3	50.2	49.5
22-Nov-22	3:20 AM	63.0	55.2	51.9	51.1	50.7	49.8	49.1
22-Nov-22	3:30 AM	59.7	56.5	53.2	52.0	51.6	50.3	49.5
22-Nov-22	3:40 AM	68.8	63.0	54.3	53.5	51.6	50.6	49.8
22-Nov-22	3:50 AM	60.2	56.7	53.6	51.9	51.2	49.6	48.9
22-Nov-22	4:00 AM	58.4	55.8	52.6	51.6	51.2	50.2	49.4
22-Nov-22	4:10 AM	59.6	56.9	53.5	51.9	51.2	50.0	49.1
22-Nov-22	4:20 AM	58.2	55.6	53.4	52.2	51.9	50.7	49.5
22-Nov-22	4:30 AM	57.3	56.4	53.9	52.3	51.8	51.0	50.2
22-Nov-22	4:40 AM	59.2	57.8	55.3	53.8	53.6	51.4	50.7
22-Nov-22	4:50 AM	62.7	58.4	55.6	53.9	53.4	52.0	51.2
22-Nov-22	5:00 AM	63.3	59.2	56.1	54.3	53.6	52.0	51.1

Table 3a (continued): A-weighted 10-minute Noise Levels at LT-V3

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	5:10 AM	82.3	66.4	62.3	60.3	56.2	54.0	52.6
22-Nov-22	5:20 AM	76.8	68.6	58.1	58.0	56.3	53.8	52.7
22-Nov-22	5:30 AM	75.0	71.1	59.2	58.7	54.5	52.9	51.7
22-Nov-22	5:40 AM	69.6	67.6	56.9	56.3	54.6	53.3	51.8
22-Nov-22	5:50 AM	64.8	60.9	58.3	56.6	56.1	54.1	52.1
22-Nov-22	6:00 AM	74.5	67.6	60.9	59.2	57.6	56.3	54.7
22-Nov-22	6:10 AM	75.1	67.6	60.8	59.6	58.3	56.9	55.3
22-Nov-22	6:20 AM	66.5	63.8	59.9	58.3	57.7	56.0	54.6
22-Nov-22	6:30 AM	71.8	66.4	59.9	58.6	57.7	55.3	54.5
22-Nov-22	6:40 AM	66.6	62.8	57.1	56.3	55.9	54.5	53.6
22-Nov-22	6:50 AM	67.9	63.6	57.8	56.6	55.8	54.1	53.0
22-Nov-22	7:00 AM	70.9	67.1	58.7	57.3	55.1	54.2	53.5
22-Nov-22	7:10 AM	68.0	62.7	58.1	56.4	55.1	54.2	53.2
22-Nov-22	7:20 AM	70.5	61.8	58.0	56.4	55.5	54.5	53.5
22-Nov-22	7:30 AM	70.9	65.7	58.8	57.8	56.7	55.7	54.8
22-Nov-22	7:40 AM	66.8	64.4	58.7	57.3	56.5	55.1	53.6
22-Nov-22	7:50 AM	66.1	61.7	58.5	55.9	54.2	52.9	51.5
22-Nov-22	8:00 AM	69.6	68.1	55.3	55.6	53.4	52.8	51.8
22-Nov-22	8:10 AM	66.1	63.9	55.5	54.5	52.6	51.6	50.7
22-Nov-22	8:20 AM	72.6	66.9	54.3	55.0	52.4	51.5	50.7
22-Nov-22	8:30 AM	70.8	62.9	59.6	57.2	56.7	53.1	52.4
22-Nov-22	8:40 AM	72.3	69.2	65.2	61.0	58.1	56.6	55.7
22-Nov-22	8:50 AM	73.2	71.3	65.4	62.9	58.8	56.1	55.1
22-Nov-22	9:00 AM	63.2	61.2	59.2	58.2	58.2	56.3	55.5
22-Nov-22	9:10 AM	68.7	59.8	57.2	56.9	56.4	56.0	55.3
22-Nov-22	9:20 AM	77.3	69.3	64.2	61.1	56.9	56.3	55.7
22-Nov-22	9:30 AM	75.6	74.0	66.0	65.4	63.8	63.4	62.3
22-Nov-22	9:40 AM	67.3	65.1	64.3	63.6	63.4	63.1	62.4
22-Nov-22	9:50 AM	77.7	67.9	64.6	61.2	57.9	56.6	56.0
22-Nov-22	10:00 AM	67.9	66.4	61.5	59.4	58.5	57.0	55.9
22-Nov-22	10:10 AM	70.3	68.2	61.5	59.4	57.4	56.1	55.4
22-Nov-22	10:20 AM	70.7	64.1	58.1	57.7	57.1	56.0	55.4
22-Nov-22	10:30 AM	68.4	62.4	58.4	56.8	55.8	55.2	54.7
22-Nov-22	10:40 AM	70.8	70.0	62.5	59.8	56.4	55.3	54.7
22-Nov-22	10:50 AM	67.3	64.0	58.9	57.5	56.7	55.8	54.8
22-Nov-22	11:00 AM	69.3	62.7	60.0	57.9	56.9	56.4	55.7
22-Nov-22	11:10 AM	72.4	70.6	62.5	60.1	56.6	56.0	55.4
22-Nov-22	11:20 AM	73.3	69.4	60.1	58.9	56.7	55.5	53.5
22-Nov-22	11:30 AM	74.7	71.0	59.9	58.5	54.3	53.4	52.3

Table 3a (continued): A-weighted 10-minute Noise Levels at LT-V3

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	11:40 AM	70.2	62.8	56.5	55.7	54.9	52.7	52.0
22-Nov-22	11:50 AM	76.3	73.1	64.1	61.0	54.0	52.7	52.2
22-Nov-22	12:00 PM	72.5	60.1	55.7	54.8	53.5	52.6	51.9
22-Nov-22	12:10 PM	77.7	72.1	59.5	59.2	53.5	52.5	51.3
22-Nov-22	12:20 PM	64.1	60.8	55.8	54.3	53.5	52.3	51.7
22-Nov-22	12:30 PM	66.2	64.0	58.2	56.5	55.7	52.6	50.7
22-Nov-22	12:40 PM	67.0	62.9	58.0	55.4	53.6	51.5	49.8
22-Nov-22	12:50 PM	69.7	67.1	57.2	55.7	52.4	50.2	49.1
22-Nov-22	1:00 PM	65.9	63.5	58.4	55.4	53.6	50.9	49.4
22-Nov-22	1:10 PM	83.8	72.4	59.0	61.8	54.1	52.0	50.3
22-Nov-22	1:20 PM	74.7	71.9	61.1	60.3	55.3	52.9	51.3
22-Nov-22	1:30 PM	79.0	74.2	63.3	62.0	55.7	53.3	51.4
22-Nov-22	1:40 PM	73.1	68.2	59.0	58.0	55.1	54.0	52.7
22-Nov-22	1:50 PM	73.3	71.1	64.9	62.0	57.1	55.6	54.4
22-Nov-22	2:00 PM	66.6	65.4	64.4	60.5	56.5	55.0	52.5
22-Nov-22	2:10 PM	73.0	70.5	65.2	61.4	57.8	55.3	53.6
22-Nov-22	2:20 PM	80.2	76.4	66.4	64.1	57.5	53.8	52.2

Table 3b: un-weighted 10-minute Octave Band Leq Noise Levels at LT-V3

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
2022-11-21	1:50 PM	65.9	57.6	56.4	56.5	61.5	50.8	43.8
2022-11-21	2:00 PM	62.4	56.4	55.0	55.0	50.5	40.0	37.9
2022-11-21	2:10 PM	65.5	62.7	61.2	62.6	62.2	55.1	49.9
2022-11-21	2:20 PM	66.1	59.5	58.4	56.9	57.3	49.8	44.4
2022-11-21	2:30 PM	66.0	58.8	57.6	55.9	52.8	43.2	36.7
2022-11-21	2:40 PM	60.4	57.9	55.6	54.1	53.0	42.7	37.2
2022-11-21	2:50 PM	61.8	56.4	55.4	55.2	51.6	41.6	31.9
2022-11-21	3:00 PM	64.5	62.7	58.1	60.6	59.7	51.3	45.7
2022-11-21	3:10 PM	57.1	54.4	50.5	50.4	47.1	36.1	34.3
2022-11-21	3:20 PM	57.0	51.8	51.1	58.2	49.2	38.4	32.1
2022-11-21	3:30 PM	59.0	56.1	51.1	49.2	45.6	34.0	28.3
2022-11-21	3:40 PM	59.5	56.2	53.7	59.1	57.3	39.3	33.3
2022-11-21	3:50 PM	57.3	56.3	54.1	54.1	47.2	31.8	32.0
2022-11-21	4:00 PM	58.2	55.5	52.0	50.7	48.0	34.8	34.4
2022-11-21	4:10 PM	60.3	56.9	53.6	51.4	46.6	32.1	34.4
2022-11-21	4:20 PM	58.9	55.3	52.0	50.9	46.8	33.4	30.3
2022-11-21	4:30 PM	60.7	56.0	52.3	50.6	46.0	33.3	31.5
2022-11-21	4:40 PM	60.8	56.2	51.4	50.7	45.9	32.9	24.1

Table 3b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V3

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
2022-11-21	4:50 PM	60.8	59.0	54.9	54.5	52.9	44.8	39.8
2022-11-21	5:00 PM	61.7	58.3	53.8	55.0	48.2	36.6	27.4
2022-11-21	5:10 PM	62.2	60.5	56.7	57.0	53.6	44.6	42.1
2022-11-21	5:20 PM	62.0	55.9	54.8	54.0	50.7	38.9	28.7
2022-11-21	5:30 PM	62.6	57.5	55.9	55.7	51.0	38.4	26.5
2022-11-21	5:40 PM	61.4	55.3	54.3	53.9	50.3	39.9	32.4
2022-11-21	5:50 PM	62.0	56.0	55.3	55.5	53.2	39.5	31.7
2022-11-21	6:00 PM	62.9	61.9	56.6	56.4	54.6	44.9	38.6
2022-11-21	6:10 PM	61.5	58.0	54.9	53.5	49.0	42.9	36.0
2022-11-21	6:20 PM	60.5	57.1	55.3	52.8	46.2	35.8	33.1
2022-11-21	6:30 PM	60.6	56.0	54.6	53.4	47.8	32.9	29.7
2022-11-21	6:40 PM	60.6	56.4	54.8	52.6	45.6	30.6	25.9
2022-11-21	6:50 PM	60.2	56.2	54.9	52.7	46.0	30.8	24.3
2022-11-21	7:00 PM	61.8	57.0	55.7	53.4	46.5	30.0	22.6
2022-11-21	7:10 PM	60.5	56.0	55.3	53.5	46.6	30.2	20.2
2022-11-21	7:20 PM	64.3	59.6	57.1	55.1	48.6	34.1	24.1
2022-11-21	7:30 PM	62.8	61.3	59.2	57.4	53.3	41.0	34.1
2022-11-21	7:40 PM	60.2	58.5	56.6	57.5	53.8	38.4	23.2
2022-11-21	7:50 PM	62.4	56.8	56.0	55.9	52.7	44.0	41.6
2022-11-21	8:00 PM	60.7	57.8	59.2	65.6	62.0	47.7	36.7
2022-11-21	8:10 PM	60.9	58.6	58.7	58.8	54.3	45.0	34.3
2022-11-21	8:20 PM	59.2	57.1	58.1	58.7	54.6	39.9	23.9
2022-11-21	8:30 PM	60.1	56.6	55.7	55.4	50.9	39.1	28.0
2022-11-21	8:40 PM	62.2	58.3	56.1	57.0	52.0	40.8	29.8
2022-11-21	8:50 PM	61.1	58.6	55.7	54.6	49.4	37.0	23.7
2022-11-21	9:00 PM	61.7	59.6	55.8	54.6	49.5	38.1	24.1
2022-11-21	9:10 PM	62.3	58.8	56.1	56.1	51.6	40.1	26.2
2022-11-21	9:20 PM	62.0	59.0	55.9	55.3	51.2	38.6	24.6
2022-11-21	9:30 PM	62.3	58.8	56.4	57.2	53.9	40.7	26.3
2022-11-21	9:40 PM	63.4	58.0	55.5	55.8	50.1	38.7	25.8
2022-11-21	9:50 PM	61.2	58.2	56.8	57.0	52.9	41.2	26.8
2022-11-21	10:00 PM	61.1	57.3	55.8	56.7	52.1	38.3	26.5
2022-11-21	10:10 PM	60.6	56.6	55.0	54.0	48.8	35.1	20.9
2022-11-21	10:20 PM	62.1	57.2	54.8	54.7	49.8	36.1	20.3
2022-11-21	10:30 PM	62.1	57.6	56.0	56.4	53.0	43.3	24.5
2022-11-21	10:40 PM	62.2	58.2	55.9	57.2	53.6	40.4	24.2
2022-11-21	10:50 PM	62.5	59.7	58.2	60.6	61.1	49.6	40.4
2022-11-21	11:00 PM	60.8	57.3	56.0	57.6	54.3	42.1	33.0
2022-11-21	11:10 PM	62.2	57.7	56.2	57.9	55.3	44.5	34.2

Table 3b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V3

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
2022-11-21	11:20 PM	61.3	58.5	56.0	56.4	53.6	40.8	28.6
2022-11-21	11:30 PM	62.3	57.7	56.4	55.7	51.9	38.8	26.2
2022-11-21	11:40 PM	62.9	57.5	55.3	55.1	51.7	38.7	26.6
2022-11-21	11:50 PM	61.3	56.8	54.5	54.4	51.0	36.6	25.6
2022-11-22	12:00 AM	62.2	57.7	57.2	59.6	55.7	43.6	34.9
2022-11-22	12:10 AM	62.6	57.5	56.9	58.1	54.5	39.6	22.8
2022-11-22	12:20 AM	62.4	57.6	56.6	56.1	52.7	38.0	25.8
2022-11-22	12:30 AM	61.6	57.0	56.8	55.9	53.3	39.2	28.3
2022-11-22	12:40 AM	61.4	55.7	54.8	54.3	51.1	36.6	24.9
2022-11-22	12:50 AM	61.6	55.6	54.7	54.6	50.8	34.1	20.3
2022-11-22	1:00 AM	60.5	55.9	55.8	57.0	54.3	36.4	19.4
2022-11-22	1:10 AM	65.1	61.8	58.9	59.2	53.4	40.7	23.9
2022-11-22	1:20 AM	61.8	57.9	55.4	55.1	49.3	33.4	19.9
2022-11-22	1:30 AM	64.1	57.5	55.4	54.9	50.1	34.8	19.6
2022-11-22	1:40 AM	66.6	58.7	56.3	55.2	50.9	36.4	22.9
2022-11-22	1:50 AM	62.1	56.1	54.7	54.0	49.2	33.0	18.8
2022-11-22	2:00 AM	62.6	57.7	54.9	53.8	48.7	30.4	20.5
2022-11-22	2:10 AM	61.6	55.4	55.0	53.1	47.8	29.6	22.2
2022-11-22	2:20 AM	60.5	55.4	54.5	52.7	47.2	30.2	20.3
2022-11-22	2:30 AM	61.6	56.9	55.8	54.0	50.3	39.7	33.1
2022-11-22	2:40 AM	61.7	56.2	55.7	54.1	49.5	35.4	22.4
2022-11-22	2:50 AM	61.2	56.7	53.9	54.5	50.0	31.7	20.8
2022-11-22	3:00 AM	62.4	57.1	54.8	53.0	48.3	29.2	20.7
2022-11-22	3:10 AM	60.3	55.1	53.4	53.2	47.5	31.6	20.6
2022-11-22	3:20 AM	59.1	54.8	52.5	51.4	45.6	30.8	18.6
2022-11-22	3:30 AM	62.8	57.2	53.8	51.8	46.3	30.4	19.2
2022-11-22	3:40 AM	60.8	56.2	54.5	54.1	47.5	30.3	17.1
2022-11-22	3:50 AM	59.0	55.1	53.1	52.0	46.7	30.1	17.0
2022-11-22	4:00 AM	61.6	55.0	52.9	51.5	46.2	30.5	17.3
2022-11-22	4:10 AM	59.0	55.0	52.8	52.0	46.8	31.5	17.2
2022-11-22	4:20 AM	59.3	54.5	52.9	52.3	47.4	31.2	17.3
2022-11-22	4:30 AM	58.8	55.4	53.0	52.2	47.8	31.9	21.1
2022-11-22	4:40 AM	61.4	57.5	54.6	53.5	49.2	32.6	18.0
2022-11-22	4:50 AM	60.5	56.5	54.1	53.8	49.7	31.8	18.3
2022-11-22	5:00 AM	62.5	57.3	54.0	53.6	50.3	37.4	31.9
2022-11-22	5:10 AM	65.4	59.3	55.8	57.1	57.1	51.2	46.6
2022-11-22	5:20 AM	64.5	58.7	55.0	57.6	53.3	46.6	34.3
2022-11-22	5:30 AM	63.5	57.8	56.1	58.3	54.8	40.0	29.4
2022-11-22	5:40 AM	63.6	59.1	55.4	55.3	52.3	43.1	37.8

Table 3b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V3

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
2022-11-22	5:50 AM	63.6	60.3	55.6	55.5	53.2	37.5	26.3
2022-11-22	6:00 AM	64.0	60.5	57.3	58.8	55.2	45.8	40.5
2022-11-22	6:10 AM	65.5	60.3	57.8	58.5	56.0	45.9	39.8
2022-11-22	6:20 AM	65.6	59.7	56.6	57.4	54.4	45.1	39.3
2022-11-22	6:30 AM	64.1	59.0	57.3	58.3	53.8	45.2	40.4
2022-11-22	6:40 AM	63.1	58.8	55.7	56.2	52.0	36.7	30.9
2022-11-22	6:50 AM	63.4	59.3	54.7	56.2	52.5	43.1	38.4
2022-11-22	7:00 AM	63.6	59.7	55.9	57.8	52.7	37.5	34.0
2022-11-22	7:10 AM	65.2	60.4	56.8	56.1	51.3	38.7	33.1
2022-11-22	7:20 AM	64.0	60.3	55.9	55.9	51.4	39.4	32.3
2022-11-22	7:30 AM	63.7	62.2	57.3	58.0	52.9	39.6	32.6
2022-11-22	7:40 AM	65.8	59.7	55.5	57.3	52.6	41.6	34.4
2022-11-22	7:50 AM	64.3	57.4	54.1	56.5	49.9	36.5	30.8
2022-11-22	8:00 AM	62.5	57.4	54.7	56.4	48.5	36.1	28.8
2022-11-22	8:10 AM	62.4	58.8	56.9	54.5	48.0	34.9	24.5
2022-11-22	8:20 AM	61.5	59.4	55.4	53.7	51.2	36.8	24.4
2022-11-22	8:30 AM	63.0	61.3	57.6	56.9	52.5	40.4	32.6
2022-11-22	8:40 AM	64.9	60.8	58.5	60.3	57.3	46.9	40.3
2022-11-22	8:50 AM	68.1	62.5	60.3	61.7	59.7	48.9	41.2
2022-11-22	9:00 AM	61.4	58.5	57.8	58.4	52.6	40.1	40.5
2022-11-22	9:10 AM	61.2	60.1	57.4	57.1	51.5	37.4	32.4
2022-11-22	9:20 AM	61.2	60.3	58.5	58.9	58.5	47.8	41.9
2022-11-22	9:30 AM	65.7	65.7	63.2	63.4	63.0	51.3	43.0
2022-11-22	9:40 AM	63.3	62.0	59.5	59.8	62.2	48.6	42.5
2022-11-22	9:50 AM	62.4	61.5	58.5	59.2	58.2	49.0	43.7
2022-11-22	10:00 AM	66.4	60.0	59.0	59.3	54.2	41.9	39.9
2022-11-22	10:10 AM	63.7	61.6	58.1	58.6	55.1	46.4	40.3
2022-11-22	10:20 AM	65.6	60.9	56.9	57.6	52.6	42.2	34.7
2022-11-22	10:30 AM	59.6	60.0	56.7	56.8	51.5	41.0	34.1
2022-11-22	10:40 AM	64.7	61.7	57.9	58.5	55.8	48.1	44.0
2022-11-22	10:50 AM	61.4	60.8	57.4	57.6	52.1	41.4	35.3
2022-11-22	11:00 AM	61.0	60.1	57.4	58.1	52.8	42.1	34.5
2022-11-22	11:10 AM	62.6	61.3	59.5	59.8	55.7	46.2	39.6
2022-11-22	11:20 AM	64.6	61.6	57.8	57.8	54.8	45.4	40.5
2022-11-22	11:30 AM	64.1	61.5	58.7	57.3	54.5	44.9	38.0
2022-11-22	11:40 AM	60.1	58.5	55.0	55.5	50.6	41.0	36.8
2022-11-22	11:50 AM	64.2	62.4	59.9	58.9	57.2	50.2	45.1
2022-11-22	12:00 PM	59.3	58.4	54.0	54.5	50.5	37.8	30.6
2022-11-22	12:10 PM	65.0	62.2	60.1	58.4	53.9	46.5	41.1

Table 3b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V3

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
2022-11-22	12:20 PM	59.9	57.6	53.2	54.0	49.6	41.0	32.4
2022-11-22	12:30 PM	60.6	58.8	53.7	55.9	50.8	45.3	43.7
2022-11-22	12:40 PM	63.2	59.3	53.9	54.1	51.5	42.1	37.4
2022-11-22	12:50 PM	63.1	62.1	56.3	54.7	50.6	42.2	38.5
2022-11-22	1:00 PM	62.8	59.7	53.3	54.4	51.1	43.8	36.8
2022-11-22	1:10 PM	64.9	60.8	63.1	57.8	58.0	51.5	47.3
2022-11-22	1:20 PM	62.7	59.7	55.8	56.3	58.2	47.1	41.1
2022-11-22	1:30 PM	64.7	61.9	60.8	60.1	58.1	51.3	45.9
2022-11-22	1:40 PM	62.6	61.1	55.4	56.0	53.9	47.9	44.4
2022-11-22	1:50 PM	66.0	62.2	57.5	60.3	58.8	50.7	44.2
2022-11-22	2:00 PM	66.2	62.0	56.2	59.3	57.1	47.7	41.1
2022-11-22	2:10 PM	67.6	63.7	59.3	60.0	57.7	49.1	42.8
2022-11-22	2:20 PM	63.0	60.8	58.0	59.5	57.4	57.2	57.0

Table 4: A-weighted Hourly Noise Levels at LT-V4

Date	Hour beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	2:00 PM	88.0	70.4	56.8	59.2	52.9	50.3	48.4
21-Nov-22	3:00 PM	85.4	64.8	55.2	58.3	49.2	46.3	43.8
21-Nov-22	4:00 PM	65.5	55.2	52.9	50.3	48.6	47.1	45.1
21-Nov-22	5:00 PM	72.9	63.7	56.5	55.1	52.8	51.4	48.7
21-Nov-22	6:00 PM	84.5	64.0	54.0	57.5	50.5	49.0	47.1
21-Nov-22	7:00 PM	81.8	64.5	56.2	57.2	53.0	51.7	49.8
21-Nov-22	8:00 PM	75.6	64.9	57.0	56.3	53.2	51.8	49.8
21-Nov-22	9:00 PM	68.2	61.7	57.9	56.3	55.2	53.8	52.5
21-Nov-22	10:00 PM	79.3	62.8	57.0	56.8	54.9	53.9	51.7
21-Nov-22	11:00 PM	70.7	63.3	55.3	54.6	53.1	52.3	51.2
22-Nov-22	12:00 AM	71.5	59.5	55.2	54.4	53.6	52.6	51.0
22-Nov-22	1:00 AM	67.6	61.4	55.8	54.8	53.7	52.0	50.6
22-Nov-22	2:00 AM	69.3	59.4	53.9	53.3	52.5	51.4	48.8
22-Nov-22	3:00 AM	69.6	57.8	52.8	52.0	50.9	49.5	47.7
22-Nov-22	4:00 AM	59.4	54.4	52.5	51.3	50.8	50.0	48.3
22-Nov-22	5:00 AM	73.0	62.4	56.2	55.5	54.0	52.7	50.4
22-Nov-22	6:00 AM	73.0	63.5	56.9	56.1	55.2	53.7	52.4
22-Nov-22	7:00 AM	72.1	63.0	56.8	55.8	54.5	53.7	51.2
22-Nov-22	8:00 AM	90.1	65.7	57.8	59.9	55.0	53.5	52.6
22-Nov-22	9:00 AM	78.0	65.2	56.8	57.1	54.7	53.6	51.9
22-Nov-22	10:00 AM	81.4	67.4	59.4	60.0	54.9	53.7	51.4
22-Nov-22	11:00 AM	83.2	73.1	59.1	61.5	54.0	52.7	50.0
22-Nov-22	12:00 PM	74.8	62.7	54.7	54.6	51.4	50.3	48.8
22-Nov-22	1:00 PM	85.0	69.6	57.7	59.2	54.2	52.8	49.3

Table 4a(continued): A-weighted 10-minute Noise Levels at LT-V4

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	1:30 PM	74.1	68.5	54.3	55.4	49.8	48.8	47.8
21-Nov-22	1:40 PM	76.3	70.0	57.7	58.0	51.5	49.6	48.5
21-Nov-22	1:50 PM	66.3	64.8	57.1	55.0	52.5	51.1	50.2
21-Nov-22	2:00 PM	74.5	71.5	58.6	59.2	56.3	51.4	49.9
21-Nov-22	2:10 PM	86.5	79.7	63.4	65.9	55.5	51.5	50.0
21-Nov-22	2:20 PM	83.6	69.4	54.6	60.3	51.4	49.9	49.3
21-Nov-22	2:30 PM	88.0	79.1	56.5	65.3	51.8	50.2	48.7
21-Nov-22	2:40 PM	63.7	61.2	53.4	52.1	50.9	49.3	48.6
21-Nov-22	2:50 PM	65.5	61.3	54.0	52.6	51.4	49.5	48.4
21-Nov-22	3:00 PM	85.4	77.7	62.2	64.9	51.9	48.5	47.3
21-Nov-22	3:10 PM	56.1	54.5	50.8	48.2	46.8	44.9	43.8
21-Nov-22	3:20 PM	64.3	62.3	53.9	52.9	51.8	46.2	44.8
21-Nov-22	3:30 PM	65.0	60.8	51.7	50.8	47.5	45.8	44.7
21-Nov-22	3:40 PM	72.3	69.0	57.9	56.3	48.8	45.8	44.9
21-Nov-22	3:50 PM	66.7	64.6	54.7	52.8	48.3	46.4	45.6
21-Nov-22	4:00 PM	60.1	55.9	53.3	50.3	48.5	46.9	45.9
21-Nov-22	4:10 PM	65.5	59.4	53.2	51.0	48.8	46.7	45.7
21-Nov-22	4:20 PM	53.7	53.4	52.6	50.3	49.3	48.0	47.1
21-Nov-22	4:30 PM	53.9	53.6	52.6	49.8	48.6	47.3	46.2
21-Nov-22	4:40 PM	53.7	53.3	52.0	48.9	47.2	46.1	45.1
21-Nov-22	4:50 PM	59.7	55.3	53.6	50.9	49.1	47.8	46.9
21-Nov-22	5:00 PM	66.1	61.0	54.6	52.3	50.3	49.4	48.7
21-Nov-22	5:10 PM	65.3	63.3	56.0	54.5	52.8	50.6	49.8
21-Nov-22	5:20 PM	67.8	64.3	56.5	54.8	53.0	51.5	50.4
21-Nov-22	5:30 PM	67.8	65.7	58.9	56.5	53.2	51.4	50.6
21-Nov-22	5:40 PM	66.3	61.2	56.2	54.6	53.6	52.0	50.2
21-Nov-22	5:50 PM	72.9	66.5	56.6	56.5	53.8	53.2	52.7
21-Nov-22	6:00 PM	75.2	68.8	59.1	58.0	53.7	49.7	48.6
21-Nov-22	6:10 PM	84.5	74.6	53.2	62.0	49.3	48.4	47.6
21-Nov-22	6:20 PM	81.7	67.0	53.3	58.7	50.3	48.7	47.1
21-Nov-22	6:30 PM	56.6	55.3	52.9	50.7	49.5	48.7	47.8
21-Nov-22	6:40 PM	65.9	55.5	52.6	51.2	50.1	49.1	48.5
21-Nov-22	6:50 PM	70.0	62.8	52.9	52.4	49.9	49.2	48.5
21-Nov-22	7:00 PM	59.6	58.5	54.0	53.0	52.3	51.7	50.9
21-Nov-22	7:10 PM	55.5	55.1	54.5	53.3	52.9	52.3	51.8
21-Nov-22	7:20 PM	65.9	64.3	57.0	55.6	54.6	52.3	51.1
21-Nov-22	7:30 PM	68.6	63.9	56.2	54.6	51.6	50.5	49.8
21-Nov-22	7:40 PM	76.2	69.2	56.5	57.1	53.2	51.4	50.2
21-Nov-22	7:50 PM	81.8	76.0	59.1	61.9	53.4	51.7	50.5

Table 4a(continued): A-weighted 10-minute Noise Levels at LT-V4

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	8:00 PM	74.5	71.3	61.0	59.5	54.2	51.8	50.9
21-Nov-22	8:10 PM	67.2	64.2	56.7	55.1	53.5	52.6	51.7
21-Nov-22	8:20 PM	75.6	68.9	56.8	57.3	53.9	52.5	51.6
21-Nov-22	8:30 PM	63.1	60.7	55.4	53.3	51.9	50.5	49.9
21-Nov-22	8:40 PM	69.5	66.7	55.8	55.0	52.4	51.1	49.8
21-Nov-22	8:50 PM	58.7	57.8	56.1	54.2	53.5	52.4	51.4
21-Nov-22	9:00 PM	60.9	58.4	56.8	54.7	54.0	53.1	52.5
21-Nov-22	9:10 PM	63.7	62.0	57.7	56.0	54.9	53.8	53.2
21-Nov-22	9:20 PM	62.3	59.6	57.5	55.4	54.4	53.4	52.7
21-Nov-22	9:30 PM	68.2	64.2	58.2	56.7	55.4	53.9	52.9
21-Nov-22	9:40 PM	64.1	60.1	58.1	56.5	56.2	54.3	53.5
21-Nov-22	9:50 PM	67.1	65.8	59.2	57.7	56.2	54.3	52.9
21-Nov-22	10:00 PM	67.6	63.2	56.4	55.2	53.8	52.9	52.0
21-Nov-22	10:10 PM	55.4	54.7	54.1	53.6	53.6	53.1	52.3
21-Nov-22	10:20 PM	69.2	58.7	54.8	54.3	53.6	53.2	52.7
21-Nov-22	10:30 PM	79.3	70.1	57.8	59.6	56.3	54.8	53.4
21-Nov-22	10:40 PM	68.8	65.0	59.3	57.8	56.7	55.9	55.4
21-Nov-22	10:50 PM	68.4	65.2	59.7	57.1	55.4	53.7	51.7
21-Nov-22	11:00 PM	68.2	64.4	55.1	54.8	53.2	52.4	51.4
21-Nov-22	11:10 PM	68.4	64.7	55.9	55.3	53.8	52.8	51.8
21-Nov-22	11:20 PM	70.7	65.8	54.4	54.8	53.0	52.2	51.4
21-Nov-22	11:30 PM	67.8	63.8	56.9	55.3	53.5	52.5	51.7
21-Nov-22	11:40 PM	66.4	63.3	55.1	54.1	52.7	52.1	51.2
21-Nov-22	11:50 PM	63.0	57.5	54.5	53.2	52.6	51.8	51.2
22-Nov-22	12:00 AM	71.5	65.9	56.2	55.9	54.3	52.9	51.8
22-Nov-22	12:10 AM	70.9	63.5	55.3	55.0	53.7	53.0	52.3
22-Nov-22	12:20 AM	61.7	58.4	56.0	54.4	53.8	52.8	51.8
22-Nov-22	12:30 AM	62.4	57.7	55.0	53.9	53.5	52.7	52.0
22-Nov-22	12:40 AM	59.0	56.2	54.4	53.3	53.1	52.2	51.0
22-Nov-22	12:50 AM	57.1	55.4	54.1	53.1	52.9	52.1	51.2
22-Nov-22	1:00 AM	66.9	61.7	55.8	54.5	53.3	51.9	50.9
22-Nov-22	1:10 AM	67.6	66.7	59.7	57.5	55.8	52.7	51.3
22-Nov-22	1:20 AM	64.1	60.5	54.6	53.8	53.2	51.8	50.8
22-Nov-22	1:30 AM	64.1	61.9	56.2	54.6	53.6	51.9	50.7
22-Nov-22	1:40 AM	63.9	61.9	55.0	54.4	53.9	52.4	51.6
22-Nov-22	1:50 AM	57.9	55.8	53.2	52.4	52.3	51.4	50.6
22-Nov-22	2:00 AM	60.0	57.9	53.8	53.1	52.7	51.9	51.3
22-Nov-22	2:10 AM	67.8	57.6	54.4	53.6	53.0	52.2	51.4
22-Nov-22	2:20 AM	55.1	54.8	54.3	53.6	53.6	53.0	52.4

Table 4a(continued): A-weighted 10-minute Noise Levels at LT-V4

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	2:30 AM	67.0	63.9	54.6	54.5	53.5	51.9	50.5
22-Nov-22	2:40 AM	69.3	60.9	52.1	52.0	50.5	49.8	49.1
22-Nov-22	2:50 AM	64.3	61.3	54.2	52.7	51.5	49.4	48.8
22-Nov-22	3:00 AM	63.7	58.8	54.3	52.8	51.9	50.4	49.5
22-Nov-22	3:10 AM	69.6	65.0	52.7	53.0	50.4	49.5	48.3
22-Nov-22	3:20 AM	56.4	52.8	51.1	50.2	50.0	49.3	48.5
22-Nov-22	3:30 AM	55.6	54.7	53.5	52.1	52.1	50.1	49.5
22-Nov-22	3:40 AM	67.5	61.8	53.7	52.6	51.3	49.5	48.8
22-Nov-22	3:50 AM	55.7	53.8	51.7	50.1	49.8	48.4	47.7
22-Nov-22	4:00 AM	55.5	54.6	52.5	50.9	50.3	49.6	49.1
22-Nov-22	4:10 AM	59.4	53.4	51.4	50.2	49.8	49.1	48.3
22-Nov-22	4:20 AM	53.5	52.9	51.4	50.6	50.4	49.6	49.0
22-Nov-22	4:30 AM	53.9	53.1	51.7	50.7	50.5	49.7	49.1
22-Nov-22	4:40 AM	58.8	56.2	54.4	52.4	51.5	50.4	49.3
22-Nov-22	4:50 AM	59.1	56.3	53.3	52.5	52.3	51.3	50.7
22-Nov-22	5:00 AM	65.3	57.2	54.2	52.7	51.9	51.0	50.4
22-Nov-22	5:10 AM	67.5	59.4	55.8	54.3	53.6	52.3	51.6
22-Nov-22	5:20 AM	73.0	67.0	57.6	57.3	56.5	54.3	53.7
22-Nov-22	5:30 AM	69.1	67.6	58.1	57.4	55.0	54.0	52.1
22-Nov-22	5:40 AM	68.6	65.7	55.8	54.9	53.2	52.2	51.2
22-Nov-22	5:50 AM	61.6	57.7	55.7	54.1	53.6	52.5	51.8
22-Nov-22	6:00 AM	69.4	62.5	56.2	55.5	54.6	53.5	52.9
22-Nov-22	6:10 AM	63.7	60.5	57.7	56.5	56.6	54.5	53.7
22-Nov-22	6:20 AM	66.7	63.9	57.4	56.5	56.0	54.1	53.5
22-Nov-22	6:30 AM	73.0	67.4	58.6	57.7	56.0	53.7	52.9
22-Nov-22	6:40 AM	65.1	63.4	55.1	54.8	54.0	53.5	53.0
22-Nov-22	6:50 AM	69.3	63.4	56.1	55.2	54.1	53.1	52.4
22-Nov-22	7:00 AM	70.0	63.8	57.1	55.7	54.1	53.5	53.1
22-Nov-22	7:10 AM	68.4	61.2	57.0	55.6	54.7	53.6	52.7
22-Nov-22	7:20 AM	67.2	63.4	57.3	55.8	54.9	54.0	53.2
22-Nov-22	7:30 AM	72.1	68.1	58.2	57.6	55.4	54.8	54.0
22-Nov-22	7:40 AM	63.4	60.4	55.9	55.3	55.0	54.2	53.3
22-Nov-22	7:50 AM	64.5	61.0	55.1	54.0	53.0	52.1	51.2
22-Nov-22	8:00 AM	62.2	58.1	53.9	53.1	52.6	52.1	51.5
22-Nov-22	8:10 AM	62.5	61.5	55.7	53.8	52.2	51.3	50.4
22-Nov-22	8:20 AM	60.8	57.8	56.4	54.3	53.5	52.1	51.1
22-Nov-22	8:30 AM	71.4	69.8	58.9	59.1	57.6	54.6	53.0
22-Nov-22	8:40 AM	90.1	73.9	60.6	65.0	58.7	57.4	56.8
22-Nov-22	8:50 AM	78.2	73.1	61.2	60.7	55.6	53.2	52.5

Table 4a(continued): A-weighted 10-minute Noise Levels at LT-V4

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	9:00 AM	74.4	69.2	56.0	57.2	55.0	53.4	52.5
22-Nov-22	9:10 AM	78.0	67.7	54.0	57.1	53.2	52.4	51.9
22-Nov-22	9:20 AM	65.9	60.5	54.8	54.2	53.6	53.0	52.5
22-Nov-22	9:30 AM	73.6	72.0	62.4	60.2	56.2	54.4	53.2
22-Nov-22	9:40 AM	66.6	61.9	57.1	55.5	54.4	53.6	53.2
22-Nov-22	9:50 AM	61.0	60.0	56.7	55.9	55.6	54.8	54.0
22-Nov-22	10:00 AM	65.5	64.7	58.2	57.8	57.1	55.7	54.9
22-Nov-22	10:10 AM	75.9	71.3	62.7	60.8	56.3	55.2	54.5
22-Nov-22	10:20 AM	73.0	71.1	58.3	58.6	55.2	54.2	53.4
22-Nov-22	10:30 AM	62.5	58.2	55.4	53.8	53.1	52.4	51.9
22-Nov-22	10:40 AM	81.4	78.0	64.1	64.7	53.2	52.2	51.4
22-Nov-22	10:50 AM	61.9	60.9	57.5	55.3	54.4	52.6	51.6
22-Nov-22	11:00 AM	77.3	72.4	59.1	59.5	54.4	53.5	52.8
22-Nov-22	11:10 AM	82.0	76.6	63.6	63.7	54.8	53.7	53.1
22-Nov-22	11:20 AM	83.2	74.7	58.2	61.6	55.0	52.8	51.1
22-Nov-22	11:30 AM	82.4	79.8	63.2	64.7	54.1	52.8	51.9
22-Nov-22	11:40 AM	72.0	67.0	55.8	56.3	53.6	52.1	50.0
22-Nov-22	11:50 AM	73.8	67.9	54.5	55.6	51.9	51.0	50.3
22-Nov-22	12:00 PM	65.0	62.3	54.8	53.1	51.3	50.5	49.9
22-Nov-22	12:10 PM	56.9	55.3	53.0	51.6	51.3	50.3	49.5
22-Nov-22	12:20 PM	65.3	60.7	52.7	52.3	51.2	50.4	49.8
22-Nov-22	12:30 PM	66.1	60.2	53.6	53.0	52.4	50.7	49.5
22-Nov-22	12:40 PM	68.1	64.5	57.0	54.3	51.3	50.3	48.8
22-Nov-22	12:50 PM	74.8	72.9	56.9	58.7	50.8	49.7	49.0
22-Nov-22	1:00 PM	75.1	72.0	54.9	57.2	51.5	50.3	49.3
22-Nov-22	1:10 PM	69.8	64.7	55.2	54.5	52.9	51.7	50.9
22-Nov-22	1:20 PM	69.5	66.4	56.9	55.8	53.4	52.3	51.4
22-Nov-22	1:30 PM	70.8	66.5	60.6	57.4	54.5	53.1	52.0
22-Nov-22	1:40 PM	75.6	71.9	59.3	59.9	57.0	54.7	53.6
22-Nov-22	1:50 PM	85.0	76.3	59.3	63.6	56.0	54.9	54.0
22-Nov-22	2:00 PM	69.6	66.8	58.9	57.1	55.1	54.1	52.9

Table 4b: un-weighted 10-minute Octave Band Leq Noise Levels at LT-V4

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	1:30 PM	64.8	59.8	56.5	53.3	48.4	46.5	40.5
21-Nov-22	1:40 PM	64.5	61.0	55.4	54.4	51.1	52.1	46.7
21-Nov-22	1:50 PM	65.2	60.8	54.5	52.9	48.9	46.4	41.8
21-Nov-22	2:00 PM	66.4	61.7	58.3	57.7	52.6	51.4	45.1

Table 4b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V4

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	2:20 PM	66.5	61.6	56.8	55.2	52.4	55.8	50.0
21-Nov-22	2:30 PM	68.9	61.5	67.2	63.9	58.5	55.9	49.4
21-Nov-22	2:40 PM	63.9	58.0	53.7	51.5	45.1	40.1	33.0
21-Nov-22	2:50 PM	65.2	57.7	53.4	50.9	46.4	43.0	36.5
21-Nov-22	3:00 PM	67.8	64.3	62.7	63.4	59.2	57.2	51.8
21-Nov-22	3:10 PM	58.1	53.3	48.7	46.9	42.1	38.8	30.0
21-Nov-22	3:20 PM	57.5	54.3	50.8	51.6	46.0	45.1	38.0
21-Nov-22	3:30 PM	60.3	55.8	50.6	47.3	44.7	43.7	38.2
21-Nov-22	3:40 PM	61.7	59.8	55.4	54.9	49.4	48.3	43.6
21-Nov-22	3:50 PM	59.6	56.8	54.0	51.8	45.3	43.5	37.4
21-Nov-22	4:00 PM	59.4	57.9	51.2	47.8	44.1	41.3	32.8
21-Nov-22	4:10 PM	60.8	58.2	52.3	48.3	43.9	42.8	34.9
21-Nov-22	4:20 PM	59.5	55.8	51.0	48.6	44.1	41.4	33.2
21-Nov-22	4:30 PM	59.8	55.7	50.3	48.2	43.5	40.8	33.1
21-Nov-22	4:40 PM	58.9	55.1	49.5	46.5	42.7	40.6	33.0
21-Nov-22	4:50 PM	60.5	56.3	51.3	49.3	44.6	41.8	34.4
21-Nov-22	5:00 PM	62.1	58.0	53.2	50.4	45.6	43.3	37.8
21-Nov-22	5:10 PM	61.9	58.6	54.3	52.7	48.2	45.8	41.5
21-Nov-22	5:20 PM	62.1	58.2	54.4	53.0	48.7	46.0	42.5
21-Nov-22	5:30 PM	63.2	59.2	55.9	56.3	49.8	45.7	42.7
21-Nov-22	5:40 PM	60.9	56.8	53.3	52.8	48.1	46.9	42.8
21-Nov-22	5:50 PM	61.4	61.8	57.5	56.1	48.6	47.0	42.1
21-Nov-22	6:00 PM	63.2	59.1	55.7	55.7	52.2	50.5	46.4
21-Nov-22	6:10 PM	63.8	64.6	57.8	58.4	55.6	55.8	52.9
21-Nov-22	6:20 PM	61.2	59.6	54.6	53.8	52.0	53.3	49.4
21-Nov-22	6:30 PM	59.5	56.3	52.7	50.2	42.5	39.5	30.9
21-Nov-22	6:40 PM	59.8	57.1	52.7	50.6	43.5	40.2	34.2
21-Nov-22	6:50 PM	59.6	57.1	52.9	51.4	44.7	43.6	38.5
21-Nov-22	7:00 PM	60.7	58.4	54.3	52.6	45.1	42.5	34.0
21-Nov-22	7:10 PM	59.2	56.8	53.2	53.1	46.1	44.0	35.7
21-Nov-22	7:20 PM	66.0	61.7	56.0	54.5	48.6	45.5	38.9
21-Nov-22	7:30 PM	63.7	60.4	57.0	54.2	46.4	42.0	33.7
21-Nov-22	7:40 PM	61.8	59.8	55.8	57.1	51.6	45.6	35.8
21-Nov-22	7:50 PM	66.1	61.1	58.0	58.7	55.3	54.9	53.3
21-Nov-22	8:00 PM	60.0	57.1	56.1	60.7	53.6	46.2	38.4
21-Nov-22	8:10 PM	60.7	58.0	55.6	55.4	48.0	43.4	37.0
21-Nov-22	8:20 PM	59.7	57.3	56.0	57.8	50.3	44.4	38.0
21-Nov-22	8:30 PM	59.2	56.6	53.4	52.7	46.4	43.7	38.5
21-Nov-22	8:40 PM	63.2	58.7	54.7	56.0	46.9	42.6	37.2

Table 4b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V4

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	8:50 PM	63.3	58.9	54.4	53.6	47.0	44.1	39.2
21-Nov-22	9:00 PM	64.3	59.6	54.7	54.0	48.3	44.4	38.1
21-Nov-22	9:10 PM	64.1	59.3	54.9	55.1	50.2	46.3	40.1
21-Nov-22	9:20 PM	64.2	59.8	54.8	54.4	49.5	45.4	39.1
21-Nov-22	9:30 PM	64.6	59.6	55.3	55.7	51.5	46.6	40.1
21-Nov-22	9:40 PM	66.4	62.3	55.4	55.2	50.2	47.0	40.1
21-Nov-22	9:50 PM	63.2	63.5	57.2	56.6	51.4	47.4	40.7
21-Nov-22	10:00 PM	63.0	60.1	54.8	54.6	48.9	44.3	38.1
21-Nov-22	10:10 PM	63.1	60.9	54.3	53.8	46.1	37.9	29.4
21-Nov-22	10:20 PM	64.3	60.8	54.2	54.0	47.7	41.4	36.6
21-Nov-22	10:30 PM	64.4	62.2	58.3	57.5	53.2	52.4	47.6
21-Nov-22	10:40 PM	64.5	61.9	56.5	57.8	52.1	46.3	37.4
21-Nov-22	10:50 PM	64.4	61.1	56.6	56.4	51.5	46.6	40.2
21-Nov-22	11:00 PM	63.4	60.5	55.7	55.1	48.1	39.3	30.3
21-Nov-22	11:10 PM	64.0	60.0	55.8	55.4	49.5	40.7	30.2
21-Nov-22	11:20 PM	63.8	61.2	55.1	55.2	47.9	40.9	30.2
21-Nov-22	11:30 PM	63.7	60.7	55.9	55.1	48.5	42.5	37.7
21-Nov-22	11:40 PM	63.8	60.4	54.7	54.7	47.0	35.8	28.7
21-Nov-22	11:50 PM	64.1	61.5	54.3	53.1	45.8	35.3	29.6
22-Nov-22	12:00 AM	65.8	61.0	56.3	56.0	50.3	39.4	28.2
22-Nov-22	12:10 AM	64.3	59.7	55.6	55.4	48.4	37.5	28.1
22-Nov-22	12:20 AM	63.6	59.5	56.0	54.8	47.0	36.3	28.3
22-Nov-22	12:30 AM	63.3	58.8	55.9	54.2	46.9	36.1	28.7
22-Nov-22	12:40 AM	62.7	58.0	55.5	53.5	46.0	35.1	27.8
22-Nov-22	12:50 AM	62.7	58.2	55.3	53.4	45.4	34.1	28.4
22-Nov-22	1:00 AM	62.3	57.9	55.6	55.1	47.7	35.3	27.9
22-Nov-22	1:10 AM	67.3	63.8	58.6	57.9	50.0	40.6	28.2
22-Nov-22	1:20 AM	64.2	58.9	55.6	54.7	45.1	33.2	27.3
22-Nov-22	1:30 AM	66.4	61.5	56.0	54.8	46.5	39.5	28.0
22-Nov-22	1:40 AM	66.2	60.2	56.4	54.6	46.5	35.5	27.9
22-Nov-22	1:50 AM	63.6	58.7	54.9	52.7	43.7	32.9	27.8
22-Nov-22	2:00 AM	64.5	59.5	55.9	53.4	43.4	32.4	27.2
22-Nov-22	2:10 AM	63.3	59.4	55.8	53.3	45.1	40.1	37.2
22-Nov-22	2:20 AM	62.6	59.5	55.4	53.6	45.5	42.2	33.9
22-Nov-22	2:30 AM	62.7	59.5	55.7	54.0	47.1	44.6	37.5
22-Nov-22	2:40 AM	62.2	58.1	54.4	52.5	43.5	32.7	27.1
22-Nov-22	2:50 AM	63.6	59.9	54.6	52.8	44.7	34.1	27.2
22-Nov-22	3:00 AM	65.7	60.2	55.7	52.8	42.8	30.0	27.5
22-Nov-22	3:10 AM	61.8	58.2	54.9	52.2	45.2	41.7	37.6

Table 4b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V4

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	3:20 AM	59.8	56.5	53.7	50.4	40.8	32.3	27.5
22-Nov-22	3:30 AM	65.9	60.5	54.7	51.6	42.8	32.3	27.7
22-Nov-22	3:40 AM	63.2	59.3	55.4	53.2	42.5	31.8	27.4
22-Nov-22	3:50 AM	60.1	56.2	53.2	50.3	41.1	31.7	26.7
22-Nov-22	4:00 AM	65.1	57.8	53.4	50.7	41.4	31.4	27.2
22-Nov-22	4:10 AM	60.0	56.8	53.1	50.6	41.2	31.5	27.4
22-Nov-22	4:20 AM	60.2	57.2	52.9	50.9	42.2	31.5	26.9
22-Nov-22	4:30 AM	60.7	57.1	53.1	50.8	42.5	33.6	27.4
22-Nov-22	4:40 AM	63.2	59.2	55.2	52.5	44.0	32.3	27.3
22-Nov-22	4:50 AM	63.9	59.5	54.6	52.8	44.2	33.2	27.4
22-Nov-22	5:00 AM	67.7	59.5	54.2	52.7	45.0	34.0	27.7
22-Nov-22	5:10 AM	68.8	59.8	54.9	53.8	47.1	42.3	37.7
22-Nov-22	5:20 AM	68.4	59.5	55.7	57.4	50.0	46.7	37.4
22-Nov-22	5:30 AM	65.7	58.7	56.9	57.8	50.3	44.3	37.4
22-Nov-22	5:40 AM	65.2	60.8	55.4	54.3	48.1	43.8	37.9
22-Nov-22	5:50 AM	65.2	60.2	55.5	54.2	46.9	38.3	32.4
22-Nov-22	6:00 AM	66.0	60.3	57.0	56.0	48.6	37.3	29.1
22-Nov-22	6:10 AM	67.2	61.5	56.9	56.8	48.7	42.0	29.2
22-Nov-22	6:20 AM	68.4	62.5	56.6	56.3	48.4	44.1	36.8
22-Nov-22	6:30 AM	67.2	60.3	57.6	57.8	50.3	45.8	41.1
22-Nov-22	6:40 AM	66.0	59.4	56.2	54.8	47.2	40.8	37.4
22-Nov-22	6:50 AM	65.6	59.4	55.7	55.1	48.2	42.7	38.8
22-Nov-22	7:00 AM	66.5	60.0	56.6	56.6	48.3	37.3	25.5
22-Nov-22	7:10 AM	68.1	61.0	57.4	55.1	47.8	40.7	36.4
22-Nov-22	7:20 AM	66.6	60.9	56.6	55.1	48.0	46.1	40.0
22-Nov-22	7:30 AM	66.7	62.3	58.8	57.8	50.3	43.1	40.6
22-Nov-22	7:40 AM	66.3	60.7	56.3	55.9	46.7	39.3	33.8
22-Nov-22	7:50 AM	66.3	59.1	55.1	54.1	46.0	40.5	34.6
22-Nov-22	8:00 AM	66.2	59.3	55.1	53.6	44.1	35.8	28.5
22-Nov-22	8:10 AM	65.7	60.5	57.2	53.9	43.2	37.8	28.5
22-Nov-22	8:20 AM	66.0	61.7	56.1	53.5	46.8	41.7	35.3
22-Nov-22	8:30 AM	65.8	64.6	59.6	57.7	53.1	49.7	44.1
22-Nov-22	8:40 AM	65.9	62.7	59.1	58.9	56.2	55.5	59.0
22-Nov-22	8:50 AM	66.2	62.1	61.0	60.2	53.8	51.3	44.3
22-Nov-22	9:00 AM	63.4	62.5	57.2	56.5	49.8	47.1	43.0
22-Nov-22	9:10 AM	64.7	66.8	58.0	54.9	49.2	46.5	42.8
22-Nov-22	9:20 AM	61.4	58.4	54.2	54.4	47.3	40.6	36.5
22-Nov-22	9:30 AM	64.2	63.4	60.9	60.5	53.3	46.9	36.2
22-Nov-22	9:40 AM	63.2	60.0	56.8	55.5	47.9	41.1	36.2

Table 4b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V4

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	9:50 AM	63.0	60.9	56.4	55.7	48.7	43.6	34.7
22-Nov-22	10:00 AM	74.0	62.9	58.5	57.3	50.0	45.0	38.2
22-Nov-22	10:10 AM	73.7	65.5	58.6	57.7	54.6	52.6	49.5
22-Nov-22	10:20 AM	71.4	64.6	57.6	57.0	51.9	49.4	43.6
22-Nov-22	10:30 AM	62.1	62.6	54.8	53.3	46.3	40.0	28.5
22-Nov-22	10:40 AM	67.4	64.4	62.0	62.5	58.6	57.9	52.5
22-Nov-22	10:50 AM	62.4	62.8	55.9	54.6	48.1	43.4	38.2
22-Nov-22	11:00 AM	65.6	63.5	59.0	58.0	53.0	51.0	45.1
22-Nov-22	11:10 AM	66.8	65.1	61.9	62.2	57.6	55.9	49.3
22-Nov-22	11:20 AM	65.5	64.1	61.9	60.6	55.2	52.3	46.4
22-Nov-22	11:30 AM	64.2	67.5	65.1	63.5	57.8	56.1	50.7
22-Nov-22	11:40 AM	61.9	61.7	55.7	54.1	50.0	48.3	42.2
22-Nov-22	11:50 AM	61.8	61.9	55.4	53.3	49.0	47.8	41.5
22-Nov-22	12:00 PM	61.3	61.6	52.8	52.7	45.7	40.4	35.0
22-Nov-22	12:10 PM	62.4	61.6	52.4	50.4	43.5	37.9	31.8
22-Nov-22	12:20 PM	60.7	61.6	51.6	50.2	44.8	43.5	35.7
22-Nov-22	12:30 PM	61.3	62.2	52.3	51.7	46.2	42.0	34.8
22-Nov-22	12:40 PM	63.3	62.3	53.6	52.4	47.8	45.1	39.9
22-Nov-22	12:50 PM	64.4	65.1	60.3	57.5	51.4	48.9	42.0
22-Nov-22	1:00 PM	62.7	63.4	55.2	54.3	51.3	49.8	44.0
22-Nov-22	1:10 PM	62.6	63.4	54.5	51.7	47.9	46.0	37.9
22-Nov-22	1:20 PM	63.2	63.3	54.4	53.6	50.0	47.3	41.1
22-Nov-22	1:30 PM	63.0	63.8	56.2	53.9	53.3	47.4	39.6
22-Nov-22	1:40 PM	64.6	65.3	59.1	57.9	53.9	52.2	45.7
22-Nov-22	1:50 PM	68.3	64.8	61.8	62.4	57.3	55.9	50.1
22-Nov-22	2:00 PM	63.4	64.9	56.4	55.3	50.7	48.0	41.4

Table 5: A-weighted Hourly Noise Levels at LT-V5

Date	Hour beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	2:00 PM	83.1	65.5	58.1	58.3	54.9	53.6	50.8
21-Nov-22	3:00 PM	77.8	67.8	56.4	57.6	53.4	51.8	49.3
21-Nov-22	4:00 PM	76.3	64.4	57.0	56.7	54.9	53.8	52.2
21-Nov-22	5:00 PM	76.2	68.1	60.1	59.0	56.0	54.9	53.1
21-Nov-22	6:00 PM	74.8	66.0	60.6	60.3	58.0	56.6	53.8
21-Nov-22	7:00 PM	77.4	65.1	61.0	60.1	58.4	57.2	54.4
21-Nov-22	8:00 PM	88.0	69.6	60.6	62.7	58.9	57.0	54.3
21-Nov-22	9:00 PM	81.6	64.0	57.4	57.4	55.5	54.7	53.7
21-Nov-22	10:00 PM	87.2	68.5	58.0	61.2	55.8	54.8	53.5
21-Nov-22	11:00 PM	81.2	67.5	58.8	59.7	56.2	55.1	53.1
22-Nov-22	12:00 AM	78.7	61.6	55.3	56.2	54.2	53.4	51.5
22-Nov-22	1:00 AM	79.9	61.4	55.2	56.5	53.8	53.0	51.8
22-Nov-22	2:00 AM	79.1	68.8	58.8	59.5	55.8	55.0	51.3
22-Nov-22	3:00 AM	68.6	59.3	57.0	55.3	52.9	51.6	48.3
22-Nov-22	4:00 AM	77.8	56.7	54.8	55.8	52.0	50.8	49.0
22-Nov-22	5:00 AM	85.7	73.2	62.9	63.1	56.1	53.9	51.0
22-Nov-22	6:00 AM	83.9	70.8	61.8	61.4	55.9	54.4	52.1
22-Nov-22	7:00 AM	82.0	71.3	58.9	60.3	55.2	54.0	52.3
22-Nov-22	8:00 AM	80.6	73.7	63.6	61.9	55.3	53.9	52.8
22-Nov-22	9:00 AM	85.1	72.5	63.0	62.1	57.1	54.0	50.9
22-Nov-22	10:00 AM	84.9	72.6	66.4	65.6	63.3	62.1	59.9
22-Nov-22	11:00 AM	81.3	69.8	64.8	63.9	62.4	61.0	58.7
22-Nov-22	12:00 PM	81.0	69.2	63.9	63.6	62.6	61.9	59.6
22-Nov-22	1:00 PM	84.4	72.7	65.0	64.3	61.8	60.7	59.2
22-Nov-22	2:00 PM	80.5	71.5	65.6	64.6	63.0	62.2	60.9

Table 5a: A-weighted 10-minute Noise Levels at LT-V5

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	2:10 PM	68.1	64.8	58.2	56.2	54.1	52.0	50.8
21-Nov-22	2:20 PM	77.6	72.3	61.3	60.0	54.6	53.3	51.6
21-Nov-22	2:30 PM	83.1	72.5	57.8	60.8	54.8	53.7	52.9
21-Nov-22	2:40 PM	61.1	58.4	56.1	55.1	55.0	53.7	52.9
21-Nov-22	2:50 PM	60.5	59.4	57.3	56.4	56.1	55.4	54.5
21-Nov-22	3:00 PM	73.3	70.6	57.2	58.1	54.1	52.0	50.9
21-Nov-22	3:10 PM	77.8	72.2	55.1	58.5	51.9	50.6	49.3
21-Nov-22	3:20 PM	64.1	59.7	54.4	53.0	52.0	50.5	49.3
21-Nov-22	3:30 PM	73.0	70.4	57.1	57.7	53.2	51.9	51.2
21-Nov-22	3:40 PM	66.3	60.9	57.4	55.3	54.1	52.5	51.7
21-Nov-22	3:50 PM	77.3	72.9	57.1	59.7	54.8	53.3	52.5
21-Nov-22	4:00 PM	58.9	57.0	55.8	54.4	54.1	53.0	52.2
21-Nov-22	4:10 PM	67.2	65.4	57.4	56.5	55.1	53.9	52.5
21-Nov-22	4:20 PM	70.8	66.6	57.2	57.3	55.9	54.7	53.3

Table 5a (continued): A-weighted 10-minute Noise Levels at LT-V5

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	4:30 PM	64.6	57.9	56.5	55.4	55.2	54.1	53.2
21-Nov-22	4:40 PM	71.1	68.4	57.3	57.2	54.6	53.6	52.7
21-Nov-22	4:50 PM	76.3	70.9	57.7	58.5	54.4	53.5	52.9
21-Nov-22	5:00 PM	76.2	70.0	60.7	59.0	54.9	54.1	53.1
21-Nov-22	5:10 PM	74.6	72.7	62.2	60.7	56.1	54.8	54.1
21-Nov-22	5:20 PM	73.3	66.7	57.8	57.4	55.8	55.0	54.5
21-Nov-22	5:30 PM	70.9	69.4	59.1	58.9	56.6	55.6	54.9
21-Nov-22	5:40 PM	69.4	64.5	57.2	56.9	56.1	55.0	54.3
21-Nov-22	5:50 PM	69.4	65.1	63.8	59.7	56.2	55.0	54.2
21-Nov-22	6:00 PM	73.3	70.5	64.7	62.4	60.2	59.3	58.5
21-Nov-22	6:10 PM	74.8	73.7	64.4	63.0	60.6	59.8	59.1
21-Nov-22	6:20 PM	74.6	71.6	62.9	61.7	59.9	55.7	54.2
21-Nov-22	6:30 PM	72.1	64.4	58.9	57.3	56.0	55.2	54.3
21-Nov-22	6:40 PM	61.8	57.9	56.2	55.6	55.5	54.7	53.8
21-Nov-22	6:50 PM	59.9	58.1	56.7	55.9	55.8	55.0	54.4
21-Nov-22	7:00 PM	66.3	60.7	57.7	56.6	56.0	55.1	54.5
21-Nov-22	7:10 PM	65.0	64.5	63.6	59.0	56.2	55.1	54.4
21-Nov-22	7:20 PM	70.7	63.1	62.0	61.5	61.4	60.7	60.1
21-Nov-22	7:30 PM	75.6	72.0	64.2	62.8	61.4	58.3	57.3
21-Nov-22	7:40 PM	77.4	70.4	60.1	60.2	58.1	57.2	56.0
21-Nov-22	7:50 PM	62.6	59.8	58.5	57.6	57.4	56.7	55.9
21-Nov-22	8:00 PM	79.2	76.9	61.7	63.6	58.6	57.3	55.7
21-Nov-22	8:10 PM	81.0	76.5	61.3	63.2	59.3	58.3	57.5
21-Nov-22	8:20 PM	88.0	79.4	63.5	66.9	62.4	60.0	58.0
21-Nov-22	8:30 PM	67.3	63.8	61.5	59.7	60.6	55.9	55.2
21-Nov-22	8:40 PM	64.7	62.0	58.2	56.9	56.2	55.4	54.6
21-Nov-22	8:50 PM	61.6	58.7	57.6	56.3	56.0	55.0	54.3
21-Nov-22	9:00 PM	68.2	61.6	56.9	55.8	55.1	54.4	53.7
21-Nov-22	9:10 PM	59.3	58.0	56.9	55.6	55.2	54.5	53.8
21-Nov-22	9:20 PM	68.6	64.1	57.8	56.8	55.8	55.0	54.2
21-Nov-22	9:30 PM	81.6	73.5	57.8	60.8	56.2	55.2	54.6
21-Nov-22	9:40 PM	60.2	58.9	57.2	56.0	55.6	54.7	54.0
21-Nov-22	9:50 PM	71.8	67.8	57.8	57.1	55.1	54.3	53.7
21-Nov-22	10:00 PM	74.1	71.2	61.4	59.6	55.6	54.6	53.5
21-Nov-22	10:10 PM	68.8	61.7	55.8	55.8	55.2	54.8	54.0
21-Nov-22	10:20 PM	71.1	68.3	55.9	56.8	54.8	54.2	53.5
21-Nov-22	10:30 PM	68.7	57.8	56.1	55.7	55.3	54.7	54.1
21-Nov-22	10:40 PM	87.2	81.0	60.3	67.1	57.7	55.7	55.0
21-Nov-22	10:50 PM	74.8	70.8	58.7	58.6	56.4	54.9	54.2

Table 5a (continued): A-weighted 10-minute Noise Levels at LT-V5

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
21-Nov-22	11:00 PM	77.0	72.6	62.7	61.0	56.7	54.4	53.4
21-Nov-22	11:10 PM	74.1	71.0	60.6	60.2	57.3	56.5	56.0
21-Nov-22	11:20 PM	81.2	78.3	58.4	63.0	57.1	56.3	55.7
21-Nov-22	11:30 PM	71.3	63.4	57.8	57.1	56.3	55.2	53.8
21-Nov-22	11:40 PM	62.1	60.5	58.0	56.1	55.2	54.1	53.1
21-Nov-22	11:50 PM	70.9	58.9	55.4	55.3	54.5	53.8	53.1
22-Nov-22	12:00 AM	78.7	72.3	56.4	59.0	54.9	53.9	53.0
22-Nov-22	12:10 AM	77.6	72.3	55.6	58.5	54.6	53.7	52.7
22-Nov-22	12:20 AM	56.5	55.7	54.9	54.1	53.9	53.2	52.1
22-Nov-22	12:30 AM	57.5	56.3	55.3	54.3	54.1	53.4	52.7
22-Nov-22	12:40 AM	59.0	56.8	54.6	53.8	53.6	52.8	51.5
22-Nov-22	12:50 AM	60.0	55.9	54.7	54.0	53.8	53.1	52.3
22-Nov-22	1:00 AM	79.9	73.0	55.0	59.9	53.7	53.1	52.4
22-Nov-22	1:10 AM	79.1	71.1	57.9	58.9	54.5	53.2	52.3
22-Nov-22	1:20 AM	59.5	55.8	54.5	53.6	53.5	52.7	51.8
22-Nov-22	1:30 AM	57.2	56.5	54.6	53.9	53.7	53.1	52.1
22-Nov-22	1:40 AM	57.7	56.2	55.0	54.0	53.9	53.1	52.1
22-Nov-22	1:50 AM	56.7	55.5	54.2	53.5	53.4	52.6	52.0
22-Nov-22	2:00 AM	77.5	70.6	56.4	58.8	53.6	52.7	51.9
22-Nov-22	2:10 AM	66.6	61.4	54.7	54.2	53.6	52.6	51.3
22-Nov-22	2:20 AM	72.6	70.6	60.5	59.8	55.8	54.5	53.7
22-Nov-22	2:30 AM	74.2	72.2	60.7	61.1	58.4	57.9	57.4
22-Nov-22	2:40 AM	79.1	73.7	60.3	61.9	58.6	58.1	57.7
22-Nov-22	2:50 AM	72.5	64.3	60.2	57.7	55.0	54.2	53.5
22-Nov-22	3:00 AM	68.6	62.1	56.5	55.3	54.0	53.3	52.6
22-Nov-22	3:10 AM	64.4	60.0	58.5	55.2	53.6	52.8	52.3
22-Nov-22	3:20 AM	61.7	60.3	58.9	56.0	53.8	52.9	52.0
22-Nov-22	3:30 AM	67.1	66.3	63.7	58.6	54.3	51.1	49.6
22-Nov-22	3:40 AM	56.8	54.5	52.5	51.2	50.9	49.5	48.3
22-Nov-22	3:50 AM	53.0	52.8	52.0	50.9	50.8	49.7	48.4
22-Nov-22	4:00 AM	53.9	53.3	52.2	51.3	51.2	50.2	49.0
22-Nov-22	4:10 AM	53.0	52.7	52.2	51.2	51.2	50.0	49.1
22-Nov-22	4:20 AM	54.3	53.1	52.5	51.6	51.4	50.7	49.7
22-Nov-22	4:30 AM	64.8	53.6	52.6	52.0	51.7	51.0	49.7
22-Nov-22	4:40 AM	54.8	54.3	53.4	52.4	52.4	51.2	50.2
22-Nov-22	4:50 AM	77.8	73.4	66.1	61.9	54.1	51.9	50.8
22-Nov-22	5:00 AM	76.1	73.2	64.8	61.2	53.4	52.0	51.0
22-Nov-22	5:10 AM	78.0	70.6	58.8	59.0	54.4	53.6	52.6
22-Nov-22	5:20 AM	76.6	70.4	56.7	58.5	54.1	53.1	52.4

Table 5a (continued): A-weighted 10-minute Noise Levels at LT-V5

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	5:30 AM	85.7	79.9	71.2	68.1	59.0	54.4	53.4
22-Nov-22	5:40 AM	78.2	75.5	65.2	63.3	60.2	56.3	55.6
22-Nov-22	5:50 AM	71.9	69.6	60.5	58.8	55.2	54.1	52.9
22-Nov-22	6:00 AM	80.5	76.1	59.6	62.4	55.7	54.1	53.5
22-Nov-22	6:10 AM	76.0	73.6	66.2	62.9	57.4	55.5	54.4
22-Nov-22	6:20 AM	77.7	74.5	64.9	62.2	56.4	55.1	54.1
22-Nov-22	6:30 AM	78.9	71.5	61.3	60.4	56.1	54.7	53.7
22-Nov-22	6:40 AM	83.9	71.8	63.4	62.1	55.5	53.6	52.8
22-Nov-22	6:50 AM	64.3	57.5	55.6	54.5	54.3	53.1	52.1
22-Nov-22	7:00 AM	82.0	76.1	57.1	61.7	54.5	53.2	52.3
22-Nov-22	7:10 AM	81.9	74.8	59.1	61.4	55.8	54.7	54.0
22-Nov-22	7:20 AM	68.0	61.5	57.2	55.9	55.2	53.8	52.7
22-Nov-22	7:30 AM	77.8	69.8	61.1	59.8	55.7	54.6	53.9
22-Nov-22	7:40 AM	82.0	72.4	56.9	60.3	54.7	53.7	52.6
22-Nov-22	7:50 AM	75.0	73.4	62.0	60.5	55.0	53.7	52.4
22-Nov-22	8:00 AM	76.0	74.1	63.1	61.4	54.5	53.5	52.5
22-Nov-22	8:10 AM	77.1	71.9	61.9	60.6	55.0	53.6	52.8
22-Nov-22	8:20 AM	79.8	76.0	65.0	63.4	56.8	55.4	54.3
22-Nov-22	8:30 AM	77.9	73.2	62.4	61.0	56.0	54.6	53.7
22-Nov-22	8:40 AM	72.9	71.3	62.2	59.7	54.8	53.1	51.5
22-Nov-22	8:50 AM	80.6	75.5	66.8	63.6	54.6	52.9	51.7
22-Nov-22	9:00 AM	77.3	71.1	61.5	59.4	54.2	53.0	52.3
22-Nov-22	9:10 AM	79.6	78.2	67.8	65.5	60.2	55.5	51.6
22-Nov-22	9:20 AM	75.7	72.3	61.3	61.3	60.6	55.5	55.1
22-Nov-22	9:30 AM	72.8	66.9	60.2	57.8	55.3	53.0	51.6
22-Nov-22	9:40 AM	85.1	74.5	63.0	62.8	54.1	52.1	50.9
22-Nov-22	9:50 AM	79.6	72.2	64.0	61.6	58.3	54.8	52.1
22-Nov-22	10:00 AM	84.9	75.6	68.3	66.3	62.4	61.6	61.1
22-Nov-22	10:10 AM	79.1	77.5	68.5	66.4	63.4	61.9	61.3
22-Nov-22	10:20 AM	84.1	78.0	67.1	67.3	64.3	63.2	61.0
22-Nov-22	10:30 AM	77.8	72.1	65.7	64.9	63.8	62.8	61.4
22-Nov-22	10:40 AM	63.8	63.0	62.6	61.6	61.2	60.5	59.9
22-Nov-22	10:50 AM	79.2	69.6	66.0	65.0	64.5	62.7	61.5
22-Nov-22	11:00 AM	78.2	67.1	65.8	65.4	65.2	64.4	63.6
22-Nov-22	11:10 AM	81.3	73.4	65.5	64.9	63.4	61.5	60.4
22-Nov-22	11:20 AM	74.5	71.4	65.2	62.9	61.5	60.1	59.3
22-Nov-22	11:30 AM	65.0	63.7	61.9	60.8	60.8	59.3	58.7
22-Nov-22	11:40 AM	71.0	67.8	62.9	62.1	61.8	60.2	59.3
22-Nov-22	11:50 AM	79.5	75.2	67.6	65.1	61.9	60.4	59.6

Table 5a (continued): A-weighted 10-minute Noise Levels at LT-V5

Date	10-minute period beginning	Lmax	L01	L10	Leq	L50	L90	Lmin
22-Nov-22	12:00 PM	71.1	67.3	64.2	63.1	62.9	61.6	59.6
22-Nov-22	12:10 PM	81.0	78.5	64.4	65.9	63.2	62.8	62.3
22-Nov-22	12:20 PM	73.4	70.8	64.7	63.6	62.5	61.8	61.3
22-Nov-22	12:30 PM	70.9	64.8	62.5	62.1	61.9	61.6	61.1
22-Nov-22	12:40 PM	70.6	68.4	64.3	63.2	62.7	61.8	61.1
22-Nov-22	12:50 PM	66.6	65.1	63.1	62.4	62.4	61.5	60.8
22-Nov-22	1:00 PM	66.4	64.2	63.0	61.8	61.5	60.5	59.6
22-Nov-22	1:10 PM	81.3	74.5	65.6	64.1	61.0	60.0	59.4
22-Nov-22	1:20 PM	77.9	75.6	62.6	63.4	60.3	59.7	59.2
22-Nov-22	1:30 PM	84.4	75.9	66.8	65.9	61.3	60.4	59.6
22-Nov-22	1:40 PM	78.0	75.2	65.8	64.9	62.7	61.6	61.0
22-Nov-22	1:50 PM	77.7	71.0	65.9	64.6	63.9	62.0	60.5
22-Nov-22	2:00 PM	78.7	75.3	64.9	64.7	62.8	61.5	60.9
22-Nov-22	2:10 PM	76.7	73.6	66.3	64.6	62.8	61.8	61.2
22-Nov-22	2:20 PM	80.5	77.1	69.9	66.8	63.0	62.4	61.9
22-Nov-22	2:30 PM	68.7	68.3	63.7	63.3	63.0	62.4	62.0
22-Nov-22	2:40 PM	65.7	64.0	63.1	62.7	62.7	62.2	61.8
22-Nov-22	2:50 PM	78.2	70.4	65.7	64.4	63.6	62.8	62.3
22-Nov-22	3:00 PM	64.8	64.3	63.8	63.3	63.2	62.8	62.3

Table 5b: un-weighted 10-minute Octave Band Leq Noise Levels at LT-V5

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	2:10 PM	63.3	60.2	57.7	54.4	50.1	47.2	38.3
21-Nov-22	2:20 PM	66.5	60.0	57.8	56.9	55.8	51.8	46.4
21-Nov-22	2:30 PM	62.8	64.5	59.6	57.8	56.8	51.4	48.4
21-Nov-22	2:40 PM	62.3	61.4	57.3	53.1	49.3	43.8	39.1
21-Nov-22	2:50 PM	64.4	61.3	58.1	54.5	50.9	45.5	39.8
21-Nov-22	3:00 PM	63.1	60.4	57.2	54.7	54.7	49.0	39.6
21-Nov-22	3:10 PM	62.8	60.2	55.8	55.3	54.7	49.9	45.6
21-Nov-22	3:20 PM	62.5	59.5	54.3	51.3	47.4	42.3	33.3
21-Nov-22	3:30 PM	64.0	63.0	56.2	55.4	53.3	48.3	43.4
21-Nov-22	3:40 PM	64.8	62.3	57.4	53.2	48.9	44.8	37.1
21-Nov-22	3:50 PM	66.5	62.4	58.0	59.4	55.1	47.7	35.5
21-Nov-22	4:00 PM	65.1	62.8	56.1	52.6	47.8	43.3	33.5
21-Nov-22	4:10 PM	63.8	62.0	56.4	53.5	52.7	44.5	38.2
21-Nov-22	4:20 PM	63.7	61.8	56.0	55.5	52.0	49.5	38.9
21-Nov-22	4:30 PM	63.8	61.7	56.9	53.1	50.2	44.8	38.3
21-Nov-22	4:40 PM	63.3	61.6	56.5	52.8	54.3	45.8	38.1

Table 5b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V5

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	4:50 PM	64.8	61.8	56.8	52.5	55.9	49.1	40.0
21-Nov-22	5:00 PM	64.0	62.5	57.6	53.1	55.5	52.1	42.7
21-Nov-22	5:10 PM	64.4	62.5	58.2	57.1	57.3	51.7	47.0
21-Nov-22	5:20 PM	64.4	62.1	57.6	54.1	53.6	47.0	40.4
21-Nov-22	5:30 PM	64.7	62.5	59.2	58.2	53.0	49.0	41.3
21-Nov-22	5:40 PM	63.8	61.2	57.6	54.4	52.0	47.9	40.7
21-Nov-22	5:50 PM	66.2	63.1	59.7	55.5	52.5	55.2	37.8
21-Nov-22	6:00 PM	68.3	63.6	62.0	58.1	56.7	57.3	45.4
21-Nov-22	6:10 PM	68.9	65.9	63.1	60.9	58.5	53.8	47.1
21-Nov-22	6:20 PM	67.3	65.6	63.6	59.3	56.6	52.4	45.7
21-Nov-22	6:30 PM	67.5	66.4	59.5	56.1	49.6	44.2	41.0
21-Nov-22	6:40 PM	66.8	65.3	58.8	54.7	47.2	39.7	32.5
21-Nov-22	6:50 PM	65.8	64.6	59.5	55.1	47.6	39.7	28.5
21-Nov-22	7:00 PM	67.4	64.9	59.9	55.7	48.1	41.9	38.9
21-Nov-22	7:10 PM	66.1	68.4	60.2	55.9	50.1	53.2	34.2
21-Nov-22	7:20 PM	69.8	74.1	62.8	58.9	54.0	51.8	40.4
21-Nov-22	7:30 PM	71.0	72.9	64.0	60.2	57.4	52.4	44.3
21-Nov-22	7:40 PM	66.4	65.5	62.0	59.3	55.0	46.7	37.7
21-Nov-22	7:50 PM	65.6	62.7	60.9	56.8	51.2	42.9	33.6
21-Nov-22	8:00 PM	68.4	63.9	62.4	63.8	59.0	50.0	37.0
21-Nov-22	8:10 PM	69.2	65.3	62.8	62.2	59.1	52.3	39.1
21-Nov-22	8:20 PM	70.7	69.8	64.4	64.4	64.7	53.7	40.3
21-Nov-22	8:30 PM	66.4	66.6	61.4	58.4	53.9	48.9	39.7
21-Nov-22	8:40 PM	64.4	62.8	59.6	55.8	50.5	44.7	35.9
21-Nov-22	8:50 PM	64.0	62.1	58.7	55.2	50.0	43.8	36.9
21-Nov-22	9:00 PM	63.9	62.1	57.6	54.6	50.0	44.0	37.6
21-Nov-22	9:10 PM	63.8	61.0	57.4	54.2	50.1	44.7	37.8
21-Nov-22	9:20 PM	64.9	61.5	58.3	55.4	51.1	46.4	40.8
21-Nov-22	9:30 PM	64.6	61.3	59.1	58.2	58.3	50.3	39.6
21-Nov-22	9:40 PM	64.1	61.4	57.4	54.2	50.6	45.5	38.7
21-Nov-22	9:50 PM	63.1	61.0	58.0	55.5	52.6	46.5	39.4
21-Nov-22	10:00 PM	64.1	62.2	58.5	56.6	55.8	50.1	46.4
21-Nov-22	10:10 PM	62.6	60.3	57.9	54.4	50.4	44.4	37.7
21-Nov-22	10:20 PM	62.7	60.5	56.8	55.8	52.3	44.8	36.5
21-Nov-22	10:30 PM	64.0	60.3	56.9	54.3	50.7	44.1	35.5
21-Nov-22	10:40 PM	65.5	62.6	59.1	65.9	64.5	55.4	43.5
21-Nov-22	10:50 PM	66.1	61.9	58.7	57.7	54.2	47.1	35.0
21-Nov-22	11:00 PM	66.3	63.0	59.0	57.6	57.2	52.7	46.6
21-Nov-22	11:10 PM	66.7	62.1	60.0	58.9	56.0	50.0	35.7

Table 5b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V5

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
21-Nov-22	11:20 PM	65.2	62.2	59.5	63.0	58.8	51.7	35.8
21-Nov-22	11:30 PM	64.1	62.2	58.8	55.9	51.5	45.5	33.7
21-Nov-22	11:40 PM	65.4	62.1	58.2	54.5	50.1	44.5	34.9
21-Nov-22	11:50 PM	63.5	60.5	57.1	54.2	50.2	42.4	32.7
22-Nov-22	12:00 AM	63.6	60.2	58.5	58.3	55.0	44.8	32.4
22-Nov-22	12:10 AM	63.2	60.2	57.9	57.9	54.1	45.2	31.8
22-Nov-22	12:20 AM	62.3	59.9	56.7	53.2	47.7	39.8	30.3
22-Nov-22	12:30 AM	62.6	60.2	57.0	53.4	48.0	39.8	29.9
22-Nov-22	12:40 AM	62.0	59.8	56.4	52.8	47.6	39.1	29.4
22-Nov-22	12:50 AM	61.8	59.9	56.4	52.9	48.0	40.1	29.2
22-Nov-22	1:00 AM	62.6	59.5	58.6	59.4	56.1	44.3	27.1
22-Nov-22	1:10 AM	65.6	62.9	58.8	59.4	52.6	43.9	26.6
22-Nov-22	1:20 AM	62.6	60.5	56.5	52.9	46.9	37.4	26.1
22-Nov-22	1:30 AM	63.4	60.2	56.8	53.2	46.9	37.8	26.2
22-Nov-22	1:40 AM	63.1	60.1	57.1	53.7	46.9	37.0	25.4
22-Nov-22	1:50 AM	62.7	60.2	56.9	52.6	46.2	36.7	25.5
22-Nov-22	2:00 AM	64.5	62.6	57.8	56.0	54.9	48.7	45.5
22-Nov-22	2:10 AM	62.7	59.9	56.8	52.7	46.8	44.8	31.1
22-Nov-22	2:20 AM	64.7	64.6	59.7	56.7	54.9	51.6	44.7
22-Nov-22	2:30 AM	65.0	65.8	61.0	57.6	56.5	52.4	45.9
22-Nov-22	2:40 AM	66.7	65.6	62.0	59.3	57.8	52.1	46.2
22-Nov-22	2:50 AM	66.4	62.3	57.7	54.8	52.1	51.2	37.5
22-Nov-22	3:00 AM	65.0	61.0	55.9	52.9	49.0	47.7	35.6
22-Nov-22	3:10 AM	63.3	62.7	56.6	52.6	49.4	45.7	35.1
22-Nov-22	3:20 AM	66.4	63.4	57.5	53.6	50.2	46.1	35.5
22-Nov-22	3:30 AM	67.4	67.7	59.1	54.5	52.4	51.4	43.6
22-Nov-22	3:40 AM	58.8	58.2	54.5	51.1	41.2	31.9	20.4
22-Nov-22	3:50 AM	58.6	58.1	54.3	50.8	41.4	32.5	20.6
22-Nov-22	4:00 AM	61.4	58.6	54.8	50.7	42.0	32.8	20.5
22-Nov-22	4:10 AM	59.0	58.4	54.7	50.6	42.4	33.7	25.3
22-Nov-22	4:20 AM	59.7	58.7	55.1	50.9	43.1	33.1	20.4
22-Nov-22	4:30 AM	60.7	59.0	55.1	50.7	44.2	38.5	27.1
22-Nov-22	4:40 AM	61.1	60.3	55.8	51.4	44.4	35.5	22.0
22-Nov-22	4:50 AM	64.2	62.8	58.5	59.0	57.7	54.0	49.0
22-Nov-22	5:00 AM	67.0	63.8	57.9	58.1	57.4	52.8	47.7
22-Nov-22	5:10 AM	64.7	62.7	59.0	57.2	54.1	49.7	42.1
22-Nov-22	5:20 AM	65.0	61.8	57.4	55.7	54.1	49.5	44.6
22-Nov-22	5:30 AM	67.0	64.5	64.3	65.1	64.5	59.3	56.4
22-Nov-22	5:40 AM	66.4	64.5	59.2	59.4	59.2	55.5	51.1

Table 5b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V5

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	5:50 AM	64.6	62.6	57.5	56.4	54.4	48.6	45.5
22-Nov-22	6:00 AM	65.2	62.4	60.1	61.2	59.5	48.4	33.2
22-Nov-22	6:10 AM	66.1	64.0	60.7	60.6	59.1	53.4	48.6
22-Nov-22	6:20 AM	66.1	63.6	59.8	59.4	58.0	53.9	48.8
22-Nov-22	6:30 AM	65.5	62.1	58.0	57.0	55.8	49.9	50.0
22-Nov-22	6:40 AM	66.1	64.5	60.6	60.2	57.6	51.6	49.1
22-Nov-22	6:50 AM	65.5	60.9	56.4	53.0	48.7	41.6	31.5
22-Nov-22	7:00 AM	64.1	62.6	59.2	61.9	57.3	48.2	28.4
22-Nov-22	7:10 AM	66.4	62.8	59.3	60.3	58.3	48.8	38.9
22-Nov-22	7:20 AM	64.1	61.9	57.4	54.5	51.0	41.4	29.0
22-Nov-22	7:30 AM	69.8	63.8	60.5	58.5	54.2	48.2	44.4
22-Nov-22	7:40 AM	64.8	63.5	60.4	56.4	54.7	51.9	50.3
22-Nov-22	7:50 AM	64.0	63.1	58.7	56.7	56.6	52.1	45.3
22-Nov-22	8:00 AM	68.1	62.8	59.7	58.9	58.1	50.5	46.2
22-Nov-22	8:10 AM	66.6	62.7	59.7	58.0	55.9	52.0	46.4
22-Nov-22	8:20 AM	67.0	64.2	60.6	61.2	59.4	54.1	49.3
22-Nov-22	8:30 AM	66.2	62.8	59.3	58.3	56.6	52.4	48.0
22-Nov-22	8:40 AM	65.5	61.7	59.3	56.4	55.4	51.5	43.8
22-Nov-22	8:50 AM	66.0	64.1	60.8	60.6	60.0	54.1	50.6
22-Nov-22	9:00 AM	63.4	61.4	58.6	57.6	55.1	49.3	45.2
22-Nov-22	9:10 AM	66.4	66.4	61.7	63.2	61.4	56.5	51.6
22-Nov-22	9:20 AM	65.5	63.0	57.5	58.6	57.5	52.0	46.7
22-Nov-22	9:30 AM	65.2	63.1	59.6	56.8	51.6	46.5	38.4
22-Nov-22	9:40 AM	65.6	64.6	61.1	60.5	58.3	54.5	49.4
22-Nov-22	9:50 AM	72.7	71.2	63.6	58.0	51.0	56.3	41.6
22-Nov-22	10:00 AM	74.4	73.9	66.2	63.8	60.6	58.3	51.4
22-Nov-22	10:10 AM	73.6	73.8	66.9	63.8	62.2	56.3	50.9
22-Nov-22	10:20 AM	70.0	73.1	68.0	63.2	64.4	56.6	50.0
22-Nov-22	10:30 AM	72.7	75.9	66.4	61.0	60.0	54.9	49.6
22-Nov-22	10:40 AM	71.3	74.0	63.4	58.1	56.0	50.0	41.2
22-Nov-22	10:50 AM	68.1	72.9	71.7	59.5	57.9	53.8	49.3
22-Nov-22	11:00 AM	66.4	72.6	73.4	59.7	57.1	51.3	41.0
22-Nov-22	11:10 AM	68.3	71.6	70.2	61.9	59.3	53.0	46.7
22-Nov-22	11:20 AM	69.1	71.3	65.7	59.7	58.0	52.7	45.5
22-Nov-22	11:30 AM	70.1	72.9	62.1	57.7	55.3	50.1	38.5
22-Nov-22	11:40 AM	70.9	73.9	63.0	58.6	56.8	52.2	45.1
22-Nov-22	11:50 AM	72.3	73.3	64.8	62.0	60.1	56.5	52.9
22-Nov-22	12:00 PM	68.9	71.8	65.6	63.4	55.7	52.1	45.2
22-Nov-22	12:10 PM	71.8	74.9	66.2	63.1	63.0	52.6	41.5

Table 5b (continued): un-weighted 10-minute Octave Band Leq Noise Levels at LT-V5

Date	10-minute period beginning	Average Octave Band Sound Level, Leq, dB						
		63	125	250	500	1000	2000	4000
22-Nov-22	12:20 PM	72.3	75.8	67.2	60.7	56.6	52.7	46.1
22-Nov-22	12:30 PM	72.5	75.7	67.0	57.4	54.4	49.3	40.2
22-Nov-22	12:40 PM	73.0	75.4	67.3	59.2	56.6	52.0	44.8
22-Nov-22	12:50 PM	73.9	75.5	67.6	58.3	54.2	48.9	40.7
22-Nov-22	1:00 PM	72.9	73.9	66.3	57.7	54.8	50.1	40.9
22-Nov-22	1:10 PM	70.3	72.3	64.3	61.1	59.4	54.4	49.8
22-Nov-22	1:20 PM	69.0	72.5	64.1	60.7	58.1	53.3	49.1
22-Nov-22	1:30 PM	72.8	73.0	64.9	62.7	61.0	57.6	52.7
22-Nov-22	1:40 PM	69.9	73.2	65.7	61.2	60.3	56.3	50.7
22-Nov-22	1:50 PM	70.4	73.5	66.1	60.3	59.8	56.3	49.9
22-Nov-22	2:00 PM	70.0	73.9	65.9	60.8	59.3	56.2	51.5
22-Nov-22	2:10 PM	71.7	74.6	66.9	60.7	59.2	55.3	50.1
22-Nov-22	2:20 PM	72.2	74.6	67.7	63.4	62.3	57.4	53.0
22-Nov-22	2:30 PM	74.1	74.6	66.8	60.6	54.8	52.8	48.4
22-Nov-22	2:40 PM	76.0	74.6	63.8	60.7	54.5	52.5	48.5
22-Nov-22	2:50 PM	76.6	76.5	68.5	59.3	55.3	51.7	47.4
22-Nov-22	3:00 PM	78.6	74.9	68.7	59.4	53.3	47.3	40.2

Appendix E

Soil Management Plan, Berths 191 through 194

SOIL MANAGEMENT PLAN
PORT OF LOS ANGELES
BERTHS 191 THROUGH 194
WILMINGTON, CALIFORNIA

Prepared For

CITY OF LOS ANGELES HARBOR DEPARTMENT
425 SOUTH PALOS VERDES STREET
SAN PEDRO, CALIFORNIA 90731

Prepared By

LEIGHTON CONSULTING, INC.
2600 MICHELSON DRIVE, SUITE 400
IRVINE, CALIFORNIA 92612

Project No. 13832.009

APP No. 170720-511 H

December 7, 2023

SOIL MANAGEMENT PLAN
PORT OF LOS ANGELES
BERTHS 191 THROUGH 194
WILMINGTON, CALIFORNIA

Prepared For:

City of Los Angeles Harbor Department

425 SOUTH PALOS VERDES STREET
SAN PEDRO, CALIFORNIA 90731

Prepared By:

LEIGHTON CONSULTING, INC.

Project No. 13832.009

December 7, 2023

Prepared by:





Michael Priestaf, MS, PG
Project Geologist

Mark Withrow, PE
Principal Engineer

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION 1

2.0 SITE BACKGROUND 3

2.1 Site Location and Description 3
2.2 Site History 3
2.3 Contaminants of Concern 5
2.3.1 Soil 5
2.3.2 Groundwater 6
2.3.3 Soil Vapor 6

3.0 PLANNED CONSTRUCTION ACTIVITIES 7

3.1 Recommended Areas for Special Handling 7

4.0 PROJECT RESPONSIBILITIES AND TRAINING REQUIREMENTS 10

4.1 Developer 10
4.2 General Contractor 10
4.3 Training and Other Regulatory Requirements 10
4.4 Harbor Department Notifications 12

5.0 HEALTH AND SAFETY PLAN 13

6.0 GENERAL MANAGEMENT REQUIREMENTS 14

6.1 Soil Management Plan Limitations 14
6.2 Site Control 14
6.3 Dust and Air Pollution Control 14
6.4 Stormwater Control 16
6.5 Soil Stockpiling and Staging 16
6.6 Soil Sampling and Analysis 17
6.7 Water Sampling and Analysis 20
6.8 Decontamination Procedures 21
6.8.1 General Decontamination Procedures 21
6.8.2 Decontamination of Heavy Equipment and Trucks 22
6.8.3 Decontamination Water and Wastewaters 22

7.0 WASTE MANAGEMENT REQUIREMENTS 24

7.1 Waste Minimization 24
7.2 Waste Handling 24
7.3 Waste Classification 25
7.4 Waste Disposal 26
7.4.1 Soil Waste 26

7.4.2 Liquid Waste 27
7.4.3 Solid Waste 28
7.5 Waste Documentation 28
8.0 OTHER POLLUTION PREVENTION AND CONTROL 29
8.1 Material and Equipment Staging Area 29
8.2 Loading Areas 29
8.3 Refueling Operations 30
8.4 Spill Prevention Measures 30
8.5 Onsite Accidental Releases and Mitigation Plans 31
9.0 BACKFILL MATERIAL REQUIREMENTS 33

List of Accompanying Figures and Appendices

Figure 1 – Site Location Map
Figure 2 – Site Plan

Appendix A – References
Appendix B – Baseline Environmental Assessment, Addendum, and Human Health Risk Assessment
Appendix C – SCAQMD Rule 1166, SCAQMD Rule 1466, and SCAQMD Rule 403
Appendix D – Port of Los Angeles Environmental Guidance for Industrial Fill Material December 2021
Appendix E – DTSC Advisory Clean Import Fill Material October 2001
Appendix F – Recommended Waste Disposal Facilities

1.0 INTRODUCTION

Leighton Consulting, Inc. (Leighton), on the behalf of the City of Los Angeles Harbor Department (Harbor Department) Environmental Management Division (EMD), has prepared this Soil Management Plan (SMP) for the Port of Los Angeles (POLA) Berths 191 through 194, referred to herein as "the Site", located in Wilmington, California (Figure 1).

Based on information provided by EMD, Leighton understands that the Site may be redeveloped into a cement-processing facility. The proposed redevelopment plan, which includes the construction of product intake hoppers and conveyors, mills, silos, workshop and office buildings, storage yards, stormwater infrastructure, and waterside improvements, is anticipated to include soil excavation, stockpiling, sampling, characterization, and off-site disposal, as well as handling of groundwater that may be encountered during construction activities.

The objectives of this SMP are:

- Identify known contamination at the Site.
- Identify key roles and responsibilities of the workers during future development activities at the Site.
- Identify project responsibilities and training requirements to protect worker health and safety, ensure proper management of waste streams, and support long-term stewardship of the Site.
- Reduce the potential for workers at the Site to be exposed to hazardous materials originating from the subsurface of the Site during planned and future intrusive activities.
- Provide procedures and protocols to be followed for the management of impacted soil and other wastes during intrusive activities at the Site.
- Identify proper handling and management practices to minimize waste generation and disposal during planned and future intrusive activities at the Site.
- Ensure waste generated at the Site is properly documented and disposed of in accordance with federal, state, and local regulations.
- Minimize the potential for a release of hazardous materials from beneath the Site to the environment (i.e., surface water, soils, sediments, and air).

This SMP shall be followed for any future development activities at the Site. Section 4.0 identifies the key roles, responsibilities, and training requirements during implementation of this SMP.

2.0 SITE BACKGROUND

2.1 Site Location and Description

The Site encompasses approximately 5.66 acres and is located east of Canal Street and south of Yacht Street in Wilmington, California (Figure 1). The Site partially occupies portions of two parcels identified by the Los Angeles County Assessor's Office as APN 7440-010-910 and APN 7440-013-909. At present, the Site is developed with a boatyard and associated equipment storage areas and Harbor Department-owned laydown areas. The vicinity is developed for industrial use and consists of fueling terminals, container storage yards, boat repair and restoration, and berths associated with container shipping activities.

2.2 Site History

Historically, the Site was associated with the Former Wilmington Liquid Bulk Terminals, Inc. (Earth Tech, 2002), a yacht club, docks for boats, and a marine gas and oil station (Locus Technologies, 2010).

In 2017, Leighton completed a baseline environmental assessment of the Site, whereas the site was screened for existing conditions. Leighton observed the advancement of 49 soil borings and installation of 19 soil vapor probes. In addition, 19 grab groundwater samples were collected. Total Petroleum Hydrocarbons (TPH) were detected in 14 soil samples at concentrations exceeding health risk-based regulatory screening levels for industrial/commercial receptors, and Title 22 metals, including copper and lead, were detected in soil samples from four borings at concentrations exceeding hazardous waste criteria. TPH as Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) as well as the chlorinated solvents tetrachloroethene (PCE) and trichloroethene (TCE) were detected in groundwater at concentrations exceeding health risk-based screening levels for industrial/commercial receptors (Leighton, 2018). In addition, PCE, TCE, and their degradation products cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride were detected in soil vapor at concentrations exceeding health-risk based screening levels for industrial/commercial receptors. Elevated concentrations of chlorinated solvents in soil gas could potentially be attributed to off-gassing from impacted groundwater.

In 2018, Enviro-Tox Services, Inc. (Enviro-Tox) prepared a human health risk assessment (HHRA) for the Site and concluded that an increased risk to human health, posed by potential exposure to impacted soil, groundwater, and soil vapor,

was present in the western boundary and northern portion of the Site. The HHRA concluded that volatile organic compounds (VOCs) detected at soil gas location LB1-4 exceeds the generally accepted human health risk for commercial industrial workers. Volatilization of VOCs detected in groundwater at sampling locations LB1-GW, LB6-GW, LB37-GW, LB39-GW, LB40-GW, LB41-GW, LB48-GW, and LB49-GW could pose a vapor intrusion potential and cancer risks for future indoor workers if exposed. To mitigate such potential exposure, the HHRA recommended that some form of vapor mitigation measures (such as an impermeable membrane and passive venting system) be implemented at and around the soil gas and groundwater sampling locations mentioned above if a structure with worker occupancy is to be constructed in these areas, which are generally in the northern half of the Site (Appendix B, Figure 2). For the rest of the Site, the HHRA concluded that there is no significant health risk associated with vapor intrusion into future onsite buildings as normally constructed (i.e., without special mitigation measures or engineering controls).

The HHRA concluded that DRO detected in soil at the Site could exceed human health screening levels established by the United States Environmental Protection Agency and/or California Department of Toxic Substances Control. Soil sampling locations that exhibited DRO concentrations that exceed human health screening levels include LB17, LB28, LB33, and LB35 (Figure 2), and are generally located along the western boundary of the Site. LB35 is currently outside of the proposed project limits. As such, these areas shall remain covered by at least four feet of soil, paving, or buildings, to minimize potential human health impacts to onsite workers. If redevelopment activities require soil excavation at these locations, excavated soil from these locations must be properly managed as described in this SMP.

In 2023, Leighton completed an addendum to the baseline environmental assessment of the Site in which the Site boundary was expanded to the northeast (Appendix B). The purpose of the expanded assessment was to screen the existing conditions beneath the expanded project boundary. Leighton observed the advancement of 10 soil borings and the installation of four soil vapor probes in the expanded northeastern portion of the Site. Grab groundwater samples were also collected from three of the 10 soil borings. DRO was detected in one soil sample at a concentration exceeding health risk-based regulatory screening levels for industrial/commercial receptors, lead and arsenic were detected in one sample at concentrations exceeding health-risk based regulatory screening levels for industrial/commercial receptors, and lead was detected in one sample at a

concentration exceeding hazardous waste criteria. In addition, Semi-Volatile Organic Compounds (SVOCs), specifically benzo(a)pyrene, dibenzo(a,h)anthracene, and naphthalene, were detected in two soil samples at concentrations exceeding health risk-based regulatory screening levels for industrial/commercial receptors. Finally, PCE was detected in one soil vapor sample at a concentration exceeding health risk-based regulatory screening levels for industrial/commercial receptors with an applied conservative attenuation factor (AF) of 0.03. Based on these results, Leighton recommended that a SMP be prepared for the Site and implemented during potential future redevelopment activities to minimize worker and public exposure to hazardous materials. Figure 2 depicts the approximate locations of soil samples identified by Leighton as exceeding health risk-based regulatory screening levels and hazardous waste criteria. If these areas remain undisturbed during future Site development, they should be covered with pavement to mitigate any future risk of exposure. If these soils are disturbed during future Site development, they should be excavated and managed in accordance with the procedures outlined in this SMP.

The baseline environmental investigation report and addendum and the HHRA are included in Appendix B. These documents show all of the historical sampling locations completed for the Site.

2.3 Contaminants of Concern

Previous environmental investigations at the Site have identified contaminants in environmental media at the Site. These Contaminants of Concern (COCs) depend on the specific environmental media (e.g., soil, groundwater, and soil vapor) as follows:

2.3.1 Soil

Known soil contaminants at the Site include:

- TPH as DRO.
- Title 22 Metals, specifically arsenic, copper, and lead.
- SVOCs, specifically benzo(a)pyrene, dibenzo(a,h)anthracene, and naphthalene.
- Polychlorinated biphenyls (PCBs), specifically Aroclor 1254 and Aroclor 1260.

Although VOCs have not previously been identified as COCs in soil at the Site, analysis for VOCs is required for waste profiling purposes. Soil excavated within the Site boundary shall be sampled for VOCs in addition to the COCs specified above, in accordance with procedures described in Section 6.6 of this SMP, prior to waste classification as summarized in Section 7.3 of this SMP.

2.3.2 Groundwater

Known groundwater contaminants at the Site include:

- TPH as DRO and GRO.
- VOCs.

2.3.3 Soil Vapor

Known soil vapor contaminants at the Site include:

- VOCs, specifically cis-1,2-DCE, PCE, TCE, and vinyl chloride.

3.0 PLANNED CONSTRUCTION ACTIVITIES

Based on information provided by the Harbor Department, Leighton understands that the Site will be redeveloped into a cement-processing facility. The proposed redevelopment plan, which includes the construction of product intake hoppers and conveyors, mills, silos, workshop and office buildings, storage yards, stormwater infrastructure, and waterside improvements, is anticipated to include soil excavation, stockpiling, sampling, characterization, and off-site disposal, as well as handling of groundwater that may be encountered during construction activities.

3.1 Recommended Areas for Special Handling

Although all soils as the site should be managed in accordance with the SMP, below is a list of areas that if disturbed during future development require special handling due to previous environmental site characterizations and known contaminants that were encountered:

- Soil in the vicinity of boring LB5 located at northing 1,736,738.07, easting 6,483,379.90 and shown on Figure 2. The soil is known to be contaminated with lead in exceedance of hazardous waste criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB17 located at northing 1,736,731.77, easting 6,483,040.33 and shown on Figure 2. The soil is known to be contaminated with lead in exceedance of hazardous waste criteria and DRO in exceedance of health risk-based screening criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB28 located at northing 1,736,400.27, easting 6,483,110.62 and shown on Figure 2. The soil is known to be contaminated with DRO in exceedance of health risk-based screening criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB31 located at northing 1,736,298.63, easting 6,483,126.75 and shown on Figure 2. The soil is known to be contaminated with lead in exceedance of hazardous waste criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB33 located at northing 1,736,175.43, easting 6,483,118.28 and shown on Figure 2. The soil is known to be contaminated with lead in exceedance of hazardous waste criteria and DRO in exceedance of health risk-based screening criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB52 located at northing 1,736,990.15, easting 6,483,698.72 and shown on Figure 2. The soil is known to be contaminated with lead in exceedance of hazardous waste criteria and SVOCs in exceedance of health risk-based screening criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB54 located at northing 1,737,014.12, easting 6,483,637.05 and shown on Figure 2. The soil is known to be contaminated with DRO and SVOCs in exceedance of health risk-based screening criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

- Soil in the vicinity of boring LB58 located at northing 1,737,015.40, easting 6,483,550.94 and shown on Figure 2. The soil is known to be contaminated with arsenic lead in exceedance of hazardous waste criteria and health risk-based screening criteria and must be segregated, sampled, and disposed of in accordance with the procedures described in this SMP. The resulting excavation should be backfilled with clean import material as described in Section 9.0 of this SMP.

If the above areas are not disturbed during construction, then special handling is not required. However, these areas should be covered with pavement to mitigate any future risk of exposure.

4.0 PROJECT RESPONSIBILITIES AND TRAINING REQUIREMENTS

4.1 Developer

The developer will be responsible for selecting the redevelopment general contractor (GC) and ensuring they are properly trained, capable of implementing the SMP and monitoring the GC's implementation to ensure compliance with the SMP requirements.

4.2 General Contractor

The GC and/or their authorized representative shall implement the SMP and be responsible for ensuring proper handling of the following:

- Stockpiling of excavated soil. Stockpiling shall be conducted in a manner to permit representative sample collection in accordance with this SMP. Stockpile requirements are further discussed in Sections 6.5 and 6.6.
- Waste segregation and characterization.
- Documentation and labeling of waste drums/containers, including pre-transport requirements (packing, marking, labeling, storing, and placarding of hazardous wastes before shipping).
- Tracking and maintaining waste inventory.
- Site-specific Health and Safety Plan (HASP) preparation and implementation.
- Procurement of waste profiles and manifests, signatures, qualified transporter, and disposal records (e.g., weight tickets, bill(s) of lading, and waste manifests).

Personnel at the Site shall also be required to comply with the requirements in this SMP in addition to any design specifications provided by the Harbor Department prior to construction.

4.3 Training and Other Regulatory Requirements

Field personnel implementing any soil disturbance activities at the Site must complete the training requirements of Occupational Safety and Health Administration (OSHA) hazardous communication 29 Code of Federal Regulations (CFR) 1910.1200. This training will be updated continuously, as environmental

concerns are addressed at tailgate safety meetings, or as needed. In addition, construction personnel must complete a Hazardous Waste Operations and Emergency Response (HAZWOPER) 24-hour or 40-hour training course, as applicable to their responsibilities, and an annual 8-hour refresher course, according to OSHA standard 29 CFR Part 1910.120 and 8 CCR § 5192.

Personnel visiting the Site shall, at a minimum, follow the health and safety requirements as described in a Site-specific HASP (Section 5.0), as well as the instructions of the designated Site Health and Safety Officer (SHSO) when work is in progress. Equipment operators will be instructed regarding moving equipment in a manner that minimizes job hazards and any impacts to the environment.

Contractors testing and handling different types of waste must have appropriate qualifications, licenses, registrations, and required permits including, but not limited to, California Professional Engineering/Geologist licenses, California contractor and/or hazardous waste remediation contractor license (for excavation and handling of hazardous waste), California Department of Transportation (DOT) registration (for the transportation of hazardous waste), and South Coast Air Quality Management District (SCAQMD) Rule 1166 and 1466 permits (Appendix C), as necessary, to complete the proposed redevelopment work.

Depending on the results of analytical testing, soil excavated from the ground within the Site boundary may be reused on-site if it meets the requirements outline in the Harbor Department's *December 2021 Environmental Guidance for Industrial Fill Material* (Appendix D) or disposed of as waste at an appropriately licensed disposal/treatment facility. Water removed from the ground within the Site boundary must be disposed of as waste at an appropriately licensed treatment/disposal facility or through an appropriate National Pollutant Discharge Elimination System (NPDES) permit for discharge into the stormdrain. Therefore, the procedures and protocols described in this SMP for sampling and chemical analysis must be implemented for assessment of on-site reuse potential and waste characterization for off-site disposal.

All work must be conducted in accordance with the requirements identified in the Mitigation Monitoring and Reporting Program (MMRP) and Lease Measure (LM) prepared in the Environmental Impact Report.

4.4 Harbor Department Notifications

If any unexpected free product or other conditions not mentioned in this document are encountered during construction, the Contractor shall notify EMD (Ms. Rita Brenner at rbrenner@portla.org) within 24 hours of discovery.

5.0 HEALTH AND SAFETY PLAN

A HASP must be prepared for the Site by the Contractor and be reviewed by field staff prior to beginning work. The HASP will outline the minimum health and safety requirements to safely conduct work at the Site, based on known contamination and site conditions. A HASP provides guidance for the handling of known and unknown hazards that may be encountered at the Site as well as guidance to ensure a safe work environment for Contractor and subcontractor personnel working at the Site and in the vicinity. The HASP will incorporate the requirements specified by Cal-OSHA Hazardous Waste Operations Standards (Title 29 CFR, Section 1910.120) and California Code of Regulations (Title 8 CCR, Section 5192). The HASP outlines the anticipated physical and chemical hazards that may be encountered at the Site during construction. The HASP must be approved by a Certified Industrial Hygienist.

In addition, the HASP will address the appropriate level of Personal Protective Equipment (PPE) for onsite workers during construction activities at the Site. Use of Level D PPE, including steel-toed boots, hard hats, safety goggles, hearing protection, and work gloves, is anticipated. The HASP will include a description of conditions, events, or encounters that may affect the required level of PPE.

The Contractor will hold tailgate safety meetings to discuss potential hazards at the beginning of each workday, when new personnel are introduced to the Site, and when new conditions or hazards arise to warrant such meetings. These meetings will identify potential workplace hazards and problems so that appropriate control measures can be implemented. Copies of tailgate safety meeting notes and a list of attendees will be kept onsite by the Contractor until the completion of the project for documentation purposes.

6.0 GENERAL MANAGEMENT REQUIREMENTS

Chemically impacted soil (CIS) will likely be encountered beneath the Site during intrusive activities. This section presents the requirements for the sampling, handling, and management of soils and water removed from beneath the Site.

6.1 Soil Management Plan Limitations

The requirements and procedures defined in this SMP are applicable only within the Site boundaries. The extent of the Site is shown on Figures 1 and 2. Areas beyond the Site boundary are not included within the purview of this SMP.

6.2 Site Control

Access to soil disturbance work areas will be controlled to prevent exposure of unauthorized persons to CIS. Access to soil disturbance work areas will be controlled using temporary fencing, delineators, cones, caution tape, or other measures to clearly designate the area and/or prevent access by the public or other unauthorized personnel.

6.3 Dust and Air Pollution Control

To reduce the generation and potential migration of contaminated dust, the Contractor will implement dust control measures in accordance with SCAQMD Rule 1466 during the excavation, loading, stockpiling, transport, grading, and compaction of all soil within the boundary of the Site. The dust control measures to be implemented include but are not limited to the following:

- Wet suppression of exposed soil prior to excavation or other earthwork activities, during excavation or other earthwork activities, and prior to loading into bins or trucks for transportation and off-site disposal. Water will be applied as needed to dampen the surface without generating runoff.
- Modifying earthwork procedures to minimize dust generation e.g., emptying excavator or loader buckets more slowly and/or from minimal heights.
- Reduction of vehicle speeds in areas with exposed soil.
- Mandatory covering of soil bins and truck beds or trailers using deployable tarps or lids prior to leaving the Site.
- Immediate cleanup and removal of any spilled soil.

- Loose soil will be removed in the designated decontamination area prior to loads departing the Site.
- Proper covering of exposed soil excavations or stockpiles at the end of each workday or while not involved in active work activities. Additional requirements regarding the management of soil stockpiles are described in Section 6.5.
- Use of approved track-out control devices at vehicle access points to the work area.
- Prevention of track-out more than 25 feet beyond the property boundary.
- Daily removal of track-out using a vacuum and high efficiency particulate air filter.
- Monitoring of airborne particulate matter with diameters of 10 micrometers or less (PM10) along the work area perimeter using two or more stationary aerosol monitors. Implementation of additional dust control measures and/or cessation of earthwork if perimeter PM10 concentrations, as determined by the difference between the upwind and downwind samples collected by the aerosol monitors, exceed 25 micrograms per cubic meter ($\mu g/m^3$).
- Cessation of earthwork if measured wind speeds exceed 15 miles per hour (mph) over a 15-minute period or if instantaneous wind speeds exceed 25 mph.

Air monitoring is required per SCAQMD Rules 403, 1166, and 1466 during any grading and dust generating activities at the Site. Air monitoring protocols are dependent and specific to each SCAQMD Rule and will be determined by conditions encountered during construction activities, and/or as determined by the HASP. If odors are evident, all work will stop, and appropriate monitoring will be conducted to determine whether the level of PPE needs to be upgraded and to determine steps needed to comply with any permits. The HASP will identify action levels of potential contaminants that may be encountered for upgrades and downgrades of PPE. If the air monitoring readings from the excavation soil are more than 50 parts per million by volume (ppmv) as detected by a photo-ionization detector (PID), then it is considered VOC-impacted, and the Contractor is required to notify SCAQMD in accordance with a Rule 1166. Copies of Rules 1166, 1466, and 403 are provided in Appendix C.

6.4 Stormwater Control

Stormwater pollution controls will be implemented by the Contractor during earthwork activities within the Site boundary to minimize stormwater runoff, which may entrain CIS. The Contractor will be responsible for preparing a project Storm Water Pollution Prevention Plan (SWPPP) prior to the start of work. The SWPPP must be prepared by a California certified Qualified SWPPP Developer (QSD) and SWPPP monitoring must be conducted by a California certified Qualified SWPPP Practitioner (QSP). The SWPPP will specify stormwater Best Management Practices (BMPs) and controls to be implemented, which may include but are not limited to staging soil stockpiles away from storm drain inlets, covering and protecting in-place nearby storm drains, covering soil stockpiles and excavations prior to forecasted rain events, installation of temporary berms, silt fences, and straw bales around soil stockpiles and open excavations, and compliance sampling.

6.5 Soil Stockpiling and Staging

Solid and liquid waste will require appropriate handling to protect worker exposure and reduce potential impacts to the environment. All solid and liquid wastes should be sampled and tested as specified in this SMP and/or following specific waste profiling requirements set forth by the disposal/treatment facilities and local, state, and federal regulatory requirements. Appropriate waste disposal methods and facilities will be determined through completion of the chemical analyses and waste profiling process.

Soil excavated within the subject area will be either temporarily stockpiled or placed in an appropriate container, such as a waste roll-off bin or United States Department of Transportation (DOT)/United Nations (UN)-approved 55-gallon drum, in a waste staging area adjacent to the excavation (if possible) or within a controlled area of the Site as described in Section 6.2. The following procedures and controls will be implemented regarding the stockpiling and staging of soil:

- Soil to be stockpiled or containerized will be wetted prior to excavation, transportation, and stockpiling or containerization to minimize dust generation during these activities. Additional dust control requirements are described in Section 6.3.
- Soil stockpiles will **not** be staged in or near storm drain inlets or channels or areas of high stormwater flow.

- Soil stockpiles will be protected from stormwater run-on using a temporary perimeter sediment barrier such as berms, dikes, silt fences, or sand/gravel bags.
- Soil stockpiles will be placed on a relatively impermeable material such as tarp or heavy plastic sheeting.
- At the end of each workday, prior to a forecasted storm or wind event, or when not involved in active work activities, soil stockpiles will be covered with a relatively impermeable material, such as tarp or plastic sheeting, and waste containers will be covered with a secured lid to minimize dust emissions and sediment runoff from stormwater. When deployed on a soil stockpile, the impermeable material will be secured in place with sandbags or other weights.
- Soil stockpiles and waste containers will be removed from the Site and disposed of in a timely manner following chemical profiling. Stockpiled or containerized soil that is determined to be hazardous waste will be stored in accordance with hazardous waste regulations and removed from the Site within 90 days of accumulation.

In addition to the guidelines provided above, stormwater BMPs will be incorporated into soil management procedures and as part of the project SWPPP.

6.6 Soil Sampling and Analysis

To determine the appropriate number of stockpile samples to be collected, the stockpile quantity will need to be estimated and the sampling frequency depicted below will be used to calculate the total number of soil samples to be collected from a specific stockpile. Sampling frequencies will be based on the guidance provided in the POLA Environmental Guidance for Industrial Fill Material (Appendix D) and the following:

- If the soil stockpile volume is estimated to be less than or equal to 1,000 cubic yards (CY), the total number of samples to be collected will be one (1) per 250 CY.
- If the soil stockpile volume is estimated to be 1,000 to 5,000 CY, the total number of samples to be collected will be four (4) samples for the first 1,000 CY plus one (1) for each additional 500 CY.

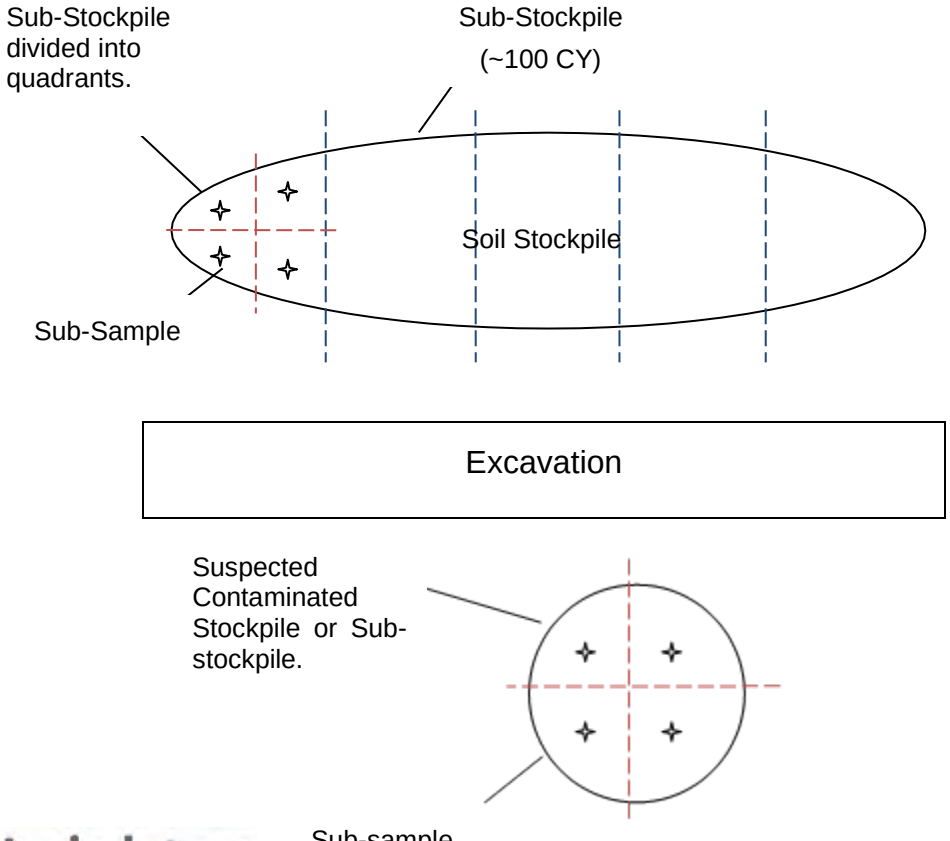
- If the soil stockpile volume is estimated to be greater than 5,000 CY, the total number of samples to be collected will be 12 for the first 5,000 CY plus one (1) for each additional 1,000 CY.

Once the number of samples to be collected has been determined, sampling may be conducted. To ensure collection of adequately representative samples, each sample shall be a composite of four sub-samples representing different areas within the stockpile. The stockpile, depending on its size, may be divided into sub-stockpiles for planned sampling. The sub-stockpile (or stockpile if less than the minimum quantity of 250 CY) soil sample will be collected as follows:

1. Divide the sub-stockpile into quadrants (four sections of equal size),
2. Collect a discrete sub-sample from each quadrant at a different depth, and
3. Submit the sub-samples to the laboratory for a composite sample analysis per sub-stockpile.

The following graphic illustrates the stockpiling, sub-dividing, and sampling technique to be used.

Soil Stockpile Subdividing and Sampling



For metals and other non-VOC analytes, the testing laboratory will composite sub-samples from each sub-stockpile in the laboratory prior to conducting the prescribed analyses. For VOCs, only the sub-sample (not the composite sample) with the highest field VOC concentration collected by a PID from each sub-stockpile shall be analyzed by the laboratory using the following protocol:

- Collect a VOC headspace reading from each sub-sample of the same sub-stockpile using a PID in the field.
- Obtain Terracore® samples (USEPA Method 5035) as described below from the sub-sample that registers the highest PID reading in the field.
- Submit the Terracore® samples to the laboratory for a discrete sample analysis.

The stockpile soil sub-samples shall be collected manually using standard drilling and soil sampling equipment typically consisting of a slide hammer hand sampler and stainless-steel sleeves, or a trowel/shovel and laboratory-supplied 8-ounce glass jars. Each sub-sample should consist of two sleeves/jars. One of the sample sleeves/jars with the stockpile samples shall be screened in the field for VOCs, while the other sample sleeve(s) and its entire content shall be sealed with Teflon® sheets (after collection of the Terracore® sample) and plastic end caps.

All soil sub-samples shall be labeled with the project name, sample identification number, as well as the date and time of collection.

Composite soil samples will be analyzed by a National Environmental Laboratory Accreditation Program (NELAP)-accredited analytical laboratory for the following constituents by the analytical and sample preparation methods specified:

- Title 22 Metals by USEPA Methods 6010B/7471A.
- VOCs (for discrete Terracore® samples from the sub-sample with the highest PID reading) by USEPA Method 5035/8260B.
- TPH as DRO, GRO and Oil Range Organics (ORO) by USEPA Method 8015M.
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082.
- SVOCs by USEPA Method 8270C SIM.

- Soluble Threshold Limit Concentration (STLC), as necessary, if the total concentration of each analyte meets or exceeds its respective ten times STLC value.
- Toxicity Characteristic Leaching Potential (TCLP), as necessary, if the total concentration of each analyte meets or exceeds its respective 20 times TCLP value.
- Any other analyses as required by the receiving landfill.

Sample preparation and analysis shall be completed within the required method holding time.

The soil samples shall be logged on a chain-of-custody form and stored on ice in a thermally insulated cooler at a temperature of 4 degrees Celsius (°C) ± 2°C immediately following collection of samples, and during transport to the laboratory.

The Waste Extraction Test (WET) and associated leachate analysis must be performed if the total bulk concentration of an analyte meets or exceeds ten times its respective STLC but does not meet or exceed its respective Total Threshold Limit Concentration (TTLC). The TCLP and associated leachate analysis must be performed if the total bulk concentration of an analyte meets or exceeds 20 times its respective TCLP value. All sample analyses must be performed within the required holding times.

Additional analyses may be required if excavated soil is further segregated due to odors, discoloration, or other evidence of non-characteristic contamination. EMD will be notified if for any reason workers suspect evidence of contamination other than those identified above.

In-situ sampling prior to excavation can be conducted for direct loading. This approach may be necessary if sufficient area is not available to stage stockpiles or containers. However, in-situ sampling does not provide the same level of confidence compared to sampling a stockpile where contamination can be observed. As a result, the number of samples needed for in-situ sampling is usually more than from a stockpile or container.

6.7 Water Sampling and Analysis

Earthwork activities within the Site boundary may result in the generation of wastewater. As described in Section 6.8, equipment that has contacted soil

originating from beneath the Site may require decontamination, which may result in the generation of wastewater and fluids. In addition, dewatering of water seepage from excavations or trenches may be required for certain construction activities. Sampling and analysis of wastewaters, regardless of the origin, will be required prior to discharge and/or off-site disposal.

Wastewater samples will be labeled with the project name, the sampler's name, a unique sample identification name and/or number, the requested analyses, and the date and time of sample collection. For each sample collected, an entry shall be made on a Chain-of-Custody form documenting the custody of the samples from collection through transport and analysis. Immediately following collection, all water samples will be stored along with the Chain-of-Custody form in a thermally insulated ice-cooled chest at a temperature of 4°C for transport to the analytical laboratory.

Each waste stream type (e.g., decontamination wastewater, decontamination fluids, dewatered wastewater, etc.) will be sampled separately in appropriately preserved laboratory-supplied containers and analyzed, at a minimum, for the following constituents by the analytical methods specified:

- Title 22 Metals by USEPA Methods 6010B/7470A.
- VOCs by USEPA Method 8260B.
- TPH as DRO, GRO, and ORO by USEPA Method 8015M:

Trip blanks provided by the laboratory shall also be analyzed when samples are submitted to the laboratory for VOC analysis. Sample preparation and analysis shall be completed within the required method holding time.

6.8 Decontamination Procedures

The following decontamination procedures will be followed:

6.8.1 General Decontamination Procedures

Prior to leaving the site, for general decontamination of tools, vehicles, and other equipment, dry or wet methods shall be used as follows:

- Loose soil will be removed from surfaces using dry decontamination methods, including but not limited to sweeping, brushing, scraping, or vacuuming.

- Viscous or other soil that cannot be readily dislodged from surfaces using dry decontamination methods will be removed using wet decontamination methods, including but not limited to scrubbing, pressure washing, or steam cleaning.

Decontamination will be conducted on plastic sheeting or within secondary containment to prevent potential dispersal of CIS and decontamination wastewater. CIS removed during general decontamination shall be collected and containerized or stockpiled for disposal as described in Section 6.5. Wastewater shall be accumulated in either DOT/UN-approved 55-gallon drums or temporary storage tanks (e.g., Baker tanks) and sampled for discharge and/or disposal as described in Section 6.7.

6.8.2 Decontamination of Heavy Equipment and Trucks

To prevent cross-contamination of waste material, decontamination procedures will be implemented.

Prior to leaving the site, all vehicles including heavy equipment and trucks entering areas of possible contamination will be decontaminated. Decontamination of trucks will first include wheel shakers to remove gross soil particles, followed by brushing off the tires/wheels. If brushing does not prove effective, the Contractor will use a pressure washer which will be made available near the decontamination area to provide wash fluids to thoroughly clean the tires. If wash fluids are used at the Site, care will be taken to clean vehicles such that the wash fluids remain within a visqueen lined decontamination area. Where possible, personal vehicles will not be driven or parked in areas of potential contamination to minimize the generation of decontamination fluids.

6.8.3 Decontamination Water and Wastewaters

Decontamination water and any wastewater that may be accumulated during the excavation/construction activities will be containerized in DOT/UN-approved 55-gallon drums or temporary storage tanks (e.g., Baker tanks) and sampled and discharged and/or disposed of in accordance with Sections 6.7 and 7.4.2. Stormwater BMPs will be implemented to ensure all stormwater will be captured and temporarily stored onsite in a secure manner, without inflow or outflow.

Removal of infiltrated/seeped groundwater from the excavations through pumping may be required for certain construction activities. The water generated from the dewatering activities shall be collected and containerized in the same manner as decontamination water or discharged in accordance with the requirements set forth in a NPDES or other applicable permits based on the work conducted.

7.0 WASTE MANAGEMENT REQUIREMENTS

It is anticipated that excavation and grading activities will generate waste streams that may consist of CIS, decontamination water, stormwater runoff, excavation dewatering, and general trash. In addition, any materials contaminated by spills or accidental releases during construction would be considered as a waste material. The waste will be characterized prior to disposal by evaluating its generation process (or sources), physical and chemical properties, and concentrations against applicable federal, state, and local waste classification criteria.

7.1 Waste Minimization

Workers at the Site shall make every effort to minimize debris, soil, dust, and water generated during construction activities. Waste minimization refers to the reduction in quantities generated, and types of waste that must be disposed of offsite. Methodologies that shall be implemented to minimize waste are:

- Conducting work activities involving waste close to the origin of the waste and in designated areas only.
- Minimizing transfer, transportation, and handling of waste to minimize the potential for spillage.
- Lining waste containers, truck beds, and equipment with plastic sheeting or other barriers to minimize the amount of decontamination required.
- Performing excavation and other intrusive activities in a manner such that waste materials may be easily segregated.

7.2 Waste Handling

Solid and liquid wastes require appropriate handling to protect workers, the public, and the environment from exposures and releases. As described in Section 4.0, workers will be required to complete specific training prior to participating in operations involving potential exposure to hazardous materials. In addition, all solid and liquid wastes will be sampled, analyzed, characterized, and disposed of as specified in this SMP and in accordance with federal, state, and local regulations and the requirements of both the Harbor Department and the disposal/treatment facilities. Appropriate waste disposal methods and facilities will be identified during the waste profiling process.

7.3 Waste Classification

Analytical results of waste samples will be compared to applicable federal, state, and local waste characterization criteria, including but not limited to hazardous characteristics (corrosivity, reactivity, ignitability, and toxicity), Resource Conservation and Recovery Act (RCRA) TCLP and California TTLC and STLC values, landfill waste discharge requirements issued by the Regional Water Quality Control Board or other local governing agency, to classify the waste and determine disposal requirements. Waste soil being assessed for on-site reuse potential must meet all testing requirements as stated in the POLA industrial fill requirements, which are included in Appendix D. The necessary documentation must be submitted to the Harbor Department's Environmental Management Division to obtain approval for soil reuse and prior to bringing any proposed fill source soils to the Site:

Rita Brenner
Marine Environmental Supervisor, Site Restoration Group
Port of Los Angeles
rbrenner@portla.org

In addition, soil producing a surface measurement of VOCs greater than 50 ppmv, as measured by a properly calibrated PID, will be classified as VOC-impacted, and the Contractor will be required to notify SCAQMD in accordance with Rule 1166.

Based on classification standards, wastes may be classified as one or more of the following categories:

- **Non-hazardous:** wastes that are not listed, do not exhibit hazardous characteristics, and contain concentrations of regulated chemical constituents below federal (RCRA) and state (non-RCRA) hazardous waste limits.
- **California hazardous (non-RCRA hazardous) waste:** wastes that are listed, exhibit hazardous characteristics, and/or contain concentrations of regulated chemical constituents above hazardous waste limits (TTLCs and/or STLCs) according to California (non-RCRA) hazardous waste criteria, but that are not federal (RCRA) hazardous wastes.
- **Federal hazardous (RCRA hazardous) waste:** wastes that are listed, exhibit hazardous characteristics, and/or contain concentrations of regulated chemical constituents above federal (RCRA) hazardous waste limits (TCLP values).

Liquid wastes, such as wastewater generated from equipment decontamination or seepage dewatered from excavations, will be sampled as described in Section 6.7 and analyzed according to requirements specified by either the off-site treatment facility or the approved NPDES permit. Liquid wastes designated for on-site discharge must meet the requirements of the approved NPDES permit while liquid wastes designated for off-site disposal will be classified as non-hazardous, California (non-RCRA) hazardous, or federal (RCRA) hazardous waste as determined by its characteristics and chemical concentrations.

7.4 Waste Disposal

Care should be exercised during the loading, removal, transportation, reuse, and disposal of waste generated at the Site in accordance with federal, state, and local regulations and requirements. These include but are not limited to CCR Titles 22, 23, and 26 et. seq.; California Health and Safety Code §25100 et. seq; and other regulations governing the waste disposal/treatment facility. All solid and liquid waste transported for offsite disposal/treatment must be accompanied by a non-hazardous or uniform hazardous waste manifest signed by an authorized representative. Disposal/treatment facilities must be established by the generator prior to receiving waste originating from the Site. Although not required, attached as Appendix F is a list of recommended disposal facilities used by the Harbor Department.

7.4.1 Soil Waste

Soil waste must be either reused on-site or disposed of at an approved disposal facility based on its waste classification. Following sampling and the receipt of laboratory analytical results, waste soil will be classified into the following categories:

- **Non-hazardous and suitable for on-site reuse** in accordance with POLA industrial fill requirements
- **Non-hazardous and unsuitable for on-site reuse**
- **California hazardous (non-RCRA hazardous)**
- **Federal hazardous (RCRA hazardous)**

In accordance with Harbor Department reuse requirements, neither Federal hazardous (RCRA hazardous) nor California hazardous (non-RCRA

hazardous) soil may be reused on-site. In addition, soil to be reused on-site must meet POLA industrial fill requirements (Appendix D).

Recommended disposal facilities for each waste category are included in Appendix F and below:

- **Non-hazardous**: Local landfills or non-hazardous waste treatment facilities. The temporary waste storage time shall not exceed 90 days from the start of waste generation.
- **California hazardous (non-RCRA hazardous)**: Waste Management Kettleman Hills Hazardous Waste Facility in Kettleman City, California. The temporary waste storage time shall not exceed 90 days from the start of waste generation.
- **Federal hazardous (RCRA hazardous):** US Ecology in Beatty, Nevada. The temporary waste storage time shall not exceed 90 days from the start of waste generation.

7.4.2 Liquid Waste

Liquid waste may either be discharged on-site in accordance with an approved NPDES permit or disposed of at an approved disposal/treatment facility. Recommended disposal facilities for each waste category are included in Appendix F and below:

- **Non-hazardous**: World Oil Recycling in Compton, California. The temporary waste storage time shall not exceed 90 days from the start of waste generation.
- **California hazardous (non-RCRA hazardous)**: Waste Management Kettleman Hills Hazardous Waste Facility in Kettleman City, California (*for in-state disposal as California hazardous (non-RCRA hazardous) waste)*; La Paz County Landfill in Parker, Arizona (*for out-of-state disposal as non-hazardous*. The temporary waste storage time shall not exceed 90 days from the start of waste generation.
- **Federal hazardous (RCRA hazardous)**: US Ecology in Beatty, Nevada. The temporary waste storage time shall not exceed 90 days from the start of waste generation.

Liquid waste determined to be hazardous under federal or state regulations may under no circumstances be discharged into the ground, public sewers, storm drains, or surface water bodies without regulatory approval.

Disposal of liquid waste into a nearby storm drain must be conducted in accordance with an approved NPDES permit. The Clean Water Act prohibits anybody from discharging "pollutants" through a "point source" into a "water of the United States" unless they have an NPDES permit. The permit will contain limits on what you can discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not hurt water quality or people's health. Under no circumstances should the liquid waste be discharged into the ground, public sewers, storm drains, or surface water bodies without appropriate regulatory permits.

7.4.3 Solid Waste

Solid waste other than soil, such as used PPE, construction debris, and general trash will be disposed of in accordance with all applicable local, state, and federal regulations. Appropriate dumpsters or other containers will be used for common debris and waste. Any contaminated sorbent material, oily rags, or used oil filters shall be segregated from other solid waste, properly stored and labeled, and disposed of offsite in accordance with applicable laws and regulations. Solid waste that is not chemically impacted may be disposed of as municipal waste in accordance with applicable laws and regulations.

7.5 Waste Documentation

Original copies of laboratory analytical reports associated with waste characterization and chemical profiling; work logs documenting field activities involving waste sampling, handling, management, transportation, and disposal; and waste disposal records, including signed waste manifests, bills of lading, and weight tickets, shall be retained by the Site tenant. The tenant shall be the generator of all wastes and obtain their own EPA generator identification number, as needed.

8.0 OTHER POLLUTION PREVENTION AND CONTROL

This section describes the safety measures to be implemented during excavation, sampling, and construction activities. These include preventative measures to be used within the staging areas to ensure no accidental release of hazardous materials or long-term effects of contamination affect previously non-impacted soil and the environment, including surface and groundwater surrounding the excavation areas. The Contractor's Site Manager or designee will conduct visual inspection of the worksite to ensure compliance with this SMP and keep written records of inspection.

Any unanticipated releases which occur during construction shall be controlled and properly characterized and disposed of associated wastes as soon as feasible. Any release which impacts or has the potential to impact the waters of the State (i.e., channels, harbor, storm drains, etc.) shall be immediately reported to the Harbor Department in accordance with applicable regulations to coordinate additional notification of appropriate regulatory agencies, if required (See Section 4.0 for key roles and responsibilities).

8.1 Material and Equipment Staging Area

If material and/or equipment staging onsite is necessary, the area will be clearly demarcated and diesel fuel, gasoline, oil, grease, and/or other petroleum or chemical products that will be used during excavation/construction will be properly labelled and stored in this area. The storage area will be bermed around the perimeter with a 110% containment capacity. Maintenance of equipment will take place, if necessary, in a designated maintenance area or offsite. Preventative measures will be employed to minimize the potential of a spill. Any waste petroleum and or chemical products will be stored in properly labeled, corrosion resistant containers and removed from the Site as soon as practical, in compliance with all applicable regulations.

8.2 Loading Areas

Onsite trucks will be loaded with soil in the specified loading area for transport to the designated stockpile area if access restrictions prevent stockpiling adjacent to excavations. Trucks and trailers will be loaded with soil or debris using wheel loaders within this specified loading area for transporting to the disposal or treatment facility.

8.3 Refueling Operations

All trucks/vehicles will be refueled at an offsite fueling station. Refueling of heavy field equipment will occur only in the designated refueling area when necessary. The following safety measures will occur while refueling heavy field equipment:

- The engine will be stopped.
- Never completely fill the tank; allow some space for expansion.
- Avoid spillage by holding onto or staying with the nozzle until refueling is complete. In case of spills, clean up immediately, refer to Section 8.4.
- No smoking during refueling operations.
- Refuel in the open air.
- Keep a working fire extinguisher nearby.

A spill kit with absorbent must be kept near the designated fueling area in case of accidental discharge of fuel. In case of accidental discharge of fuel, utilize the spill kit and absorbent to remove as much free-flowing fuel as possible. Used absorbent shall be removed and stored in drums at the hazardous waste storage area. Listed wastes or hazardous wastes will be properly labeled, sealed, manifested, and hauled by an appropriate transporter to a disposal facility approved for receiving such hazardous waste.

8.4 Spill Prevention Measures

Chemicals such as gasoline, spray paint, and hydraulic oil may be hazardous unless handled properly in accordance with instructions outlined in the Safety Data Sheets (SDS) or Globally Harmonized System of Classification and Labelling of Chemicals Safety Data Sheets. SDS will be reviewed prior to handling any chemicals, including cleanup of spills. All chemicals will be properly handled, and appropriate protective equipment and clothing be required. The following measures shall be implemented to ensure safe handling of these chemicals:

- Where hazards exist due to chemical storage, special provisions must be made for handling or working around them. Handling and use of poisons, acids, caustics, and hazardous chemicals will be done by appropriately trained supervisory personnel.
- Review the SDS prior to using any material.

- Mixing chemicals will be prohibited unless chemical properties are known, and the Site Manager/supervisor is confident that no hazard exists.
- Fire-fighting equipment must be compatible with any chemicals or gases present.
- Appropriate protective equipment and sanitary facilities must be provided and used where contact with corrosive and toxic materials is possible or likely.
- To the extent possible, disposal of surplus or excess material will be avoided. If reuse is not possible, disposal of surplus or excess materials and containers must be handled in accordance with applicable laws and regulations.
- Containers, which have been used for toxic substances or poison, should never be used to store any other material.
- When handling volatile organic compounds or toxic chemicals, ensure adequate ventilation and that appropriate PPE is worn.
- Where there is any question regarding the safe use of a material, the Site Manager is to be notified. Mishandling of chemicals, oil, and fuel is dangerous and can result in injury or spillage, causing contaminated soil generation.

If a spill should occur the following steps will be taken:

1. Stop the leak or spill.
2. Notify the Site Manager.
3. Contain spilled material with sorbent material.
4. Clean up the spilled and contaminated material.
5. Containerize the sorbent material into a container (metal drum for oily rags). Move the container to visqueen lined containment area at the Site.

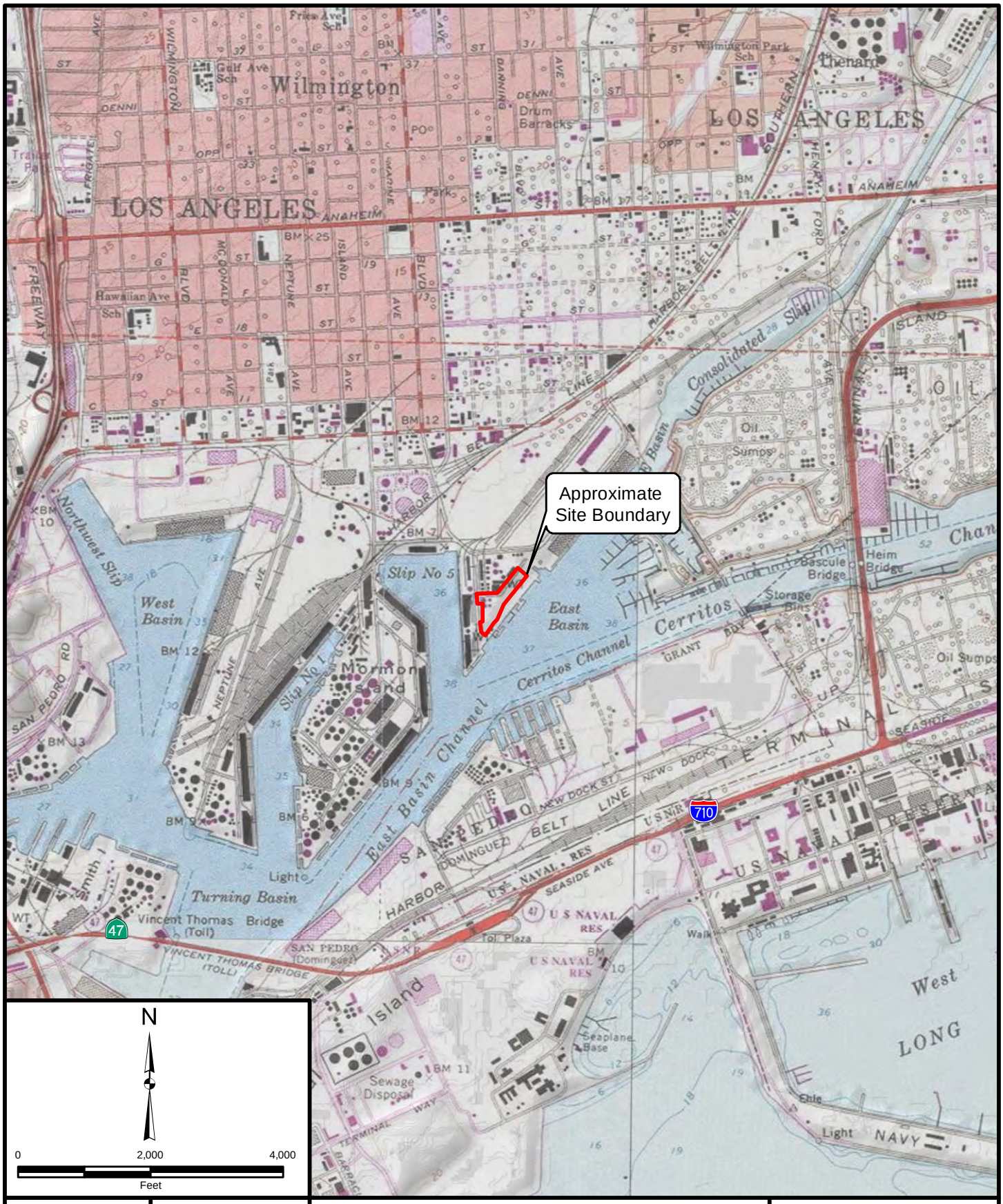
8.5 Onsite Accidental Releases and Mitigation Plans

By following this SMP and implementing preventative measures, the potential of a hazardous release or spill is greatly reduced. However, onsite accidental releases can still occur and may include debris falling from trucks during transport to the storage area or fuel spills during refueling of excavation equipment, or oil spills during equipment repair. To further minimize this potential, all trucks transporting excavated soil from the Site will be covered with a tarp from the point of origin to

the point of unloading. It is recommended that the site Safety Officer or supervisor conduct periodic audits to make sure the proper procedures and protocols documented in the SMP are followed.

9.0 BACKFILL MATERIAL REQUIREMENTS

Excavation, trenching, and other intrusive activities within the Site boundary will require backfilling. Backfill materials shall meet current Harbor Department and DTSC requirements for imported fill material, as outlined in the "Environmental Guidance for Industrial Fill Material" (POLA, 2021) and "DTSC Fact Sheet: Information Advisory Clean Import Fill Material" (DTSC, 2001), included as Appendix D and Appendix E, respectively. The Contractor will ensure that imported backfill material is free of contaminants, oversized material, significant organic material, and construction debris. Soil that does not meet established compaction requirements defined in the design specifications will be excavated and replaced with properly compactable fill. The results of compaction testing, and the observations of overseeing field technicians will be recorded as required in the design specifications.



Project: 13832.009	Eng/Geol: MDW
Scale: 1 " = 2,000 '	Date: September 2023

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

SITE LOCATION MAP

Berths 191-194
ORCEM Site
Port of Los Angeles, California

FIGURE 1

Leighton

Map Saved as J:\Drafting\12736\024\Maps\12736-024_Fig1_SLM_2023-02-11.mxd on 2/23/2023 12:06:50 PM



LEGEND

- Approximate location of boring with environmental media exceeding regulatory screening criteria
- Approximate location of boring with California hazardous waste exceedance
- Approximate location of boring with environmental media exceeding regulatory screening criteria and California hazardous waste exceedance
- Approximate Site Boundary

Project: 13832.009	Eng/Geol: MW
Scale: 1 " = 100 '	Date: September 2023

Credits: © 2023 Microsoft Corporation © 2023 Maxar ©CNES (2023) Distribution Airbus DS

SITE PLAN

Berths 191-194
ORCEM Site
Port of Los Angeles, California

FIGURE 2

Leighton

Map Saved as J:\Drafting\13832\009\Maps\13832.009_Fig2_SP_2023-08-24.mxd on 9/27/2023 8:43:04 AM Author: Leighton Geomatics (kmanchikanti)

APPENDIX A

References

APPENDIX A

REFERENCES

California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Characteristics of Hazardous Waste.

Department of Toxic Substances Control (DTSC), 2008. "Determination of a Southern California Regional Background Arsenic Concentration in Soil."

Department of Toxic Substances Control (DTSC), 2011. "Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)". October.

Department of Toxic Substances Control (DTSC), 2020. "Supplemental Guidance: Screening and Evaluating Vapor Intrusion – Draft." February.

Department of Toxic Substances Control (DTSC), 2022. "Human and Ecological Risk Office (HERO), Human Health Risk Assessment (HHRA) Note Number 3: DTSC-modified Screening Levels." May. https://dtsc.ca.gov/wp content/uploads/sites/31/2022/02/HHRA-Note-3-June2020-Revised-May2022A.pdf

Department of Toxic Substances Control (DTSC), 2014. "Human and Ecological Risk Office (HERO), Human Health Risk Assessment (HHRA) Note Number 5: Health-based Indoor Air Screening Criteria for Trichloroethylene." August 23.

Department of Toxic Substances Control (DTSC), Los Angeles Regional Water Quality Control (LARWQCB), and San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), 2015. "Advisory – Active Soil Gas Investigations." July.

Earth Tech, 2002. "Phase II Site Investigation Port of Los Angeles, Former Wilmington Liquid Bulk Terminals, Inc., Berths 191, 192, and 193, Los Angeles, California 90744." January.

Enviro-Tox Services, Inc (Enviro-Tox), 2018. "Human Health Risk Assessment Berths 191-193, Wilmington, California." June 19.

Leighton Consulting, Inc. (Leighton), 2018. "Baseline Environmental Site Characterization Report, Port of Los Angeles, Berths 191 through 193, Wilmington, California." April 13.

Leighton Consulting, Inc. (Leighton), 2023. "Baseline Environmental Site Characterization Report Addendum, Port of Los Angeles, Berths 191 through 194, Wilmington, California." February 28.

Locus Technologies (Locus), 2010. “Phase I/II Environmental Site Assessment, Berth 193 Port of Los Angeles.” November 30.

Port of Los Angeles (POLA), 2021. “Environmental Guidance for Industrial Fill Material.” December.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), 2019. Environmental Screening Levels (ESLs) Summary Tables (Revision 2). https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html January.

United States Environmental Protection Agency (USEPA), 2023. Region 9 Industrial Regional Screening Levels (RSLs) - Generic Tables | Risk Assessment. May. https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

APPENDIX B

Baseline Environmental Site Assessment, Addendum, and Human Health Risk Assessment

Leighton
a verdantas company

BASELINE ENVIRONMENTAL SITE CHARACTERIZATION REPORT ADDENDUM

PORT OF LOS ANGELES

BERTHS 191 THROUGH 194

WILMINGTON, CALIFORNIA

Prepared For

CITY OF LOS ANGELES HARBOR DEPARTMENT
425 SOUTH PALOS VERDES STREET
SAN PEDRO, CALIFORNIA 90731

Prepared By

LEIGHTON CONSULTING, INC.
2600 MICHELSON DRIVE, SUITE 400
IRVINE, CALIFORNIA 92612

APP# 170720-511 H

Project No. 12736.024

February 28, 2023

This document was prepared under the technical direction of the undersigned. We appreciate the opportunity to assist the City of Los Angeles Harbor Department on this project. If you have questions regarding this report addendum please call us at your convenience at ***866-LEIGHTON***, directly at the phone extension and/or e-mail address listed below.

Respectfully submitted,

LEIGHTON CONSULTING, INC.





Mark Withrow, PE 83229
Associate Engineer
Ext 4211, mwithrow@leightongroup.com

MDW/lr

Distribution: (1 PDF) Addressee

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION 1
1.1 Objective 1
1.2 Scope of Work 1

2.0 BACKGROUND 2
2.1 Site Description 2
2.2 Previous Investigations 2

3.0 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS 3

4.0 INVESTIGATIVE METHODOLOGY 5
4.1 Pre-field Activities 5
4.1.1 Health and Safety Plan 5
4.1.2 Utility Clearance 5
4.1.3 Permits 5
4.2 Field Activities 5
4.2.1 Soil Investigation 5
4.2.2 Groundwater Investigation 6
4.2.3 Soil Vapor Survey 7
4.3 Laboratory Analysis 8
4.3.1 Groundwater Laboratory Analyses 9
4.3.2 Soil Gas Laboratory Analyses 10

5.0 INVESTIGATIVE RESULTS 11
5.1 Analytical Results for Soil Samples 11
5.2 Analytical Results for Groundwater Samples 13
5.3 Analytical Results for Soil Gas Samples 14

6.0 CONCLUSIONS 15
6.1 Soil 15
6.2 Groundwater 16
6.3 Soil Gas 16

7.0 RECOMMENDATIONS 18

8.0 LIMITATIONS 19

9.0 REFERENCES 20

ATTACHMENTS:

Figure 1 – Site Location Map
Figure 2 – Site Plan

Table 1 – TPH in Soil
Table 2 – Metals in Soil
Table 3 – Soil Waste Characterization
Table 4 – VOCs in Soil
Table 5 – PAHs in Soil
Table 6 – PCBs in Soil
Table 7 – VOCs and Methane in Soil Vapor
Table 8 – TPH in Groundwater
Table 9 – Metals in Groundwater
Table 10 – VOCs in Groundwater
Table 11 – PAHs in Groundwater

Appendix A – Baseline Environmental Site Characterization Report
Appendix B – 2018 Human Health Risk Assessment
Appendix C – Boring Logs
Appendix D – Boring Permit
Appendix E – Laboratory Reports and Chain-of-Custody Documents

1.0 INTRODUCTION

Leighton Consulting, Inc. (Leighton Consulting) is pleased to present the City of Los Angeles Harbor Department (Harbor Department), Environmental Management Division (EMD) this report addendum summarizing the results of a baseline environmental site characterization of soil, soil gas, and groundwater at the Port of Los Angeles (POLA) Berths 191 through 194 located in Wilmington, California (Site, Figure 1). Our understanding of this project is based on the information provided to us by EMD and review of conceptual drawing "Ecocem Port of LA Site Layout." We understand the Site may undergo future development as a cement-processing facility. The proposed development plan includes product intake hoppers and conveyors to mills, siloes, workshop and office buildings, storage yards, stormwater infrastructure, electrical substation, and waterside improvements.

1.1 Objective

The objective of this baseline environmental site characterization is to determine what, if any, environmental impacts are present in the shallow soil, soil gas, and groundwater from activities on or near the Site prior to leasing the Site to a new tenant. In addition, this report addendum will provide data in areas of the Site that was not previously characterized.

1.2 Scope of Work

The scope of work included the following:

- Advancement of 10 exploratory soil borings to total depths between 4 feet and 10 feet below ground surface (bgs);
- Installation of soil gas probes in 4 of the 10 soil borings.
- Collection of soil, soil gas, and groundwater samples for chemical analysis; and
- Preparation of this report summarizing our findings and conclusions, including tables, illustrations and appendices.

2.0 BACKGROUND

2.1 Site Description

The Site encompasses roughly 5.66 acres and is located east of Canal Street and south of Yacht Street in Wilmington, California. Historically, the Site was associated with the Former Wilmington Liquid Bulk Terminals, Inc. (Earth Tech, 2002), a yacht club, docks for boats and a marine gas and oil station (Locus Technologies, 2010). The surrounding vicinity is industrial in nature, consisting of fueling terminals, container storage yards, and various berths associated with cargo/container shipping activities.

2.2 Previous Investigations

In 2017, Leighton Consulting completed a baseline site characterization of the Site. Leighton Consulting observed the installation of 49 soil borings and 19 soil vapor probes. In addition, 19 grab groundwater samples were collected. Total petroleum hydrocarbons (TPH) were detected in soil at concentrations exceeding health risk-based regulatory screening levels in 14 soil samples, and metals including copper and lead exceeded hazardous waste thresholds in soil from four boring locations. TPH and chlorinated volatile organic compounds (VOCs) were detected in grab groundwater samples. Tetrachloroethene and trichloroethene exceeded risk-based screening criteria. In addition, VOCs were detected in soil vapor at concentrations exceeded health risk-based screening criteria for commercial receptors (Leighton Consulting, 2018). Elevated soil vapor concentrations may be a result of off-gassing of contaminated groundwater. The baseline environmental site characterization report for this investigation is included in Appendix A.

A human health risk assessment (HHRA) was prepared for the Site by Enviro-Tox Services, Inc. (Enviro-Tox Services, 2018). The HHRA concluded that there was potential elevated risk due to exposure to contaminated soil and via a vapor intrusion pathway including contaminated groundwater. The HHRA recommended vapor mitigation and soil removals be implemented if redevelopment activities disturb certain areas. The HHRA is included in Appendix B.

3.0 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The Site is located within the Los Angeles Coastal Plain (California Department of Water Resources [CDWR], 1961) of the Peninsular Ranges geomorphic province of southern California (Norris and Webb, 1990), approximately 17 miles south of downtown Los Angeles at the northern end of the Los Angeles Harbor. The Los Angeles Coastal Plain is a deep structural trough that has been filled primarily with unconsolidated Miocene through Recent age sediments or alluvium that are underlain by earlier Cenozoic bedrock. The Los Angeles Coastal Plain is bounded on the north by the Santa Monica Mountains; on the northeast by the low-lying Elysian, Repetto, Merced, and Puente Hills; on the east and southeast by the Santa Ana Mountains and San Joaquin Hills; on the south by the Palos Verdes Hills and the Pacific Ocean; and on the west by the Pacific Ocean (CDWR, 1961).

The Los Angeles Coastal Plain has been spatially divided by the CDWR into four groundwater basins (West Coast Basin, Central Basin, Santa Monica Basin, and Hollywood Basin) based on the hydrogeologic characteristics of the underlying strata and the locations of bounding geologic structures such as non-water-bearing rock and/or faults that impede groundwater movement. The Site is located within the West Coast Basin, west of the Central Basin and south of the Santa Monica and Hollywood groundwater Basins. The West Coast Basin is bordered on the east by the Newport-Inglewood Fault; on the west by Santa Monica Bay; on the north by the Ballona Gap (north of the Los Angeles International Airport), and on the south by the Palos Verdes Hills.

Based on lateral distribution and varying hydrogeologic characteristics, five major aquifers have been identified in the geologic formations underlying the West Coast Basin (CDWR, 1961). The aquifers consist of (from oldest to youngest) the Silverado and Lynwood Aquifers of the San Pedro Formation; the Gage Aquifer of the Lakewood Formation; and the Gaspur and semiperched aquifers of the recent Holocene age Alluvium. In general, the older/deeper Silverado and Lynwood aquifers are currently designated as drinking water sources and the younger shallow aquifers (Gage, Gaspur, and semiperched) are not currently used for drinking water purposes due to low yield and/or generally poor quality. Note that the in the Regional Water Quality Control Board's (RWQCB) August 28, 1998, Municipal and Domestic Water Supply Policy Staff Report, the portion of the West Basin including the Site has been de-designated and its underlying aquifers are no longer considered to be of beneficial use for drinking water.

Soils encountered during the investigation consisted primarily of gravel and silty sand in the shallow soil (less than 2.5 feet bgs) and sand in the deeper soil (greater than 2.5 feet

bgs). Stained soil was noted in one of the ten borings (LB51). Photoionization detector (PID) readings for the collected soil cuttings were all 0.0 parts per million by volume (ppmv), and are noted on the boring logs in Appendix C.

Groundwater was encountered between 4 and 5 feet bgs at the Site. The direction of groundwater flow is anticipated to be south-southeast towards the harbor and is expected to be tidally influenced.

4.0 INVESTIGATIVE METHODOLOGY

The investigative methodology developed for this project includes, and is limited to, the activities summarized below.

4.1 Pre-field Activities

4.1.1 Health and Safety Plan

A Site-Specific Health and Safety Plan (HSP) was prepared for work performed at the Site. All onsite Leighton Consulting personnel signed the HSP acknowledging acceptance. The document was kept onsite at all times during the field activities. The HSP was prepared in compliance with Title 8 Section 5192 of the California Code of Regulations (CCR), and the Occupational Safety and Health Administration (OSHA) Chapter 29 of the Code of Federal Regulations (29 CFR) 1910.120.

4.1.2 Utility Clearance

DigAlert of Southern California was contacted at least 72-hours prior to commencement of fieldwork to mark the location of public utilities that may enter the Site from nearby streets. The locations of the proposed borings were clearly marked with a stake and flag or white paint prior to contacting DigAlert. In addition, borings were cleared using hand auger equipment in the upper 5 feet of soil.

4.1.3 Permits

Prior to commencement of field activities, Leighton Consulting obtained a well permit from the County of Los Angeles Public Health, Department of Environmental Health (DEH). The permit was required for the advancement of select borings into groundwater. A copy of this permit is included in Appendix D.

4.2 Field Activities

4.2.1 Soil Investigation

On December 6, 2022, Leighton Consulting oversaw the advancement of 10 soil borings at the Site (LB50 through LB59). Boring locations are depicted on Figure 2. The borings were advanced using hand auger and

truck-mounted direct-push drilling equipment operated by Millennium Environmental, Inc. (Millennium) of Anaheim, California, a State of California licensed drilling contractor. During boring advancement, a PID was used to evaluate the soil cuttings for the presence or absence of volatile organic hydrocarbon vapors and monitor the worker breathing zone for health and safety purposes. Soil encountered during drilling was classified and logged in accordance with the Unified Soil Classification System (USCS). Detailed boring logs are included in Appendix C.

Soil samples were collected for chemical analysis from borings LB50 through LB59 at depths of 0.5 feet, 2.5 feet, 5 feet bgs, or until boring refusal or groundwater was encountered.

Soil samples were retained in 8-ounce laboratory-supplied glass jars or acetate sleeves capped with Teflon sheets and plastic end caps, and placed in an ice-cooled chest for storage and delivery to Jones Environmental Inc. (Jones) in Santa Fe Springs, California for chemical analysis. Jones is a State of California Environmental Laboratory Accreditation Program-certified (ELAP) laboratory. Each soil sample was field screened using a PID to evaluate the soil sample for the presence of volatile organic hydrocarbon vapors.

Down-hole drilling and sampling equipment was decontaminated between boreholes by washing in a solution of non-phosphate detergent and water, rinsing with potable water, final rinsing with distilled water, and allowing to air-dry.

Upon completion of soil sampling, groundwater sampling (described below), and soil gas survey (described below), the soil borings were backfilled with hydrated bentonite chips and the surface was returned to its original finish.

4.2.2 Groundwater Investigation

On December 6, 2022, grab groundwater samples were collected from three borings (LB50, LB51, and LB55). Boring locations are depicted on Figure 2. Groundwater was encountered during this investigation at depths ranging between 4 feet and 5 feet bgs. Each grab groundwater sample was collected by utilizing a Hydropunch® sampling device. The Hydropunch® sampling tool consisted of an approximately 2-inch diameter hollow steel rod equipped with an inner 4-foot long, 0.010-inch screened, steel rod. The

sampler was fitted with an expendable drive point at the bottom. The Hydropunch® sampling tool was advanced to the desired depth and the outer hollow steel rod was withdrawn 4-feet to expose the screen. Disposable tubing was then lowered through the hollow steel rods in the water column and extracted through the tubing with a peristaltic pump to bring the groundwater samples to the surface. The groundwater samples were retained in laboratory supplied containers, clearly marked with sample identification, placed in an ice-cooled chest for temporary storage, and transported to Jones for chemical analysis. Chain-of-custody protocol was followed throughout all phases of the sample handling process.

4.2.3 Soil Vapor Survey

A soil vapor survey was performed at the Site in accordance with the *Advisory – Active Soil Gas Investigations, Revised July 2015*, jointly developed by California Environmental Protection Agency – Department of Toxic Substances Control (DTSC) and California Regional Water Quality Control Board – Los Angeles and San Francisco Region's (LARWQCB and SFRWQCB).

On December 6, 2022, Leighton Consulting oversaw the installation of soil gas probes in the four soil boring locations (LB56 through LB59) as shown on Figure 2. Soil gas probes were installed at a depth of 3 feet bgs, based on the observed groundwater depth of 4 feet bgs. The soil gas probes consisted of inert ¼-inch nylaflow tubing fitted with a porous polyethylene implant at the terminus, which was set within one foot of sand, one foot of dry bentonite above, followed by hydrated bentonite. The surface end of the probe was fitted with a gas-tight luerlock to prevent infiltration of water or air. The soil gas probes were allowed to equilibrate for at least 72 hours prior to sampling.

Soil gas sample collection and chemical analysis was performed on December 13, 2022, by Jones Environmental, Inc. (Jones) of Santa Fe Springs, California. Samples were collected in Summa® canisters and analyzed at Jones fixed/stationary laboratory.

A shut-in test was conducted along the sampling train setup at each sampling depth and location, prior to purging each probe. If a leak was detected, the above-ground sampling train connections were checked and adjusted until no leaks are detected.

At each sampling depth and location, an electric vacuum pump (set to draw 0.200 liters per minute of soil gas at a maximum vacuum of 100-inches of water) was attached to the probe to purge the probe prior to sample collection. To remove stagnant air from the sampling system so that representative samples could be collected, a standard of three purge volumes was used.

Subsequent to purging, soil gas samples were obtained by drawing the sample through the luerlock connection, which connects the sampling probe to the sample container, 1-liter summa canisters under vacuum.

A tracer gas mixture of pentane, hexane, n-propanol, and isopropanol was applied onto a cloth in the area of the soil gas probes at each point of connection in which ambient air could enter the sampling system. These connection points included the top of the sampling probe where the tubing meets the probe connection and the surface bentonite seals. The tracer gas was not detected in the soil gas samples collected indicating that no ambient air compromised the soil gas analytical test data.

In addition, a methane soil vapor survey was conducted on December 6 and 13, 2022, to assess the presence of methane at the Site and determine the level of appropriate mitigation, if any, in accordance with City of Los Angeles Department of Building and Safety Information Bulletin P/BC 2020-101. Methane measurements were taken utilizing a RKI Eagle 4 Gas Meter and pressure was measured utilizing a magnahelic gauge.

Soil gas sampling points were abandoned by pulling the nylaflow tubing from the ground and the surface restored to its original condition.

4.3 Laboratory Analysis

Soil Laboratory Analyses

Soil samples collected from the Site at intervals of 0.5, 2.5, and 5.0 feet bgs were analyzed for total petroleum hydrocarbons (TPH) in the gasoline range (GRO), diesel range (DRO), and oil range (ORO) by Environmental Protection Agency (EPA) Method 8015M and 8620B and California Code of Regulations, and Title 22, Article 11 metals (CAM 17 metals) by EPA Methods 6010B/7000 series.

Select soil samples, based on the results of the above analyses, field screening methods (PID, visual, or olfactory), or boring location relative to known environmental concerns, were analyzed for the following:

- VOCs (22 total) by EPA Method 8260B, using EPA Method 5035 sample preservation protocols;
- Polynuclear aromatic hydrocarbons (PAHs) (10 total) by EPA Method 8270SIM; and
- Polychlorinated biphenyls (PCBs) (10 total) by EPA Method 8082;

Soil samples with detected concentrations of GRO above the reporting limit, DRO exceeding 500 milligrams per kilogram (mg/kg), ORO exceeding 1,000 mg/kg, or detected PID concentrations above 5 parts per million (ppm) were analyzed for the following:

- VOCs by EPA Method 8260B, using EPA Method 5035 sample preservation protocols;
- PAHs by EPA Method 8270SIM; and
- PCBs by EPA Method 8082.

Soil samples with arsenic, chromium, copper, and lead exceeding waste characterization criteria as defined in California Code of Regulations, Title 22, Chapter 11, Article 3, were analyzed using the soluble threshold limit concentration (STLC) waste extraction test (WET) using EPA Method 6010B and the toxicity characteristic leaching procedure (TCLP) test using EPA Method 1311.

4.3.1 Groundwater Laboratory Analyses

Groundwater samples collected from the Site were analyzed for the following constituents:

- GRO, DRO, and ORO by EPA Methods 8620B and 8015M;
- VOCs by EPA Method 8260B;
- Title 22 metals by EPA Method 6010B/7000 series;
- PAHs by EPA Method 8270SIM.

4.3.2 Soil Gas Laboratory Analyses

Soil vapor samples were analyzed for the following constituents:

- GRO and VOCs by EPA Method 8260B;
- Methane by RKI Eagle 4 Gas Meter

Soil vapor samples that were collected in Summa® canisters were submitted to the laboratory on a normal turnaround time basis (seven business days) and in accordance with standard QA/QC protocol.

Copies of the chain of custody forms and complete analytical reports are included in Appendix E.

5.0 INVESTIGATIVE RESULTS

5.1 Analytical Results for Soil Samples

The soil sample analytical results were compared to the following screening criteria:

- EPA Industrial Regional Screening Levels (RSLs) and DTSC Office of Human and Ecological Risk (HERO) Note Number 3 (DTSC-SL) values in an industrial setting for, metals (except arsenic), PAHs, PCBs, and VOCs;
- Environmental Screening Levels (ESLs) for direct exposure of TPH developed by the San Francisco Bay Regional Water Quality Control Board and updated in January 2019;
- The DTSC Southern California Background concentration of 12 milligrams per kilogram (mg/kg) for arsenic; and
- California Code of Regulations, Title 22, Division 4.5, Chapter 11, Article 3, Characteristics of Hazardous Waste.

The analytical results for soil samples are summarized in Tables 1 through 6 and as follows:

- **GRO** was detected in 3 of the 22 soil samples analyzed at concentrations ranging from 0.35 milligrams per kilogram (mg/kg) in boring LB58 at 0.5 feet bgs to 3.11 mg/kg in boring LB54 at 0.5 feet bgs. These concentrations of GRO do not exceed the Industrial ESL of 2,000 mg/kg.
- **DRO** was detected in 13 of the 22 soil samples that were analyzed at concentrations ranging from 27.1 mg/kg in boring LB53 at 2.5 feet bgs to 1,710 mg/kg in boring LB54 at 0.5 feet bgs. One sample, LB54-0.5, exceeded the Industrial ESL of 1,200 mg/kg.
- **ORO** was detected in 13 of the 22 soil samples analyzed at concentrations ranging from 479 mg/kg in boring LB53 at 2.5 feet bgs to 14,600 mg/kg in boring LB54 at 0.5 feet bgs. These concentrations of ORO do not exceed the Industrial ESL of 180,000 mg/kg.
- **Title 22 Metals** were detected in all of the soil samples analyzed with the exception of beryllium, selenium, silver, and thallium. Two metals were

detected at concentrations exceeding their respective industrial screening levels during this investigation.

- **Arsenic** was detected 3 of the 22 soil samples analyzed at concentrations ranging from 9.2 mg/kg in boring LB51 at 0.5 feet bgs to 938 mg/kg in boring LB58 at 2.5 feet bgs. One sample, LB58-2.5, exceeded the screening criteria of 12 mg/kg.
- **Lead** is detected in all of the soil samples analyzed at concentrations ranging from 1.0 mg/kg in boring LB51 at 2.5 feet bgs to 514 mg/kg in boring LB58 at 2.5 feet bgs. One sample, LB58-2.5, exceeded the Industrial DTSC-SL of 500 mg/kg.

Soil samples containing total arsenic, chromium, copper, and/or lead at concentrations above 10 times the STLC and 20 times the TCLP were analyzed using the STLC and TCLP waste extraction tests. The results of these analyses are summarized in Table 3 and below:

- **Arsenic STLC** was analyzed in one soil sample at a concentration less than 0.01 milligram per liter (mg/L) in boring LB58 at 2.5 feet bgs. This is below the STCL threshold value of 5 mg/L.
- **Arsenic TCLP** was analyzed in one soil sample at a concentration less than 0.10 mg/L in LB58 at 2.5 feet bgs. This is below the TCLP threshold value of 5 mg/L.
- **Chromium STLC** was analyzed in one soil sample at a concentration of 0.02 mg/L in boring LB58 at 2.5 feet bgs. This is below the STLC threshold value of 5 mg/L.
- **Copper STLC** was analyzed in two soil samples at concentrations of 0.98 mg/L in boring LB58 at 2.5 feet bgs and 5.30 mg/L in boring LB52 at 5 feet bgs. These are below the STLC threshold value of 25 mg/L.
- **Lead STLC** was analyzed in five soil samples with at concentrations ranging from 1.44 mg/L in boring LB57 at 0.5 feet bgs to 6.68 mg/L in boring LB52 at 5 feet bgs. One sample, LB52 at 5 feet bgs, exceeded the lead STLC threshold of 5 mg/L.
- **Lead TCLP** was analyzed in two soil samples at concentrations of 4.81 mg/L in LB52 at 5 feet bgs and less than 0.01 mg/L in LB58 at 2.5 feet bgs. The detected TCLP concentrations was below the TCLP threshold value 5 mg/L.

- **VOCs** – Twelve VOCs were detected in the 22 soil samples and the detected concentrations were all below screening levels.
- **PAHs** – Fifteen PAHs were detected in the 10 soil samples and the maximum detected concentrations are summarized as follows:

PAH	Concentration	RSL/DTSC-SL	Boring
Acenaphthene	380 µg/kg	23,000,000 µg/kg	LB55-0.5
Acenaphthylene	500 µg/kg	Not established	LB52-0.5
Anthracene	1,200 µg/kg	130,000,000 µg/kg	LB52-0.5
Benzo(a)anthracene	1,500 µg/kg	12,000 µg/kg	LB52-0.5
Benzo(a)pyrene	**1,800 µg/kg**	**1,300 µg/kg**	**LB52-0.5**
Benzo(b)fluoranthene	3,500 µg/kg	13,000 µg/kg	LB52-0.5
Benzo(g,h,i)perylene	1,200 µg/kg	Not established	LB52-0.5
Benzo(k)fluoranthene	990 µg/kg	130,000 µg/kg	LB52-0.5
Chrysene	3,000 µg/kg	1,200,000 µg/kg	LB52-0.5
Dibenz(a,h)anthracene	**320 µg/kg**	**310 µg/kg**	**LB52-0.5**
Fluoranthene	3,500 µg/kg	18,000,000 µg/kg	LB55-0.5
Indeno(1,2,3-cd)pyrene	1,200 µg/kg	13,000 µg/kg	LB52-0.5
Naphthalene	**9,300 µg/kg**	**6,500 µg/kg**	**LB54-0.5**
Phenanthrene	4,500 µg/kg	Not established	LB55-0.5
Pyrene	6,300 µg/kg	13,000,000 µg/kg	LB52-0.5

Note: Bold concentrations exceed screening criteria.

- **PCBs** – were not detected above laboratory reporting limits in the 10 soil samples analyzed.

5.2 Analytical Results for Groundwater Samples

Results of the chemical analyses of the groundwater samples were compared to the ESLs developed by the San Francisco Bay Regional Water Quality Control Board and updated in January 2019. Aquatic habit screening levels for saltwater were chosen for screening purposes since the Site is adjacent to the harbor.

The analytical results for groundwater samples are summarized in Tables 8 through 11 and as follows:

- **GRO** was not detected above the laboratory reporting limit of 0.10 mg/L.
- **DRO** was not detected above the laboratory reporting limit of 1.0 mg/L.
- **ORO** was not detected above the laboratory reporting limit of 1.0 mg/L.
- **Title 22 Metals -** barium, molybdenum, vanadium, and zinc were detected in the groundwater samples analyzed and none of the detected concentrations exceeded associated ESL screening levels.
- **VOCs** – Four VOCs were detected in the groundwater samples analyzed and none of the detected concentrations exceeded associated ESL screening levels.
- **PAHs** – Seven PAHs were detected in the groundwater samples analyzed and none of the detected concentrations exceeded associated ESL screening levels.

5.3 Analytical Results for Soil Gas Samples

Results of the chemical analyses of the soil gas samples were compared to the adjusted DTSC-SLs and EPA RSLs for indoor air in an industrial setting assuming a future slab attenuation factor of 0.0005 (DTSC, 2011) and 0.03 (DTSC, 2020). The results of the laboratory analysis for the soil gas samples are summarized in Table 7.

VOCs were detected in three of the four soil gas samples analyzed. Four VOCs were detected with maximum concentrations as follows:

VOC	Concentration	DTSC-SL	Boring	Probe Depth
PCE	**0.104 µg/L**	**0.067 µg/L**	**LB59**	**3 feet bgs**
Trichlorofluoromethane	0.044 µg/L	177 µg/L	LB59	3 feet bgs
1,2,4-Trimethylbenzene	0.010 µg/L	8.67 µg/L	LB56	3 feet bgs
m,p-Xylene	0.027 µg/L	14.7 µg/L	LB59	3 feet bgs

Note: Bold concentration exceeds the DTSC-SL using an attenuation factor of 0.03 (DTSC, 2020). This concentration does not exceed the DTSC-SL using an attenuation factor of 0.0005 (DTSC, 2011).

Methane was detected in all four of the soil gas samples analyzed at concentrations of ranging from 460 ppmv in LB56 at 3 feet bgs to 500 ppmv in LB59 at 3 feet bgs. Pressure readings were not detected above 0 inches of water.

6.0 CONCLUSIONS

The purpose of this investigation was to establish an environmental baseline for future tenants and to screen for the potential presence of hazardous substances in soil, soil gas, and groundwater at Berths 191 through 194 in Wilmington, California that could present a health risk to future commercial/industrial occupants of the Site. This investigation was intended to provide data in areas of the Site that was not previously characterized in 2017. To accomplish the objectives set forth in this investigation, 10 borings were advanced at the Site with the installation of four soil gas probes and collection of three grab groundwater samples.

6.1 Soil

DRO was detected above the Industrial ESL of 1,200 mg/kg in 1 of the 22 soil samples analyzed during this investigation from boring LB54 at 0.5 feet bgs (1,710 mg/kg). While there is no discernable trend in DRO impacted soil, DRO was found primarily within the surficial soil throughout the Site. This is consistent with the findings of the 2017 investigation.

Arsenic was detected above the Southern California Background concentration of 12 mg/kg in 1 of the 22 soil samples analyze during this investigation from boring LB58 at 2.5 feet bgs (938 mg/kg). Soil from this boring exceeded total threshold limit concentrations of 500 mg/kg but did not exceed TCLP thresholds. Therefore, soil in this area may be classified as non-resource conservation and recovery act (non-RCRA) hazardous waste (California hazardous) if removed from the Site.

Lead was detected above the Industrial DTSC-SL concentration of 500 mg/kg in 1 of the 22 soil samples analyze during this investigation from boring LB58 at 2.5 feet bgs (514 mg/kg). Soil from this boring did not exceed the STLC or TCLP thresholds. Therefore, soil in this area may be classified as non-hazardous waste if removed from the Site.

Lead was detected above the STLC threshold of 5.0 mg/L in boring LB52 at 5 feet bgs but did not exceed the TCLP threshold. Therefore, soil in this area may be classified as non-resource conservation and recovery act (non-RCRA) hazardous waste (California hazardous) if removed from the Site.

Three PAHs, benzo(a)pyrene, dibenz(a,h)anthracene, and naphthalene, had soil concentrations exceeding Industrial DTSC-SLs of 1,300 µg/kg, 310 µg/kg, and 6,500 µg/kg, respectively. These exceedances occurred in borings LB52 at 0.5 feet bgs and LB54 at 0.5 feet bgs.

GRO, ORO, VOCs, PCBs, and metals other than arsenic and lead were not detected in the soil samples analyzed during this investigation at concentrations exceeding their respective industrial screening levels.

6.2 Groundwater

TPH was not detected in any of the groundwater samples analyzed during this investigation.

Barium, molybdenum, vanadium, and zinc were detected in the groundwater samples analyzed; however, detected concentrations did not exceed the ESL screening criteria. Since the groundwater beneath the Site is non-beneficial for municipal use and direct contact with groundwater beneath the Site is unlikely, these concentrations of metals in groundwater should not pose a risk to future commercial/industrial occupants of the Site.

Four VOCs, cis-1,2-dichloroethene, MTBE, PCE, and TCE, were detected in the groundwater samples analyzed; however, detected concentrations did not exceed the ESL screening criteria. Based on results of the 2017 investigation, the primary VOC contaminants of concern in groundwater were PCE and TCE. During this investigation, PCE and TCE concentrations were at least two orders of magnitude lower than detections from 2017.

Seven PAHs were detected in one groundwater sample from boring LB51.; however, detected concentrations did not exceed the ESL screening criteria.

6.3 Soil Gas

One VOC, PCE, was detected in soil gas at a concentration above the DTSC-SL of 0.067 µg/L using an attenuation factor of 0.03. This exceedance occurred in vapor probe LB59 at 3 feet bgs at a concentration of 0.104 µg/L. This concentration did not exceed the DTSCL-SL of 4.0 µg/L using an attenuation factor of 0.0005. Based on results of the 2017 investigation, the primary VOC contaminants of concern in soil gas were PCE, TCE, and vinyl chloride. During this investigation, TCE and vinyl chloride were not detected above laboratory reporting limits, and PCE was detected two orders of magnitude lower than the maximum PCE concentration from the 2017 investigation. Based on the results of this investigation, it appears that the location of the proposed workshop and office building has a low risk for vapor intrusion and is suitable for commercial/industrial

receptors. In addition, the methane testing results for this area were below 1,000 ppmv and vapor pressures were below two inches of water; therefore, the Site would be classified as Site Design Level I in accordance with the Los Angeles Municipal Code Ordinance No. 175790.

7.0 RECOMMENDATIONS

Based on the results of this investigation and the previous 2017 sampling, the Site soil contains contaminants of concern that exceed health-risked based screening criteria for commercial/industrial receptors and hazardous waste thresholds. We recommend a waste management plan be prepared for the Site and implemented during future redevelopment activities to minimize onsite worker and public exposure to hazardous materials. The waste management plan should identify known areas of concern and develop protocols to manage unforeseen conditions if encountered.

In general, observations should be made during any future Site redevelopment for areas of possible contamination such as, but not limited to, the presence of underground facilities, buried debris, waste drums, tanks, stained soil or odorous soils. Should such materials be encountered, further investigation and analysis may be necessary at that time.

8.0 LIMITATIONS

This investigation was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

The observations and conclusions presented in this report are professional opinions based on the scope of activities, work schedule, and information obtained through the activities described herein, and are limited to the portion of the Site investigated. Opinions presented herein apply to property conditions existing at the time of our study and cannot necessarily be taken to apply to property conditions outside of the area investigated or changes that we are not aware of or have not had the opportunity to evaluate. It must be recognized that conclusions drawn from these data are limited to the portion of the Site investigated, and the amount, type, distribution, and integrity of the information collected at the time of the investigation, and the methods utilized to collect and evaluate the data. Although Leighton Consulting has taken steps to obtain true copies of available information, we make no representation or warranty with respect to the accuracy or completeness of the information provided by others.

9.0 REFERENCES

California Code of Regulations, Title 22, Division 4.5, Chapter 11, Article 3, Characteristics of Hazardous Waste.

California Department of Water Resources (DWR), 1961, Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Bulletin No. 104.

Department of Toxic Substance Control, Determination of a Southern California Regional Background Arsenic Concentration in Soil, 2008.

Department of Toxic Substances Control, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), October 2011.

Department of Toxic Substances Control, 2020. “Supplemental Guidance: Screening and Evaluating Vapor Intrusion – Draft.” February.

Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note Number: 3, DTSC-modified Screening Levels, May 2022.

Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note Number: 5, Health-based Indoor Air Screening Criteria for Trichloroethylene, August 23, 2014.

Department of Toxic Substances Control Los Angeles Regional Water Quality Control Board and San Francisco Regional Water Quality Control Board, 2012, Advisory – Active Soil Gas Investigations, July 2015.

Earth Tech, Phase II Site Investigation Port of Los Angeles, Former Wilmington Liquid Bulk Terminals, Inc., Berths 191, 192 and 193, Los Angeles, California 90744, January 2002

Enviro-Tox Services, Inc. Human Health Risk Assessment Berths 191-193, Wilmington, California, June 19, 2018.

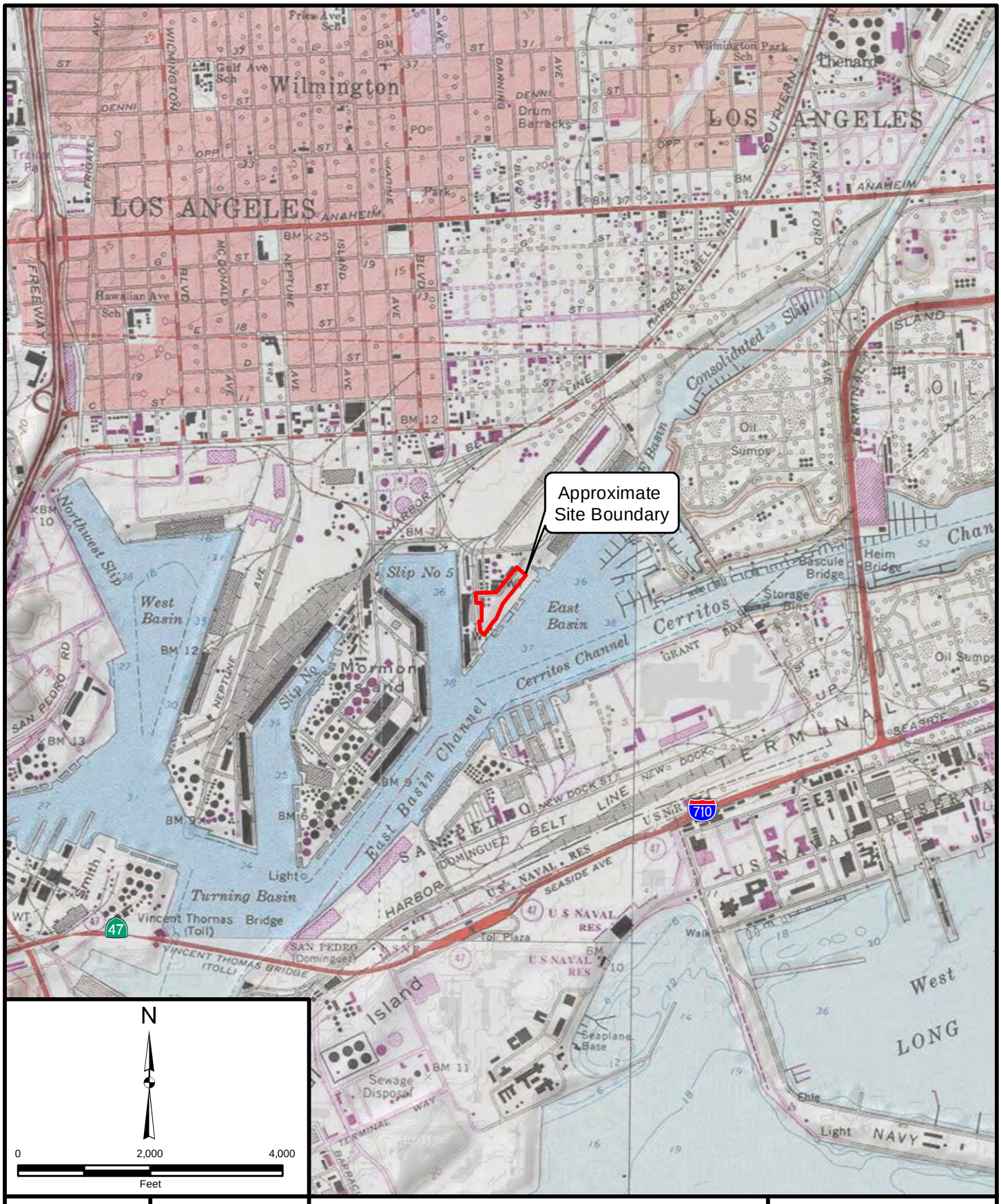
Leighton Consulting, Inc. Baseline Environmental Site Characterization Report, Port of Los Angeles, Berths 191 through 193, Wilmington, California, April 13, 2018.

Locus Technologies, Phase I/II Environmental Site Assessment, Berth 193 Port of Los Angeles, November 30, 2010.

San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, January 2019.

United States Environmental Protection Agency, 2022, Residential Regional Screening Levels, November 2022.

FIGURES



Project: 12736.024	Eng/Geol: MW
Scale: 1 " = 2,000 '	Date: February 2023

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

SITE LOCATION MAP

Berth 191-194
ORCEM Site
Port of Los Angeles, California

FIGURE 1

Leighton

Map Saved as J:\Drafting\12736\024\Maps\12736-024_Fig1_SLM_2023-02-11.mxd on 2/23/2023 12:06:50 PM



Project: 12736.024	Eng/Geol: MW
Scale: 1 " = 100 '	Date: February 2023

Credits: © 2023 Microsoft Corporation © 2022

SITE PLAN

Berth 191-194
ORCEM Site
Port of Los Angeles, California

FIGURE 2

Leighton

Map Saved as J:\Drafting\12736\024\Maps\12736-024_Fig2_SP_2023-02-12.mxd on 2/23/2023 12:26:11 PM Author: Leighton Geomatics (kmanchikanti)

TABLES

TABLE 1
TPH IN SOIL
Berth 191-194
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO
HERO HHRA Note 3 Industrial Soil Screening Criteria			mg/kg	--	500	18,000
RWQCB ESL Commercial/Industrial Soil			mg/kg	2,000	1,200	180,000
LB50-0.5	0.5	12/6/2022	mg/kg	--	**117**	**2,470**
LB50-2.5	2.5	12/6/2022	mg/kg	<0.20	**90.4**	**2,930**
LB50-5	5	12/6/2022	mg/kg	<0.20	**93.9**	**3,020**
LB51-0.5	0.5	12/6/2022	mg/kg	<0.20	**39.0**	**513**
LB51-2.5	2.5	12/6/2022	mg/kg	--	<10.0	<10.0
LB52-0.5	0.5	12/6/2022	mg/kg	<0.20	**551**	**5,960**
LB52-2.5	2.5	12/6/2022	mg/kg	<0.20	**223**	**9,790**
LB52-5	5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB53-0.5	0.5	12/6/2022	mg/kg	**0.52**	**690**	**8,660**
LB53-2.5	2.5	12/6/2022	mg/kg	<0.20	**27.1**	**479**
LB54-0.5	0.5	12/6/2022	mg/kg	**3.11**	**1,710**	**14,600**
LB54-2.5	2.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB55-0.5	0.5	12/6/2022	mg/kg	<0.20	**281**	**8,940**
LB55-2.5	2.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB56-0.5	0.5	12/6/2022	mg/kg	<0.20	**32.7**	**1,050**
LB56-2.5	2.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB57-0.5	0.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB57-2.5	2.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB58-0.5	0.5	12/6/2022	mg/kg	**0.35**	**176**	**4,380**
LB58-2.5	2.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0
LB59-0.5	0.5	12/6/2022	mg/kg	<0.20	**204**	**5,760**
LB59-2.5	2.5	12/6/2022	mg/kg	<0.20	<10.0	<10.0

Notes:
TPH = total petroleum hydrocarbons
bgs = below ground surface
mg/kg = milligrams per kilogram
ESL = RWQCB Environmental Screening Level (February 2019)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (May 2022)
<0.20 = Not detected above the reporting detection limit.
-- = Not analyzed or not applicable
GRO = Gasoline Range Petroleum Hydrocarbons
DRO = Diesel Range Petroleum Hydrocarbons
ORO = Oil Range Petroleum Hydrocarbons
Bold concentrations were detected above laboratory reporting limit
Highlighted values exceed Industrial RSL

TABLE 2
METALS IN SOIL
Berth 191-194
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	470	3.00	220,000	2,300	100	--	350	47,000	800	46	390	11,000	5,800	5,800	12	5,800	350,000
HERO HHRA Note 3 Industrial Soil Screening Criteria			mg/kg	--	0.36	--	230	79	--	--	--	500	4.4	--	11,000	--	--	--	--	--
STLC x 10			mg/kg	150	50	1,000	7.5	10	50	800	250	50	2.0	3,500	200	10	50	70	240	2,500
TCLP x 20			mg/kg	--	100	2,000	--	20	100	--	--	100	4.0	--	--	20	100	--	--	--
Arsenic Background (DTSC, 2008)			mg/kg	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LB50-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**83.8**	<0.5	**1.2**	**14.1**	**5.4**	**17.3**	**20.2**	**0.069**	<0.5	**14.9**	<5.0	<0.5	<5.0	**25.5**	**56.1**
LB50-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**90.8**	<0.5	**1.1**	**12.6**	**4.5**	**17.6**	**25.4**	**0.104**	<0.5	**13.3**	<5.0	<0.5	<5.0	**21.7**	**59.2**
LB50-5	5	12/6/2022	mg/kg	<5.0	<5.0	**59.2**	<0.5	**1.0**	**9.0**	**3.7**	**14.5**	**22.9**	**0.099**	**0.5**	**11.1**	<5.0	<0.5	<5.0	**19.2**	**55.3**
LB51-0.5	0.5	12/6/2022	mg/kg	<5.0	**9.2**	**95.9**	<0.5	**1.9**	**21.6**	**6.0**	**148**	**41.3**	**0.141**	**1.0**	**14.8**	<5.0	<0.5	<5.0	**31.0**	**153**
LB51-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**22.5**	<0.5	**0.8**	**7.4**	**3.1**	**3.0**	**1.0**	**0.041**	<0.5	**3.8**	<5.0	<0.5	<5.0	**19.4**	**17.7**
LB52-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**61.2**	<0.5	**1.4**	**11.7**	**5.0**	**89.4**	**34.0**	**0.126**	<0.5	**15.1**	<5.0	<0.5	<5.0	**25.4**	**106**
LB52-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**41.7**	<0.5	**0.8**	**5.8**	**3.6**	**14.8**	**5.6**	**0.040**	<0.5	**13.8**	<5.0	<0.5	<5.0	**22.0**	**28.8**
LB52-5	5	12/6/2022	mg/kg	**9.4**	**9.3**	**164**	<0.5	**3.3**	**21.3**	**8.8**	**377**	**171**	**0.138**	<0.5	**13.0**	<5.0	<0.5	<5.0	**37.2**	**173**
LB53-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**76.3**	<0.5	**1.5**	**13.2**	**5.5**	**52.5**	**30.9**	**0.096**	<0.5	**16.3**	<5.0	<0.5	<5.0	**30.7**	**145**
LB53-2.5	2.5	12/6/2022	mg/kg	**12.4**	<5.0	**74.3**	<0.5	**1.5**	**15.8**	**4.7**	**44.1**	**97.6**	**0.330**	<0.5	**7.9**	<5.0	<0.5	<5.0	**24.4**	**81.8**
LB54-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**78.3**	<0.5	**1.3**	**12.6**	**5.6**	**25.3**	**25.0**	**0.472**	<0.5	**16.2**	<5.0	<0.5	<5.0	**27.5**	**63.4**
LB54-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**30.6**	<0.5	**0.7**	**6.9**	**2.8**	**85.9**	**6.6**	**0.032**	<0.5	**3.4**	<5.0	<0.5	<5.0	**16.1**	**23.9**
LB55-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**83.3**	<0.5	**2.0**	**17.1**	**6.6**	**35.8**	**58.0**	**0.101**	<0.5	**15.4**	<5.0	<0.5	<5.0	**32.2**	**152**
LB55-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**35.1**	<0.5	**0.9**	**8.3**	**3.8**	**4.7**	**2.1**	**0.070**	<0.5	**4.6**	<5.0	<0.5	<5.0	**17.8**	**20.2**
LB56-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**51.8**	<0.5	**1.2**	**10.4**	**4.5**	**16.6**	**38.6**	**0.206**	<0.5	**8.9**	<5.0	<0.5	<5.0	**23.9**	**66.2**
LB56-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**31.8**	<0.5	**0.8**	**7.2**	**3.4**	**3.9**	**1.2**	**0.023**	<0.5	**4.6**	<5.0	<0.5	<5.0	**15.2**	**24.6**
LB57-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**80.8**	<0.5	**1.4**	**12.3**	**5.2**	**30.3**	**96.7**	**0.481**	<0.5	**10.4**	<5.0	<0.5	<5.0	**26.5**	**93.3**
LB57-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**33.9**	<0.5	**0.9**	**7.8**	**3.4**	**6.8**	**5.7**	**0.090**	<0.5	**4.4**	<5.0	<0.5	<5.0	**18.6**	**27.7**
LB58-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**51.2**	<0.5	**1.1**	**10.3**	**4.9**	**10.4**	**12.5**	**0.053**	<0.5	**10.8**	<5.0	<0.5	<5.0	**23.2**	**166**
LB58-2.5	2.5	12/6/2022	mg/kg	**6.7**	**938**	**65.0**	<0.5	**6.7**	**85.2**	**3.7**	**2010**	**514**	**0.059**	<0.5	**14.7**	<5.0	<0.5	<5.0	**20.3**	**1070**
LB59-0.5	0.5	12/6/2022	mg/kg	<5.0	<5.0	**49.7**	<0.5	**1.0**	**8.7**	**4.1**	**26.5**	**14.1**	**0.032**	<0.5	**11.8**	<5.0	<0.5	<5.0	**22.7**	**74.0**
LB59-2.5	2.5	12/6/2022	mg/kg	<5.0	<5.0	**29.4**	<0.5	**1.1**	**8.8**	**3.0**	**9.3**	**18.2**	**0.055**	<0.5	**6.8**	<5.0	<0.5	<5.0	**20.9**	**62.6**

Notes:
mg/kg = milligrams per kilogram
bgs = below ground surface
ND<2.0 = Not detected above laboratory reporting limit as shown
-- = Not analyzed or not applicable
RSL = EPA Region 9 Industrial Regional Screening Level (November 2022)
Arsenic Background = DTSC Determination of a Southern California Regional Background Arsenic Concentration in Soil (DTSC, 2008)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (May 2022)
Bold concentrations were detected above laboratory reporting limit
Highlighted concentrations exceeds selected screening criteria

TABLE 3
SOIL WASTE CHARACTERIZATION
Berth 191-194
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Arsenic (STLC/TCLP)	Chromium (STLC)	Copper (STLC)	Lead (STLC/TCLP)
STLC limit			mg/L	5	5	25	5.0
TCLP limit			mg/L	5	5	--	5.0
LB52-5	5	12/6/2022	mg/L	--	--	**5.30**	**6.68 / 4.81**
LB53-2.5	2.5	12/6/2022	mg/L	--	--	--	ND<0.01 / --
LB55-0.5	0.5	12/6/2022	mg/L	--	--	--	**2.02** / **--**
LB57-0.5	0.5	12/6/2022	mg/L	--	--	--	**1.44** / **--**
LB58-2.5	2.5	12/6/2022	mg/L	ND<0.10/ND<0.10	**0.02**	**0.98**	**3.47** / ND<0.01

mg/L = milligrams per liter
bgs = below ground surface
ND<2.0 = Not detected above laboratory reporting limit as shown
-- = Not analyzed or not applicable
STLC = Soluble Threshold Limit Concentration
TCLP = Toxicity Characteristic Leaching Procedure
Highlighted concentrations exceeds selected screening criteria

TABLE 4
VOCs in SOIL
Berth 191-194
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	4-Isopropyltoluene	Ethylbenzene	Isopropylbenzene	m,p-Xylene	Naphthalene	n-Propylbenzene	o-Xylene	Tetrachloroethene	Toluene	Trichloroethene	Other VOCs
USEPA RSL Industrial Soil			µg/kg	1,800,000	1,500,000	--	25,000	9,900,000	2,400,000	8,600	24,000,000	2,800,000	100,000	47,000,000	6,000	varies
HERO HHRA Note 3 Industrial Soil Screening Criteria			µg/kg	--	--	--	--	--	--	6,500	--	--	2,700	5,300,000	--	varies
LB50-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB50-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB50-5	5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB51-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB51-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB52-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB52-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB52-5	5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB53-0.5	0.5	12/6/2022	µg/kg	**10.2**	**6.8**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	**32.8**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB53-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB54-0.5	0.5	12/6/2022	µg/kg	**69.7**	ND<1.0	**8.8**	**6.0**	**5.5**	**5.2**	**339**	**6.7**	**4.4**	ND<1.0	ND<1.0	**1.0**	ND
LB54-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB55-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	**28.4**	ND<1.0	ND<1.0	**10.9**	ND<1.0	ND<1.0	ND
LB55-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB56-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB56-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB57-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB57-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB58-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	**40.5**	ND<1.0	**289**	ND<5.0	ND<1.0	**59.6**	ND<1.0	**1.1**	ND<1.0	ND
LB58-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
LB59-0.5	0.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	**10.9**	ND<1.0	**81.3**	ND<5.0	ND<1.0	**17.5**	ND<1.0	ND<1.0	ND<1.0	ND
LB59-2.5	2.5	12/6/2022	µg/kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND

Notes:
VOCs = volatile organic compounds
bgs = below ground surface
µg/kg = micrograms per kilogram
ND<0.88 = Not detected above the laboratory reporting limit
-- = Not analyzed or not applicable
RSL = EPA Region 9 Industrial Regional Screening Level (November 2022)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (May 2022)

TABLE 5
PAHs IN SOIL
Berth 191-194
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA RSL Industrial Soil			µg/kg	45,000,000	--	230,000,000	21,000	2,100	21,000	--	210,000	2,100,000	2,100	30,000,000	30,000	21,000	8,600	--	23,000,000
HERO HHRA Note 3 Industrial Soil Screening Criteria			µg/kg	23,000,000	--	130,000,000	12,000	1,300	13,000	--	130,000	1,300,000	310	18,000,000	17,000	13,000	6,500	--	13,000,000
LB50-0.5	0.5	12/6/2022	µg/kg	ND<50	ND<50	ND<50	**77**	ND<50	ND<100	**93**	ND<50	**57**	ND<50	**60**	ND<100	ND<50	ND<50	ND<50	ND<100
LB50-5	5	12/6/2022	µg/kg	ND<50	**70**	**120**	**150**	ND<50	**140**	**160**	ND<50	**120**	ND<50	**200**	ND<100	**60**	ND<50	**140**	**220**
LB52-0.5	0.5	12/6/2022	µg/kg	ND<50	**500**	**1,200**	**1,500**	**1,800**	**3,500**	**1,200**	**990**	**3,000**	**320**	**1,600**	ND<100	**1,200**	ND<50	**290**	**6,300**
LB52-2.5	2.5	12/6/2022	µg/kg	ND<50	ND<50	ND<50	**50**	ND<50	ND<100	**83**	ND<50	ND<50	ND<50	ND<50	ND<100	ND<50	ND<50	ND<50	ND<100
LB53-0.5	0.5	12/6/2022	µg/kg	ND<50	**170**	**430**	**690**	**640**	**1,200**	**570**	**480**	**1,200**	ND<50	**1,100**	ND<100	**490**	ND<50	**460**	**1,600**
LB54-0.5	0.5	12/6/2022	µg/kg	ND<50	**400**	**370**	**570**	ND<50	ND<100	**310**	ND<50	**1,100**	ND<50	**1,800**	ND<100	ND<50	**9,300**	**1,600**	**1,700**
LB55-0.5	0.5	12/6/2022	µg/kg	**380**	**120**	**980**	**580**	ND<50	ND<100	**170**	ND<50	**670**	ND<50	**3,500**	ND<100	**90**	ND<50	**4,500**	**3,100**
LB56-0.5	0.5	12/6/2022	µg/kg	ND<10	ND<5.0	ND<5.0	**7.0**	ND<10	ND<10	**11**	ND<10	**12**	ND<5.0	**8.3**	ND<10	ND<5.0	ND<5.0	**7.0**	ND<10
LB58-0.5	0.5	12/6/2022	µg/kg	ND<50	ND<50	ND<50	**110**	ND<50	ND<100	**100**	ND<50	**93**	ND<50	ND<50	ND<100	ND<50	ND<50	**77**	**110**
LB59-0.5	0.5	12/6/2022	µg/kg	ND<50	ND<50	ND<50	**73**	ND<50	ND<100	**140**	ND<50	**160**	ND<50	**57**	ND<100	ND<50	ND<50	**60**	ND<100

Notes:
PAHs = Polynuclear aromatic hydrocarbons
bgs = below ground surface
ug/kg = micrograms per kilogram
ND<50 = Not detected above the laboratory reporting limit
-- = Not analyzed or not applicable
RSL = EPA Region 9 Industrial Regional Screening Level (November 2022)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (May 2022)

TABLE 6
PCBs IN SOIL
Berth 191-194
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
USEPA RSL Industrial Soil			mg/kg	27	0.83	0.72	0.95	0.94	0.97	0.99	--	--
HERO HHRA Note 3 Industrial Soil Screening Criteria			mg/kg	17	0.53	0.49	0.58	0.58	0.59	0.60	--	--
LB50-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB50-5	5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB52-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB52-2.5	2.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB53-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB54-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB55-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB56-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB58-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
LB59-0.5	0.5	12/6/2022	mg/kg	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050

Notes:
PCBs = Polychlorinated Biphenyls
bgs = below ground surface
mg/kg = milligrams per kilogram
ND<4.6 = Not detected above the reporting limit.
D1 = Sample required dilution due to possible matrix interference
RSL = EPA Region 9 Industrial Regional Screening Level (November 2022)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (May 2022)

TABLE 7

VOCs AND METHANE IN SOIL VAPOR

Berth 191 - 194

Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane (Freon 11)	1,2,4-Trimethylbenzene	m,p-Xylene	Other VOCs	Methane (ppmv)
USEPA RSL Industrial Air (AF = 0.0005)				94	6.0	--	520	880	varies	--
USEPA RSL Industrial Air (AF = 0.03)				1.57	0.1	--	8.67	14.7	varies	--
DTSC HERO Note 3 industrial (AF = 0.0005)				4.0	--	10,600	--	--	varies	--
DTSC HERO Note 3 industrial (AF = 0.03)				0.067	--	177	--	--	varies	--
LB56-3	12/13/2022	3.0	µg/L	**0.013**	<0.008	<0.016	**0.010**	**0.017**	ND	**460**
LB57-3	12/13/2022	3.0	µg/L	<0.008	<0.008	<0.016	<0.008	<0.008	ND	**490**
LB58-3	12/13/2022	3.0	µg/L	**0.050**	<0.008	<0.016	<0.008	<0.008	ND	**490**
LB59-3	12/13/2022	3.0	µg/L	**0.104**	<0.008	**0.044**	<0.008	**0.027**	ND	**500**

Notes:

Screening levels are adjusted using a 0.0005 attenuation factor for future commerical/industrial use are from Table 2 of the 2011 Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) In addition, an 0.03 attenuation factor was evaluted based on Draft DTSC Guidance (DTSC, 2020).

µg/L = micrograms per liter

ppmv= parts per million by volume

bgs = below ground surface

HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (May 2022)

RSL = EPA Region 9 Industrial Regional Screening Level (November 2022)

Methane values were collected with an RKI Eagle field instrument

-- = Not available

ND = non-detect

TABLE 8
TPH IN GROUNDWATER
Berth 191-194
Wilmington, California

Sample ID	Date	Units	GRO	DRO	ORO
ESLs Saltwater Tox.		mg/L	3.7	0.64	0.64
LB50-GW	12/06/22	mg/L	ND<0.10	ND<1.0	ND<1.0
LB51-GW	12/06/22	mg/L	ND<0.10	ND<1.0	ND<1.0
LB55-GW	12/06/22	mg/L	ND<0.10	ND<1.0	ND<1.0

Notes:
TPH = total petroleum hydrocarbons
mg/L = milligrams per liter
GRO = Gasoline Range Petroleum Hydrocarbons
DRO = Diesel Range Petroleum Hydrocarbons
ORO = Oil Range Petroleum Hydrocarbons
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2019) for saltwater aquatic habits
ND<0.05 = Not detected above laboratory reporting limit
-- = not applicable

TABLE 9
METALS IN GROUNDWATER
Berth 191-194
Wilmington, California

Sample ID	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
ESLs Saltwater Tox.		mg/L	0.5	0.036	--	--	0.0093	--	--	0.0031	0.0081	0.000025	--	0.0082	0.071	0.00019	0.21	--	0.081
LB50-GW	12/06/22	mg/L	ND<0.100	ND<0.100	**0.050**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.00010	**0.022**	ND<0.010	ND<0.100	ND<0.100	ND<0.100	ND<0.010	**0.032**
LB51-GW	12/06/22	mg/L	ND<0.100	ND<0.100	**0.082**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.00010	**0.018**	ND<0.010	ND<0.100	ND<0.100	ND<0.100	**0.012**	**0.024**
LB55-GW	12/06/22	mg/L	Nd<0.100	ND<0.100	**0.052**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.00010	**0.031**	ND<0.010	ND<0.100	ND<0.100	ND<0.100	ND<0.010	**0.020**

Notes:
mg/L = milligrams per liter
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2019) for saltwater aquatic habits
ND<0.13 = Not detected above laboratory reporting limit
-- = not applicable

TABLE 10
VOCs IN GROUNDWATER
Berth 191-194
Wilmington, California

Sample ID	Date	Units	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Dibromochloromethane	MTBE	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
ESLs Saltwater Tox.		µg/L	22,000	11,000	22,000	3,200	8,000	230	22,000	200	--
LB50-GW	12/06/22	µg/L	ND<0.5	ND<0.5	**3.3**	ND<0.5	**5.0**	**0.7**	ND<0.5	**2.9**	ND<0.5
LB51-GW	12/06/22	µg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**6.7**	ND<0.5	ND<0.5	ND<0.5	ND<0.5
LB55-GW	12/06/22	µg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Notes:
VOCs = volatile organic compounds
MTBE = methyl tertiary butyl ether
µg/L = micrograms per liter
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2019) for saltwater aquatic habits
ND<0.13 = Not detected above laboratory reporting limit

TABLE 11
PAHs IN GROUNDWATER
Berth 191-194
Wilmington, California

Sample ID	Date	Units	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
ESLs Saltwater Tox.		µg/L	30	15	15	15	15	15	15	15	15	15	15	8.0	15	15	15	4.6	15
LB50-GW	12/06/22	µg/L	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00
LB51-GW	12/06/22	µg/L	ND<1.00	ND<1.00	ND<1.00	ND<1.00	**1.98**	**1.22**	**3.78**	ND<1.00	**1.02**	**3.02**	ND<1.00	**1.22**	ND<1.00	ND<1.00	ND<1.00	ND<1.00	**1.56**
LB55-GW	12/06/22	µg/L	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00	ND<1.00

Notes:
PAHs = polynuclear aromatic hydrocarbons
µg/L = micrograms per liter
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2019) for saltwater aquatic habits
ND<0.13 = Not detected above laboratory reporting limit
-- = not applicable

APPENDIX A

Baseline Environmental Site Characterization Report

Leighton

BASELINE ENVIRONMENTAL SITE CHARACTERIZATION REPORT PORT OF LOS ANGELES BERTHS 191 THROUGH 193 WILMINGTON, CALIFORNIA

Prepared For:

City of Los Angeles Harbor Department

425 South Palo Verdes Street
San Pedro, California 90731

APP: 170720-511
Leighton Project No. 11618.005

April 13, 2018

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

April 13, 2018

APP: 170720-511

City of Los Angeles Harbor Department
Environmental Management Division
425 South Palo Verdes Street
San Pedro, California 90731

Subject: **Baseline Environmental Site Characterization Report**
Port of Los Angeles Berths 191 through 193,
Wilmington, California

INTRODUCTION

Leighton Consulting, Inc. (Leighton) is pleased to present the City of Los Angeles Harbor Department, Environmental Management Division (EMD) this report summarizing the results of a baseline environmental site characterization of soil, soil gas, and groundwater at the Port of Los Angeles (POLA) Berths 191 through 193 located in Wilmington, California (Site, Figure 1).

BACKGROUND

The Site encompasses roughly 6.8 acres and is located east of Canal Street and south of Yacht Street in Wilmington, California. Historically, the Site was associated with the Former Wilmington Liquid Bulk Terminals, Inc. (Earth Tech, 2002), a yacht club, docks for boats and a marine gas and oil station (Locus Technologies, 2010). The surrounding vicinity is industrial in nature, consisting of fueling terminals, container storage yards, and various berths associated with cargo/container shipping activities. References are included in Appendix A.

17781 Cowan ▪ Irvine, CA 92614-6009
949.250.1421 ▪ 949.250.1114 Fax

OBJECTIVE

The objective of this screening level environmental site characterization of soil, soil gas, and groundwater is to establish environmental baseline conditions for the future tenant and to determine what, if any, environmental impacts were present in the shallow soil, soil gas, and groundwater from activities on or near the Site which could present a health risk to future commercial/industrial occupants of the Site.

SCOPE OF WORK

The scope of work included the following:

- Advancement of 49 exploratory soil borings to total depths between 5 and 9 feet below ground surface (bgs);
- Installation of soil gas probes in 19 of the 49 soil borings.
- Collection of soil, soil gas, and groundwater samples for chemical analysis; and
- Preparation of this report summarizing our findings and conclusions, including tables, illustrations and appendices.

INVESTIGATIVE METHODOLOGY

The investigative methodology developed for this project includes, and is limited to, the activities summarized below.

Pre-field Activities

Health and Safety Plan

A Site Specific Health and Safety Plan (HSP) was prepared for work performed at the Site. All onsite Leighton personnel signed the HSP acknowledging acceptance. The document was kept onsite at all times during the field activities. The HSP was prepared in compliance with Title 8 Section 5192 of the California Code of Regulations (CCR), and the Occupational Safety and Health Administration (OSHA) Chapter 29 of the Code of Federal Regulations (29 CFR) 1910.120.

Underground Services Alert and Private Subsurface Utility Survey

Underground Service Alert (USA; also referred to as DigAlert) was contacted at least 48-hours prior to commencement of fieldwork to mark the location of public utilities that may enter the Site from nearby streets. The locations of the proposed borings were clearly marked with a stake and flag or white paint prior to contacting USA.

Additionally, prior to each round of sampling all of the proposed borings were checked for subsurface utilities by conducting a geophysical utility survey of the project area to evaluate for the presence of detectable buried magnetic, metallic, and electrically conductive features such as metal pipelines, buried tanks, debris, electrical lines, and other subsurface features in the area of the proposed borings. Boring locations that conflicted with identified underground utilities were relocated.

Permits

Prior to commencement of field activities, Leighton obtained a well permit from the County of Los Angeles Public Health, Department of Environmental Health (DEH). The permit was required for the advancement of select borings into groundwater. A copy of this permit is included in Appendix B.

Field Activities

Soil Investigation

On October 11 through 13 and December 13, 2017, Leighton oversaw the advancement of 49 soil borings at the Site (LB1 through LB49). Boring locations are depicted on Figure 2. The borings were advanced using truck-mounted direct-push drilling equipment operated by Millennium Environmental, Inc. (Millennium) of Anaheim, California, a State of California licensed drilling contractor. During boring advancement, a photoionization detector (PID) was used to evaluate the soil cuttings for the presence or absence of volatile organic hydrocarbon vapors and monitor the worker breathing zone for health and safety purposes. Soil encountered during drilling was classified and logged in accordance with the Unified Soil Classification System (USCS). Detailed boring logs are included in Appendix C.

Soil samples were collected for chemical analysis from borings LB1 through LB35 and LB45 through LB47, at depths of 0.5 feet, 2.5 feet, 5 feet bgs, or until boring refusal or groundwater was encountered. Soil samples were not collected from borings LB36

through LB44, LB48, and LB49, since these locations were selected for soil gas and groundwater assessment only.

Soil samples were retained in 8-ounce laboratory-supplied glass jars or acetate sleeves capped with Teflon sheets and plastic end caps, and placed in an ice-cooled chest for storage and delivery to Advanced Technology Laboratories, Inc. (ATL) in Signal Hill, California for chemical analysis. ATL is a State of California Environmental Laboratory Accreditation Program-certified (ELAP) laboratory.

Down-hole drilling and sampling equipment was decontaminated between boreholes by washing in a solution of non-phosphate detergent and water, rinsing with potable water, final rinsing with distilled water, and allowing to air-dry.

Upon completion of soil sampling and soil gas survey (described below), the soil borings were backfilled with hydrated bentonite chips and the surface was returned to its original finish.

Groundwater Investigation

On October 11 through 13 and December 13, 2017, grab groundwater samples were collected from 19 of the 49 borings (LB1, LB6, LB13, LB23, LB25, LB27, LB31, LB34, LB36 through LB44, LB48, and LB49). Boring locations are depicted on Figure 2. Groundwater was encountered during this investigation at depths ranging between 5.5 feet and 6 feet bgs. Each grab groundwater sample was collected by utilizing a Hydropunch® sampling device. The Hydropunch® sampling tool consisted of an approximately 2-inch diameter hollow steel rod equipped with an inner 4-foot long, 0.010-inch screened, steel rod. The sampler was fitted with an expendable drive point at the bottom. The Hydropunch® sampling tool was advanced to the desired depth and the outer hollow steel rod was withdrawn 4-feet to expose the screen. Disposable tubing was then lowered through the hollow steel rods in the water column and extracted through the tubing with a peristaltic pump to bring the groundwater samples to the surface. The groundwater samples were retained in laboratory supplied containers, clearly marked with sample identification, placed in an ice-cooled chest for temporary storage, and transported to ATL for chemical analysis. Chain-of-custody protocol was followed throughout all phases of the sample handling process.

Soil Gas Survey

A soil gas survey was performed at the Site in accordance with the *Advisory – Active Soil Gas Investigations, Revised July 2015*, jointly developed by California Environmental Protection Agency – Department of Toxic Substances Control (DTSC) and California Regional Water Quality Control Board – Los Angeles and San Francisco Region's (LARWQCB and SFRWQCB).

On October 11 through 13 and December 13, 2017, Leighton oversaw the installation of soil gas probes in the 19 of the 49 soil boring locations (LB1, LB6, LB13, LB23, LB25, LB27, LB31, LB34, LB36 through LB44, LB48, and LB49) as shown on Figure 2. Soil gas probes were installed at a depth of 4 feet bgs, based on the observed groundwater depth of 5 feet bgs. The soil gas probes consisted of inert ¼-inch nylaflow tubing fitted with a porous polyethylene implant at the terminus, which was set within one foot of sand, one foot of dry bentonite above, followed by hydrated bentonite. The surface end of the probe was fitted with a gas-tight luerlock to prevent infiltration of water or air. The soil gas probes were allowed to equilibrate for at least 72 hours prior to sampling.

Soil gas sample collection and chemical analysis was performed on October 17 and December 18, 2017, by an onsite mobile laboratory operated by Jones Environmental, Inc. (Jones) of Santa Fe Springs, California.

A shut-in test was conducted along the sampling train setup at each sampling depth and location, prior to purging each probe. If a leak was detected, the above-ground sampling train connections were checked and adjusted until no leaks are detected.

At each sampling depth and location, an electric vacuum pump (set to draw 0.200 liters per minute of soil gas at a maximum vacuum of 100-inches of water) was attached to the probe to purge the probe prior to sample collection with the exception of LB34. LB34 was manually evacuated using a glass syringe. To remove stagnant air from the sampling system so that representative samples could be collected, a standard of three purge volumes was used.

Subsequent to purging, soil gas samples were obtained by drawing the sample through the luerlock connection, which connects the sampling probe to the sample container. Soil gas samples were immediately injected into the onsite mobile laboratory gas chromatograph/purge and trap system after collection.

A tracer gas mixture of pentane, hexane, and heptane was applied onto a cloth in the area of the soil gas probes at each point of connection in which ambient air could enter the sampling system. These connection points included the top of the sampling probe

where the tubing meets the probe connection and the surface bentonite seals. The tracer gas was not detected in the soil gas samples collected indicating that no ambient air compromised the soil gas analytical test data.

Two duplicate soil gas samples were obtained and analyzed for the two-day soil gas survey.

Soil Laboratory Analyses

Soil samples were analyzed for total petroleum hydrocarbons (TPH) in the gasoline range (GRO), diesel range (DRO), and oil range (ORO) by Environmental Protection Agency (EPA) Method 8015M and California Code of Regulations, and Title 22, Article 11 metals (CAM 17 metals) by EPA Methods 6010B/7471A.

Soil samples with detected concentrations of GRO above the reporting limit, DRO exceeding 500 milligrams per kilogram (mg/kg), ORO exceeding 1,000 mg/kg, or detected PID concentrations above 5 parts per million (ppm) were analyzed for the following:

- Volatile organic compounds (VOCs) by EPA Method 8260B, using EPA Method 5035 sample preservation protocols; and

- Polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270SIM.

Soil samples with detected concentrations of total TPH above 1,000 mg/kg or collected from locations adjacent to pole-mounted transformers were analyzed for polychlorinated biphenyls (PCBs) by EPA Method 8082.

One randomly selected soil sample with elevated concentrations of total TPH (LB17-0.5) was analyzed for dioxin/furans by EPA Method 8290.

Soil samples with lead, copper, and mercury exceeding waste characterization criteria as defined in California Code of Regulations, Title 22, Chapter 11, Article 3, were analyzed for soluble lead, copper, and mercury using the soluble threshold limit concentration (STLC) waste extraction test (WET) using EPA Method 6010B and the toxicity characteristic leaching procedure (TCLP) test using EPA Method 1311.

Groundwater Laboratory Analyses

Groundwater samples were analyzed for GRO, DRO, and ORO by EPA Method 8015B, CAM 17 metals by EPA Method 6010B/7471A, VOCs by EPA Method 8260B, and PAHs by EPA Method 8270SIM.

Soil Gas Laboratory Analyses

Soil gas samples, including duplicates, were analyzed for the tracer gas and VOCs by EPA Method 8260B.

Copies of the chain of custody forms and complete analytical reports are included in Appendix D.

INVESTIGATIVE RESULTS

Geologic and Hydrogeologic Conditions

The Site is located within the Los Angeles Coastal Plain (California Department of Water Resources [CDWR], 1961) of the Peninsular Ranges geomorphic province of southern California (Norris and Webb, 1990), approximately 17 miles south of downtown Los Angeles at the northern end of the Los Angeles Harbor. The Los Angeles Coastal Plain is a deep structural trough that has been filled primarily with unconsolidated Miocene through Recent age sediments or alluvium that are underlain by earlier Cenozoic bedrock. The Los Angeles Coastal Plain is bounded on the north by the Santa Monica Mountains; on the northeast by the low-lying Elysian, Repetto, Merced, and Puente Hills; on the east and southeast by the Santa Ana Mountains and San Joaquin Hills; on the south by the Palos Verdes Hills and the Pacific Ocean; and on the west by the Pacific Ocean (CDWR, 1961).

The Los Angeles Coastal Plain has been spatially divided by the CDWR into four groundwater basins (West Coast Basin, Central Basin, Santa Monica Basin, and Hollywood Basin) based on the hydrogeologic characteristics of the underlying strata and the locations of bounding geologic structures such as non-water-bearing rock and/or faults that impede groundwater movement. The Site is located within the West Coast Basin, west of the Central Basin and south of the Santa Monica and Hollywood groundwater Basins. The West Coast Basin is bordered on the east by the Newport-Inglewood Fault; on the west by Santa Monica Bay; on the north by the Ballona Gap

(north of the Los Angeles International Airport), and on the south by the Palos Verdes Hills.

Based on lateral distribution and varying hydrogeologic characteristics, five major aquifers have been identified in the geologic formations underlying the West Coast Basin (CDWR, 1961). The aquifers consist of (from oldest to youngest) the Silverado and Lynwood Aquifers of the San Pedro Formation; the Gage Aquifer of the Lakewood Formation; and the Gaspur and semiperched aquifers of the recent Holocene age Alluvium. In general, the older/deeper Silverado and Lynwood aquifers are currently designated as drinking water sources and the younger shallow aquifers (Gage, Gaspur, and semiperched) are not currently used for drinking water purposes due to low yield and/or generally poor quality. Note that the in the Regional Water Quality Control Board's (RWQCB) August 28, 1998, Municipal and Domestic Water Supply Policy Staff Report, the portion of the West Basin including the Site has been de-designated and its underlying aquifers are no longer considered to be of beneficial use for drinking water.

Soils encountered during the investigation consisted primarily of gravel and silt in the shallow soil (less than 2.5 feet bgs) and silt and sand in the deeper soil (greater than 2.5 feet bgs). Stained or odorous soil was noted in a few borings (LB4, LB14, LB45, and LB46). Detections observed on the PID ranged from 0 to 1.5 parts per million by volume (ppmv), and are shown on the boring logs in Appendix C. The maximum PID reading of 1.5 ppmv was observed in boring LB4 at a depth of 3.5 feet bgs.

Groundwater was encountered between 5.5 and 6 feet bgs at the Site. The direction of groundwater flow is anticipated to be south-southeast towards the harbor and is expected to be tidally influenced.

Analytical Results for Soil Samples

The soil sample analytical results were compared to the following screening criteria:

- EPA Region 9 Industrial Regional Screening Levels (RSLs) and DTSC Office of Human and Ecological Risk (HERO) Note Number 3 values in an industrial setting for TPH, metals (except arsenic), PAHs, PCBs, and VOCs;
- The DTSC Southern California Background concentration of 12 milligrams per kilogram (mg/kg) for arsenic; and

- DTSC HERO Note Number 2 screening level of 22 picograms per gram (pg/g) for dioxins/furans; and
- California Code of Regulations, Title 22, Division 4.5, Chapter 11, Article 3, Characteristics of Hazardous Waste.

The analytical results for soil samples are summarized in Tables 1 through 7 and as follows:

- **GRO** was only detected in the soil sample collected from boring LB28 at 5 feet bgs (LB28-5.0) at a concentration of 400 mg/kg. This concentration does not exceed the Industrial RSL of 420 mg/kg.
- **DRO** was detected in all of the soil samples analyzed at concentrations ranging from 1.2 mg/kg in boring LB6 at 5.0 feet bgs to 11,000 mg/kg in boring LB28 at 5.0 feet bgs. Fourteen soil samples had DRO concentrations exceeding the Industrial RSL of 440 mg/kg (Figure 3). There is no discernable trend in DRO impacted soil.
- **ORO** was detected in all of the soil samples analyzed at concentrations ranging from 1.5 mg/kg in boring LB10 at 5.0 feet bgs to 17,000 mg/kg in boring LB35 at 5.0 feet bgs. The detected concentrations of ORO did not exceed the Industrial RSL of 33,000 mg/kg.
- **Title 22 Metals** were detected in all of the soil samples analyzed with the exception of beryllium, selenium, and thallium. Metals in soil at concentrations exceeding their respective industrial screening levels were not detected during this investigation.

  Soil samples containing total copper, lead, and/or mercury at concentrations above 10 times the STLC and 20 times the TCLP were analyzed using the STLC and TCLP waste extraction tests. The results of these analyses are shown on Figure 4 and summarized below:

  - **Copper STLC** was analyzed in three soil samples with resulting concentrations ranging from 2.6 milligram per liter (mg/L) in boring LB2 at 0.5 feet bgs to 25 mg/L in boring LB11 at 0.5 feet bgs. One sample, LB11 at 0.5 feet bgs, equaled the copper STLC threshold of 25 mg/L.
  - **Copper TCLP** was analyzed in soil sample LB11 at 0.5 with a resulting concentration 0.77 mg/L. There is no corresponding TCLP limit for copper.

- **Lead STLC** was analyzed in eleven soil samples with resulting concentrations ranging from 1.0 mg/L in boring LB28 at 2.5 feet bgs to 13 mg/L in boring LB31 at 0.5 feet bgs. Four samples, LB5 at 2.5 feet bgs, LB17 at 0.5 feet bgs, LB31 at 0.5 feet bgs, and LB33 at 2.5 feet bgs, exceeded the lead STLC threshold of 5 mg/L.

- **Lead TCLP** was analyzed in seven soil samples with resulting concentrations ranging from non-detect (five soil samples) to 0.33 mg/L in LB31 at 0.5 feet bgs. The detected TCLP concentrations were below the TCLP threshold value 5 mg/L. It should be noted that TCLP analysis of soil samples LB5 at 2.5 feet bgs and LB17 at 0.5 feet bgs were not completed because the quantity of soil sample remaining was not enough to meet the required aliquot for the test method.

- **Mercury STLC** was analyzed in soil sample LB11 at 0.5. The mercury STLC result did not exceed the laboratory detection limit of 0.00023 mg/L.

- **Mercury TCLP** was analyzed in soil sample LB11 at 0.5. The mercury TCLP result did not exceed the laboratory detection limit of 0.00005 mg/L.

- **VOCs** – Carbon disulfide and tetrachloroethene (PCE) were the only VOCs detected in the 29 soil samples analyzed during this investigation. Carbon disulfide was detected in four of the 29 soil samples at concentrations ranging from 5.3 microgram per kilogram (µg/kg) in sample LB2 at 0.5 feet bgs to 13 µg/kg in sample LB10 at 2.5 feet bgs. The detected concentrations are below the carbon disulfide Industrial RSL of 3,500,000 µg/kg. PCE was detected in one of the 29 soil samples (LB4 at 0.5 feet bgs) at a concentration of 27 µg/kg, which is below the Industrial HERO Note 3 screening value of 2,700 µg/kg.

- **PAHs** – 2-Methylnaphthalene, benzo(b)fluoranthene, fluoranthene, and pyrene were the only PAHs detected in the 28 soil samples analyzed. 2-Methylnaphthalene was detected in one of the 28 soil samples (LB28 at 5.0 feet bgs) at a concentration of 7,800 µg/kg. Benzo(b)fluoranthene, fluoranthene, and pyrene were detected in one of the 28 soil samples (LB2 at 2.5 feet bgs) at concentrations of 10 µg/kg, 12 µg/kg, and 11 µg/kg, respectively. The four detected PAHs were below their respective Industrial RSLs.

- **PCBs –** Aroclor 1254 and Aroclor 1260 were the only PCBs detected in eight of the 18 soil samples analyzed. Aroclor 1254 was detected in two soil samples at concentrations of 0.870 mg/kg and 0.110 mg/kg in soil samples LB11 at 0.5 feet bgs and LB16 at 2.5 feet bgs, respectively. Aroclor 1260 was detected in six soil samples

at concentrations ranging from 0.019 mg/kg in sample LB10 at 0.5 feet bgs to 0.180 mg/kg in sample LB47 at 0.5 feet bgs. The detected concentrations of Aroclor 1254 and Aroclor 1260 did not exceed their Industrial RSLs of 0.970 mg/kg and 0.990 mg/kg, respectively.

- **Dioxins and Furans** – LB17 at 0.5 feet bgs was analyzed for dioxin and furans. The results of the analysis were used to calculate a Total Toxic Equivalency (TTE). The TTE for LB17 at 0.5 feet bgs was 5.27 pg/g, which is below the DTSC HERO Note 2 screening level of 22 pg/g.

Analytical Results for Groundwater Samples

Results of the chemical analyses of the groundwater samples were compared to the Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board and updated in February 2016. Aquatic habit screening levels for saltwater were chosen for screening purposes since the Site is adjacent to the harbor and groundwater beneath the Site is of non-beneficial use.

The analytical results for groundwater samples are summarized in Tables 8 through 11 and as follows:

- **GRO** was detected in three of the eight groundwater samples analyzed during this investigation at concentrations ranging from 0.08 mg/L in sample LB25-GW to 9.9 mg/L in sample LB1-GW. The concentration of GRO detected in sample LB1-GW exceeded the ESL screening criteria concentration of 3.7 mg/L (Figure 5).

- **DRO** was detected in the eight groundwater samples analyzed during this investigation at concentrations ranging from 0.15 mg/L in sample LB34-GW to 0.93 mg/L in sample LB1-GW. The concentration of DRO detected in sample LB1-GW exceeded the ESL screening criteria concentration of 0.64 mg/L (Figure 5).

- **ORO** was detected in all eight groundwater samples analyzed during this investigation at concentrations ranging from 0.10 mg/L in sample LB34-GW to 0.43 mg/L in sample LB1-GW. None of the eight samples exceeded the ORO ESL screening criteria concentration of 0.64 mg/L (Figure 5).

- **Title 22 Metals** were detected in all of the groundwater samples analyzed during this investigation with the exception of beryllium, cadmium, lead, mercury, selenium, silver, and thallium. The maximum concentrations detected were as follows:

Metal	Concentration	ESL	Boring
Antimony	0.013 mg/L	0.5 mg/L	LB25
Arsenic	0.013 mg/L	0.036 mg/L	LB27
Barium	0.31 mg/L	--	LB27
Chromium	0.022 mg/L	--	LB27
Cobalt	0.0086 mg/L	--	LB27
Copper	**0.016 mg/L**	0.0031 mg/L	LB27
Molybdenum	0.021 mg/L	--	LB25
Nickel	**0.016 mg/L**	0.0082 mg/L	LB27
Vanadium	0.034 mg/L	--	LB27
Zinc	**0.090 mg/L**	0.081 mg/L	LB27

Note: Bold concentrations exceed ESL screening criteria.

Copper was detected in three of the eight groundwater samples analyzed at concentrations of 0.011 mg/L in LB1-GW, 0.0090 mg/L in LB6-GW, and 0.016mg/L in LB27-GW (Figure 6). These concentrations exceeded the ESL screening criteria of 0.0031 mg/L for copper in groundwater.

Nickel was detected in five of the eight groundwater samples analyzed at concentrations ranging from 0.0060 mg/L in LB13-GW to 0.016 mg/L in LB27-GW (Figure 6). Three of these concentrations, 0.011 mg/L in LB1-GW, 0.0083 mg/L in LB25-GW, and 0.016 mg/L in LB27-GW exceeded the ESL screening criteria of 0.0082 mg/L for nickel in groundwater.

Zinc was detected in one of the eight groundwater samples analyzed (LB27-GW) at a concentration of 0.090 mg/L (Figure 6). This concentration exceeded the ESL screening criteria of 0.081 mg/L for zinc in groundwater.

- **VOCs** were detected in 16 of the 19 groundwater samples analyzed during this investigation. Thirteen VOC chemicals were detected with maximum concentrations as follows:

VOC	Concentration	ESL	Boring
1,1-Dichloroethene	13 µg/L	22,000 µg/L	LB41
1,2-Dichloroethane	1.1 µg/L	11,000 µg/L	LB43

VOC	Concentration	ESL	Boring
Benzene	0.81 µg/L	350 µg/L	LB6
Bromodichloromethane	0.70 µg/L	3,200 µg/L	LB38
Bromoform	4.2 µg/L	3,200 µg/L	LB38
Carbon Disulfide	3.5 µg/L	--	LB40
cis-1,2-Dichloroethene	8,500 µg/L	22,000 µg/L	LB41
Dibromochloromethane	2.7 µg/L	3,200 µg/L	LB38
MTBE	19 µg/L	8,000 µg/L	LB6
PCE	**19,000 µg/L**	230 µg/L	LB1
trans-1,2-Dichloroethene	290 µg/L	22,000 µg/L	LB41
Trichloroethene (TCE)	**7,900 µg/L**	200 µg/L	LB1
Vinyl Chloride	57 µg/L	--	LB41 and LB49

Note: Bold concentrations exceed ESL screening criteria.

PCE was detected in 11 of the 19 groundwater samples analyzed at concentrations ranging from 0.52 µg/L in LB49 to 19,000 µg/L in LB1. Three groundwater samples with PCE concentrations of 19,000 µg/L in LB1, 440 µg/L in LB37, and 380 µg/L in LB39 exceeded the ESL screening criteria of 230 µg/L for PCE in groundwater (Figure 7).

TCE was detected in 11 of the 19 groundwater samples analyzed at concentrations ranging from 0.78 µg/L in LB23 to 7,900 µg/L in LB1. Three groundwater samples with TCE concentrations of 7,900 µg/L in LB1, 870 µg/L in LB37, and 890 µg/L in LB39 exceeded the ESL screening criteria of 200 µg/L for TCE in groundwater (Figure 7).

- **PAHs** were not detected above the laboratory reporting limits in the groundwater samples analyzed during this investigation.

Analytical Results for Soil Gas Samples

Results of the chemical analyses of the soil gas samples were compared to the adjusted DTSC HERO Notes 3 and 5 and EPA Region 9 RSLs for indoor air in an industrial setting assuming a future slab attenuation factor of 0.0005 (DTSC, 2011). The results of the laboratory analysis for the soil gas samples are summarized in Table 12.

VOCs were detected in 14 of the 17 soil gas samples analyzed (including duplicate samples). Twenty-eight VOC chemicals were detected with maximum concentrations as follows:

VOC	Concentration	HERO Note 3 & 5	Boring	Probe Depth
Benzene	0.024 µg/L	0.84 µg/L	LB1	4 feet bgs
Bromobenzene	0.009 µg/L	520 µg/L	LB43	4 feet bgs
n-Butylbenzene	0.013 µg/L	--	LB43	4 feet bgs
sec-Butylbenzene	0.014 µg/L	--	LB43	4 feet bgs
tert-Butylbenzene	0.013 µg/L	--	LB43	4 feet bgs
Chloroform	0.167 µg/L	1.06 µg/L	LB1	4 feet bgs
2-Chlortoluene	0.009 µg/L	--	LB43	4 feet bgs
4-Chlortoluene	0.010 µg/L	--	LB43	4 feet bgs
Dichlorodifluoromethane	0.011 µg/L	880 µg/L	LB38 and LB43	3 and 4 feet bgs
1,1-Dichloroethene	0.056 µg/L	620 µg/L	LB39	4 feet bgs
cis-1,2-Dichloroethene	**70.1 µg/L**	70 µg/L	LB39	4 feet bgs
trans-1,2-Dichloroethene	3.56 µg/L	700 µg/L	LB1	4 feet bgs
Ethylbenzene	0.030 µg/L	9.8 µg/L	LB27	4 feet bgs
Isopropylbenzene	0.12 µg/L	3,600 µg/L	LB43	4 feet bgs
4-Isopropyltoluene	0.771 µg/L	--	LB36	4 feet bgs
n-Propylbenzene	0.014 µg/L	8,800 µg/L	LB43	4 feet bgs
Styrene	0.009 µg/L	7,800 µg/L	LB36	4 feet bgs

VOC	Concentration	HERO Note 3 & 5	Boring	Probe Depth
1,1,2,2-Tetrachloroethane	0.011 µg/L	0.42 µg/L	LB36	4 feet bgs
PCE	**148 µg/L**	4.0 µg/L	LB1	4 feet bgs
Toluene	0.081 µg/L	2,600 µg/L	LB36	4 feet bgs
1,1,2-Trichloroethane	0.304 µg/L	1.54 µg/L	LB36	4 feet bgs
TCE	**23.2 µg/L**	16 µg/L	LB1	4 feet bgs
Trichlorofluoromethane	3.71 µg/L	10,800 µg/L	LB38	4 feet bgs
1,2,4-Trimethylbenzene	0.234 µg/L	520 µg/L	LB36	4 feet bgs
1,3,5-Trimethylbenzene	0.013 µg/L	520 µg/L	LB43	4 feet bgs
Vinyl Chloride	**3.20 µg/L**	0.32 µg/L	LB6	4 feet bgs
m,p-Xylene	0.136 µg/L	880 µg/L	LB27	4 feet bgs
o-Xylene	0.038 µg/L	880 µg/L	LB27	4 feet bgs

Note: Bold concentrations exceed respectively screening levels.

Cis-1,2-dichloroethene was detected in eight of the 17 soil gas samples analyzed at concentrations ranging from 0.011 µg/L in LB27 at 4 feet bgs to 70.1 µg/L in LB39 at 4 feet bgs. The soil gas concentration of 70.1 µg/L from boring LB39 at 4 feet bgs exceeded the adjusted Industrial HERO Note 3 value of 70 µg/L for cis-1,2-dichloroethene (Figure 8).

PCE was detected in 12 of the 17 soil gas samples analyzed at concentrations ranging from 0.011 µg/L in LB43 at 4 feet bgs to 148 µg/L in LB1 at 4 feet bgs. The soil gas concentrations of 148 µg/L in LB1 at 4 feet bgs and 8.75 µg/L in LB39 at 4 feet bgs exceeded the adjusted Industrial HERO Note 3 value of 4 µg/L for PCE (Figure 8).

TCE was detected in 10 of the 17 soil gas samples analyzed at concentrations ranging from 0.014 µg/L in LB42 at 4 feet bgs to 23.2 µg/L in LB1 at 4 feet bgs. The soil gas concentrations of 23.2 µg/L in LB1 at 4 feet bgs and 18.4 µg/L in LB39 at 4 feet bgs exceeded the adjusted Industrial HERO Note 5 value of 16 µg/L for TCE (Figure 8).

Vinyl chloride was detected in three of the 17 soil gas samples analyzed at concentrations of 3.2 µg/L in LB6 at 4 feet bgs, 0.014 µg/L in LB39 at 4 feet bgs, and 0.021 µg/L in LB49 at 4 feet bgs. The soil gas concentration of 3.2 µg/L from boring LB6 at 4 feet bgs exceeded the adjusted Industrial HERO Note 3 value of 0.32 µg/L for vinyl chloride (Figure 8).

It should be noted that the soil gas probes installed in borings LB34, LB41, LB44, and LB48 were unable to be sampled due to groundwater intrusion.

CONCLUSIONS

The purpose of this site assessment was to establish an environmental baseline for future tenant and to screen for the potential presence of hazardous substances in soil, soil gas, and groundwater at POLA Berths 191 through 193 in Wilmington, California that could present a health risk to future commercial/industrial occupants of the Site.

Soil

DRO was detected above the Industrial RSL in 14 of the 104 soil samples analyzed during this investigation. While there is no discernable trend in DRO impacted soil, DRO was found primarily within the surficial soil in the northern portion of the Site and in deeper soil (5 feet bgs) in the southern portion of the Site.

Copper and lead exceeded the STLC limits in of 5.0 mg/L in soil samples collected from borings LB5, LB11, LB17, LB31, and LB33. Soil in the vicinity of these borings may be classified as non-RCRA hazardous waste (California hazardous) if removed from the Site. The copper and lead-impacted soil appears to be limited to the upper 3 feet bgs.

GRO, ORO, VOCs, PAHs, PCBs, and dioxin/furans were not detected in the soil samples analyzed during this investigation at concentrations exceeding their respective industrial screening levels.

Groundwater

TPH was detected in a majority of the groundwater samples analyzed during this investigation. One groundwater sample, LB1, had a concentration of GRO and DRO exceeding the ESL screening criteria. Based on the site-wide TPH impacts to groundwater, it is likely that the Site is located within a regional plume of TPH-impacted groundwater.

Elevated levels of copper, nickel, and zinc were detected in groundwater samples collected from borings LB1, LB6, LB25, and LB27 at concentrations exceeding the ESL screening criteria. Since the groundwater beneath the Site is non-beneficial for municipal use and direct contact with groundwater beneath the Site is unlikely, these elevated concentrations of metals in groundwater should not pose a risk to future commercial/industrial occupants of the Site.

Two VOCs, PCE and TCE, were detected in groundwater at concentrations above their respective ESL screening criteria from three borings (LB1, LB37, and LB39). The elevated concentrations of VOCs in groundwater were limited to the northern portion of the Site. The primary VOC contaminants of concern in groundwater are PCE and TCE; however, other chlorinated VOCs such as cis- and trans-1,2-dichloroethene, 1,2-dichloroethane, 1,1-dichloroethee, and vinyl chloride were detected along with fuel constituents such as benzene and MTBE. Iso-concentration maps of PCE and TCE are included as Figures 9 and 10.

PAHs were not detected in the groundwater samples analyzed during this investigation.

Soil Gas

Four VOCs, cis-1,2-dichloroethene, PCE, TCE, and vinyl chloride, were detected in soil gas at concentrations above their respective adjusted industrial screening levels in three borings (LB1, LB6, and LB39). Elevated concentrations of the same VOCs were detected in groundwater samples collected at these three locations and it is likely that the impacted soil gas is a result of off-gassing of the contaminated groundwater.

RECOMMENDATIONS

Leighton recommends the completion of a human health risk assessment (HHRA). The HHRA should discuss health risks associated with commercial land use at the Site and determine if removals are necessary based on the contaminants present at the Site.

Soil in the vicinity of borings LB5, LB11, LB17, LB31, and LB33 has concentrations of copper and lead exceeding the STLC limits. If soil removals are to take place at the Site during redevelopment activities, additional soil waste characterization is warranted in the area of these borings and there is a potential for soil in these areas to be classified as non-RCRA hazardous waste (California hazardous). The copper and lead-impacted soil appears to be limited to the upper 3 feet bgs.

In general, observations should be made during any future Site redevelopment for areas of possible contamination such as, but not limited to, the presence of underground facilities, buried debris, waste drums, tanks, stained soil or odorous soils. Should such materials be encountered, further investigation and analysis may be necessary at that time.

LIMITATIONS

This investigation was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

The observations and conclusions presented in this report are professional opinions based on the scope of activities, work schedule, and information obtained through the activities described herein, and are limited to the portion of the Site investigated. Opinions presented herein apply to property conditions existing at the time of our study and cannot necessarily be taken to apply to property conditions outside of the area investigated or changes that we are not aware of or have not had the opportunity to evaluate. It must be recognized that conclusions drawn from these data are limited to the portion of the Site investigated, and the amount, type, distribution, and integrity of the information collected at the time of the investigation, and the methods utilized to collect and evaluate the data. Although Leighton has taken steps to obtain true copies of available information, we make no representation or warranty with respect to the accuracy or completeness of the information provided by others.

We appreciate the opportunity to assist EMD on this project. If you have questions regarding our proposal or information that would update our scope of work, please call us at your convenience at ***866-LEIGHTON***, directly at the phone extension and/or e-mail address listed below.

Respectfully submitted,

LEIGHTON CONSULTING, INC.



Brynn McCulloch, PG 8794
Associate Geologist
Ext 4287, bmcculloch@leightongroup.com

BFM/KCH

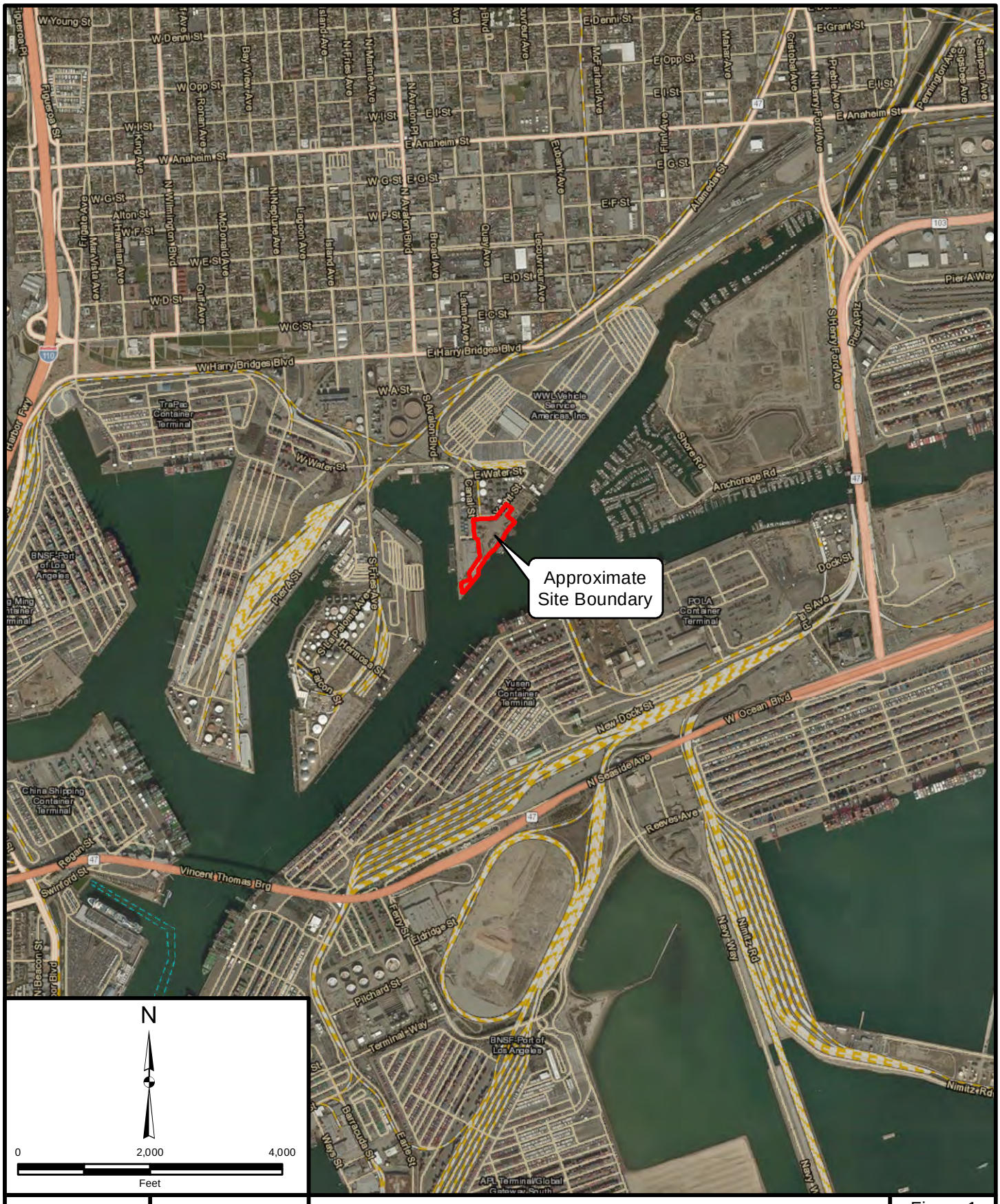
Distribution: (1 PDF) Addressee

ATTACHMENTS:

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – TPH in Soil
Figure 4 – California Hazardous Waste in Soil
Figure 5 – TPH in Groundwater
Figure 6 – Metals in Groundwater
Figure 7 – VOCs in Groundwater
Figure 8 – VOCs in Soil Gas
Figure 9 – PCE in Groundwater
Figure 10 – TCE in Groundwater

Table 1 – TPH in Soil
Table 2 – Metals in Soil
Table 3 – Soil Waste Characterization
Table 4 – VOCs in Soil
Table 5 – PAHs in Soil
Table 6 – PCBs in Soil
Table 7 – Dioxins and Furans in Soil
Table 8 – TPH in Groundwater
Table 9 – Metals in Groundwater
Table 10 – VOCs in Groundwater
Table 11 – PAHs in Groundwater
Table 12 – VOCs in Soil Gas

Appendix A – References
Appendix B – Boring Permit
Appendix C – Boring Logs
Appendix D – Laboratory Reports and Chain-of-Custody Documents



Project: 11618.005	Eng/Geol: BFM
Scale: 1 " = 2,000 '	Date: February 2018

Base Map: ESRI ArcGIS Online 2017
Thematic Information: Leighton
Author: Leighton Geomatics (mmurphy)

SITE LOCATION MAP

Berth 191-193
Wilmington, California

Figure 1

Leighton

Map Saved as P:\Drafting\11618\005\Maps\11618-005_F01_SLM_2017-11-30.mxd on 11/30/2017 10:47:45 AM

LEGEND

- Approximate Boring Location
- Approximate Site Boundary



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

SITE PLAN

Berth 191-193
Wilmington, California

Figure 2

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- mg/kg milligram per kilogram
- TPH Total Petroleum Hydrocarbons
- GRO Gasoline Range TPH
- DRO Diesel Range TPH
- ORO Oil Range TPH

Only GRO, DRO, or ORO concentrations exceeding Industrial RSLs are shown on the map.



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

TPH IN SOIL

Berth 191-193
Wilmington, California

Figure 3

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- mg/L milligram per liter
- STLC Soluble Threshold Limit Concentration
- TCLP Toxicity Characteristic Leaching Procedure

Only metal concentrations exceeding STLC or TCLP values are shown on the map.



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

CALIFORNIA HAZARDOUS WASTE IN SOIL

Berth 191-193
Wilmington, California

Figure 4

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- mg/L — milligrams per liter
- TPH — Total Petroleum Hydrocarbons
- GRO — Gasoline Range TPH
- DRO — Diesel Range TPH
- ORO — Oil Range TPH

Only GRO, DRO, or ORO concentrations exceeding Environmental Screening Levels (San Francisco Bay Regional Water Quality Control Board) are shown on the map.



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: April 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

TPH IN GROUNDWATER

Berth 191-193
Wilmington, California

Figure 5

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- mg/L milligram per liter

Only metal concentrations exceeding Environmental Screening Levels (San Francisco Bay Regional Water Quality Control Board) are shown on the map



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: April 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

METALS IN GROUNDWATER

Berth 191-193
Wilmington, California

Figure 6

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- ug/L — microgram per liter
- VOC — Volatile Organic Compound
- PCE — Tetrachloroethene
- TCE — Trichloroethene

Only VOC concentrations exceeding Environmental Screening Levels (San Francisco Bay Regional Water Quality Control Board) are shown on the map



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: April 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

VOCS IN GROUNDWATER

Berth 191-193
Wilmington, California

Figure 7

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- ug/L — microgram per liter
- VOC — Volatile Organic Compound
- PCE — Tetrachloroethene
- cis-1,2-DCE — cis-1,2-Dichloroethene

Only VOC concentrations exceeding DTSC HERO Notes 3 or 5 industrial criteria are shown on the map.



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

VOCS IN SOIL GAS

Berth 191-193
Wilmington, California

Figure 8

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- ug/L — microgram per liter
- PCE — Tetrachloroethene
- 440 — Concentration of PCE in ug/L
- ND — Non-Detect
- 10,000 ug/L — Isoconcentration Contour, queried where inferred



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

PCE IN GROUNDWATER

Berth 191-193
Wilmington, California

Figure 9

Leighton

LEGEND

- Approximate Boring Location
- Approximate Site Boundary
- ug/L — microgram per liter
- TCE — Trichloroethene
- 7,900 — Concentration of TCE in ug/L
- ND — Non-Detect
- 1,000 ug/L — Isoconcentration Contour, queried where inferred

Yacht St

LB23 0.78

LB13 1.6

LB25 3.5

LB43 ND

LB31 ND

LB34 ND

LB27 ND

LB6 ND

LB49 1.8

LB44 ND

LB48 10

LB38 ND

10 ug/L

100 ug/L

1,000 ug/L

LB40 21

LB39 890

LB1 7,900

LB36 3.8

LB42 ND

110 LB41

LB37 870

N

0 100 200

Feet

Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

Base Map: Google Earth 2016
drafted by Mark Withrow

TCE IN GROUNDWATER

Berth 191-193
Wilmington, California

Figure 10

Leighton

TABLE 1
TPH IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--
LB1-0.5	0.5	10/11/17	mg/kg	ND<0.20	**200**	**460**	**660**
LB1-2.5	2.5	10/11/17	mg/kg	ND<0.20	**8.4**	**7.1**	**15.5**
LB1-5.0	5	10/11/17	mg/kg	ND<0.20	**5.0**	**4.4**	**9.4**
LB2-0.5	0.5	10/11/17	mg/kg	ND<0.20	**720**	**1,700**	**2,420**
LB2-2.5	2.5	10/11/17	mg/kg	ND<0.20	**8.7**	**13**	**21.7**
LB2-5.0	5	10/11/17	mg/kg	ND<0.20	**8.1**	**8.3**	**16.4**
LB3-0.5	0.5	10/11/17	mg/kg	ND<0.20	**20**	**41**	**61**
LB3-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.1**	**5.4**	**11.5**
LB3-5.0	5	10/11/17	mg/kg	ND<0.20	**10**	**9.1**	**19.1**
LB4-0.5	0.5	10/11/17	mg/kg	ND<0.20	**640**	**1,900**	**2,540**
LB4-2.5	2.5	10/11/17	mg/kg	ND<0.20	**22**	**52**	**74**
LB4-3.5	3.5	10/11/17	mg/kg	ND<0.20	**70**	**140**	**210**
LB5-0.5	0.5	10/11/17	mg/kg	ND<0.21	**470**	**1,500**	**1,970**
LB5-2.5	2.5	10/11/17	mg/kg	ND<0.18	**20**	**46**	**66**
LB5-5.0	5	10/11/17	mg/kg	ND<0.21	**19**	**15**	**34**
LB6-0.5	0.5	10/12/17	mg/kg	ND<0.20	**7.1**	**16**	**23.1**
LB6-2.5	2.5	10/12/17	mg/kg	ND<0.20	**6.8**	**5.1**	**11.9**
LB6-5.0	5	10/12/17	mg/kg	ND<0.20	**1.2**	**1.6**	**2.8**
LB7-0.5	0.5	10/12/17	mg/kg	ND<0.20	**270**	**630**	**900**
LB7-2.5	2.5	10/12/17	mg/kg	ND<0.20	**92**	**130**	**222**
LB7-5.0	5	10/12/17	mg/kg	ND<0.20	**10**	**11**	**21**
LB8-0.5	0.5	10/11/17	mg/kg	ND<0.20	**180**	**580**	**760**
LB8-2.5	2.5	10/11/17	mg/kg	ND<0.20	**4.8**	**5.0**	**9.8**
LB8-5.0	5	10/11/17	mg/kg	ND<0.20	**3.7**	**3.7**	**7.4**
LB9-0.5	0.5	10/11/17	mg/kg	ND<0.22	**690**	**2,500**	**3,190**
LB9-2.5	2.5	10/11/17	mg/kg	ND<0.19	**75**	**160**	**235**
LB9-5.0	5	10/11/17	mg/kg	ND<0.17	**8.9**	**5.7**	**14.6**
LB10-0.5	0.5	10/12/17	mg/kg	ND<0.20	**840**	**3,800**	**4,640**
LB10-2.5	2.5	10/12/17	mg/kg	ND<0.20	**5.2**	**7.3**	**12.5**
LB10-5.0	5	10/12/17	mg/kg	ND<0.20	**1.3**	**1.5**	**2.8**
LB11-0.5	0.5	10/12/17	mg/kg	ND<0.20	**310**	**730**	**1,040**
LB11-2.5	2.5	10/12/17	mg/kg	ND<0.20	**8.6**	**7.9**	**16.5**
LB11-5.0	5	10/12/17	mg/kg	ND<0.20	**12**	**9.3**	**21.3**
LB12-0.5	0.5	10/11/17	mg/kg	ND<0.20	**180**	**420**	**600**
LB12-2.5	2.5	10/11/17	mg/kg	ND<0.20	**5.7**	**5.7**	**11.4**
LB12-5.0	5	10/11/17	mg/kg	ND<0.20	**6.4**	**6.6**	**13**
LB13-0.5	0.5	10/11/17	mg/kg	ND<0.20	**350**	**1,200**	**1,550**
LB13-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.9**	**8.4**	**15.3**
LB13-5.0	5	10/11/17	mg/kg	ND<0.20	**6.7**	**6.7**	**13.4**
LB14-0.5	0.5	10/11/17	mg/kg	ND<0.20	**160**	**440**	**600**
LB14-2.5	2.5	10/11/17	mg/kg	ND<0.24	**9.2**	**15**	**24.2**
LB14-5.0	5	10/11/17	mg/kg	ND<0.20	**3.6**	**3.1**	**6.7**
LB15-0.5	0.5	10/12/17	mg/kg	ND<0.20	**20**	**35**	**55**
LB15-2.5	2.5	10/12/17	mg/kg	ND<0.20	**4.0**	**4.6**	**8.6**
LB15-5.0	5	10/12/17	mg/kg	ND<0.20	**2.9**	**2.5**	**5.4**
LB16-0.5	0.5	10/12/17	mg/kg	ND<0.20	**7.7**	**10**	**17.7**

TABLE 1
TPH IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--
LB16-2.5	2.5	10/12/17	mg/kg	ND<0.20	**390**	**1,100**	**1,490**
LB16-5.0	5	10/12/17	mg/kg	ND<0.20	**63**	**130**	**193**
LB17-0.5	0.5	10/11/17	mg/kg	ND<0.20	**1,400**	**3,400**	**4,800**
LB17-2.5	2.5	10/11/17	mg/kg	ND<0.20	**11**	**9.6**	**20.6**
LB17-5.0	5	10/11/17	mg/kg	ND<0.20	**6.7**	**6.2**	**12.9**
LB18-0.5	0.5	10/11/17	mg/kg	ND<0.20	**110**	**280**	**390**
LB18-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.1**	**5.9**	**12**
LB18-5.0	5	10/11/17	mg/kg	ND<0.20	**11**	**9.8**	**20.8**
LB19-0.5	0.5	10/11/17	mg/kg	ND<0.20	**8.8**	**7.9**	**16.7**
LB19-2.5	2.5	10/11/17	mg/kg	ND<0.20	**3.3**	**3.7**	**7.0**
LB19-5.0	5	10/11/17	mg/kg	ND<0.20	**3.9**	**4.0**	**7.9**
LB20-0.5	0.5	10/11/17	mg/kg	ND<0.20	**14**	**26**	**40**
LB20-2.5	2.5	10/11/17	mg/kg	ND<0.20	**3.2**	**3.7**	**6.9**
LB20-5.0	5	10/11/17	mg/kg	ND<0.20	**4.2**	**3.1**	**7.3**
LB21-0.5	0.5	10/12/17	mg/kg	ND<0.20	**9.1**	**9.9**	**19**
LB21-2.5	2.5	10/12/17	mg/kg	ND<0.20	**20**	**17**	**37**
LB21-5.0	5	10/12/17	mg/kg	ND<0.20	**7.2**	**8.5**	**15.7**
LB22-0.5	0.5	10/12/17	mg/kg	ND<0.20	**11**	**21**	**32**
LB22-2.5	2.5	10/12/17	mg/kg	ND<0.20	**8.6**	**10**	**18.6**
LB22-5.0	5	10/12/17	mg/kg	ND<0.20	**9.6**	**9.2**	**18.8**
LB23-0.5	0.5	10/11/17	mg/kg	ND<0.20	**14**	**12**	**26**
LB23-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.3**	**7.1**	**13.4**
LB23-5.0	5	10/11/17	mg/kg	ND<0.20	**8.7**	**7.6**	**16.3**
LB24-0.5	0.5	10/11/17	mg/kg	ND<0.20	**5.1**	**6.2**	**11.3**
LB24-2.5	2.5	10/11/17	mg/kg	ND<0.20	**5.6**	**5.6**	**11.2**
LB24-5.0	5	10/11/17	mg/kg	ND<0.20	**4.3**	**4.7**	**9.0**
LB25-0.5	0.5	10/11/17	mg/kg	ND<0.20	**2.6**	**2.2**	**4.8**
LB25-2.5	2.5	10/11/17	mg/kg	ND<0.20	**2.1**	**1.9**	**4.0**
LB25-5.0	5	10/11/17	mg/kg	ND<0.20	**2.4**	**2.6**	**5.0**
LB26-0.5	0.5	10/12/17	mg/kg	ND<0.20	**11**	**14**	**25**
LB26-2.5	2.5	10/12/17	mg/kg	ND<0.20	**12**	**12**	**24**
LB26-5.0	5	10/12/17	mg/kg	ND<0.20	**20**	**18**	**38**
LB27-0.5	0.5	10/12/17	mg/kg	ND<0.20	**41**	**80**	**121**
LB27-2.5	2.5	10/12/17	mg/kg	ND<0.20	**9.5**	**11**	**20.5**
LB27-5.0	5	10/12/17	mg/kg	ND<0.20	**8.1**	**8.4**	**16.5**
LB28-0.5	0.5	10/12/17	mg/kg	ND<0.20	**530**	**930**	**1,460**
LB28-2.5	2.5	10/12/17	mg/kg	ND<0.20	**480**	**1,000**	**1,480**
LB28-5.0	5	10/12/17	mg/kg	**400**	**11,000**	**5,600**	**16,600**
LB29-0.5	0.5	10/12/17	mg/kg	ND<0.20	**54**	**100**	**154**
LB29-2.5	2.5	10/12/17	mg/kg	ND<0.20	**8.8**	**8.8**	**17.6**
LB29-5.0	5	10/12/17	mg/kg	ND<0.20	**5.4**	**5.6**	**11**
LB30-0.5	0.5	10/12/17	mg/kg	ND<0.20	**32**	**36**	**68**
LB30-2.5	2.5	10/12/17	mg/kg	ND<0.20	**220**	**450**	**670**
LB30-5.0	5	10/12/17	mg/kg	ND<0.20	**9.2**	**13**	**22.2**
LB31-0.5	0.5	10/12/17	mg/kg	ND<0.20	**230**	**490**	**720**
LB31-2.5	2.5	10/12/17	mg/kg	ND<0.20	**5.7**	**6.0**	**11.7**

TABLE 1
TPH IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--
LB31-5.0	5	10/12/17	mg/kg	ND<0.20	**9.3**	**9.4**	**18.7**
LB32-0.5	0.5	10/12/17	mg/kg	ND<0.20	**170**	**360**	**530**
LB32-2.5	2.5	10/12/17	mg/kg	ND<0.20	**6.8**	**9.5**	**16.3**
LB32-5.0	5	10/12/17	mg/kg	ND<0.20	**13**	**12**	**25**
LB33-0.5	0.5	10/12/17	mg/kg	ND<0.20	**78**	**160**	**238**
LB33-2.5	2.5	10/12/17	mg/kg	ND<0.20	**2,500**	**6,800**	**9,300**
LB33-5.0	5	10/12/17	mg/kg	ND<0.20	**9.0**	**8.1**	**17.1**
LB34-0.5	0.5	10/13/17	mg/kg	ND<0.20	**1,100**	**4,000**	**5,100**
LB34-2.5	2.5	10/13/17	mg/kg	ND<0.20	**30**	**59**	**89**
LB34-5.0	5	10/13/17	mg/kg	ND<0.20	**5.0**	**7.1**	**12.1**
LB35-0.5	0.5	10/13/17	mg/kg	ND<0.20	**2,400**	**7,800**	**10,200**
LB35-2.5	2.5	10/13/17	mg/kg	ND<0.20	**1,800**	**7,400**	**9,200**
LB35-5.0	5	10/13/17	mg/kg	ND<0.20	**6,300**	**17,000**	**23,300**

Notes:
TPH = total petroleum hydrocarbons
bgs = below ground surface
mg/kg = milligrams per kilogram
RSL = USEPA Regional Screening Level, industrial (November 2017). Most conservative value between aromatic/aliphatic
ND<0.20 = Not detected above the reporting detection limit.
GRO = Gasoline Range Petroleum Hydrocarbons
DRO = Diesel Range Petroleum Hydrocarbons
ORO = Oil Range Petroleum Hydrocarbons
Bold concentrations were detected above laboratory reporting limit
Highlighted values exceed Industrial RSL

TABLE 2
METALS IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	470	3.0	220,000	2,300	980	1,800,000	350	47,000	800	46	5,800	22,000	5,800	5,800	12	5,800	350,000
HERO HHRA Note 3 Industrial Soil Screening Criteria			mg/kg	--	--	--	210	7.3	170,000	--	--	320	4.5	--	3,100	--	1,500	--	1,000	--
Arsenic Background (DTSC, 2008)			mg/kg	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LB1-0.5	0.5	10/11/17	mg/kg	ND<0.51	**2.6**	**50**	ND<0.03	ND<0.14	**9.2**	**5.1**	**29**	**22**	**0.17**	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**23**	**40**
LB1-2.5	2.5	10/11/17	mg/kg	ND<0.51	**1.7**	**28**	ND<0.03	ND<0.14	**6.3**	**2.9**	**2.9**	ND<0.18	**0.17**	ND<0.12	**4.0**	ND<0.40	ND<0.12	ND<0.38	**13**	**14**
LB1-5.0	5	10/11/17	mg/kg	ND<0.51	**2.0**	**26**	ND<0.03	ND<0.14	**6.7**	**3.5**	**3.8**	ND<0.18	ND<0.005	ND<0.12	**4.3**	ND<0.40	ND<0.12	ND<0.38	**15**	**16**
LB2-0.5	0.5	10/11/17	mg/kg	ND<0.51	**4.0**	**93**	ND<0.03	ND<0.14	**29**	**7.2**	**670**	**110**	**0.28**	**1.9**	**22**	ND<0.40	ND<0.12	ND<0.38	**30**	**120**
LB2-2.5	2.5	10/11/17	mg/kg	ND<0.51	**1.7**	**50**	ND<0.03	ND<0.14	**7.9**	**4.0**	**5.2**	**5.8**	**0.16**	ND<0.12	**5.6**	ND<0.40	ND<0.12	ND<0.38	**15**	**32**
LB2-5.0	5	10/11/17	mg/kg	ND<0.51	**3.5**	**25**	ND<0.03	**1.2**	**7.5**	**4.8**	**4.2**	**1.7**	**0.11**	ND<0.12	**5.6**	ND<0.40	ND<0.12	ND<0.38	**15**	**17**
LB3-0.5	0.5	10/11/17	mg/kg	ND<0.51	**2.2**	**53**	ND<0.03	ND<0.14	**10**	**4.0**	**8.8**	**29**	**0.25**	ND<0.12	**7.9**	ND<0.40	ND<0.12	ND<0.38	**20**	**65**
LB3-2.5	2.5	10/11/17	mg/kg	ND<0.51	**2.0**	**29**	ND<0.03	ND<0.14	**6.1**	**3.6**	**3.5**	ND<0.18	**0.15**	ND<0.12	**4.6**	ND<0.40	ND<0.12	ND<0.38	**12**	**18**
LB3-5.0	5	10/11/17	mg/kg	ND<0.51	**1.4**	**33**	ND<0.03	ND<0.14	**6.6**	**3.6**	**3.1**	ND<0.18	**0.12**	ND<0.12	**4.8**	ND<0.40	ND<0.12	ND<0.38	**12**	**18**
LB4-0.5	0.5	10/11/17	mg/kg	**5.1**	**2.3**	**96**	ND<0.03	ND<0.14	**16**	**3.9**	**58**	**130**	**0.72**	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**18**	**160**
LB4-2.5	2.5	10/11/17	mg/kg	ND<0.51	**2.3**	**51**	ND<0.03	ND<0.14	**7.4**	**3.0**	**11**	**20**	**0.34**	ND<0.12	**6.2**	ND<0.40	ND<0.12	ND<0.38	**13**	**43**
LB4-3.5	3.5	10/11/17	mg/kg	ND<0.51	**8.0**	**94**	ND<0.03	ND<0.14	**8.5**	**4.5**	**590**	**5.0**	**0.13**	ND<0.12	**8.0**	ND<0.40	ND<0.12	ND<0.38	**23**	**43**
LB5-0.5	0.5	10/11/17	mg/kg	ND<0.51	**2.8**	**73**	ND<0.03	ND<0.14	**13**	**5.7**	**22**	**14**	ND<0.005	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**23**	**51**
LB5-2.5	2.5	10/11/17	mg/kg	**2.5**	**5.5**	**89**	ND<0.03	ND<0.14	**12**	**5.1**	**51**	**99**	**1.4**	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**23**	**160**
LB5-5.0	5	10/11/17	mg/kg	ND<0.51	**1.6**	**47**	ND<0.03	ND<0.14	**9.5**	**5.3**	**6.3**	ND<0.18	**0.18**	ND<0.12	**7.2**	ND<0.40	ND<0.12	ND<0.38	**17**	**25**
LB6-0.5	0.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**12**	ND<0.03	ND<0.14	**2.9**	**1.2**	**2.4**	**7.3**	**0.16**	ND<0.12	**2.1**	ND<0.40	ND<0.12	ND<0.38	**4.9**	**16**
LB6-2.5	2.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**9.8**	ND<0.03	ND<0.14	**2.1**	**1.2**	ND<0.19	ND<0.18	**0.16**	ND<0.12	**1.6**	ND<0.40	ND<0.12	ND<0.38	**3.7**	**6.7**
LB6-5.0	5	10/12/17	mg/kg	ND<0.51	ND<0.12	**9.1**	ND<0.03	ND<0.14	**1.7**	ND<0.07	ND<0.19	ND<0.18	**0.20**	ND<0.12	**1.2**	ND<0.40	ND<0.12	ND<0.38	**3.0**	**5.3**
LB7-0.5	0.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**110**	ND<0.03	ND<0.14	**12**	**11**	**27**	**16**	ND<0.005	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**36**	**71**
LB7-2.5	2.5	10/12/17	mg/kg	ND<0.51	**1.5**	**52**	ND<0.03	ND<0.14	**9.3**	**4.5**	**50**	**49**	**0.25**	ND<0.12	**14**	ND<0.40	**1.5**	ND<0.38	**16**	**89**
LB7-5.0	5	10/12/17	mg/kg	ND<0.51	ND<0.12	**29**	ND<0.03	ND<0.14	**6.6**	**3.5**	**4.1**	**1.0**	ND<0.005	ND<0.12	**5.0**	ND<0.40	ND<0.12	ND<0.38	**13**	**19**
LB8-0.5	0.5	10/11/17	mg/kg	ND<0.51	**5.0**	**100**	ND<0.03	ND<0.14	**17**	**6.1**	**42**	**29**	**0.21**	ND<0.12	**15**	ND<0.40	ND<0.12	ND<0.38	**27**	**170**
LB8-2.5	2.5	10/11/17	mg/kg	ND<0.51	**2.9**	**34**	ND<0.03	ND<0.14	**6.9**	**3.4**	**3.5**	**1.4**	ND<0.005	ND<0.12	**4.6**	ND<0.40	ND<0.12	ND<0.38	**15**	**18**
LB8-5.0	5	10/11/17	mg/kg	ND<0.51	**2.9**	**26**	ND<0.03	ND<0.14	**6.8**	**3.1**	**3.1**	**2.0**	ND<0.005	ND<0.12	**3.9**	ND<0.40	ND<0.12	ND<0.38	**19**	**15**
LB9-0.5	0.5	10/11/17	mg/kg	ND<0.51	**2.7**	**90**	ND<0.03	ND<0.14	**13**	**6.2**	**19**	**13**	**0.12**	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**27**	**44**
LB9-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.2**	**55**	ND<0.03	ND<0.14	**11**	**5.9**	**14**	**13**	**0.27**	ND<0.12	**9.7**	ND<0.40	ND<0.12	ND<0.38	**22**	**46**
LB9-5.0	5	10/11/17	mg/kg	ND<0.51	**2.0**	**21**	ND<0.03	ND<0.14	**5.8**	**3.1**	**2.6**	ND<0.18	**0.12**	ND<0.12	**3.8**	ND<0.40	ND<0.12	ND<0.38	**13**	**14**
LB10-0.5	0.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**21**	ND<0.03	ND<0.14	**3.1**	**1.6**	**5.7**	**5.0**	**0.21**	ND<0.12	**4.7**	ND<0.40	ND<0.12	ND<0.38	**6.3**	**18**
LB10-2.5	2.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**21**	ND<0.03	ND<0.14	**3.8**	**2.2**	**2.3**	ND<0.18	**0.51**	ND<0.12	**3.0**	ND<0.40	ND<0.12	ND<0.38	**6.5**	**11**
LB10-5.0	5	10/12/17	mg/kg	ND<0.51	ND<0.12	**11**	ND<0.03	ND<0.14	**2.4**	**1.3**	ND<0.19	ND<0.18	**0.24**	ND<0.12	**1.6**	ND<0.40	ND<0.12	ND<0.38	**3.8**	**6.4**
LB11-0.5	0.5	10/12/17	mg/kg	ND<0.51	**12**	**61**	ND<0.03	ND<0.14	**25**	**5.1**	**890**	**150**	**2.2**	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**17**	**780**
LB11-2.5	2.5	10/12/17	mg/kg	ND<0.51	**5.0**	**79**	ND<0.03	ND<0.14	**14**	**9.0**	**16**	**3.9**	ND<0.005	ND<0.12	**13**	ND<0.40	ND<0.12	ND<0.38	**32**	**38**
LB11-5.0	5	10/12/17	mg/kg	ND<0.51	**2.9**	**110**	ND<0.03	ND<0.14	**19**	**9.3**	**19**	**3.9**	ND<0.005	ND<0.12	**14**	ND<0.40	ND<0.12	ND<0.38	**33**	**46**
LB12-0.5	0.5	10/11/17	mg/kg	ND<0.51	**5.4**	**140**	ND<0.03	ND<0.14	**18**	**6.3**	**52**	**38**	**0.34**	ND<0.12	**16**	ND<0.40	ND<0.12	ND<0.38	**28**	**200**
LB12-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.4**	**30**	ND<0.03	ND<0.14	**7.9**	**2.6**	ND<0.19	**1.2**	ND<0.005	ND<0.12	**3.1**	ND<0.40	ND<0.12	ND<0.38	**28**	**13**
LB12-5.0	5	10/11/17	mg/kg	ND<0.51	**3.7**	**46**	ND<0.03	ND<0.14	**8.5**	**4.6**	**4.7**	**1.6**	**0.17**	ND<0.12	**6.0**	ND<0.40	ND<0.12	ND<0.38	**19**	**23**
LB13-0.5	0.5	10/11/17	mg/kg	ND<0.51	**4.8**	**100**	ND<0.03	ND<0.14	**15**	**5.5**	**34**	**42**	**0.62**	ND<0.12	**13**	ND<0.40	ND<0.12	ND<0.38	**27**	**210**
LB13-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.7**	**47**	ND<0.03	ND<0.14	**9.3**	**4.9**	**6.3**	**6.3**	ND<0.005	ND<0.12	**7.4**	ND<0.40	ND<0.12	ND<0.38	**22**	**31**
LB13-5.0	5	10/11/17	mg/kg	ND<0.51	**2.8**	**25**	ND<0.03	ND<0.14	**6.7**	**3.1**	**2.0**	**1.2**	ND<0.005	ND<0.12	**4.0**	ND<0.40	ND<0.12	ND<0.38	**17**	**15**
LB14-0.5	0.5	10/11/17	mg/kg	ND<0.51	**3.6**	**84**	ND<0.03	ND<0.14	**24**	**6.7**	**33**	**28**	**0.28**	ND<0.12	**16**	ND<0.40	ND<0.12	ND<0.38	**27**	**86**
LB14-2.5	2.5	10/11/17	mg/kg	ND<0.51	ND<0.12	**97**	ND<0.03	ND<0.14	**8.5**	**4.2**	**9.3**	ND<0.18	**0.15**	ND<0.12	**5.6**	ND<0.40	ND<0.12	ND<0.38	**18**	**26**
LB14-5.0	5	10/11/17	mg/kg	ND<0.51	**1.5**	**57**	ND<0.03	ND<0.14	**11**	**6.2**	**7.8**	ND<0.18	**0.21**	ND<0.12	**8.3**	ND<0.40	ND<0.12	ND<0.38	**21**	**30**
LB15-0.5	0.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**78**	ND<0.03	ND<0.14	**7.8**	**3.9**	**9.2**	**4.5**	ND<0.005	ND<0.12	**6.4**	ND<0.40	ND<0.12	ND<0.38	**15**	**31**
LB15-2.5	2.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**15**	ND<0.03	ND<0.14	**2.9**	**1.8**	**2.1**	ND<0.18	**0.22**	ND<0.12	**2.3**	ND<0.40	ND<0.12	ND<0.38	**5.6**	**8.7**
LB15-5.0	5	10/12/17	mg/kg	ND<0.51	ND<0.12	**8.3**	ND<0.03	ND<0.14	**1.7**	ND<0.07	ND<0.19	ND<0.18	**0.17**	ND<0.12	**1.2**	ND<0.40	ND<0.12	ND<0.38	**2.8**	**4.6**
LB16-0.5	0.5	10/12/17	mg/kg	ND<0.51	**2.2**	**74**	ND<0.03	ND<0.14	**6.7**	**6.0**	**27**	**5.0**	ND<0.005	ND<0.12	**7.1**	ND<0.40	ND<0.12	ND<0.38	**17**	**180**
LB16-2.5	2.5	10/12/17	mg/kg	ND<0.51	**2.5**	**78**	ND<0.03	ND<0.14	**10**	**5.6**	**19**	**33**	ND<0.005	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**18**	**160**
LB16-5.0	5	10/12/17	mg/kg	ND<0.51	**2.4**	**65**	ND<0.03	ND<0.14	**7.3**	**3.7**	**12**	**4.9**	ND<0.005	ND<0.12	**6.5**	ND<0.40	ND<0.12	ND<0.38	**14**	**39**

TABLE 2
METALS IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	470	3.0	220,000	2,300	980	1,800,000	350	47,000	800	46	5,800	22,000	5,800	5,800	12	5,800	350,000
HERO HHRA Note 3 Industrial Soil Screening Criteria			mg/kg	--	--	--	210	7.3	170,000	--	--	320	4.5	--	3,100	--	1,500	--	1,000	--
Arsenic Background (DTSC, 2008)			mg/kg	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LB17-0.5	0.5	10/11/17	mg/kg	ND<0.51	**1.4**	**75**	ND<0.03	ND<0.14	**14**	**4.0**	**16**	**51**	**0.73**	ND<0.12	**10**	ND<0.40	ND<0.12	ND<0.38	**22**	**250**
LB17-2.5	2.5	10/11/17	mg/kg	ND<0.51	**1.3**	**46**	ND<0.03	ND<0.14	**9.1**	**4.9**	**6.0**	ND<0.18	ND<0.005	ND<0.12	**6.7**	ND<0.40	ND<0.12	ND<0.38	**20**	**24**
LB17-5.0	5	10/11/17	mg/kg	ND<0.51	**1.0**	**51**	ND<0.03	ND<0.14	**8.5**	**5.1**	**5.3**	ND<0.18	**0.10**	ND<0.12	**6.6**	ND<0.40	ND<0.12	ND<0.38	**16**	**24**
LB18-0.5	0.5	10/11/17	mg/kg	ND<0.51	**2.5**	**99**	ND<0.03	ND<0.14	**35**	**7.3**	**100**	**33**	**0.23**	**3.5**	**32**	ND<0.40	ND<0.12	ND<0.38	**23**	**150**
LB18-2.5	2.5	10/11/17	mg/kg	ND<0.51	**2.1**	**28**	ND<0.03	ND<0.14	**7.0**	**3.3**	**3.1**	ND<0.18	ND<0.005	ND<0.12	**4.5**	ND<0.40	ND<0.12	ND<0.38	**16**	**16**
LB18-5.0	5	10/11/17	mg/kg	ND<0.51	**2.2**	**35**	ND<0.03	ND<0.14	**7.5**	**4.3**	**3.9**	ND<0.18	ND<0.005	ND<0.12	**5.3**	ND<0.40	ND<0.12	ND<0.38	**17**	**18**
LB19-0.5	0.5	10/11/17	mg/kg	ND<0.51	**3.1**	**37**	ND<0.03	ND<0.14	**7.5**	**3.7**	**3.6**	**1.6**	ND<0.005	ND<0.12	**4.9**	ND<0.40	ND<0.12	ND<0.38	**19**	**21**
LB19-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.4**	**20**	ND<0.03	ND<0.14	**6.0**	**2.9**	ND<0.19	**1.4**	ND<0.005	ND<0.12	**3.3**	ND<0.40	ND<0.12	ND<0.38	**17**	**14**
LB19-5.0	5	10/11/17	mg/kg	ND<0.51	**3.0**	**33**	ND<0.03	ND<0.14	**6.6**	**3.8**	**3.2**	**1.1**	ND<0.005	ND<0.12	**4.9**	ND<0.40	ND<0.12	ND<0.38	**14**	**19**
LB20-0.5	0.5	10/11/17	mg/kg	ND<0.51	**3.7**	**52**	ND<0.03	ND<0.14	**15**	**6.1**	**39**	**35**	**0.22**	ND<0.12	**21**	ND<0.40	ND<0.12	ND<0.38	**32**	**110**
LB20-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.3**	**30**	ND<0.03	ND<0.14	**6.6**	**3.4**	**3.0**	**1.8**	ND<0.005	ND<0.12	**4.5**	ND<0.40	ND<0.12	ND<0.38	**13**	**17**
LB20-5.0	5	10/11/17	mg/kg	ND<0.51	**2.9**	**36**	ND<0.03	ND<0.14	**7.1**	**3.7**	**3.1**	**2.3**	ND<0.005	ND<0.12	**4.8**	ND<0.40	ND<0.12	ND<0.38	**15**	**18**
LB21-0.5	0.5	10/12/17	mg/kg	ND<0.51	**1.3**	**20**	ND<0.03	ND<0.14	**5.6**	**2.8**	**3.1**	ND<0.18	ND<0.005	ND<0.12	**3.8**	ND<0.40	ND<0.12	ND<0.38	**12**	**14**
LB21-2.5	2.5	10/12/17	mg/kg	ND<0.51	**2.1**	**38**	ND<0.03	ND<0.14	**8.1**	**4.4**	**4.8**	ND<0.18	ND<0.005	ND<0.12	**6.2**	ND<0.40	ND<0.12	ND<0.38	**14**	**22**
LB21-5.0	5	10/12/17	mg/kg	ND<0.51	**2.4**	**65**	ND<0.03	ND<0.14	**11**	**6.5**	**8.3**	ND<0.18	ND<0.005	ND<0.12	**8.9**	ND<0.40	ND<0.12	ND<0.38	**19**	**33**
LB22-0.5	0.5	10/12/17	mg/kg	ND<0.51	**2.3**	**50**	ND<0.03	ND<0.14	**11**	**5.3**	**9.8**	**5.5**	ND<0.005	ND<0.12	**8.7**	ND<0.40	ND<0.12	ND<0.38	**19**	**97**
LB22-2.5	2.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**69**	ND<0.03	ND<0.14	**15**	**7.1**	**12**	**1.3**	**0.17**	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**23**	**40**
LB22-5.0	5	10/12/17	mg/kg	ND<0.51	**1.7**	**19**	ND<0.03	ND<0.14	**4.1**	**2.1**	**2.5**	ND<0.18	ND<0.005	ND<0.12	**2.9**	ND<0.40	ND<0.12	ND<0.38	**7.2**	**10**
LB23-0.5	0.5	10/11/17	mg/kg	ND<0.51	ND<0.12	**24**	ND<0.03	ND<0.14	**6.0**	**2.4**	**2.8**	ND<0.18	ND<0.005	ND<0.12	**3.0**	ND<0.40	ND<0.12	ND<0.38	**14**	**11**
LB23-2.5	2.5	10/11/17	mg/kg	ND<0.51	**1.1**	**36**	ND<0.03	ND<0.14	**8.4**	**4.2**	**5.9**	ND<0.18	**0.10**	ND<0.12	**5.7**	ND<0.40	ND<0.12	ND<0.38	**15**	**20**
LB23-5.0	5	10/11/17	mg/kg	ND<0.51	**1.7**	**28**	ND<0.03	ND<0.14	**5.8**	**2.9**	**2.6**	ND<0.18	ND<0.005	ND<0.12	**4.0**	ND<0.40	ND<0.12	ND<0.38	**10**	**15**
LB24-0.5	0.5	10/11/17	mg/kg	ND<0.51	**4.5**	**59**	ND<0.03	ND<0.14	**12**	**6.7**	**9.7**	**2.9**	ND<0.005	ND<0.12	**9.4**	ND<0.40	ND<0.12	ND<0.38	**28**	**35**
LB24-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.3**	**36**	ND<0.03	ND<0.14	**7.2**	**3.7**	**3.3**	**1.5**	ND<0.005	ND<0.12	**5.2**	ND<0.40	ND<0.12	ND<0.38	**14**	**19**
LB24-5.0	5	10/11/17	mg/kg	ND<0.51	**4.4**	**23**	ND<0.03	ND<0.14	**5.8**	**2.9**	ND<0.19	**1.2**	ND<0.005	ND<0.12	**3.6**	ND<0.40	ND<0.12	ND<0.38	**15**	**14**
LB25-0.5	0.5	10/11/17	mg/kg	ND<0.51	**2.8**	**18**	ND<0.03	ND<0.14	**5.8**	**2.6**	**2.4**	**1.9**	ND<0.005	ND<0.12	**3.2**	ND<0.40	ND<0.12	ND<0.38	**17**	**12**
LB25-2.5	2.5	10/11/17	mg/kg	ND<0.51	**3.4**	**48**	ND<0.03	ND<0.14	**8.6**	**5.0**	**4.7**	**1.8**	ND<0.005	ND<0.12	**6.5**	ND<0.40	ND<0.12	ND<0.38	**18**	**25**
LB25-5.0	5	10/11/17	mg/kg	ND<0.51	**2.4**	**24**	ND<0.03	ND<0.14	**5.6**	**2.6**	ND<0.19	**1.1**	ND<0.005	ND<0.12	**3.5**	ND<0.40	ND<0.12	ND<0.38	**12**	**14**
LB26-0.5	0.5	10/12/17	mg/kg	ND<0.51	**2.2**	**13**	ND<0.03	ND<0.14	**4.2**	**2.1**	**2.4**	**1.1**	ND<0.005	ND<0.12	**2.7**	ND<0.40	ND<0.12	ND<0.38	**8.0**	**11**
LB26-2.5	2.5	10/12/17	mg/kg	ND<0.51	**2.0**	**23**	ND<0.03	ND<0.14	**5.5**	**2.6**	**2.7**	ND<0.18	ND<0.005	ND<0.12	**3.8**	ND<0.40	ND<0.12	ND<0.38	**8.8**	**14**
LB26-5.0	5	10/12/17	mg/kg	ND<0.51	**1.6**	**62**	ND<0.03	ND<0.14	**9.8**	**5.8**	**7.0**	ND<0.18	ND<0.005	ND<0.12	**7.7**	ND<0.40	ND<0.12	ND<0.38	**18**	**30**
LB27-0.5	0.5	10/12/17	mg/kg	ND<0.51	**4.0**	**98**	ND<0.03	ND<0.14	**18**	**8.7**	**28**	**130**	ND<0.005	ND<0.12	**15**	ND<0.40	ND<0.12	ND<0.38	**32**	**120**
LB27-2.5	2.5	10/12/17	mg/kg	ND<0.51	**2.1**	**43**	ND<0.03	ND<0.14	**9.4**	**5.5**	**6.5**	ND<0.18	ND<0.005	ND<0.12	**7.1**	ND<0.40	ND<0.12	ND<0.38	**16**	**26**
LB27-5.0	5	10/12/17	mg/kg	ND<0.51	**1.1**	**16**	ND<0.03	ND<0.14	**3.8**	**1.8**	ND<0.19	ND<0.18	ND<0.005	ND<0.12	**2.4**	ND<0.40	ND<0.12	ND<0.38	**6.7**	**9.5**
LB28-0.5	0.5	10/12/17	mg/kg	ND<0.51	**4.2**	**45**	ND<0.03	ND<0.14	**8.3**	**4.1**	**17**	**85**	ND<0.005	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**16**	**190**
LB28-2.5	2.5	10/12/17	mg/kg	ND<0.51	**5.0**	**63**	ND<0.03	ND<0.14	**13**	**5.3**	**27**	**53**	ND<0.005	ND<0.12	**13**	ND<0.40	ND<0.12	ND<0.38	**20**	**120**
LB28-5.0	5	10/12/17	mg/kg	ND<0.51	**2.5**	**81**	ND<0.03	ND<0.14	**19**	**4.1**	**9.2**	**4.0**	ND<0.005	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**18**	**50**
LB29-0.5	0.5	10/12/17	mg/kg	ND<0.51	**2.4**	**17**	ND<0.03	ND<0.14	**4.1**	**2.2**	**10**	**10**	ND<0.005	ND<0.12	**4.0**	ND<0.40	ND<0.12	ND<0.38	**9.7**	**43**
LB29-2.5	2.5	10/12/17	mg/kg	ND<0.51	**2.1**	**18**	ND<0.03	ND<0.14	**5.1**	**2.3**	**2.1**	ND<0.18	ND<0.005	ND<0.12	**3.0**	ND<0.40	ND<0.12	ND<0.38	**9.9**	**11**
LB29-5.0	5	10/12/17	mg/kg	ND<0.51	**1.4**	**35**	ND<0.03	ND<0.14	**7.0**	**3.8**	**4.4**	ND<0.18	ND<0.005	ND<0.12	**5.3**	ND<0.40	ND<0.12	ND<0.38	**12**	**19**
LB30-0.5	0.5	10/12/17	mg/kg	ND<0.51	**1.6**	**48**	ND<0.03	ND<0.14	**10**	**4.6**	**8.3**	**5.0**	ND<0.005	ND<0.12	**6.5**	ND<0.40	ND<0.12	ND<0.38	**18**	**26**
LB30-2.5	2.5	10/12/17	mg/kg	ND<0.51	**1.6**	**82**	ND<0.03	ND<0.14	**16**	**5.4**	**91**	**180**	**0.25**	ND<0.12	**24**	ND<0.40	ND<0.12	ND<0.38	**38**	**130**
LB30-5.0	5	10/12/17	mg/kg	ND<0.51	ND<0.12	**44**	ND<0.03	ND<0.14	**10**	**7.0**	**8.1**	**3.0**	ND<0.005	ND<0.12	**7.4**	ND<0.40	ND<0.12	ND<0.38	**18**	**29**
LB31-0.5	0.5	10/12/17	mg/kg	ND<0.51	**4.3**	**63**	ND<0.03	ND<0.14	**12**	**5.2**	**110**	**110**	**0.89**	ND<0.12	**9.7**	ND<0.40	ND<0.12	ND<0.38	**21**	**140**
LB31-2.5	2.5	10/12/17	mg/kg	ND<0.51	ND<0.12	**13**	ND<0.03	ND<0.14	**3.6**	**1.8**	**2.2**	ND<0.18	ND<0.005	ND<0.12	**2.2**	ND<0.40	ND<0.12	ND<0.38	**6.8**	**8.3**
LB31-5.0	5	10/12/17	mg/kg	ND<0.51	**1.6**	**53**	ND<0.03	ND<0.14	**9.6**	**5.8**	**6.8**	ND<0.18	ND<0.005	ND<0.12	**7.8**	ND<0.40	ND<0.12	ND<0.38	**17**	**29**
LB32-0.5	0.5	10/12/17	mg/kg	ND<0.51	**3.7**	**60**	ND<0.03	ND<0.14	**13**	**6.1**	**29**	**7.5**	ND<0.005	ND<0.12	**11**	ND<0.40	ND<0.12	ND<0.38	**22**	**48**
LB32-2.5	2.5	10/12/17	mg/kg	ND<0.51	**1.6**	**28**	ND<0.03	ND<0.14	**5.9**	**3.0**	**3.3**	ND<0.18	ND<0.005	ND<0.12	**4.4**	ND<0.40	ND<0.12	ND<0.38	**10**	**19**
LB32-5.0	5	10/12/17	mg/kg	ND<0.51	**1.7**	**63**	ND<0.03	ND<0.14	**11**	**6.6**	**9.7**	ND<0.18	ND<0.005	ND<0.12	**9.1**	ND<0.40	ND<0.12	ND<0.38	**20**	**32**

TABLE 2
METALS IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	470	3.0	220,000	2,300	980	1,800,000	350	47,000	800	46	5,800	22,000	5,800	5,800	12	5,800	350,000
HERO HHRA Note 3 Industrial Soil Screening Criteria			mg/kg	--	--	--	210	7.3	170,000	--	--	320	4.5	--	3,100	--	1,500	--	1,000	--
Arsenic Background (DTSC, 2008)			mg/kg	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LB33-0.5	0.5	10/12/17	mg/kg	ND<0.51	**1.7**	**44**	ND<0.03	ND<0.14	**13**	**6.2**	**6.1**	**1.5**	ND<0.005	ND<0.12	**9.3**	ND<0.40	ND<0.12	ND<0.38	**22**	**34**
LB33-2.5	2.5	10/12/17	mg/kg	ND<0.51	**6.9**	**73**	ND<0.03	ND<0.14	**14**	**9.0**	**230**	**110**	**0.23**	ND<0.12	**20**	ND<0.40	ND<0.12	ND<0.38	**22**	**790**
LB33-5.0	5	10/12/17	mg/kg	ND<0.51	**2.0**	**55**	ND<0.03	ND<0.14	**9.7**	**6.1**	**7.9**	ND<0.18	ND<0.005	ND<0.12	**8.0**	ND<0.40	ND<0.12	ND<0.38	**19**	**29**
LB34-0.5	0.5	10/13/17	mg/kg	ND<0.51	**3.1**	**100**	ND<0.03	ND<0.14	**20**	**5.1**	**23**	**25**	ND<0.005	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**20**	**79**
LB34-2.5	2.5	10/13/17	mg/kg	ND<0.51	ND<0.12	**99**	ND<0.03	ND<0.14	**7.5**	**3.7**	**7.6**	ND<0.18	ND<0.005	ND<0.12	**5.8**	ND<0.40	ND<0.12	ND<0.38	**15**	**26**
LB34-5.0	5	10/13/17	mg/kg	ND<0.51	**1.7**	**52**	ND<0.03	ND<0.14	**8.7**	**5.2**	**6.8**	ND<0.18	ND<0.005	ND<0.12	**7.0**	ND<0.40	ND<0.12	ND<0.38	**15**	**27**
LB35-0.5	0.5	10/13/17	mg/kg	ND<0.51	ND<0.12	**71**	ND<0.03	ND<0.14	**6.7**	**4.6**	**8.1**	**4.1**	ND<0.005	ND<0.12	**15**	ND<0.40	ND<0.12	ND<0.38	**24**	**30**
LB35-2.5	2.5	10/13/17	mg/kg	ND<0.51	ND<0.12	**67**	ND<0.03	ND<0.14	**6.1**	**3.7**	**5.3**	**1.1**	ND<0.005	ND<0.12	**13**	ND<0.40	ND<0.12	ND<0.38	**19**	**74**
LB35-5.0	5	10/13/17	mg/kg	ND<0.51	ND<0.12	**39**	ND<0.03	ND<0.14	**6.7**	**3.2**	**5.1**	**8.5**	ND<0.005	ND<0.12	**12**	ND<0.40	ND<0.12	ND<0.38	**17**	**29**

Notes:
mg/kg = milligrams per kilogram
ug/kg= micrograms per kilogram
bgs = below ground surface
<2.0 = Not detected above laboratory reporting limit as shown
-- = Not analyzed or not applicable
RSL = EPA Region 9 Industrial Regional Screening Level (November 2017)
SoCal Background = DTSC Determination of a Southern California Regional Background Arsenic Concentration in Soil (DTSC, 2008)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (June 2017)
Bold concentrations were detected above laboratory reporting limit
Highlighted concentrations exceeds selected screening criteria

TABLE 3
SOIL WASTE CHARACTERIZATION
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Copper (STLC/TCLP)	Lead (STLC/TCLP)	Mercury (STLC/TCLP)
STLC limit			mg/L	25	5.0	0.2
TCLP limit			mg/L	--	5.0	0.2
LB2-0.5	0.5	10/11/2017	mg/L	2.6 D1	2.5 D1 / ND<0.047 D5	--
LB4-0.5	0.5	10/11/2017	mg/L	--	3.7 D1 / ND<0.024 D1	--
LB4-3.5	3.5	10/11/2017	mg/L	18 D1	--	--
LB5-2.5	2.5	10/11/2017	mg/L	--	5.8 D1	--
LB11-0.5	0.5	10/12/2017	mg/L	25 D1 / 0.77	2.2 D1 / ND<0.024 D1	ND<0.00023 / ND<0.00005
LB17-0.5	0.5	10/11/2017	mg/L	--	7.0 D1	--
LB27-0.5	0.5	10/12/2017	mg/L	--	1.9 D1 / 0.33 D1	--
LB28-0.5	0.5	10/12/2017	mg/L	--	4.8 D1	--
LB28-2.5	2.5	10/12/2017	mg/L	--	1.0 D1	--
LB30-2.5	2.5	10/12/2017	mg/L	--	2.2 D1 / ND<0.024 D1	--
LB31-0.5	0.5	10/12/2017	mg/L	--	13 D1 / 0.33 D1	--
LB33-2.5	2.5	10/12/2017	mg/L	--	11 D1 / ND<0.024 D1	--

mg/kg = milligrams per kilogram
ug/kg= micrograms per kilogram
bgs = below ground surface
<2.0 = Not detected above laboratory reporting limit as shown
-- = Not analyzed or not applicable
D1 = Sample required dilution due to possible matrix interference
D5 = Sample diluted due to failing internal standard on the original run
STLC = Soluble Threshold Limit Concentration
TCLP = Toxicity Characteristic Leaching Procedure
Highlighted concentrations exceeds selected screening criteria

TABLE 4
VOCs in Soil
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Carbon Disulfide	Tetrachloroethene
USEPA RSL Industrial Soil			ug/kg	3,500,000	100,000
HERO HHRA Note 3 Industrial Soil Screening Criteria			ug/kg	--	2,700
LB2-0.5	0.5	10/11/2017	ug/kg	**5.3**	ND<1.5
LB2-2.5	2.5	10/11/2017	ug/kg	**7.4 H7**	ND<1.4 H7
LB4-0.5	0.5	10/11/2017	ug/kg	ND<3.5	**27**
LB4-2.5	2.5	10/11/2017	ug/kg	ND<3.3	ND<1.5
LB5-0.5	0.5	10/11/2017	ug/kg	ND<3.2	ND<1.4
LB5-2.5	2.5	10/11/2017	ug/kg	ND<3.7	ND<1.7
LB9-0.5	0.5	10/11/2017	ug/kg	ND<3.3	ND<1.5
LB9-2.5	2.5	10/11/2017	ug/kg	ND<3.7	ND<1.7
LB10-0.5	0.5	10/12/2017	ug/kg	ND<3.4	ND<1.5
LB10-2.5	2.5	10/12/2017	ug/kg	**13**	ND<1.4
LB11-0.5	0.5	10/12/2017	ug/kg	ND<3.4	ND<1.5
LB11-2.5	2.5	10/12/2017	ug/kg	ND<3.4	ND<1.5
LB13-0.5	0.5	10/11/2017	ug/kg	ND<3.3	ND<1.5
LB13-2.5	2.5	10/11/2017	ug/kg	ND<3.8	ND<1.7
LB16-2.5	2.5	10/12/2017	ug/kg	ND<3.4	ND<1.5
LB16-5.0	5	10/12/2017	ug/kg	ND<3.3	ND<1.5
LB17-0.5	0.5	10/11/2017	ug/kg	**12**	ND<1.6
LB17-2.5	2.5	10/11/2017	ug/kg	ND<3.9	ND<1.7
LB28-0.5	0.5	10/12/2017	ug/kg	ND<3.7	ND<1.7
LB28-2.5	2.5	10/12/2017	ug/kg	ND<3.5	ND<1.5
LB28-5.0	5	10/12/2017	ug/kg	ND<3.9	ND<1.7
LB33-2.5	2.5	10/12/2017	ug/kg	ND<3.3	ND<1.5
LB33-5.0	5	10/12/2017	ug/kg	ND<3.7	ND<1.6
LB34-0.5	0.5	10/13/2017	ug/kg	ND<3.9	ND<1.7
LB34-2.5	2.5	10/13/2017	ug/kg	ND<4.8	ND<2.1
LB34-5.0	5	10/13/2017	ug/kg	ND<4.3	ND<1.9
LB35-0.5	0.5	10/13/2017	ug/kg	ND<4.5	ND<2.0
LB35-2.5	2.5	10/13/2017	ug/kg	ND<4.5	ND<2.0
LB35-5.0	5	10/13/2017	ug/kg	ND<3.9	ND<1.7

Notes:
VOCs = volatile organic compounds
bgs = below ground surface
ug/kg = micrograms per kilogram
ND<0.88 = Not detected above the laboratory reporting limit
H7 = The sample was logged past hold time
RSL = EPA Region 9 Industrial Regional Screening Level (November 2017)
HERO Note 3 = Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Number 3 (June 2017)

TABLE 5
PAHs IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	2-Methylnaphthalene	Benzo(b)fluoranthene	Fluoranthene	Pyrene
USEPA RSL Industrial Soil			ug/kg	3,000,000	21,000	30,000,000	23,000,000
LB2-0.5	0.5	10/11/17	ug/kg	ND<60 D1	ND<220 D1	ND<45 D1	ND<51 D1
LB2-2.5	2.5	10/11/17	ug/kg	ND<1.2 H4	**10 H4**	**12 H4**	**11 H4**
LB4-0.5	0.5	10/11/17	ug/kg	ND<60 D1	ND<220 D1	ND<45 D1	ND<51 D1
LB4-2.5	2.5	10/11/17	ug/kg	ND<12 D1	ND<43 D1	ND<9.0 D1	ND<10 D1
LB5-0.5	0.5	10/11/17	ug/kg	ND<60 D1	ND<220 D1	ND<45 D1	ND<51 D1
LB5-2.5	2.5	10/11/17	ug/kg	ND<3.0	ND<11	ND<2.2	ND<2.6
LB9-0.5	0.5	10/11/17	ug/kg	ND<60 D1	ND<220 D1	ND<45 D1	ND<51 D1
LB9-2.5	2.5	10/11/17	ug/kg	ND<30 D1	ND<110 D1	ND<22 D1	ND<26 D1
LB10-0.5	0.5	10/12/17	ug/kg	ND<120 D1	ND<430 D1	ND<90 D1	ND<100 D1
LB10-2.5	2.5	10/12/17	ug/kg	ND<0.60	ND<2.2	ND<0.45	ND<0.51
LB11-0.5	0.5	10/12/17	ug/kg	ND<12 D1	ND<43 D1	ND<9.0 D1	ND<10 D1
LB11-2.5	2.5	10/12/17	ug/kg	ND<0.60	ND<2.2	ND<0.45	ND<0.51
LB13-0.5	0.5	10/11/17	ug/kg	ND<60 D1	ND<220 D1	ND<45 D1	ND<51 D1
LB13-2.5	2.5	10/11/17	ug/kg	ND<0.60	ND<2.2	ND<0.45	ND<0.51
LB16-2.5	2.5	10/12/17	ug/kg	ND<30 D1	ND<110 D1	ND<22 D1	ND<26 D1
LB16-5.0	5	10/12/17	ug/kg	ND<30 D1	ND<110 D1	ND<22 D1	ND<26 D1
LB17-0.5	0.5	10/11/17	ug/kg	ND<30 D1	ND<110 D1	ND<22 D1	ND<26 D1
LB17-2.5	2.5	10/11/17	ug/kg	ND<0.60	ND<2.2	ND<0.45	ND<0.51
LB28-0.5	0.5	10/12/17	ug/kg	ND<30 D1	ND<110 D1	ND<22 D1	ND<26 D1
LB28-2.5	2.5	10/12/17	ug/kg	ND<120 D1	ND<430 D1	ND<90 D1	ND<100 D1
LB28-5.0	5	10/12/17	ug/kg	**7,800**	ND<43	ND<9.0	ND<10
LB33-2.5	2.5	10/12/17	ug/kg	ND<120 D1	ND<430 D1	ND<90 D1	ND<100 D1
LB33-5.0	5	10/12/17	ug/kg	ND<0.60	ND<2.2	ND<0.45	ND<0.51
LB34-0.5	0.5	10/13/17	ug/kg	ND<300 D1	ND<1100 D1	ND<220 D1	ND<260 D1
LB34-2.5	2.5	10/13/17	ug/kg	ND<0.60	ND<2.2	ND<0.45	ND<0.51
LB35-0.5	0.5	10/13/17	ug/kg	ND<300 D1	ND<1100 D1	ND<220 D1	ND<260 D1
LB35-2.5	2.5	10/13/17	ug/kg	ND<600 D1	ND<2200 D1	ND<450 D1	ND<510 D1
LB35-5.0	5	10/13/17	ug/kg	ND<750 D1	ND<2700 D1	ND<560 D1	ND<640 D1

Notes:
PAHs = Polynuclear aromatic hydrocarbons
bgs = below ground surface
ug/kg = micrograms per kilogram
ND<0.88 = Not detected above the laboratory reporting limit
D1 = Sample required dilution due to possible matrix interference
H4 = Change order analysis requested past the sample holding time
RSL = EPA Region 9 Industrial Regional Screening Level (November 2017)

TABLE 6
PCBs IN SOIL
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Aroclor 1254	Aroclor 1260
USEPA RSL Industrial Soil			mg/kg	0.970	0.990
LB2-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	ND<0.0046
LB4-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	**0.079**
LB5-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	ND<0.0046
LB9-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	ND<0.0046
LB10-0.5	0.5	10/12/2017	mg/kg	ND<0.0046	**0.21**
LB11-0.5	0.5	10/12/2017	mg/kg	**0.870**	ND<0.0046
LB13-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	**0.021**
LB16-2.5	2.5	10/12/2017	mg/kg	**0.110**	ND<0.0046
LB17-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	**0.032**
LB19-0.5	0.5	10/11/2017	mg/kg	ND<0.0046	ND<0.0046
LB28-5.0	5	10/12/2017	mg/kg	ND<0.0046	ND<0.0046
LB33-2.5	2.5	10/12/2017	mg/kg	ND<0.0091	ND<0.0091
LB34-0.5	0.5	10/13/2017	mg/kg	ND<0.0046	ND<0.0046
LB35-0.5	0.5	10/13/2017	mg/kg	ND<0.046 D1	ND<0.046 D1
LB35-5.0	5	10/13/2017	mg/kg	ND<0.0091	ND<0.0091
LB45-0.5	0.5	12/13/2017	mg/kg	<0.016	**0.068**
LB46-0.5	0.5	12/13/2017	mg/kg	<0.016	<0.016
LB47-0.5	0.5	12/13/2017	mg/kg	<0.016	**0.180**

Notes:
PCBs = Polychlorinated Biphenyls
bgs = below ground surface
mg/kg = milligrams per kilogram
ND<4.6 = Not detected above the reporting limit.
D1 = Sample required dilution due to possible matrix interference
RSL = EPA Region 9 Industrial Regional Screening Level (November 2017)

TABLE 7
DIOXINS AND FURANS
Berth 191-193
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total Toxic Equivalency
Toxic Equivalency Factor				1	1	0.1	0.1	0.1	0.01	0.0003	N/A	N/A	N/A	N/A	0.1	0.03	0.3	0.1	0.1	0.1	0.1	0.01	0.01	0.0003	N/A	N/A	N/A	N/A	N/A
LB17-0.5	0.5	10/11/17	pg/g	ND<0.172	ND<0.327	ND<0.327	7.34	ND<0.315	245	2150	ND<0.480	8.34	80.9	564	ND<0.0886	ND<0.412	2.82 J	ND<0.518	3.47 J	ND<0.319	ND<0.425	22.6	ND<0.378	86.7	26.8	44.1 / 50.5 EMPC	48.1	66.7	5.27*

Notes:
pg/g = picograms per gram
ND <0.327= Not detected above estimated detection limit
J = Estimated concentration found below the lower quantitation limit but greater than zero.
EMPC = Estimated Maximum possible concentration due to ion abundance ratio failure
* = The total toxic equivalency of 5.27 is below the DTSC Human and Ecological Risk Office Human Health Risk Assessment Note 2 (April 2017) conservative value of 22 pg/g for industrial/commercial workers.

TABLE 8
TPH IN GROUNDWATER
Berth 191-193
Wilmington, California

Sample ID	Date	Units	GRO	DRO	ORO
ESLs Saltwater Tox.		mg/L	3.7	0.64	0.64
LB1-GW	10/11/17	mg/L	**9.9**	**0.93**	**0.38**
LB6-GW	10/12/17	mg/L	**0.09**	**0.47**	**0.43**
LB13-GW	10/11/17	mg/L	ND<0.05	**0.47**	**0.42**
LB23-GW	10/11/17	mg/L	ND<0.05	**0.33**	**0.38**
LB25-GW	10/11/17	mg/L	**0.08**	**0.23**	**0.16**
LB27-GW	10/12/17	mg/L	ND<0.05	**0.35**	**0.27**
LB31-GW	10/12/17	mg/L	ND<0.05	**0.38**	**0.33**
LB34-GW	10/13/17	mg/L	ND<0.05	**0.15**	**0.10**

Notes:
TPH = total petroleum hydrocarbons
mg/L = milligrams per liter
GRO = Gasoline Range Petroleum Hydrocarbons
DRO = Diesel Range Petroleum Hydrocarbons
ORO = Oil Range Petroleum Hydrocarbons
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2016) for saltwater aquatic habits
ND<0.05 = Not detected above laboratory reporting limit
-- = not applicable
Highlighted values exceed Port Screening Criteria

TABLE 9
METALS IN GROUNDWATER
Berth 191-193
Wilmington, California

Sample ID	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
ESLs Saltwater Tox.		mg/L	0.5	0.036	--	--	0.0093	--	--	0.0031	0.0081	0.00094	--	0.0082	0.071	0.00034	0.21	--	0.081
LB1-GW	10/11/17	mg/L	ND<0.0088	ND<0.0078	**0.11**	ND<0.0016	ND<0.0024	**0.015**	ND<0.0016	**0.011**	ND<0.0047	ND<0.00005	**0.027**	**0.011**	ND<0.0093	ND<0.0024	ND<0.0085	**0.011**	ND<0.0057
LB6-GW	10/12/17	mg/L	ND<0.0088	ND<0.0078	**0.098**	ND<0.0016	ND<0.0024	**0.0087**	**0.0035**	**0.0090**	ND<0.0047	ND<0.00005	**0.022**	**0.0067**	ND<0.0093	ND<0.0024	ND<0.0085	**0.018**	ND<0.0057
LB13-GW	10/11/17	mg/L	ND<0.0088	ND<0.0078	**0.12**	ND<0.0016	ND<0.0024	**0.0094**	ND<0.0016	ND<0.0038	ND<0.0047	ND<0.00005	**0.0093**	**0.0060**	ND<0.0093	ND<0.0024	ND<0.0085	**0.013**	ND<0.0057
LB23-GW	10/11/17	mg/L	ND<0.0088	ND<0.0078	**0.089**	ND<0.0016	ND<0.0024	ND<0.0020	ND<0.0016	ND<0.0038	ND<0.0047	ND<0.00005	**0.0087**	ND<0.0046	ND<0.0093	ND<0.0024	ND<0.0085	**0.0036**	ND<0.0057
LB25-GW	10/11/17	mg/L	**0.013**	ND<0.0078	**0.062**	ND<0.0016	ND<0.0024	**0.012**	ND<0.0016	ND<0.0038	ND<0.0047	ND<0.00005	**0.021**	**0.0083**	ND<0.0093	ND<0.0024	ND<0.0085	**0.0043**	ND<0.0057
LB27-GW	10/12/17	mg/L	ND<0.0088	**0.013**	**0.31**	ND<0.0016	ND<0.0024	**0.022**	**0.0086**	**0.016**	ND<0.0047	ND<0.00005	ND<0.0030	**0.016**	ND<0.0093	ND<0.0024	ND<0.0085	**0.034**	**0.090**
LB31-GW	10/12/17	mg/L	ND<0.0088	ND<0.0078	**0.047**	ND<0.0016	ND<0.0024	ND<0.0020	ND<0.0016	ND<0.0038	ND<0.0047	ND<0.00005	**0.0059**	ND<0.0046	ND<0.0093	ND<0.0024	ND<0.0085	**0.0067**	ND<0.0057
LB34-GW	10/13/17	mg/L	ND<0.0088	ND<0.0078	**0.13**	ND<0.0016	ND<0.0024	ND<0.0020	**0.0034**	ND<0.0038	ND<0.0047	ND<0.00005	ND<0.0030	ND<0.0046	ND<0.0093	ND<0.0024	ND<0.0085	ND<0.0022	ND<0.0057

Notes:
mg/L = milligrams per liter
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2016) for saltwater aquatic habits
ND<0.13 = Not detected above laboratory reporting limit
-- = not applicable
Highlighted values exceed Port Screening Criteria

TABLE 10
VOCs IN GROUNDWATER
Berth 191-193
Wilmington, California

Sample ID	Date	Units	1,1-Dichloroethene	1,2-Dichloroethane	Benzene	Bromodichloromethane	Bromoform	Carbon disulfide	cis-1,2-Dichloroethene	Dibromochloromethane	MTBE	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
ESLs Saltwater Tox.		ug/L	22,000	11,000	350	3,200	3,200	--	22,000	3,200	8,000	230	22,000	200	--
LB1-GW	10/11/17	ug/L	ND<14	ND<20	ND<10	ND<16	ND<7.0	ND<11	**3,300**	ND<5.3	ND<4.6	**19,000**	**210**	**7,900**	ND<13
LB6-GW	10/12/17	ug/L	ND<0.28	ND<0.39	**0.81**	ND<0.32	ND<0.14	ND<0.21	**78**	ND<0.11	**19**	ND<0.18	**33**	ND<0.15	**43**
LB13-GW	10/11/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	**0.61**	ND<0.11	ND<0.09	**2.0**	ND<0.15	**1.6**	ND<0.25
LB23-GW	10/11/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	ND<0.39	ND<0.11	ND<0.09	**1.3**	ND<0.15	**0.78**	ND<0.25
LB25-GW	10/11/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	**1.5**	ND<0.11	ND<0.09	**6.2**	ND<0.15	**3.5**	ND<0.25
LB27-GW	10/12/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	ND<0.39	ND<0.11	ND<0.09	ND<0.18	ND<0.15	ND<0.15	ND<0.25
LB31-GW	10/12/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	ND<0.39	ND<0.11	ND<0.09	ND<0.18	ND<0.15	ND<0.15	ND<0.25
LB34-GW	10/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
LB36-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**7.6**	ND<0.5	**1.3**	**2.6**	**0.50**	**3.8**	**0.73**
LB37-GW	12/13/17	ug/L	**7.2**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**2,400**	ND<0.5	ND<0.5	**440**	**230**	**870**	**4.0**
LB38-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	**0.70**	**4.2**	ND<0.5	**24**	**2.7**	ND<0.5	ND<0.5	**0.78**	ND<0.5	**2.7**
LB39-GW	12/13/17	ug/L	**9.6**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**4,900**	ND<0.5	**1.2**	**380**	**220**	**890**	**7.7**
LB40-GW	12/13/17	ug/L	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.5**	**380**	ND<1.0	**2.0**	**12**	**19**	**21**	**11**
LB41-GW	12/13/17	ug/L	**13**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**8,500**	ND<0.5	ND<0.5	**40**	**290**	**110**	**57**
LB42-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**4.7**	ND<0.5	ND<0.5	ND<0.5	ND<0.5
LB43-GW	12/13/17	ug/L	ND<0.5	**1.1**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**5.9**	ND<0.5	**15**	ND<0.5	ND<0.5	ND<0.5	**2.4**
LB44-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**17**	ND<0.5	**6.3**	ND<0.5	ND<0.5	ND<0.5	ND<0.5
LB48-GW	12/13/17	ug/L	**2.8**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**1,100**	ND<0.5	ND<0.5	**7.6**	**38**	**10**	**8.3**
LB49-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**180**	ND<0.5	**6.8**	**0.52**	**35**	**1.8**	**57**

Notes:
VOCs = volatile organic compounds
MTBE = methyl tertiary butyl ether
ug/L = micrograms per liter
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2016) for saltwater aquatic habits
ND<0.13 = Not detected above laboratory reporting limit
Highlighted values exceed Port Screening Criteria

TABLE 11
PAHs IN GROUNDWATER
Berth 191-193
Wilmington, California

Sample ID	Date	Units	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
ESLs Saltwater Tox.		ug/L	30	40	30	--	--	--	--	--	--	--	--	8.0	30	--	240	--	--
LB1-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB6-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB13-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB23-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB25-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB27-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB31-GW	10/13/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB34-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02

Notes:
PAHs = polynuclear aromatic hydrocarbons
ug/L = micrograms per liter
ESLs Saltwater Tox. = Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (February 2016) for saltwater aquatic habits
ND<0.13 = Not detected above laboratory reporting limit
-- = not applicable

TABLE 12
VOCs IN SOIL GAS
Berth 191-193
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	Benzene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	2-Chlorotoluene	4-Chlorotoluene	Dichlorodifluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene	4-Isopropyltoluene	n-Propylbenzene	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride	m,p-Xylene	o-Xylene
USEPA RSL Industrial Air*				3.2	520	--	--	--	1.06	--	--	880	1,760	--	--	9.8	3,600	--	8,800	8,800	0.42	94	44,000	1.54	6	--	520	520	5.6	880	880
DTSC HERO Note 3 industrial*				0.84	--	--	--	--	--	--	--	--	620	70	700	--	--	--	--	7,800	--	4.0	2,600	--	--	10,800	--	--	0.32	--	--
DTSC HERO Note 5 industrial*				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	--	--	--	--	--	--
LB1-4	10/17/2017	4.0	ug/L	**0.024**	<0.008	<0.008	<0.008	<0.008	**0.167**	<0.008	<0.008	**0.027**	**0.024**	**30.6**	**3.56**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**148**	**0.055**	<0.008	**23.2**	**0.016**	**0.008**	<0.008	<0.008	<0.008	<0.008
LB6-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**2.15**	**0.445**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**3.20**	<0.008	<0.008
LB13-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.035**	<0.008	<0.008	**0.026**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB23-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB23-4 REP	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB25-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.262**	<0.008	<0.008	**0.021**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB27-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.011**	<0.008	**0.030**	<0.008	<0.008	<0.008	<0.008	<0.008	**0.102**	**0.066**	<0.008	**0.029**	<0.008	**0.038**	<0.008	<0.008	**0.136**	**0.038**
LB31-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB34-4	10/17/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.274**	**0.038**	<0.008	**0.029**	<0.008	<0.008	<0.008	<0.008	**0.016**	<0.008
LB36-4'	12/18/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.010**	<0.008	<0.008	<0.008	**0.019**	**0.011**	**0.771**	**0.012**	**0.009**	**0.011**	**0.141**	**0.081**	**0.304**	<0.008	**3.59**	**0.234**	**0.010**	<0.008	**0.046**	**0.019**
LB37-4'	12/18/2017	4.0	ug/L	No flow, water in probe																											
LB38-3'	12/18/2017	3.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.011**	<0.008	<0.008	<0.008	<0.008	<0.008	**0.106**	<0.008	<0.008	<0.008	<0.008	**0.016**	<0.008	<0.008	**3.71**	**0.036**	<0.008	<0.008	<0.008	<0.008
LB39-4'	12/18/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	**0.026**	<0.008	<0.008	**0.010**	**0.056**	**70.1**	**2.67**	<0.008	<0.008	**0.023**	<0.008	<0.008	<0.008	**8.75**	**0.011**	**0.015**	**18.4**	<0.008	<0.008	<0.008	**0.014**	<0.008	<0.008
LB40-4'	12/18/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.009**	<0.008	**0.218**	**0.012**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.243**	<0.008	**0.012**	**0.146**	**0.010**	<0.008	<0.008	<0.008	<0.008	<0.008
LB41-4'	12/18/2017	4.0	ug/L	No flow, water in probe																											
LB42-4'	12/18/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.110**	<0.008	<0.008	<0.008	**0.206**	<0.008	<0.008	<0.008	**0.066**	**0.010**	<0.008	**0.014**	**0.052**	**0.066**	<0.008	<0.008	<0.008	<0.008
LB42-4' REP	12/18/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.133**	<0.008	<0.008	<0.008	**0.206**	<0.008	<0.008	<0.008	**0.075**	**0.012**	<0.008	**0.030**	**0.054**	**0.070**	<0.008	<0.008	<0.008	<0.008
LB43-4'	12/18/2017	4.0	ug/L	<0.008	**0.009**	**0.013**	**0.014**	**0.013**	<0.008	**0.009**	**0.010**	**0.011**	<0.008	<0.008	<0.008	**0.012**	**0.012**	**0.026**	**0.014**	<0.008	<0.008	**0.011**	**0.021**	**0.118**	<0.008	**0.009**	**0.021**	**0.013**	<0.008	**0.021**	**0.011**
LB44-4'	12/18/2017	4.0	ug/L	No flow, water in probe																											
LB48-4'	12/18/2017	4.0	ug/L	No flow, water in probe																											
LB49-4'	12/18/2017	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.100**	<0.008	<0.008	<0.008	**0.014**	<0.008	<0.008	<0.008	**0.090**	<0.008	<0.008	**0.064**	<0.008	<0.008	<0.008	**0.021**	<0.008	<0.008

Notes:

*= Screening levels are adjusted using a 0.0005 attenuation factor for future commerical/industrial use are from Table 2 of the 2011 Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)

ug/L = micrograms per liter

bgs = below ground surface

APPENDIX A

References

APPENDIX A

References

California Code of Regulations, Title 22, Division 4.5, Chapter 11, Article 3, Characteristics of Hazardous Waste.

California Department of Water Resources (DWR), 1961, Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Bulletin No. 104.

Department of Toxic Substance Control, Determination of a Southern California Regional Background Arsenic Concentration in Soil, 2008.

Department of Toxic Substances Control, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), October 2011.

Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note Number: 3, DTSC-modified Screening Levels, February 2018.

Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note Number: 2, Soil Remedial Goals for Dioxins and Dioxin-like Compounds for Consideration at California Hazardous Waste Sites, April 2017.

Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note Number: 5, Health-based Indoor Air Screening Criteria for Trichloroethylene, August 23, 2014.

Department of Toxic Substances Control Los Angeles Regional Water Quality Control Board and San Francisco Regional Water Quality Control Board, 2012, Advisory – Active Soil Gas Investigations, July 2015.

San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, February 2016.

United States Environmental Protection Agency, 2017, Region 9 Residential Regional Screening Levels, November 2017.

APPENDIX B

Boring Permit

ENVIRONMENTAL HEALTH

Drinking Water Program

5050 Commerce Drive, Baldwin Park, CA 91706
Telephone: (626) 430-5420 • Facsimile: (626) 813-3013 • Email: waterquality@ph.lacounty.gov
http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm

SR0120054
Berth 191-193, Canal Street & Yacht Street, Wilmington, CA 90744
Work Plan Approval

TO BE COMPLETED BY APPLICANT:

WORK SITE ADDRESS	CITY	ZIP	EMAIL ADDRESS FOR WELL PERMIT APPROVAL
Berth 191-193, Canal Street & Yacht Street	Wilmington	90744	bmcculloch@leightongroup.com

NOTICE:

- WORK PLAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).
- WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- WORK PLAN APPROVALS ARE LIMITED TO COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC.
- ALL FIELD WORK MUST BE CONDUCTED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL GEOLOGIST LICENSED IN THE STATE OF CALIFORNIA.
- THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- ***ONCE APPROVED NOTIFY INSPECTOR AT ytaye@ph.lacounty.gov PREFERABLY 3 BUSINESS DAYS BEFORE WORK IS SCHEDULED TO BEGIN.***

TO BE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM:

X WORK PLAN APPROVED (35 soil borings) **DATE: September 26, 2017**

ADDITIONAL APPROVAL CONDITIONS:

- Provide the start of project date and time via my email listed above.
- Ensure to backfill with appropriate sealing material in accordance with the California Well Standards Bulletins 74-90 and 74-81 within 72 hours.
- Exploration holes must comply with all applicable requirements published in the California Well Standards (Bulletins 74-81 and 74-90).

REHS NO. 7115

Yonas Taye, REHS

□ ANNULAR SEAL FINAL INSPECTION REQUIRED

DATE ACCEPTED:	REHS signature

□ WELL COMPLETION LOG REQUIRED

DATE ACCEPTED:	REHS signature

□ WATER QUALITY—BACTERIOLOGICAL STANDARDS REQUIRED

DATE ACCEPTED:	REHS signature

□ WATER QUALITY—CHEMICAL STANDARDS REQUIRED

DATE ACCEPTED:	REHS signature

□ WATER SUPPLY YIELD REQUIRED

DATE ACCEPTED:	REHS signature

□ OTHER REQUIREMENT

DATE ACCEPTED:	REHS signature

APPENDIX C

Boring Logs

SOIL GAS PROBE BORING/CONSTRUCTION LOG

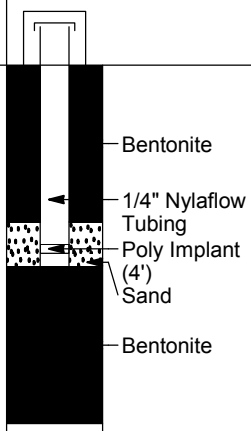
PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB1
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER 5.50 ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly Silty Sand.	0.3
			LB1-0.5		0	ML		@0.5': SILT (ML), olive gray, moist, soft, no staining or odor	2.5
			LB1-2.5		0	SM		@2.5': Silty SAND (SM), gray, moist, medium dense, fine grained sand, trace shell fragments, no staining or odor	5.0
5			LB1-5.0		0	SP		@5.0': Poorly Graded SAND (SP), gray, moist, medium dense, no staining or odor ▼	
					0			@5.5': Poorly Graded SAND (SP) with silt, dark gray, wet, medium dense, some shell fragements, no staining or odor	8.0
10									
15									
20									
25									
30									

Notes:
Total Depth = 8 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.

WELL DIAGRAM



SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB2
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly Silty Sand.	0.3	
			LB2-0.5		0	ML		@0.5'-Sandy SILT (ML), brown, moist, very stiff, fine grained sand, no staining or odor		
			LB2-2.5		0	ML		@2.5'-Sandy SILT (ML), brown, moist, very stiff, fine grained sand, no staining or odor		
5			LB2-5.0		0	SP		@5.0': Poorly Graded SAND (SP) with silt, brown, moist, very dense, fine grained sand, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB3
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly Silty Sand.	0.3	
			LB3-0.5		0	SP		@0.5': Poorly Graded SAND (SP) with silt, brown, moist, dense, fine to medium grained sand, no staining or odor		
			LB3-2.5		0			@2.5': Poorly Graded SAND (SP) with silt, gray brown, moist, dense, fine to medium grained sand, no staining or odor	4.7	
5			LB3-5.0		0	ML		@5'-Sandy SILT (ML), brown, moist, very stiff, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB4
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 3.5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly Silty Sand.	0.3	
			LB4-0.5		0	SP		@0.5': Poorly Graded SAND (SP) with silt, dark brown, moist, dense, fine to medium grained, staining and chemical odor		
			LB4-2.5		0			@2.5': Asphaltic type material and Poorly Graded SAND (SP) with silt, brown, moist, dense, possible hydrocarbon staining and odor	3.5	
5			LB4-5.0		1.5			@3.5'-Refusal-two borings were attempted. Possible riprap boundary.		
10										
15										
20										
25										
30										

Notes:
Total Depth = 3.5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB5
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly Sand.	0.3	
			LB5-0.5		0	SW		@0.5':Gravelly SAND (SW), gray brown, moist, dense, fine to medium grained, no odor or staining	2.5	
			LB5-2.5		0	ML		@2.5': Sandy SILT (ML), dark brown, moist, stiff, fine grained sand, no staining or odor	4.7	
5			LB5-5.0		0	SP		@5.0': Poorly Graded SAND (SP), gray, moist, dense, fine grained sand, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

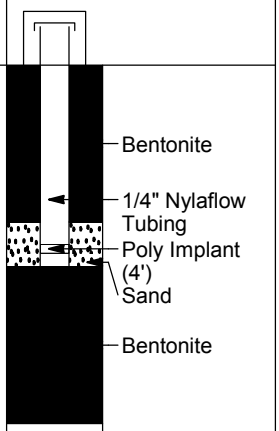
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB6
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER 5.50 ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SILT	0.3
			LB6-0.5		0	SM		@0.5':Silty SAND (SM), gray, moist, dense, fine to medium grained, no odor or staining	
			LB6-2.5		0	SM		@2.5': Silty SAND (SM), gray, moist, dense, fine grained sand, no staining or odor	
5			LB6-5.0		0	SM		@ 5.0': Silty SAND (SM), gray, moist, dense, fine grained sand, no staining or odor @ 5.5': Silty SAND (SM), dark gray-black, wet, dense, fine grained sand, no staining or odor	8.0
10								**Notes:** Total Depth = 8 feet bgs Groundwater was encountered at 5.5 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.	
15									
20									
25									
30									

WELL DIAGRAM



SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB7
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			LB7-0.5		0			@Surface: Gravel @0.5': Gravelly SILT (ML), black, moist, soft, no odor or staining	0.3	
			LB7-2.5		0			@2.5': Sandy SILT (ML), gray brown, moist, stiff, no staining or odor	4.7	
5			LB7-5.0		0	SM		@5.0': Silty SAND (SM), gray brown, moist, stiff, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB8
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB8-0.5		0	ML		@0.5': SILT (ML), light gray, moist, soft, no odor or staining		
			LB8-2.5		0	ML		@2.5': Sandy SILT (ML), dark gray, moist, stiff, no staining or odor		
5			LB8-5.0		0	ML		@5.0': Sandy SILT (SM), dark gray, moist, stiff, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB9
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SAND	0.3	
			LB9-0.5		0	ML		@0.5':Gravelly SILT (ML), light brown, dry, stiff, no odor or staining	2.5	
			LB9-2.5		0	SM		@2.5': Silty SAND (SM) with gravel, dark brown, moist, medium dense, fine grained sand, no staining or odor	4.7	
5			LB9-5.0		0	SP		@5.0': Poorly Graded SAND (SP), gray, moist, medium dense, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB10
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			LB10-0.5		0			@Surface: Gravelly SILT @0.5':Gravelly SILT (SW), gray, moist, stiff, no odor or staining	0.3	
			LB10-2.5		0	SM		@2.5': Sandy SILT (SM), dark gray, moist, stiff, fine grained sand, no staining or odor	2.5	
5			LB10-5.0		0	SM		@5.0': Sandy SILT (SM), dark gray, moist, stiff, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB11
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravel	0.3	
			LB11-0.5		0	ML		@0.5':Gravelly SILT (ML), brown, moist, dense, no odor or staining		
			LB11-2.5		0	ML		@2.5': Sandy SILT (ML), gray brown, moist, stiff, fine grained sand, no staining or odor		
5			LB11-5.0		0	ML		@5.0': Sandy SILT (ML), brown, moist, stiff, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB12
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER - ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB12-0.5		0	ML		@0.5':SILT (ML), light gray-brown, dry, stiff, no odor or staining		
			LB12-2.5		0	ML		@2.5':SILT (ML), light gray-brown, slightly moist, stiff, no odor or staining		
5			LB12-5.0		0	ML		@5.0': Sandy SILT (ML), brown, moist, stiff, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

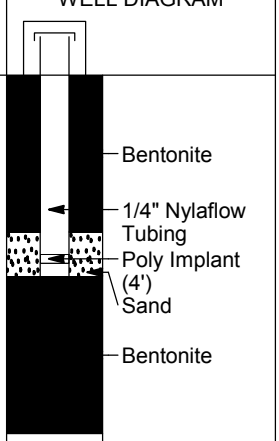
PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB13
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER 5.50 ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SILT	0.3
			LB13-0.5		0	ML		@0.5':SILT (ML), gray-brown, moist, stiff, no odor or staining	
			LB13-2.5		0	ML		@2.5':Sandy SILT (ML), gray, moist, stiff, no odor or staining	
5			LB13-5.0		0	SM SM		@5.0': Silty SAND (SM), gray, moist, medium dense, no staining or odor @5.5': Silty SAND (SM), gray, wet, medium dense, no staining or odor	5.0
10									
15									
20									
25									
30									

Notes:
Total Depth = 8 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.

WELL DIAGRAM



SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB14
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SAND	0.3	
			LB14-0.5		0	ML		@0.5': Gravelly SILT (ML), gray, dry, stiff, no odor or staining		
			LB14-2.5		0	ML		@2.5':SILT (ML), black, moist, stiff, no odor, staining possible, degraded asphaltic appearance	4.7	
5			LB14-5.0		0	SP		@5.0': SAND (SP), gray, moist, medium dense, fine grained, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB15
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB15-0.5		0	ML		@0.5': Gravelly SILT (ML), gray, moist, stiff, no odor or staining		
									2.5	
			LB15-2.5		0	SM		@2.5': Silty SAND (SM), gray, moist, dense, fine grained sand, no staining or odor		
5			LB15-5.0		0	SM		@5.0': Silty SAND (SM), gray, moist, dense, fine grained sand, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB16
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB16-0.5		0	ML		@0.5': Gravelly SILT (ML), gray, moist, stiff, no odor or staining		
			LB16-2.5		0	SM		@2.5': Silty SAND (SM) with gravel, gray, moist, dense, fine grained sand, no staining or odor	2.5	
									4.5	
5			LB16-5.0		0	ML		@5.0': Sandy SILT (ML), gray, moist, stiff, some medium to coarse grained sand, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB17
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface:Silty Sand.	0.3	
			LB17-0.5		0	ML		@0.5'-SILT (ML), brown, dry, stiff, no staining or odor		
			LB17-2.5		0			@2.5'-Sandy SILT (ML), brown, moist, stiff, no staining or odor		
									4.7	
5			LB17-5.0		0	SP		@5'-SAND (SP), light gray, moist, medium dense, medium to coarse grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB18
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB18-0.5		0	ML		@0.5'-SILT (ML), dark brown, moist, stiff, no staining or odor		
			LB18-2.5		0	ML		@2.5'-Sandy SILT (ML), dark gray, moist, stiff, no staining or odor, some shell fragments		
5			LB18-5.0		0	ML		@5.0'-Sandy SILT (ML), dark gray, moist, stiff, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER	11618.005	**BORING/WELL NUMBER**	LB19
PROJECT NAME	POLA Berth 191-193	**DATE DRILLED**	10/11/2017
LOCATION	SE Corner of Canal Ave. and Yacht St., Wilmington, CA	**CASING TYPE/DIAMETER**	
DRILLING METHOD	Direct Push	**SCREEN TYPE/SLOT**	
SAMPLING METHOD	Sleeve	**FILTER PACK TYPE**	
GROUND ELEVATION	-- ft. above MSL	**GROUT TYPE**	
TOP OF CASING ELEV.	ft. above MSL	**DEPTH TO WATER**	-- ft.
LOGGED BY	KCH	**TOTAL DRILL DEPTH**	5 ft.
REMARKS	Boring completed by Millenium Environmental using direct push.		

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 2 inch thick concrete	0.3	
			LB19-0.5		0	ML		@0.5'-SILT (ML) with gravel, light gray, dry, loose, no staining or odor	2.5	
			LB19-2.5		0	SM		@2.5'-Silty SAND (SM), gray, moist, dense, no staining or odor	5.0	
5			LB19-5.0		0	SM		@5.0'-Silty SAND (SM), dark gray, moist, dense, no staining or odor		
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB20
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SAND	0.3	
			LB20-0.5		0	ML		@0.5'-SILT (ML) with gravel, light brown, moist, loose, no staining or odor		
			LB20-2.5		0	ML		@2.5'-Sandy SILT (ML), gray, moist, stiff, fine grained sand, no staining or odor		
5			LB20-5.0		0	ML		@5.0'-Sandy SILT (ML), gray, moist, stiff, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB21
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Asphalt	0.3	
			LB21-0.5		0	ML		@0.5'-SILT (ML) with gravel, gray, moist, stiff, no staining or odor		
			LB21-2.5		0	ML		@2.5'-Sandy SILT (ML), gray, moist, stiff, fine grained sand, no staining or odor		
5			LB21-5.0		0	ML		@5.0'-Sandy SILT (ML), gray, moist, stiff, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB22
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB22-0.5		0	ML		@0.5'-Sandy SILT (ML) with gravel, dark gray, moist, stiff, no staining or odor		
			LB22-2.5		0	ML		@2.5'-SILT (ML), dark gray, moist, stiff, fine grained sand, no staining or odor	4.7	
5			LB22-5.0		0	SM		@5.0'-Silty SAND (SM), dark gray, moist, medium dense, no staining or odor	5.0	

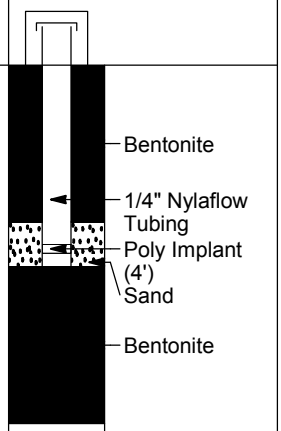
Notes:
Total Depth = 5 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB23
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER 5.50 ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: SILT	0.3
			LB23-0.5		0	ML		@0.5'-SILT (ML), gray, dry, soft, no staining or odor	
			LB23-2.5		0	ML		@2.5'-Sandy SILT (ML), gray, moist, stiff, no staining or odor	
5			LB23-5.0		0	ML		@5.0'-Sandy SILT (ML),dark gray, moist, stiff, no staining or odor ▼	
								@5.5'-Sandy SILT (ML),dark gray, wet, stiff, no staining or odor	8.0
10									
15									
20									
25									
30									



Notes:
Total Depth = 8 feet bgs
Groundwater was encountered at 5.5' bgs
Groundwater was collected from this boring
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB24
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Asphalt	0.3	
			LB24-0.5		0	ML		@0.5'-SILT (ML) with gravel, gray, dry, no staining or odor		
			LB24-2.5		0	ML		@2.5'-Sandy SILT (ML), gray, moist, stiff, fine grained sand, no staining or odor		
									4.7	
5			LB24-5.0		0	SM		@5.0'-Silty SAND (SM),dark gray, moist, stiff, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

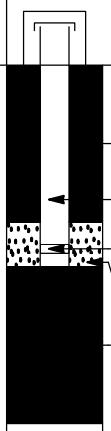
PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB25
DATE DRILLED 10/11/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SILT	0.3
			LB25-0.5		0	ML		@0.5'-SILT (ML) with gravel, light brown, dry, no staining or odor	2.5
			LB25-2.5		0	SP		@2.5': SAND (SP), gray, moist, medium dense, fine grained, some shell fragments, no staining or odor	5.0
5			LB25-5.0		0	SM		@5.0'-Silty SAND (SM),dark gray, moist, medium dense, no staining or odor @5.5'-Silty SAND (SM),dark gray, wet, stiff, no staining or odor	8.0
10									
15									
20									
25									
30									

Notes:
Total Depth = 8 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.

WELL DIAGRAM



SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB26
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Asphalt	0.3	
			LB26-0.5		0	ML		@0.5'-Sandy SILT (ML) with gravel, gray, moist, stiff, no staining or odor		
			LB26-2.5		0	ML		@2.5'-Sandy SILT (ML), gray, moist, stiff, no staining or odor		
5			LB26-5.0		0	ML		@5.0'-Sandy SILT (ML), gray, moist, stiff, no staining or odor	5.0	

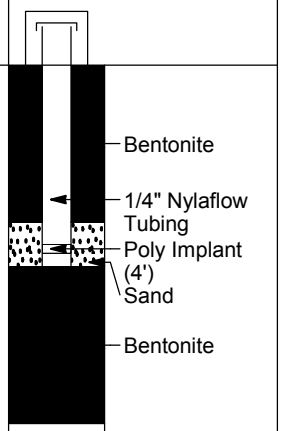
Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB27
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SILT	0.3
			LB27-0.5		0	ML		@0.5'-Gravelly SILT (ML), dark brown, moist, stiff, no staining or odor	
			LB27-2.5		0	ML		@2.5'-SILT (ML), gray-brown, moist, stiff, no staining or odor	
5			LB27-5.0		0	SM		@5.0'-Silty SAND (SM),dark gray, moist, medium dense, no staining or odor	5.0
						SM		@6.5'-Silty SAND (SM), gray-black, wet, medium dense, no staining or odor	8.0
10									
15									
20									
25									
30									



Notes:
Total Depth = 8 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB28
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 3" Asphalt	0.3	
			LB28-0.5		0	ML		@0.5'-Silty SAND (ML), gray, moist, medium dense, no staining or odor		
			LB28-2.5		0	ML		@2.5'-SILT (ML), gray, moist, stiff, no staining or odor, shell fragments	4.7	
5			LB28-5.0		0	SM		@5.0'-Silty SAND (SM), gray, moist, medium dense, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB29
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Asphalt	0.3	
			LB29-0.5		0	ML		@0.5'-SILT (ML) with gravel, light brown, dry, no staining or odor		
			LB29-2.5		0	ML		@2.5'-Sandy SILT (ML), gray, moist, stiff, no staining or odor		
5			LB29-5.0		0	ML		@5.0'-Sandy SILT (ML), gray, moist, stiff, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB30
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB30-0.5		0	ML		@0.5'-Sandy SILT (ML) with gravel, gray, moist, stiff, no staining or odor		
			LB30-2.5		0	ML		@2.5'-SILT (ML), dark brown, moist, stiff, no staining or odor		
5			LB30-5.0		0	ML		@5.0'-SILT (ML), black-gray, moist, stiff, no staining or odor, some shell fragments	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

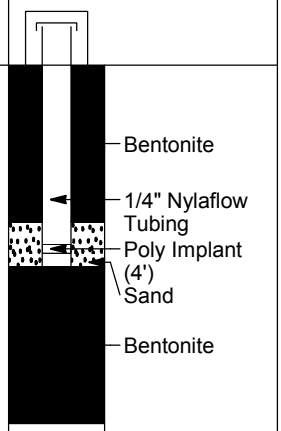
10
15
20
25
30

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB31
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Asphalt	0.3
			LB31-0.5		0	ML		@0.5'-SILT (ML) with gravel, dark brown, moist, stiff, no staining or odor	2.5
			LB31-2.5		0	SM		@2.5'-Silty SAND (SM), light gray, moist, medium dense, no staining or odor	
5			LB31-5.0		0	SM		@5.0'-Silty SAND (SM), light gray, moist, medium dense, no staining or odor @5.5'-Silty SAND (SM), light gray, wet, medium dense, no staining or odor	8.0
10									
15									
20									
25									
30									



Notes:
Total Depth = 8 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB32
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB32-0.5		0	ML		@0.5'-SILT (ML) with gravel, brown, moist, stiff, no staining or odor		
			LB32-2.5		0	ML		@2.5'-Sandy SILT (ML) with gravel, brown, moist, stiff, no staining or odor		
									4.7	
5			LB32-5.0		0	SM		@5.0'-Silty SAND (SM), gray, moist, medium dense, fine grained sand, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB33
DATE DRILLED 10/12/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Asphalt	0.3	
			LB33-0.5		0	ML		@0.5'-SILT (ML) with gravel, brown, moist, stiff, no staining or odor		
			LB33-2.5		0	ML		@2.5'-SILT (ML) with gravel, brown, moist, stiff, no staining or odor		
5			LB33-5.0		0	SM		@5.0'-Silty SAND (SM), gray, moist, medium dense, fine grained sand, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

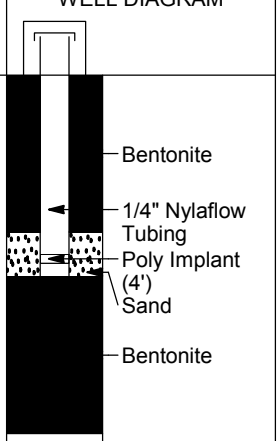
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB34
DATE DRILLED 10/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: 4" Asphalt	0.3
			LB34-0.5		0	ML		@0.5'-Sandy SILT (ML), brown-gray, moist, stiff, some fine grained sand, no staining or odor	
			LB34-2.5		0	ML		@2.5'-Sandy SILT (ML), brown-gray, moist, stiff, some fine grained sand, no staining or odor	
5			LB34-5.0		0	ML ML		@5.0'-SILT (ML), gray, moist, stiff, some shell fragments, no staining or odor @5.5'-Sandy SILT (ML), gray, wet, stiff, fine to medium grained sand, no staining or odor	8.0
10								**Notes:** Total Depth = 8 feet bgs Groundwater was encountered at 5.5 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.	
15									
20									
25									
30									

WELL DIAGRAM



SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB35
DATE DRILLED 10/13/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 4" Concrete over 4" Asphalt	0.3	
			LB35-0.5		0	ML		@0.5'-SILT (ML) with gravel, gray, moist, stiff, no staining or odor		
			LB35-2.5		0	ML		@2.5'-SILT (ML) with gravel, gray, moist, stiff, no staining or odor		
5			LB35-5.0		0	ML		@5.0'-SILT (ML) with gravel, gray, moist, stiff, no staining or odor	5.0	

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

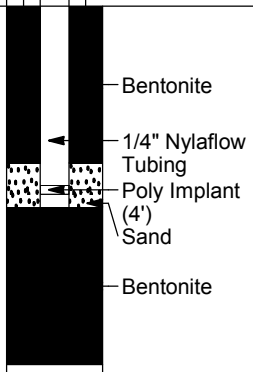
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER	11618.005	**BORING/WELL NUMBER**	LB36
PROJECT NAME	POLA Berth 191-193	**DATE DRILLED**	12/13/2017
LOCATION	SE Corner of Canal Ave. and Yacht St., Wilmington, CA	**CASING TYPE/DIAMETER**	Nylaflow Tubing / 1/4"
DRILLING METHOD	Direct Push	**SCREEN TYPE/SLOT**	Air Stone
SAMPLING METHOD	Sleeve	**FILTER PACK TYPE**	Monterrey Sand
GROUND ELEVATION	-- ft. above MSL	**GROUT TYPE**	Hydrated Bentonite
TOP OF CASING ELEV.	ft. above MSL	**DEPTH TO WATER**	-- ft.
LOGGED BY	KCH	**TOTAL DRILL DEPTH**	9 ft.

REMARKS Boring completed by Millenium Environmental using direct push.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: 4" Asphalt	0.3
								@0.5'-Silty SAND (ML), gray, moist, medium dense, no staining or odor	
						ML		@2.5'-Silty SAND (ML), gray, moist, medium dense, no staining or odor	
5						ML		@5.0'-Silty SAND (ML), gray, wet, medium dense, no staining or odor	
									9.0
10								**Notes:** Total Depth = 9 feet bgs Groundwater was encountered at 5.5 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.	
15									
20									
25									
30									

WELL DIAGRAM



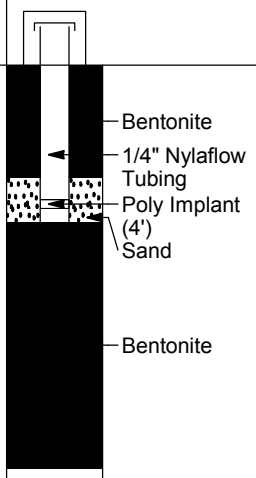
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB38
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Green waste and debris	0.3
						ML		@0.5'-Silty SAND (ML), gray, moist, medium dense, no staining or odor	
						ML		@2.5'-Silty SAND (ML), gray, moist, medium dense, no staining or odor	
5						ML		@5.0'-Silty SAND (ML), gray, wet, medium dense, no staining or odor	
									9.0
10								**Notes:** Total Depth = 9 feet bgs Groundwater was encountered at 6 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.	
15									
20									
25									
30									

WELL DIAGRAM



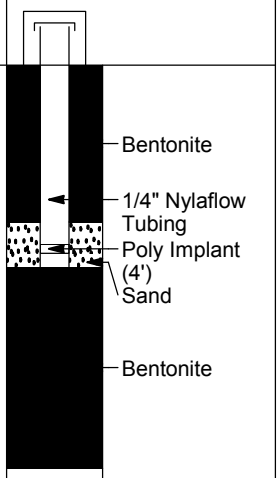
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB39
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 8 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly Silty Sand.	0.3
						ML		@0.5': SILT (ML), olive gray, moist, soft, no staining or odor	2.5
						SM		@2.5': Silty SAND (SM), gray, moist, medium dense, fine grained sand, trace shell fragments, no staining or odor	5.0
5						SP		@5.0': Poorly Graded SAND (SP), gray, moist, medium dense, no staining or odor @5.5': Poorly Graded SAND (SP) with silt, dark gray, wet, medium dense, some shell fragements, no staining or odor	8.0
								Notes: Total Depth = 8 feet bgs Groundwater was encountered at 5.5 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 8 ft bgs to dry boring prior to soil vapor probe contruction.	
10									
15									
20									
25									
30									

WELL DIAGRAM

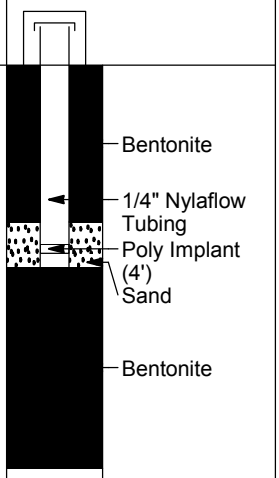


SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB40
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
						ML		@Surface: Gravelly Silty Sand. @0.5'-Sandy SILT, brown, moist, very stiff, fine grained sand, no staining or odor	0.3
						ML		@2.5'-Sandy SILT, brown, moist, very stiff, fine grained sand, no staining or odor	5.0
5						SP		@5.0': Poorly Graded SAND (SP) with silt, brown, moist, very dense, fine grained sand, no staining or odor	9.0
10									
15									
20									
25									
30									



WELL DIAGRAM

Notes:
Total Depth = 9 feet bgs
Groundwater was encountered at 6 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.

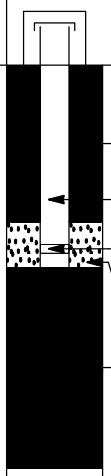
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB41
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
						ML		@Surface: Gravelly Silty Sand. @0.5'-Sandy SILT, brown, moist, very stiff, fine grained sand, no staining or odor	0.3
						ML		@2.5'-Sandy SILT, brown, moist, very stiff, fine grained sand, no staining or odor	
5						SP		@5.0': Poorly Graded SAND (SP) with silt, brown, moist, very dense, fine grained sand, no staining or odor	5.0
									8.0
10									
15									
20									
25									
30									

WELL DIAGRAM



Notes:
Total Depth = 9 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.

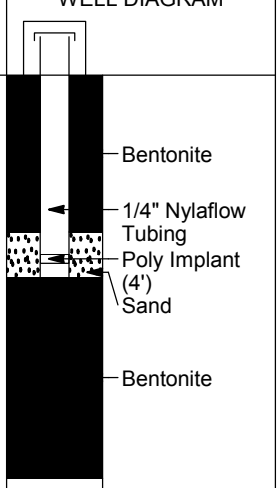
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB42
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
						SM		@Surface: Silty SAND @0.5'-Silty SAND (SM), gray, moist, medium dense, no staining or odor	0.3
5						SP		@5.0'-SAND (SP), gray-brown, moist, medium dense, no staining or odor @5.5'-SAND (SP), gray-brown, wet, medium dense, no staining or odor	5.0
									9.0
10								**Notes:** Total Depth = 9 feet bgs Groundwater was encountered at 5.5 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.	
15									
20									
25									
30									

WELL DIAGRAM



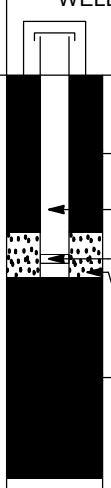
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB43
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SAND	0.3
						SW		@0.5':Gravelly SILT (SW), light brown, dry, stiff, no odor or staining	2.5
						SM		@2.5': Silty SAND (SM) with gravel, dark brown, moist, medium dense, fine grained sand, no staining or odor	5.0
5						SP		@5.0': Poorly Graded SAND (SP), gray, moist, medium dense, no staining or odor	9.0
10									
15									
20									
25									
30									

WELL DIAGRAM



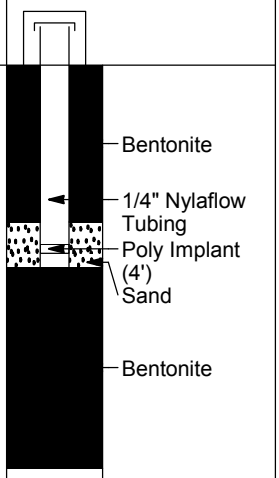
Notes:
Total Depth = 9 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER	11618.005	**BORING/WELL NUMBER**	LB44
PROJECT NAME	POLA Berth 191-193	**DATE DRILLED**	12/13/2017
LOCATION	SE Corner of Canal Ave. and Yacht St., Wilmington, CA	**CASING TYPE/DIAMETER**	Nylaflow Tubing / 1/4"
DRILLING METHOD	Direct Push	**SCREEN TYPE/SLOT**	Air Stone
SAMPLING METHOD	Sleeve	**FILTER PACK TYPE**	Monterrey Sand
GROUND ELEVATION	-- ft. above MSL	**GROUT TYPE**	Hydrated Bentonite
TOP OF CASING ELEV.	ft. above MSL	**DEPTH TO WATER**	-- ft.
LOGGED BY	KCH	**TOTAL DRILL DEPTH**	9 ft.

REMARKS Boring completed by Millenium Environmental using direct push.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SILT	0.3
						ML		@0.5': Gravelly SILT (ML), gray, moist, stiff, no odor or staining	2.5
						SM		@2.5': Silty SAND (SM) with gravel, gray, moist, dense, fine grained sand, no staining or odor	5.0
5						ML		@5.0': Sandy SILT (ML), gray, moist, stiff, some medium to coarse grained sand, no staining or odor	9.0
10									
15									
20									
25									
30									



Notes:
Total Depth = 9 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Jars
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB45
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 2.7 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravel	0.3	
			LB45-0.5		0	ML		@0.5': Silty SAND (ML) with gravel, gray-black, no odor, possible staining.		
			LB45-2.5		0	ML		@2.5': Silty SAND (ML), gray, moist, medium dense, no odor, possible staining. @2.7'-Refusal-two borings were attempted. Possible riprap boundary	2.8	

Notes:
Total Depth = 2.7 feet bgs
Groundwater not encountered
Boring backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Jars
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB46
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Gravelly SILT	0.3	
			LB46-0.5		0	SM		@0.5'-Silty SAND (ML) with gravel, black, moist, stiff, no odor, staining to sand, appears asphaltic		
			LB46-2.5		0	SM		@2.5'-Silty SAND (SM), gray-brown, moist, medium dense, fine grained sand, no staining or odor		
5			LB46-5.0		0	SM		@5.0'-Silty SAND (SM), gray-brown, moist, medium dense, fine grained sand, no staining or odor	5.0	
10										
15										
20										
25										
30										

Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered
Boring was backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Jars
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB47
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER
SCREEN TYPE/SLOT
FILTER PACK TYPE
GROUT TYPE
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 5 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: Green waste and debris	0.3	
			LB47-0.5		0	SM		@0.5'-Silty SAND (SM), dark brown, moist, medium dense, no staining or odor		
			LB47-2.5		0	SM		@2.5'-Silty SAND (SM), gray, moist, medium dense, no staining or odor		
5			LB47-5.0		0	SM		@5.0'-Silty SAND (SM), gray, wet, medium dense, no staining or odor	5.0	

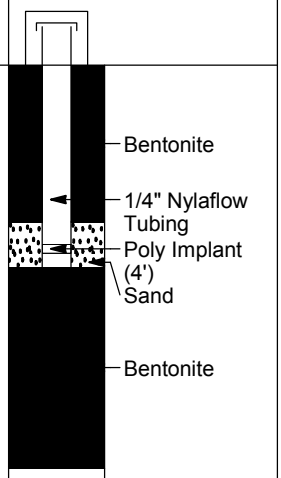
Notes:
Total Depth = 5 feet bgs
Groundwater was not encountered.
Boring was backfilled with bentonite

SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB48
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravel	0.3
						ML		@0.5': Gravelly SILT (ML), black, moist, soft, no odor or staining	
								@2.5': Sandy SILT (ML), gray brown, moist, stiff, no staining or odor	4.7
5						SM		@5.0': Silty SAND (SM), gray brown, moist, stiff, no staining or odor	5.0
									9.0
10									
15									
20									
25									
30									



Notes:
Total Depth = 9 feet bgs
Groundwater was encountered at 5.5 feet bgs.
Groundwater was collected from this boring.
Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.

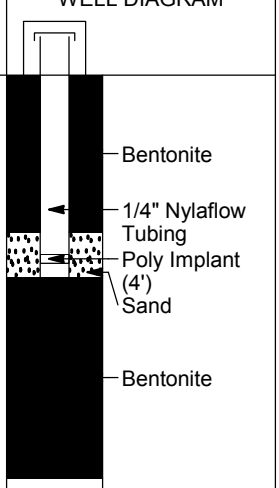
SOIL GAS PROBE BORING/CONSTRUCTION LOG

PROJECT NUMBER 11618.005
PROJECT NAME POLA Berth 191-193
LOCATION SE Corner of Canal Ave. and Yacht St., Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Sleeve
GROUND ELEVATION -- ft. above MSL
TOP OF CASING ELEV. ft. above MSL
LOGGED BY KCH
REMARKS Boring completed by Millenium Environmental using direct push.

BORING/WELL NUMBER LB49
DATE DRILLED 12/13/2017
CASING TYPE/DIAMETER Nylaflow Tubing / 1/4"
SCREEN TYPE/SLOT Air Stone
FILTER PACK TYPE Monterrey Sand
GROUT TYPE Hydrated Bentonite
DEPTH TO WATER -- ft.
TOTAL DRILL DEPTH 9 ft.

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								@Surface: Gravelly SILT	0.3
						SM		@0.5':Sandy SILT (SM), gray, moist, dense, fine to medium grained, no odor or staining	
						SM		@2.5': Silty SAND (SM), gray, moist, dense, fine grained sand, no staining or odor	
5						SM		@ 5.0': Silty SAND (SM), gray, moist, dense, fine grained sand, no staining or odor @ 5.5': Silty SAND (SM), dark gray-black, wet, dense, fine grained sand, no staining or odor	
								Notes: Total Depth = 9 feet bgs Groundwater was encountered at 5.5 feet bgs. Groundwater was collected from this boring. Boring was backfilled with bentonite from 4.5 to 9 ft bgs to dry boring prior to soil vapor probe contruction.	9.0
10									
15									
20									
25									
30									

WELL DIAGRAM



APPENDIX D

Laboratory Reports and Chain-of-Custody Documents

ADVANCED TECHNOLOGY LABORATORIES

October 19, 2017

Brynn McCulloch
Leighton Consulting, Inc.
17781 Cowan Street
Irvine, CA 92614
Tel: (949) 394-2306
Fax:(949) 250-1114

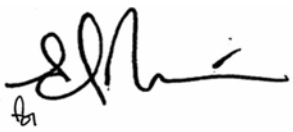
ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1703640
Client Reference : POLA Berth 191-193, 11618-005

Enclosed are the results for sample(s) received on October 11, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB1-GW	1703640-01	Groundwater	10/11/17 9:30	10/11/17 16:18
LB25-GW	1703640-02	Groundwater	10/11/17 11:50	10/11/17 16:18
LB13-GW	1703640-03	Groundwater	10/11/17 13:45	10/11/17 16:18
LB23-GW	1703640-04	Groundwater	10/11/17 15:22	10/11/17 16:18

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-GW

Lab ID: 1703640-01

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:21	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:21	
Barium	**0.11**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Chromium	**0.015**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Cobalt	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Copper	**0.011**	0.0090	1	B7J0455	10/17/2017	10/17/17 17:21	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:21	
Molybdenum	**0.027**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:21	
Nickel	**0.011**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:21	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:21	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:21	
Vanadium	**0.011**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:21	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:21	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 16:59	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	**9.9**	0.05	1	B7J0254	10/13/2017	10/13/17 12:36	
Surrogate: 4-Bromofluorobenzene	*125 %*	*70 - 130*		B7J0254	10/13/2017	*10/13/17 12:36*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.93**	0.05	1	B7J0338	10/13/2017	10/14/17 10:03	
ORO	**0.38**	0.05	1	B7J0338	10/13/2017	10/14/17 10:03	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-GW
Lab ID: 1703640-01

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*126 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 10:03*	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,1,1-Trichloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,1,2,2-Tetrachloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,1,2-Trichloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,1-Dichloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,1-Dichloroethene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,1-Dichloropropene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2,3-Trichloropropane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2,3-Trichlorobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2,4-Trichlorobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2,4-Trimethylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2-Dibromo-3-chloropropane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2-Dibromoethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2-Dichlorobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2-Dichloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,2-Dichloropropane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,3,5-Trimethylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,3-Dichlorobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,3-Dichloropropane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
1,4-Dichlorobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
2,2-Dichloropropane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
2-Chlorotoluene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
4-Chlorotoluene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
4-Isopropyltoluene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Benzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Bromobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Bromochloromethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Bromodichloromethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Bromoform	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Bromomethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-GW
Lab ID: 1703640-01

Volatile Organic Compounds by EPA 8260B — **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon disulfide	ND	50	50	B7J0394	10/16/2017	10/16/17 16:01	
Carbon tetrachloride	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Chlorobenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Chloroethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Chloroform	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Chloromethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
cis-1,2-Dichloroethene	**3300**	25	50	B7J0394	10/16/2017	10/16/17 16:01	
cis-1,3-Dichloropropene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Di-isopropyl ether	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Dibromochloromethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Dibromomethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Dichlorodifluoromethane	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Ethyl Acetate	ND	500	50	B7J0394	10/16/2017	10/16/17 16:01	
Ethyl Ether	ND	500	50	B7J0394	10/16/2017	10/16/17 16:01	
Ethyl tert-butyl ether	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Ethylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Freon-113	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Hexachlorobutadiene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Isopropylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
m,p-Xylene	ND	50	50	B7J0394	10/16/2017	10/16/17 16:01	
Methylene chloride	ND	50	50	B7J0394	10/16/2017	10/16/17 16:01	
MTBE	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
n-Butylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
n-Propylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Naphthalene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
o-Xylene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
sec-Butylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Styrene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
tert-Amyl methyl ether	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
tert-Butanol	ND	500	50	B7J0394	10/16/2017	10/16/17 16:01	
tert-Butylbenzene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Tetrachloroethene	**19000**	250	500	B7J0394	10/16/2017	10/16/17 16:25	
Toluene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
trans-1,2-Dichloroethene	**210**	25	50	B7J0394	10/16/2017	10/16/17 16:01	
trans-1,3-Dichloropropene	ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Trichloroethene	**7900**	250	500	B7J0394	10/16/2017	10/16/17 16:25	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-GW
Lab ID: 1703640-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane		ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Vinyl acetate		ND	500	50	B7J0394	10/16/2017	10/16/17 16:01	
Vinyl chloride		ND	25	50	B7J0394	10/16/2017	10/16/17 16:01	
Surrogate: 1,2-Dichloroethane-d4	*96.4 %*		*70 - 166*		B7J0394	10/16/2017	*10/16/17 16:25*	
Surrogate: 1,2-Dichloroethane-d4	*98.9 %*		*70 - 166*		B7J0394	10/16/2017	*10/16/17 16:01*	
Surrogate: 4-Bromofluorobenzene	*92.7 %*		*88 - 120*		B7J0394	10/16/2017	*10/16/17 16:25*	
Surrogate: 4-Bromofluorobenzene	*93.2 %*		*88 - 120*		B7J0394	10/16/2017	*10/16/17 16:01*	
Surrogate: Dibromofluoromethane	*104 %*		*80 - 150*		B7J0394	10/16/2017	*10/16/17 16:01*	
Surrogate: Dibromofluoromethane	*102 %*		*80 - 150*		B7J0394	10/16/2017	*10/16/17 16:25*	
Surrogate: Toluene-d8	*100 %*		*87 - 121*		B7J0394	10/16/2017	*10/16/17 16:01*	
Surrogate: Toluene-d8	*98.7 %*		*87 - 121*		B7J0394	10/16/2017	*10/16/17 16:25*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Acenaphthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Acenaphthylene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Anthracene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Benzo(a)anthracene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Benzo(a)pyrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Benzo(b)fluoranthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Benzo(g,h,i)perylene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Benzo(k)fluoranthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Chrysene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Dibenz(a,h)anthracene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Fluoranthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Fluorene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Indeno(1,2,3-cd)pyrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Naphthalene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Phenanthrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Pyrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 13:36	
Surrogate: 1,2-Dichlorobenzene-d4	*71.2 %*		*32 - 99*		B7J0413	10/16/2017	*10/16/17 13:36*	
Surrogate: 2-Fluorobiphenyl	*80.5 %*		*29 - 105*		B7J0413	10/16/2017	*10/16/17 13:36*	
Surrogate: Nitrobenzene-d5	*91.6 %*		*17 - 123*		B7J0413	10/16/2017	*10/16/17 13:36*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-GW

Lab ID: 1703640-01

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 4-Terphenyl-d14	*94.8 %*		*32 - 119*		B7J0413	10/16/2017	*10/16/17 13:36*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-GW

Lab ID: 1703640-02

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**0.013**	0.010	1	B7J0455	10/17/2017	10/17/17 17:25	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:25	
Barium	**0.062**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Chromium	**0.012**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Cobalt	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Copper	ND	0.0090	1	B7J0455	10/17/2017	10/17/17 17:25	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:25	
Molybdenum	**0.021**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:25	
Nickel	**0.0083**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:25	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:25	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:25	
Vanadium	**0.0043**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:25	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:25	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:14	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	**0.08**	0.05	1	B7J0254	10/13/2017	10/13/17 12:57	
Surrogate: 4-Bromofluorobenzene	*115 %*	*70 - 130*		B7J0254	10/13/2017	*10/13/17 12:57*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.23**	0.05	1	B7J0338	10/13/2017	10/14/17 10:19	
ORO	**0.16**	0.05	1	B7J0338	10/13/2017	10/14/17 10:19	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-GW

Lab ID: 1703640-02

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*118 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 10:19*	

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,1,1-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,1,2-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,1-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,1-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,1-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2,3-Trichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2,3-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2,4-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2,4-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2-Dibromoethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,3,5-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,3-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,3-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
1,4-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
2,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
2-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
4-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
4-Isopropyltoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Benzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Bromobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Bromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Bromodichloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Bromoform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Bromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-GW

Lab ID: 1703640-02

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon disulfide	ND	1.0	1	B7J0319	10/13/2017	10/13/17 16:31	
Carbon tetrachloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Chlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Chloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Chloroform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Chloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
cis-1,2-Dichloroethene	**1.5**	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
cis-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Di-isopropyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Dibromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Dibromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Dichlorodifluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Ethyl Acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 16:31	
Ethyl Ether	ND	10	1	B7J0319	10/13/2017	10/13/17 16:31	
Ethyl tert-butyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Ethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Freon-113	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Hexachlorobutadiene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Isopropylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
m,p-Xylene	ND	1.0	1	B7J0319	10/13/2017	10/13/17 16:31	
Methylene chloride	ND	1.0	1	B7J0319	10/13/2017	10/13/17 16:31	
MTBE	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
n-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
n-Propylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Naphthalene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
o-Xylene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
sec-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Styrene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
tert-Amyl methyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
tert-Butanol	ND	10	1	B7J0319	10/13/2017	10/13/17 16:31	
tert-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Tetrachloroethene	**6.2**	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Toluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
trans-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
trans-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Trichloroethene	**3.5**	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-GW
Lab ID: 1703640-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Vinyl acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 16:31	
Vinyl chloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:31	
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*70 - 166*		B7J0319	10/13/2017	*10/13/17 16:31*	
Surrogate: 4-Bromofluorobenzene	*90.9 %*	*88 - 120*		B7J0319	10/13/2017	*10/13/17 16:31*	
Surrogate: Dibromofluoromethane	*106 %*	*80 - 150*		B7J0319	10/13/2017	*10/13/17 16:31*	
Surrogate: Toluene-d8	*101 %*	*87 - 121*		B7J0319	10/13/2017	*10/13/17 16:31*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Acenaphthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Acenaphthylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Benzo(a)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Benzo(a)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Benzo(b)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Benzo(g,h,i)perylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Benzo(k)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Chrysene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Dibenz(a,h)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Fluorene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Naphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Phenanthrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:04	
Surrogate: 1,2-Dichlorobenzene-d4	*73.6 %*	*32 - 99*		B7J0413	10/16/2017	*10/16/17 14:04*	
Surrogate: 2-Fluorobiphenyl	*76.9 %*	*29 - 105*		B7J0413	10/16/2017	*10/16/17 14:04*	
Surrogate: Nitrobenzene-d5	*93.1 %*	*17 - 123*		B7J0413	10/16/2017	*10/16/17 14:04*	
Surrogate: 4-Terphenyl-d14	*94.7 %*	*32 - 119*		B7J0413	10/16/2017	*10/16/17 14:04*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-GW

Lab ID: 1703640-03

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:26	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:26	
Barium	**0.12**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Chromium	**0.0094**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Cobalt	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Copper	ND	0.0090	1	B7J0455	10/17/2017	10/17/17 17:26	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:26	
Molybdenum	**0.0093**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:26	
Nickel	**0.0060**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:26	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:26	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:26	
Vanadium	**0.013**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:26	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:26	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:16	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7J0254	10/13/2017	10/13/17 13:17	
Surrogate: 4-Bromofluorobenzene	*112 %*	*70 - 130*		B7J0254	10/13/2017	*10/13/17 13:17*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.47**	0.05	1	B7J0338	10/13/2017	10/14/17 10:36	
ORO	**0.42**	0.05	1	B7J0338	10/13/2017	10/14/17 10:36	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-GW

Lab ID: 1703640-03

Diesel Range Organics by EPA 8015B — **Analyst: TKT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*130 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 10:36*	

Volatile Organic Compounds by EPA 8260B — **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,1,1-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,1,2-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,1-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,1-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,1-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2,3-Trichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2-Dibromoethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,3-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,3-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
1,4-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
2,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
2-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
4-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
4-Isopropyltoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Benzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Bromobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Bromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Bromodichloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Bromoform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Bromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-GW

Lab ID: 1703640-03

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon disulfide	ND	1.0	1	B7J0319	10/13/2017	10/13/17 16:55	
Carbon tetrachloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Chlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Chloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Chloroform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Chloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
cis-1,2-Dichloroethene	**0.61**	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
cis-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Di-isopropyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Dibromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Dibromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Dichlorodifluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Ethyl Acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 16:55	
Ethyl Ether	ND	10	1	B7J0319	10/13/2017	10/13/17 16:55	
Ethyl tert-butyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Ethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Freon-113	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Hexachlorobutadiene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Isopropylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
m,p-Xylene	ND	1.0	1	B7J0319	10/13/2017	10/13/17 16:55	
Methylene chloride	ND	1.0	1	B7J0319	10/13/2017	10/13/17 16:55	
MTBE	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
n-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
n-Propylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Naphthalene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
o-Xylene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
sec-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Styrene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
tert-Amyl methyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
tert-Butanol	ND	10	1	B7J0319	10/13/2017	10/13/17 16:55	
tert-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Tetrachloroethene	**2.0**	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Toluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
trans-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
trans-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Trichloroethene	**1.6**	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-GW
Lab ID: 1703640-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Vinyl acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 16:55	
Vinyl chloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 16:55	
Surrogate: 1,2-Dichloroethane-d4	*99.3 %*	*70 - 166*		B7J0319	10/13/2017	*10/13/17 16:55*	
Surrogate: 4-Bromofluorobenzene	*92.1 %*	*88 - 120*		B7J0319	10/13/2017	*10/13/17 16:55*	
Surrogate: Dibromofluoromethane	*104 %*	*80 - 150*		B7J0319	10/13/2017	*10/13/17 16:55*	
Surrogate: Toluene-d8	*101 %*	*87 - 121*		B7J0319	10/13/2017	*10/13/17 16:55*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Acenaphthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Acenaphthylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Benzo(a)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Benzo(a)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Benzo(b)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Benzo(g,h,i)perylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Benzo(k)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Chrysene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Dibenz(a,h)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Fluorene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Naphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Phenanthrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 14:33	
Surrogate: 1,2-Dichlorobenzene-d4	*65.8 %*	*32 - 99*		B7J0413	10/16/2017	*10/16/17 14:33*	
Surrogate: 2-Fluorobiphenyl	*72.4 %*	*29 - 105*		B7J0413	10/16/2017	*10/16/17 14:33*	
Surrogate: Nitrobenzene-d5	*84.4 %*	*17 - 123*		B7J0413	10/16/2017	*10/16/17 14:33*	
Surrogate: 4-Terphenyl-d14	*82.8 %*	*32 - 119*		B7J0413	10/16/2017	*10/16/17 14:33*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-GW

Lab ID: 1703640-04

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:27	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:27	
Barium	**0.089**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Chromium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Cobalt	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Copper	ND	0.0090	1	B7J0455	10/17/2017	10/17/17 17:27	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:27	
Molybdenum	**0.0087**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:27	
Nickel	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:27	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:27	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:27	
Vanadium	**0.0036**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:27	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:27	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:18	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7J0254	10/13/2017	10/13/17 13:37	
Surrogate: 4-Bromofluorobenzene	*113 %*	*70 - 130*		B7J0254	10/13/2017	*10/13/17 13:37*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.33**	0.05	1	B7J0338	10/13/2017	10/14/17 10:53	
ORO	**0.38**	0.05	1	B7J0338	10/13/2017	10/14/17 10:53	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-GW

Lab ID: 1703640-04

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*110 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 10:53*	

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,1,1-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,1,2-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,1-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,1-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,1-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2,3-Trichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2-Dibromoethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,3-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,3-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
1,4-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
2,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
2-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
4-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
4-Isopropyltoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Benzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Bromobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Bromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Bromodichloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Bromoform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Bromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-GW

Lab ID: 1703640-04

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon disulfide	ND	1.0	1	B7J0319	10/13/2017	10/13/17 17:20	
Carbon tetrachloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Chlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Chloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Chloroform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Chloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
cis-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
cis-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Di-isopropyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Dibromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Dibromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Dichlorodifluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Ethyl Acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 17:20	
Ethyl Ether	ND	10	1	B7J0319	10/13/2017	10/13/17 17:20	
Ethyl tert-butyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Ethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Freon-113	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Hexachlorobutadiene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Isopropylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
m,p-Xylene	ND	1.0	1	B7J0319	10/13/2017	10/13/17 17:20	
Methylene chloride	ND	1.0	1	B7J0319	10/13/2017	10/13/17 17:20	
MTBE	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
n-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
n-Propylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Naphthalene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
o-Xylene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
sec-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Styrene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
tert-Amyl methyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
tert-Butanol	ND	10	1	B7J0319	10/13/2017	10/13/17 17:20	
tert-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Tetrachloroethene	**1.3**	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Toluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
trans-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
trans-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Trichloroethene	**0.78**	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-GW
Lab ID: 1703640-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Vinyl acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 17:20	
Vinyl chloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:20	
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*70 - 166*		B7J0319	10/13/2017	*10/13/17 17:20*	
Surrogate: 4-Bromofluorobenzene	*93.3 %*	*88 - 120*		B7J0319	10/13/2017	*10/13/17 17:20*	
Surrogate: Dibromofluoromethane	*105 %*	*80 - 150*		B7J0319	10/13/2017	*10/13/17 17:20*	
Surrogate: Toluene-d8	*100 %*	*87 - 121*		B7J0319	10/13/2017	*10/13/17 17:20*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Acenaphthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Acenaphthylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Benzo(a)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Benzo(a)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Benzo(b)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Benzo(g,h,i)perylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Benzo(k)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Chrysene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Dibenz(a,h)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Fluorene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Naphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Phenanthrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:02	
Surrogate: 1,2-Dichlorobenzene-d4	*65.3 %*	*32 - 99*		B7J0413	10/16/2017	*10/16/17 15:02*	
Surrogate: 2-Fluorobiphenyl	*71.2 %*	*29 - 105*		B7J0413	10/16/2017	*10/16/17 15:02*	
Surrogate: Nitrobenzene-d5	*82.9 %*	*17 - 123*		B7J0413	10/16/2017	*10/16/17 15:02*	
Surrogate: 4-Terphenyl-d14	*82.1 %*	*32 - 119*		B7J0413	10/16/2017	*10/16/17 15:02*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0455 - EPA 3010A_W										
Blank (B7J0455-BLK1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Antimony	ND	0.010	0.0088							
Arsenic	ND	0.010	0.0078							
Barium	ND	0.0030	0.0026							
Beryllium	ND	0.0030	0.0016							
Cadmium	ND	0.0030	0.0024							
Chromium	ND	0.0030	0.0020							
Cobalt	ND	0.0030	0.0016							
Copper	ND	0.0090	0.0038							
Lead	ND	0.0050	0.0047							
Molybdenum	ND	0.0050	0.0030							
Nickel	ND	0.0050	0.0046							
Selenium	ND	0.010	0.0093							
Silver	ND	0.0030	0.0024							
Thallium	ND	0.015	0.0085							
Vanadium	ND	0.0030	0.0022							
Zinc	ND	0.025	0.0057							
LCS (B7J0455-BS1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Antimony	0.929102	0.010	0.0088	1.00000		92.9	80 - 120			
Arsenic	0.941062	0.010	0.0078	1.00000		94.1	80 - 120			
Barium	0.969431	0.0030	0.0026	1.00000		96.9	80 - 120			
Beryllium	0.952237	0.0030	0.0016	1.00000		95.2	80 - 120			
Cadmium	0.923200	0.0030	0.0024	1.00000		92.3	80 - 120			
Chromium	0.964497	0.0030	0.0020	1.00000		96.4	80 - 120			
Cobalt	0.960800	0.0030	0.0016	1.00000		96.1	80 - 120			
Copper	0.947343	0.0090	0.0038	1.00000		94.7	80 - 120			
Lead	0.953769	0.0050	0.0047	1.00000		95.4	80 - 120			
Molybdenum	0.936200	0.0050	0.0030	1.00000		93.6	80 - 120			
Nickel	0.929993	0.0050	0.0046	1.00000		93.0	80 - 120			
Selenium	0.907008	0.010	0.0093	1.00000		90.7	80 - 120			
Silver	1.18499	0.0030	0.0024	1.00000		118	80 - 120			
Thallium	0.946903	0.015	0.0085	1.00000		94.7	80 - 120			
Vanadium	0.953132	0.0030	0.0022	1.00000		95.3	80 - 120			
Zinc	0.930909	0.025	0.0057	1.00000		93.1	80 - 120			
Matrix Spike (B7J0455-MS1)				**Source: 1703640-01**	Prepared: 10/17/2017 Analyzed: 10/17/2017					
Antimony	2.45296	0.010	0.0088	2.50000	ND	98.1	60 - 130			
Arsenic	2.51904	0.010	0.0078	2.50000	ND	101	69 - 123			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0455 - EPA 3010A_W (continued)										
Matrix Spike (B7J0455-MS1) - Continued			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/17/2017				
Barium	2.59554	0.0030	0.0026	2.50000	0.106382	99.6	67 - 129			
Beryllium	2.52702	0.0030	0.0016	2.50000	ND	101	74 - 120			
Cadmium	2.37069	0.0030	0.0024	2.50000	ND	94.8	69 - 116			
Chromium	2.49293	0.0030	0.0020	2.50000	0.014934	99.1	74 - 120			
Cobalt	2.43594	0.0030	0.0016	2.50000	0.002840	97.3	70 - 116			
Copper	2.53772	0.0090	0.0038	2.50000	0.01129	101	76 - 123			
Lead	2.42425	0.0050	0.0047	2.50000	ND	97.0	69 - 117			
Molybdenum	2.53677	0.0050	0.0030	2.50000	0.026825	100	68 - 120			
Nickel	2.38734	0.0050	0.0046	2.50000	0.011243	95.0	70 - 115			
Selenium	2.39006	0.010	0.0093	2.50000	ND	95.6	66 - 120			
Silver	2.66866	0.0030	0.0024	2.50000	ND	107	73 - 123			
Thallium	2.34797	0.015	0.0085	2.50000	ND	93.9	57 - 124			
Vanadium	2.52252	0.0030	0.0022	2.50000	0.010942	100	72 - 123			
Zinc	2.38635	0.025	0.0057	2.50000	0.023691	94.5	73 - 111			
Matrix Spike Dup (B7J0455-MSD1)			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	2.42439	0.010	0.0088	2.50000	ND	97.0	60 - 130	1.17	20	
Arsenic	2.47205	0.010	0.0078	2.50000	ND	98.9	69 - 123	1.88	20	
Barium	2.56504	0.0030	0.0026	2.50000	0.106382	98.3	67 - 129	1.18	20	
Beryllium	2.49000	0.0030	0.0016	2.50000	ND	99.6	74 - 120	1.48	20	
Cadmium	2.33304	0.0030	0.0024	2.50000	ND	93.3	69 - 116	1.60	20	
Chromium	2.44862	0.0030	0.0020	2.50000	0.014934	97.3	74 - 120	1.79	20	
Cobalt	2.39427	0.0030	0.0016	2.50000	0.002840	95.7	70 - 116	1.73	20	
Copper	2.50095	0.0090	0.0038	2.50000	0.01129	99.6	76 - 123	1.46	20	
Lead	2.39216	0.0050	0.0047	2.50000	ND	95.7	69 - 117	1.33	20	
Molybdenum	2.50298	0.0050	0.0030	2.50000	0.026825	99.0	68 - 120	1.34	20	
Nickel	2.35861	0.0050	0.0046	2.50000	0.011243	93.9	70 - 115	1.21	20	
Selenium	2.34170	0.010	0.0093	2.50000	ND	93.7	66 - 120	2.04	20	
Silver	2.62202	0.0030	0.0024	2.50000	ND	105	73 - 123	1.76	20	
Thallium	2.34150	0.015	0.0085	2.50000	ND	93.7	57 - 124	0.276	20	
Vanadium	2.48646	0.0030	0.0022	2.50000	0.010942	99.0	72 - 123	1.44	20	
Zinc	2.35433	0.025	0.0057	2.50000	0.023691	93.2	73 - 111	1.35	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0458 - EPA 245.1/7470_W										
Blank (B7J0458-BLK1)						Prepared: 10/17/2017 Analyzed: 10/18/2017				
Mercury	ND	0.20	0.05							
LCS (B7J0458-BS1)						Prepared: 10/17/2017 Analyzed: 10/18/2017				
Mercury	9.54958	0.20	0.05	10.0000		95.5	80 - 120			
Matrix Spike (B7J0458-MS1)			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/18/2017				
Mercury	9.82494	0.20	0.05	10.0000	0.066603	97.6	70 - 130			
Matrix Spike Dup (B7J0458-MSD1)			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/18/2017				
Mercury	10.2498	0.20	0.05	10.0000	0.066603	102	70 - 130	4.23	20	
Post Spike (B7J0458-PS1)			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/18/2017				
Mercury	4.94797			5.00000	0.066603	97.6	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0254 - GCVOA_W										
Blank (B7J0254-BLK1)						Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	ND	0.05	0.05							
Surrogate: 4-Bromofluorobenzen	*0.1180*			*0.100000*		*118*	*70 - 130*			
LCS (B7J0254-BS1)						Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	0.916000	0.05	0.05	1.00000		91.6	70 - 130			
Surrogate: 4-Bromofluorobenzen	*0.1125*			*0.100000*		*113*	*70 - 130*			
LCS Dup (B7J0254-BSD1)						Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	0.821000	0.05	0.05	1.00000		82.1	70 - 130	10.9	20	
Surrogate: 4-Bromofluorobenzen	*0.1179*			*0.100000*		*118*	*70 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0338 - GCSEMI_DRO_W										
Blank (B7J0338-BLK1)						Prepared: 10/13/2017 Analyzed: 10/14/2017				
DRO	ND	0.05	0.05							
ORO	ND	0.05	0.05							
Surrogate: p-Terphenyl	*0.1079*			*8.00000E-2*		*135*	*20 - 150*			
LCS (B7J0338-BS1)						Prepared: 10/13/2017 Analyzed: 10/14/2017				
DRO	0.547070	0.05	0.05	1.00000		54.7	42 - 142			
Surrogate: p-Terphenyl	*0.1020*			*8.00000E-2*		*128*	*20 - 150*			
LCS Dup (B7J0338-BSD1)						Prepared: 10/13/2017 Analyzed: 10/14/2017				
DRO	0.504190	0.05	0.05	1.00000		50.4	42 - 142	8.16	20	
Surrogate: p-Terphenyl	*0.1056*			*8.00000E-2*		*132*	*20 - 150*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W										
Blank (B7J0319-BLK1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,1,1,2-Tetrachloroethane	ND	0.50	0.13							
1,1,1-Trichloroethane	ND	0.50	0.38							
1,1,2,2-Tetrachloroethane	ND	0.50	0.20							
1,1,2-Trichloroethane	ND	0.50	0.19							
1,1-Dichloroethane	ND	0.50	0.20							
1,1-Dichloroethene	ND	0.50	0.28							
1,1-Dichloropropene	ND	0.50	0.36							
1,2,3-Trichloropropane	ND	0.50	0.16							
1,2,3-Trichlorobenzene	ND	0.50	0.06							
1,2,4-Trichlorobenzene	ND	0.50	0.07							
1,2,4-Trimethylbenzene	ND	0.50	0.09							
1,2-Dibromo-3-chloropropane	ND	0.50	0.20							
1,2-Dibromoethane	ND	0.50	0.13							
1,2-Dichlorobenzene	ND	0.50	0.12							
1,2-Dichloroethane	ND	0.50	0.39							
1,2-Dichloropropane	ND	0.50	0.47							
1,3,5-Trimethylbenzene	ND	0.50	0.08							
1,3-Dichlorobenzene	ND	0.50	0.13							
1,3-Dichloropropane	ND	0.50	0.08							
1,4-Dichlorobenzene	ND	0.50	0.18							
2,2-Dichloropropane	ND	0.50	0.23							
2-Chlorotoluene	ND	0.50	0.12							
4-Chlorotoluene	ND	0.50	0.11							
4-Isopropyltoluene	ND	0.50	0.12							
Benzene	ND	0.50	0.21							
Bromobenzene	ND	0.50	0.12							
Bromochloromethane	ND	0.50	0.10							
Bromodichloromethane	ND	0.50	0.32							
Bromoform	ND	0.50	0.14							
Bromomethane	ND	0.50	0.22							
Carbon disulfide	ND	1.0	0.21							
Carbon tetrachloride	ND	0.50	0.31							
Chlorobenzene	ND	0.50	0.16							
Chloroethane	ND	0.50	0.29							
Chloroform	ND	0.50	0.16							
Chloromethane	ND	0.50	0.19							
cis-1,2-Dichloroethene	ND	0.50	0.39							
cis-1,3-Dichloropropene	ND	0.50	0.08							
Di-isopropyl ether	ND	0.50	0.14							
Dibromochloromethane	ND	0.50	0.11							

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
Blank (B7J0319-BLK1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Dibromomethane	ND	0.50	0.09							
Dichlorodifluoromethane	ND	0.50	0.31							
Ethyl Acetate	ND	10	1.1							
Ethyl Ether	ND	10	1.4							
Ethyl tert-butyl ether	ND	0.50	0.08							
Ethylbenzene	ND	0.50	0.08							
Freon-113	ND	0.50	0.34							
Hexachlorobutadiene	ND	0.50	0.22							
Isopropylbenzene	ND	0.50	0.10							
m,p-Xylene	ND	1.0	0.18							
Methylene chloride	ND	1.0	0.26							
MTBE	ND	0.50	0.09							
n-Butylbenzene	ND	0.50	0.15							
n-Propylbenzene	ND	0.50	0.14							
Naphthalene	ND	0.50	0.09							
o-Xylene	ND	0.50	0.04							
sec-Butylbenzene	ND	0.50	0.15							
Styrene	ND	0.50	0.05							
tert-Amyl methyl ether	ND	0.50	0.10							
tert-Butanol	ND	10	3.0							
tert-Butylbenzene	ND	0.50	0.11							
Tetrachloroethene	ND	0.50	0.18							
Toluene	ND	0.50	0.14							
trans-1,2-Dichloroethene	ND	0.50	0.15							
trans-1,3-Dichloropropene	ND	0.50	0.09							
Trichloroethene	ND	0.50	0.15							
Trichlorofluoromethane	ND	0.50	0.33							
Vinyl acetate	ND	10	1.9							
Vinyl chloride	ND	0.50	0.25							
Surrogate: 1,2-Dichloroethane-d	*24.67*			*25.0000*		*98.7*	*70 - 166*			
Surrogate: 4-Bromofluorobenzen	*23.05*			*25.0000*		*92.2*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.32*			*25.0000*		*101*	*80 - 150*			
Surrogate: Toluene-d8	*25.18*			*25.0000*		*101*	*87 - 121*			
LCS (B7J0319-BS1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,1,1,2-Tetrachloroethane	7.43000	0.50	0.13	10.0000		74.3	73 - 136			
1,1,1-Trichloroethane	9.16000	0.50	0.38	10.0000		91.6	73 - 143			
1,1,2,2-Tetrachloroethane	9.50000	0.50	0.20	10.0000		95.0	62 - 127			
1,1,2-Trichloroethane	10.3500	0.50	0.19	10.0000		104	72 - 122			
1,1-Dichloroethane	10.0700	0.50	0.20	10.0000		101	73 - 138			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS (B7J0319-BS1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,1-Dichloroethene	9.99000	0.50	0.28	10.0000		99.9	74 - 132			
1,1-Dichloropropene	13.1800	0.50	0.36	10.0000		132	70 - 143			
1,2,3-Trichloropropane	10.3200	0.50	0.16	10.0000		103	66 - 119			
1,2,3-Trichlorobenzene	10.1600	0.50	0.06	10.0000		102	70 - 131			
1,2,4-Trichlorobenzene	10.1400	0.50	0.07	10.0000		101	70 - 128			
1,2,4-Trimethylbenzene	10.2400	0.50	0.09	10.0000		102	74 - 142			
1,2-Dibromo-3-chloropropane	6.24000	0.50	0.20	10.0000		62.4	56 - 118			
1,2-Dibromoethane	10.4100	0.50	0.13	10.0000		104	73 - 122			
1,2-Dichlorobenzene	10.4900	0.50	0.12	10.0000		105	75 - 128			
1,2-Dichloroethane	13.3700	0.50	0.39	10.0000		134	70 - 131			L4
1,2-Dichloropropane	10.6900	0.50	0.47	10.0000		107	69 - 124			
1,3,5-Trimethylbenzene	10.3000	0.50	0.08	10.0000		103	73 - 144			
1,3-Dichlorobenzene	10.5500	0.50	0.13	10.0000		106	75 - 131			
1,3-Dichloropropane	10.5900	0.50	0.08	10.0000		106	70 - 122			
1,4-Dichlorobenzene	10.5200	0.50	0.18	10.0000		105	75 - 127			
2,2-Dichloropropane	8.20000	0.50	0.23	10.0000		82.0	68 - 151			
2-Chlorotoluene	10.2100	0.50	0.12	10.0000		102	72 - 138			
4-Chlorotoluene	10.0800	0.50	0.11	10.0000		101	72 - 140			
4-Isopropyltoluene	10.4200	0.50	0.12	10.0000		104	74 - 149			
Benzene	27.1300	0.50	0.21	20.0000		136	67 - 138			
Bromobenzene	10.4900	0.50	0.12	10.0000		105	73 - 127			
Bromochloromethane	10.0900	0.50	0.10	10.0000		101	74 - 123			
Bromodichloromethane	8.40000	0.50	0.32	10.0000		84.0	74 - 129			
Bromoform	6.12000	0.50	0.14	10.0000		61.2	63 - 131			L4
Bromomethane	16.3300	0.50	0.22	10.0000		163	57 - 216			
Carbon disulfide	10.2300	1.0	0.21	10.0000		102	81 - 147			
Carbon tetrachloride	9.47000	0.50	0.31	10.0000		94.7	77 - 151			
Chlorobenzene	10.1800	0.50	0.16	10.0000		102	73 - 125			
Chloroethane	11.2000	0.50	0.29	10.0000		112	54 - 154			
Chloroform	10.3200	0.50	0.16	10.0000		103	77 - 132			
Chloromethane	5.64000	0.50	0.19	10.0000		56.4	57 - 142			L4
cis-1,2-Dichloroethene	9.86000	0.50	0.39	10.0000		98.6	73 - 126			
cis-1,3-Dichloropropene	8.28000	0.50	0.08	10.0000		82.8	76 - 120			
Di-isopropyl ether	9.00000	0.50	0.14	10.0000		90.0	54 - 147			
Dibromochloromethane	7.27000	0.50	0.11	10.0000		72.7	71 - 126			
Dibromomethane	10.0000	0.50	0.09	10.0000		100	73 - 121			
Dichlorodifluoromethane	8.66000	0.50	0.31	10.0000		86.6	48 - 152			
Ethyl Acetate	95.8800	10	1.1	100.000		95.9	50 - 144			
Ethyl Ether	94.3500	10	1.4	100.000		94.4	67 - 140			
Ethyl tert-butyl ether	8.68000	0.50	0.08	10.0000		86.8	58 - 137			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS (B7J0319-BS1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Ethylbenzene	20.9500	0.50	0.08	20.0000		105	72 - 134			
Freon-113	11.3900	0.50	0.34	10.0000		114	75 - 157			
Hexachlorobutadiene	10.1900	0.50	0.22	10.0000		102	72 - 139			
Isopropylbenzene	10.4400	0.50	0.10	10.0000		104	73 - 146			
m,p-Xylene	20.3800	1.0	0.18	20.0000		102	75 - 138			
Methylene chloride	9.38000	1.0	0.26	10.0000		93.8	52 - 154			
MTBE	8.97000	0.50	0.09	10.0000		89.7	62 - 129			
n-Butylbenzene	10.7000	0.50	0.15	10.0000		107	72 - 151			
n-Propylbenzene	10.7300	0.50	0.14	10.0000		107	69 - 149			
Naphthalene	10.2600	0.50	0.09	10.0000		103	61 - 122			
o-Xylene	20.4900	0.50	0.04	20.0000		102	66 - 147			
sec-Butylbenzene	10.6400	0.50	0.15	10.0000		106	72 - 148			
Styrene	9.95000	0.50	0.05	10.0000		99.5	72 - 138			
tert-Amyl methyl ether	8.61000	0.50	0.10	10.0000		86.1	53 - 122			
tert-Butanol	35.6900	10	3.0	50.0000		71.4	21 - 149			
tert-Butylbenzene	10.3600	0.50	0.11	10.0000		104	70 - 145			
Tetrachloroethene	10.4100	0.50	0.18	10.0000		104	61 - 145			
Toluene	21.3400	0.50	0.14	20.0000		107	70 - 140			
trans-1,2-Dichloroethene	10.1800	0.50	0.15	10.0000		102	73 - 130			
trans-1,3-Dichloropropene	7.14000	0.50	0.09	10.0000		71.4	72 - 129			L4
Trichloroethene	10.5000	0.50	0.15	10.0000		105	69 - 126			
Trichlorofluoromethane	11.2000	0.50	0.33	10.0000		112	70 - 159			
Vinyl acetate	80.0100	10	1.9	100.000		80.0	69 - 170			
Vinyl chloride	9.61000	0.50	0.25	10.0000		96.1	56 - 151			
Surrogate: 1,2-Dichloroethane-d	*24.98*			*25.0000*		*99.9*	*70 - 166*			
Surrogate: 4-Bromofluorobenzen	*24.03*			*25.0000*		*96.1*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.30*			*25.0000*		*101*	*80 - 150*			
Surrogate: Toluene-d8	*24.91*			*25.0000*		*99.6*	*87 - 121*			
LCS Dup (B7J0319-BSD1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,1,1,2-Tetrachloroethane	7.41000	0.50	0.13	10.0000		74.1	73 - 136	0.270	20	
1,1,1-Trichloroethane	9.63000	0.50	0.38	10.0000		96.3	73 - 143	5.00	20	
1,1,2,2-Tetrachloroethane	9.37000	0.50	0.20	10.0000		93.7	62 - 127	1.38	20	
1,1,2-Trichloroethane	10.4100	0.50	0.19	10.0000		104	72 - 122	0.578	20	
1,1-Dichloroethane	10.3600	0.50	0.20	10.0000		104	73 - 138	2.84	20	
1,1-Dichloroethene	10.3300	0.50	0.28	10.0000		103	74 - 132	3.35	20	
1,1-Dichloropropene	13.5800	0.50	0.36	10.0000		136	70 - 143	2.99	20	
1,2,3-Trichloropropane	10.1300	0.50	0.16	10.0000		101	66 - 119	1.86	20	
1,2,3-Trichlorobenzene	10.1500	0.50	0.06	10.0000		102	70 - 131	0.0985	20	
1,2,4-Trichlorobenzene	9.99000	0.50	0.07	10.0000		99.9	70 - 128	1.49	20	

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618-005
Report To : Brynn McCulloch
Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS Dup (B7J0319-BSD1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,2,4-Trimethylbenzene	10.2100	0.50	0.09	10.0000		102	74 - 142	0.293	20	
1,2-Dibromo-3-chloropropane	6.13000	0.50	0.20	10.0000		61.3	56 - 118	1.78	20	
1,2-Dibromoethane	10.2900	0.50	0.13	10.0000		103	73 - 122	1.16	20	
1,2-Dichlorobenzene	10.5000	0.50	0.12	10.0000		105	75 - 128	0.0953	20	
1,2-Dichloroethane	12.8400	0.50	0.39	10.0000		128	70 - 131	4.04	20	
1,2-Dichloropropane	10.7400	0.50	0.47	10.0000		107	69 - 124	0.467	20	
1,3,5-Trimethylbenzene	10.2400	0.50	0.08	10.0000		102	73 - 144	0.584	20	
1,3-Dichlorobenzene	10.5500	0.50	0.13	10.0000		106	75 - 131	0.00	20	
1,3-Dichloropropane	10.5400	0.50	0.08	10.0000		105	70 - 122	0.473	20	
1,4-Dichlorobenzene	10.4100	0.50	0.18	10.0000		104	75 - 127	1.05	20	
2,2-Dichloropropane	8.14000	0.50	0.23	10.0000		81.4	68 - 151	0.734	20	
2-Chlorotoluene	10.1800	0.50	0.12	10.0000		102	72 - 138	0.294	20	
4-Chlorotoluene	10.1200	0.50	0.11	10.0000		101	72 - 140	0.396	20	
4-Isopropyltoluene	10.3200	0.50	0.12	10.0000		103	74 - 149	0.964	20	
Benzene	28.3500	0.50	0.21	20.0000		142	67 - 138	4.40	20	L4
Bromobenzene	10.4600	0.50	0.12	10.0000		105	73 - 127	0.286	20	
Bromochloromethane	10.1700	0.50	0.10	10.0000		102	74 - 123	0.790	20	
Bromodichloromethane	8.68000	0.50	0.32	10.0000		86.8	74 - 129	3.28	20	
Bromoform	6.11000	0.50	0.14	10.0000		61.1	63 - 131	0.164	20	L4
Bromomethane	16.9000	0.50	0.22	10.0000		169	57 - 216	3.43	20	
Carbon disulfide	10.6700	1.0	0.21	10.0000		107	81 - 147	4.21	20	
Carbon tetrachloride	9.68000	0.50	0.31	10.0000		96.8	77 - 151	2.19	20	
Chlorobenzene	10.2200	0.50	0.16	10.0000		102	73 - 125	0.392	20	
Chloroethane	11.5100	0.50	0.29	10.0000		115	54 - 154	2.73	20	
Chloroform	10.6300	0.50	0.16	10.0000		106	77 - 132	2.96	20	
Chloromethane	5.59000	0.50	0.19	10.0000		55.9	57 - 142	0.890	20	L4
cis-1,2-Dichloroethene	10.1300	0.50	0.39	10.0000		101	73 - 126	2.70	20	
cis-1,3-Dichloropropene	8.26000	0.50	0.08	10.0000		82.6	76 - 120	0.242	20	
Di-isopropyl ether	9.44000	0.50	0.14	10.0000		94.4	54 - 147	4.77	20	
Dibromochloromethane	7.14000	0.50	0.11	10.0000		71.4	71 - 126	1.80	20	
Dibromomethane	10.3200	0.50	0.09	10.0000		103	73 - 121	3.15	20	
Dichlorodifluoromethane	8.66000	0.50	0.31	10.0000		86.6	48 - 152	0.00	20	
Ethyl Acetate	97.6000	10	1.1	100.000		97.6	50 - 144	1.78	20	
Ethyl Ether	96.4500	10	1.4	100.000		96.4	67 - 140	2.20	20	
Ethyl tert-butyl ether	8.98000	0.50	0.08	10.0000		89.8	58 - 137	3.40	20	
Ethylbenzene	21.1400	0.50	0.08	20.0000		106	72 - 134	0.903	20	
Freon-113	11.5900	0.50	0.34	10.0000		116	75 - 157	1.74	20	
Hexachlorobutadiene	10.1700	0.50	0.22	10.0000		102	72 - 139	0.196	20	
Isopropylbenzene	10.3400	0.50	0.10	10.0000		103	73 - 146	0.962	20	
m,p-Xylene	20.4300	1.0	0.18	20.0000		102	75 - 138	0.245	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS Dup (B7J0319-BSD1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Methylene chloride	9.82000	1.0	0.26	10.0000		98.2	52 - 154	4.58	20	
MTBE	9.11000	0.50	0.09	10.0000		91.1	62 - 129	1.55	20	
n-Butylbenzene	10.6000	0.50	0.15	10.0000		106	72 - 151	0.939	20	
n-Propylbenzene	10.6800	0.50	0.14	10.0000		107	69 - 149	0.467	20	
Naphthalene	9.85000	0.50	0.09	10.0000		98.5	61 - 122	4.08	20	
o-Xylene	20.2200	0.50	0.04	20.0000		101	66 - 147	1.33	20	
sec-Butylbenzene	10.6700	0.50	0.15	10.0000		107	72 - 148	0.282	20	
Styrene	9.96000	0.50	0.05	10.0000		99.6	72 - 138	0.100	20	
tert-Amyl methyl ether	8.70000	0.50	0.10	10.0000		87.0	53 - 122	1.04	20	
tert-Butanol	36.6800	10	3.0	50.0000		73.4	21 - 149	2.74	20	
tert-Butylbenzene	10.4400	0.50	0.11	10.0000		104	70 - 145	0.769	20	
Tetrachloroethene	10.4900	0.50	0.18	10.0000		105	61 - 145	0.766	20	
Toluene	21.5800	0.50	0.14	20.0000		108	70 - 140	1.12	20	
trans-1,2-Dichloroethene	10.3700	0.50	0.15	10.0000		104	73 - 130	1.85	20	
trans-1,3-Dichloropropene	7.17000	0.50	0.09	10.0000		71.7	72 - 129	0.419	20	L4
Trichloroethene	10.7200	0.50	0.15	10.0000		107	69 - 126	2.07	20	
Trichlorofluoromethane	11.4800	0.50	0.33	10.0000		115	70 - 159	2.47	20	
Vinyl acetate	77.8800	10	1.9	100.000		77.9	69 - 170	2.70	20	
Vinyl chloride	9.76000	0.50	0.25	10.0000		97.6	56 - 151	1.55	20	
Surrogate: 1,2-Dichloroethane-d	*25.28*			*25.0000*		*101*	*70 - 166*			
Surrogate: 4-Bromofluorobenzen	*24.08*			*25.0000*		*96.3*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.78*			*25.0000*		*103*	*80 - 150*			
Surrogate: Toluene-d8	*24.72*			*25.0000*		*98.9*	*87 - 121*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0394 - MSVOA_W										
Blank (B7J0394-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
1,1,1,2-Tetrachloroethane	ND	0.50	0.13							
1,1,1-Trichloroethane	ND	0.50	0.38							
1,1,2,2-Tetrachloroethane	ND	0.50	0.20							
1,1,2-Trichloroethane	ND	0.50	0.19							
1,1-Dichloroethane	ND	0.50	0.20							
1,1-Dichloroethene	ND	0.50	0.28							
1,1-Dichloropropene	ND	0.50	0.36							
1,2,3-Trichloropropane	ND	0.50	0.16							
1,2,3-Trichlorobenzene	ND	0.50	0.06							
1,2,4-Trichlorobenzene	ND	0.50	0.07							
1,2,4-Trimethylbenzene	ND	0.50	0.09							
1,2-Dibromo-3-chloropropane	ND	0.50	0.20							
1,2-Dibromoethane	ND	0.50	0.13							
1,2-Dichlorobenzene	ND	0.50	0.12							
1,2-Dichloroethane	ND	0.50	0.39							
1,2-Dichloropropane	ND	0.50	0.47							
1,3,5-Trimethylbenzene	ND	0.50	0.08							
1,3-Dichlorobenzene	ND	0.50	0.13							
1,3-Dichloropropane	ND	0.50	0.08							
1,4-Dichlorobenzene	ND	0.50	0.18							
2,2-Dichloropropane	ND	0.50	0.23							
2-Chlorotoluene	ND	0.50	0.12							
4-Chlorotoluene	ND	0.50	0.11							
4-Isopropyltoluene	ND	0.50	0.12							
Benzene	ND	0.50	0.21							
Bromobenzene	ND	0.50	0.12							
Bromochloromethane	ND	0.50	0.10							
Bromodichloromethane	ND	0.50	0.32							
Bromoform	ND	0.50	0.14							
Bromomethane	ND	0.50	0.22							
Carbon disulfide	ND	1.0	0.21							
Carbon tetrachloride	ND	0.50	0.31							
Chlorobenzene	ND	0.50	0.16							
Chloroethane	ND	0.50	0.29							
Chloroform	ND	0.50	0.16							
Chloromethane	ND	0.50	0.19							
cis-1,2-Dichloroethene	ND	0.50	0.39							
cis-1,3-Dichloropropene	ND	0.50	0.08							
Di-isopropyl ether	ND	0.50	0.14							
Dibromochloromethane	ND	0.50	0.11							

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0394 - MSVOA_W (continued)										
Blank (B7J0394-BLK1) - Continued						Prepared: 10/16/2017 Analyzed: 10/16/2017				
Dibromomethane	ND	0.50	0.09							
Dichlorodifluoromethane	ND	0.50	0.31							
Ethyl Acetate	ND	10	1.1							
Ethyl Ether	ND	10	1.4							
Ethyl tert-butyl ether	ND	0.50	0.08							
Ethylbenzene	ND	0.50	0.08							
Freon-113	ND	0.50	0.34							
Hexachlorobutadiene	ND	0.50	0.22							
Isopropylbenzene	ND	0.50	0.10							
m,p-Xylene	ND	1.0	0.18							
Methylene chloride	ND	1.0	0.26							
MTBE	ND	0.50	0.09							
n-Butylbenzene	ND	0.50	0.15							
n-Propylbenzene	ND	0.50	0.14							
Naphthalene	ND	0.50	0.09							
o-Xylene	ND	0.50	0.04							
sec-Butylbenzene	ND	0.50	0.15							
Styrene	ND	0.50	0.05							
tert-Amyl methyl ether	ND	0.50	0.10							
tert-Butanol	ND	10	3.0							
tert-Butylbenzene	ND	0.50	0.11							
Tetrachloroethene	ND	0.50	0.18							
Toluene	ND	0.50	0.14							
trans-1,2-Dichloroethene	ND	0.50	0.15							
trans-1,3-Dichloropropene	ND	0.50	0.09							
Trichloroethene	ND	0.50	0.15							
Trichlorofluoromethane	ND	0.50	0.33							
Vinyl acetate	ND	10	1.9							
Vinyl chloride	ND	0.50	0.25							
Surrogate: 1,2-Dichloroethane-d	*23.56*			*25.0000*		*94.2*	*70 - 166*			
Surrogate: 4-Bromofluorobenzen	*25.12*			*25.0000*		*100*	*88 - 120*			
Surrogate: Dibromofluoromethan	*23.63*			*25.0000*		*94.5*	*80 - 150*			
Surrogate: Toluene-d8	*24.39*			*25.0000*		*97.6*	*87 - 121*			
LCS (B7J0394-BS1)						Prepared: 10/16/2017 Analyzed: 10/16/2017				
1,1,1,2-Tetrachloroethane	8.14000	0.50	0.13	10.0000		81.4	73 - 136			
1,1,1-Trichloroethane	9.56000	0.50	0.38	10.0000		95.6	73 - 143			
1,1,2,2-Tetrachloroethane	8.93000	0.50	0.20	10.0000		89.3	62 - 127			
1,1,2-Trichloroethane	9.63000	0.50	0.19	10.0000		96.3	72 - 122			
1,1-Dichloroethane	10.2300	0.50	0.20	10.0000		102	73 - 138			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0394 - MSVOA_W (continued)										
LCS (B7J0394-BS1) - Continued					Prepared: 10/16/2017 Analyzed: 10/16/2017					
1,1-Dichloroethene	10.3300	0.50	0.28	10.0000		103	74 - 132			
1,1-Dichloropropene	13.1400	0.50	0.36	10.0000		131	70 - 143			
1,2,3-Trichloropropane	9.58000	0.50	0.16	10.0000		95.8	66 - 119			
1,2,3-Trichlorobenzene	9.99000	0.50	0.06	10.0000		99.9	70 - 131			
1,2,4-Trichlorobenzene	10.0200	0.50	0.07	10.0000		100	70 - 128			
1,2,4-Trimethylbenzene	10.1400	0.50	0.09	10.0000		101	74 - 142			
1,2-Dibromo-3-chloropropane	6.02000	0.50	0.20	10.0000		60.2	56 - 118			
1,2-Dibromoethane	9.69000	0.50	0.13	10.0000		96.9	73 - 122			
1,2-Dichlorobenzene	10.3600	0.50	0.12	10.0000		104	75 - 128			
1,2-Dichloroethane	11.7800	0.50	0.39	10.0000		118	70 - 131			
1,2-Dichloropropane	10.8000	0.50	0.47	10.0000		108	69 - 124			
1,3,5-Trimethylbenzene	10.3200	0.50	0.08	10.0000		103	73 - 144			
1,3-Dichlorobenzene	10.5800	0.50	0.13	10.0000		106	75 - 131			
1,3-Dichloropropane	9.97000	0.50	0.08	10.0000		99.7	70 - 122			
1,4-Dichlorobenzene	10.4300	0.50	0.18	10.0000		104	75 - 127			
2,2-Dichloropropane	8.73000	0.50	0.23	10.0000		87.3	68 - 151			
2-Chlorotoluene	10.2400	0.50	0.12	10.0000		102	72 - 138			
4-Chlorotoluene	10.0100	0.50	0.11	10.0000		100	72 - 140			
4-Isopropyltoluene	10.4800	0.50	0.12	10.0000		105	74 - 149			
Benzene	26.9200	0.50	0.21	20.0000		135	67 - 138			
Bromobenzene	10.5500	0.50	0.12	10.0000		106	73 - 127			
Bromochloromethane	9.86000	0.50	0.10	10.0000		98.6	74 - 123			
Bromodichloromethane	8.76000	0.50	0.32	10.0000		87.6	74 - 129			
Bromoform	6.38000	0.50	0.14	10.0000		63.8	63 - 131			
Bromomethane	14.4800	0.50	0.22	10.0000		145	57 - 216			
Carbon disulfide	10.6600	1.0	0.21	10.0000		107	81 - 147			
Carbon tetrachloride	10.4800	0.50	0.31	10.0000		105	77 - 151			
Chlorobenzene	10.3300	0.50	0.16	10.0000		103	73 - 125			
Chloroethane	12.5400	0.50	0.29	10.0000		125	54 - 154			
Chloroform	10.3200	0.50	0.16	10.0000		103	77 - 132			
Chloromethane	5.55000	0.50	0.19	10.0000		55.5	57 - 142			L4
cis-1,2-Dichloroethene	10.0200	0.50	0.39	10.0000		100	73 - 126			
cis-1,3-Dichloropropene	8.66000	0.50	0.08	10.0000		86.6	76 - 120			
Di-isopropyl ether	9.21000	0.50	0.14	10.0000		92.1	54 - 147			
Dibromochloromethane	7.46000	0.50	0.11	10.0000		74.6	71 - 126			
Dibromomethane	9.77000	0.50	0.09	10.0000		97.7	73 - 121			
Dichlorodifluoromethane	9.01000	0.50	0.31	10.0000		90.1	48 - 152			
Ethyl Acetate	84.8300	10	1.1	100.000		84.8	50 - 144			
Ethyl Ether	90.6800	10	1.4	100.000		90.7	67 - 140			
Ethyl tert-butyl ether	8.37000	0.50	0.08	10.0000		83.7	58 - 137			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0394 - MSVOA_W (continued)										
LCS (B7J0394-BS1) - Continued						Prepared: 10/16/2017 Analyzed: 10/16/2017				
Ethylbenzene	21.2500	0.50	0.08	20.0000		106	72 - 134			
Freon-113	11.7900	0.50	0.34	10.0000		118	75 - 157			
Hexachlorobutadiene	10.4600	0.50	0.22	10.0000		105	72 - 139			
Isopropylbenzene	10.4300	0.50	0.10	10.0000		104	73 - 146			
m,p-Xylene	20.4900	1.0	0.18	20.0000		102	75 - 138			
Methylene chloride	11.9600	1.0	0.26	10.0000		120	52 - 154			
MTBE	8.47000	0.50	0.09	10.0000		84.7	62 - 129			
n-Butylbenzene	10.7500	0.50	0.15	10.0000		108	72 - 151			
n-Propylbenzene	10.7500	0.50	0.14	10.0000		108	69 - 149			
Naphthalene	9.19000	0.50	0.09	10.0000		91.9	61 - 122			
o-Xylene	20.5200	0.50	0.04	20.0000		103	66 - 147			
sec-Butylbenzene	10.7300	0.50	0.15	10.0000		107	72 - 148			
Styrene	9.91000	0.50	0.05	10.0000		99.1	72 - 138			
tert-Amyl methyl ether	8.07000	0.50	0.10	10.0000		80.7	53 - 122			
tert-Butanol	30.9400	10	3.0	50.0000		61.9	21 - 149			
tert-Butylbenzene	10.3600	0.50	0.11	10.0000		104	70 - 145			
Tetrachloroethene	11.1500	0.50	0.18	10.0000		112	61 - 145			
Toluene	21.2400	0.50	0.14	20.0000		106	70 - 140			
trans-1,2-Dichloroethene	10.2000	0.50	0.15	10.0000		102	73 - 130			
trans-1,3-Dichloropropene	7.62000	0.50	0.09	10.0000		76.2	72 - 129			
Trichloroethene	10.7900	0.50	0.15	10.0000		108	69 - 126			
Trichlorofluoromethane	11.2700	0.50	0.33	10.0000		113	70 - 159			
Vinyl acetate	78.3700	10	1.9	100.000		78.4	69 - 170			
Vinyl chloride	9.50000	0.50	0.25	10.0000		95.0	56 - 151			
Surrogate: 1,2-Dichloroethane-d	*23.26*			*25.0000*		*93.0*	*70 - 166*			
Surrogate: 4-Bromofluorobenzen	*23.90*			*25.0000*		*95.6*	*88 - 120*			
Surrogate: Dibromofluoromethan	*24.79*			*25.0000*		*99.2*	*80 - 150*			
Surrogate: Toluene-d8	*24.34*			*25.0000*		*97.4*	*87 - 121*			
LCS Dup (B7J0394-BSD1)						Prepared: 10/16/2017 Analyzed: 10/16/2017				
1,1,1,2-Tetrachloroethane	8.07000	0.50	0.13	10.0000		80.7	73 - 136	0.864	20	
1,1,1-Trichloroethane	9.72000	0.50	0.38	10.0000		97.2	73 - 143	1.66	20	
1,1,2,2-Tetrachloroethane	9.30000	0.50	0.20	10.0000		93.0	62 - 127	4.06	20	
1,1,2-Trichloroethane	10.1500	0.50	0.19	10.0000		102	72 - 122	5.26	20	
1,1-Dichloroethane	10.0900	0.50	0.20	10.0000		101	73 - 138	1.38	20	
1,1-Dichloroethene	10.3400	0.50	0.28	10.0000		103	74 - 132	0.0968	20	
1,1-Dichloropropene	13.4800	0.50	0.36	10.0000		135	70 - 143	2.55	20	
1,2,3-Trichloropropane	9.54000	0.50	0.16	10.0000		95.4	66 - 119	0.418	20	
1,2,3-Trichlorobenzene	10.1600	0.50	0.06	10.0000		102	70 - 131	1.69	20	
1,2,4-Trichlorobenzene	10.3200	0.50	0.07	10.0000		103	70 - 128	2.95	20	

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618-005
Report To : Brynn McCulloch
Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0394 - MSVOA_W (continued)										
LCS Dup (B7J0394-BSD1) - Continued					Prepared: 10/16/2017 Analyzed: 10/16/2017					
1,2,4-Trimethylbenzene	10.3500	0.50	0.09	10.0000		104	74 - 142	2.05	20	
1,2-Dibromo-3-chloropropane	6.18000	0.50	0.20	10.0000		61.8	56 - 118	2.62	20	
1,2-Dibromoethane	9.96000	0.50	0.13	10.0000		99.6	73 - 122	2.75	20	
1,2-Dichlorobenzene	10.6000	0.50	0.12	10.0000		106	75 - 128	2.29	20	
1,2-Dichloroethane	12.9500	0.50	0.39	10.0000		130	70 - 131	9.46	20	
1,2-Dichloropropane	11.0800	0.50	0.47	10.0000		111	69 - 124	2.56	20	
1,3,5-Trimethylbenzene	10.3800	0.50	0.08	10.0000		104	73 - 144	0.580	20	
1,3-Dichlorobenzene	10.7400	0.50	0.13	10.0000		107	75 - 131	1.50	20	
1,3-Dichloropropane	10.3700	0.50	0.08	10.0000		104	70 - 122	3.93	20	
1,4-Dichlorobenzene	10.6000	0.50	0.18	10.0000		106	75 - 127	1.62	20	
2,2-Dichloropropane	9.24000	0.50	0.23	10.0000		92.4	68 - 151	5.68	20	
2-Chlorotoluene	10.2100	0.50	0.12	10.0000		102	72 - 138	0.293	20	
4-Chlorotoluene	10.1000	0.50	0.11	10.0000		101	72 - 140	0.895	20	
4-Isopropyltoluene	10.6000	0.50	0.12	10.0000		106	74 - 149	1.14	20	
Benzene	26.6100	0.50	0.21	20.0000		133	67 - 138	1.16	20	
Bromobenzene	10.6800	0.50	0.12	10.0000		107	73 - 127	1.22	20	
Bromochloromethane	10.1300	0.50	0.10	10.0000		101	74 - 123	2.70	20	
Bromodichloromethane	8.87000	0.50	0.32	10.0000		88.7	74 - 129	1.25	20	
Bromoform	6.47000	0.50	0.14	10.0000		64.7	63 - 131	1.40	20	
Bromomethane	15.8500	0.50	0.22	10.0000		158	57 - 216	9.03	20	
Carbon disulfide	10.4800	1.0	0.21	10.0000		105	81 - 147	1.70	20	
Carbon tetrachloride	10.2200	0.50	0.31	10.0000		102	77 - 151	2.51	20	
Chlorobenzene	10.4500	0.50	0.16	10.0000		104	73 - 125	1.15	20	
Chloroethane	13.3100	0.50	0.29	10.0000		133	54 - 154	5.96	20	
Chloroform	10.5800	0.50	0.16	10.0000		106	77 - 132	2.49	20	
Chloromethane	4.93000	0.50	0.19	10.0000		49.3	57 - 142	11.8	20	L4
cis-1,2-Dichloroethene	10.1100	0.50	0.39	10.0000		101	73 - 126	0.894	20	
cis-1,3-Dichloropropene	8.82000	0.50	0.08	10.0000		88.2	76 - 120	1.83	20	
Di-isopropyl ether	8.99000	0.50	0.14	10.0000		89.9	54 - 147	2.42	20	
Dibromochloromethane	7.99000	0.50	0.11	10.0000		79.9	71 - 126	6.86	20	
Dibromomethane	9.93000	0.50	0.09	10.0000		99.3	73 - 121	1.62	20	
Dichlorodifluoromethane	8.98000	0.50	0.31	10.0000		89.8	48 - 152	0.334	20	
Ethyl Acetate	84.7200	10	1.1	100.000		84.7	50 - 144	0.130	20	
Ethyl Ether	90.1800	10	1.4	100.000		90.2	67 - 140	0.553	20	
Ethyl tert-butyl ether	8.42000	0.50	0.08	10.0000		84.2	58 - 137	0.596	20	
Ethylbenzene	21.3500	0.50	0.08	20.0000		107	72 - 134	0.469	20	
Freon-113	11.9500	0.50	0.34	10.0000		120	75 - 157	1.35	20	
Hexachlorobutadiene	10.8200	0.50	0.22	10.0000		108	72 - 139	3.38	20	
Isopropylbenzene	10.6000	0.50	0.10	10.0000		106	73 - 146	1.62	20	
m,p-Xylene	20.5800	1.0	0.18	20.0000		103	75 - 138	0.438	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0394 - MSVOA_W (continued)										
LCS Dup (B7J0394-BSD1) - Continued					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Methylene chloride	9.74000	1.0	0.26	10.0000		97.4	52 - 154	20.5	20	R
MTBE	8.52000	0.50	0.09	10.0000		85.2	62 - 129	0.589	20	
n-Butylbenzene	10.9300	0.50	0.15	10.0000		109	72 - 151	1.66	20	
n-Propylbenzene	10.8700	0.50	0.14	10.0000		109	69 - 149	1.11	20	
Naphthalene	9.61000	0.50	0.09	10.0000		96.1	61 - 122	4.47	20	
o-Xylene	20.3700	0.50	0.04	20.0000		102	66 - 147	0.734	20	
sec-Butylbenzene	10.8600	0.50	0.15	10.0000		109	72 - 148	1.20	20	
Styrene	10.1100	0.50	0.05	10.0000		101	72 - 138	2.00	20	
tert-Amyl methyl ether	8.21000	0.50	0.10	10.0000		82.1	53 - 122	1.72	20	
tert-Butanol	31.1000	10	3.0	50.0000		62.2	21 - 149	0.516	20	
tert-Butylbenzene	10.4500	0.50	0.11	10.0000		104	70 - 145	0.865	20	
Tetrachloroethene	11.2400	0.50	0.18	10.0000		112	61 - 145	0.804	20	
Toluene	21.4700	0.50	0.14	20.0000		107	70 - 140	1.08	20	
trans-1,2-Dichloroethene	10.4300	0.50	0.15	10.0000		104	73 - 130	2.23	20	
trans-1,3-Dichloropropene	7.89000	0.50	0.09	10.0000		78.9	72 - 129	3.48	20	
Trichloroethene	10.7400	0.50	0.15	10.0000		107	69 - 126	0.464	20	
Trichlorofluoromethane	11.6700	0.50	0.33	10.0000		117	70 - 159	3.49	20	
Vinyl acetate	87.0500	10	1.9	100.000		87.0	69 - 170	10.5	20	
Vinyl chloride	9.46000	0.50	0.25	10.0000		94.6	56 - 151	0.422	20	
Surrogate: 1,2-Dichloroethane-d	*23.46*			*25.0000*		*93.8*	*70 - 166*			
Surrogate: 4-Bromofluorobenzen	*23.75*			*25.0000*		*95.0*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.08*			*25.0000*		*100*	*80 - 150*			
Surrogate: Toluene-d8	*24.58*			*25.0000*		*98.3*	*87 - 121*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0413 - MSSEMI_W										
Blank (B7J0413-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	ND	0.20	0.02							
Acenaphthene	ND	0.20	0.02							
Acenaphthylene	ND	0.20	0.02							
Anthracene	ND	0.20	0.01							
Benzo(a)anthracene	ND	0.20	0.01							
Benzo(a)pyrene	ND	0.20	0.01							
Benzo(b)fluoranthene	ND	0.20	0.06							
Benzo(g,h,i)perylene	ND	0.20	0.02							
Benzo(k)fluoranthene	ND	0.20	0.02							
Chrysene	ND	0.20	0.02							
Dibenz(a,h)anthracene	ND	0.20	0.02							
Fluoranthene	ND	0.20	0.02							
Fluorene	ND	0.20	0.02							
Indeno(1,2,3-cd)pyrene	ND	0.20	0.02							
Naphthalene	ND	0.20	0.02							
Phenanthrene	ND	0.20	0.02							
Pyrene	ND	0.20	0.02							
Surrogate: 1,2-Dichlorobenzene-	*0.7723*			*1.00000*		*77.2*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8111*			*1.00000*		*81.1*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.9341*			*1.00000*		*93.4*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*1.165*			*1.00000*		*117*	*32 - 119*			
LCS (B7J0413-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	0.594950	0.20	0.02	1.00000		59.5	38 - 137			
Acenaphthene	0.670340	0.20	0.02	1.00000		67.0	38 - 103			
Acenaphthylene	0.682710	0.20	0.02	1.00000		68.3	41 - 102			
Anthracene	0.707100	0.20	0.01	1.00000		70.7	37 - 118			
Benzo(a)anthracene	0.778780	0.20	0.01	1.00000		77.9	42 - 118			
Benzo(a)pyrene	0.712580	0.20	0.01	1.00000		71.3	17 - 148			
Benzo(b)fluoranthene	0.800210	0.20	0.06	1.00000		80.0	33 - 126			
Benzo(g,h,i)perylene	0.716580	0.20	0.02	1.00000		71.7	33 - 123			
Benzo(k)fluoranthene	0.803040	0.20	0.02	1.00000		80.3	20 - 131			
Chrysene	0.747150	0.20	0.02	1.00000		74.7	44 - 127			
Dibenz(a,h)anthracene	0.796090	0.20	0.02	1.00000		79.6	31 - 122			
Fluoranthene	0.761460	0.20	0.02	1.00000		76.1	48 - 113			
Fluorene	0.740860	0.20	0.02	1.00000		74.1	46 - 100			
Indeno(1,2,3-cd)pyrene	0.750140	0.20	0.02	1.00000		75.0	35 - 123			
Naphthalene	0.706850	0.20	0.02	1.00000		70.7	35 - 115			
Phenanthrene	0.708600	0.20	0.02	1.00000		70.9	43 - 112			
Pyrene	0.762180	0.20	0.02	1.00000		76.2	47 - 116			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0413 - MSSEMI_W (continued)										
LCS (B7J0413-BS1) - Continued						Prepared: 10/16/2017 Analyzed: 10/16/2017				
Surrogate: 1,2-Dichlorobenzene-	*0.7505*			*1.00000*		*75.1*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8615*			*1.00000*		*86.2*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.8931*			*1.00000*		*89.3*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*0.9966*			*1.00000*		*99.7*	*32 - 119*			
LCS Dup (B7J0413-BSD1)						Prepared: 10/16/2017 Analyzed: 10/16/2017				
2-Methylnaphthalene	0.588280	0.20	0.02	1.00000		58.8	38 - 137	1.13	20	
Acenaphthene	0.688400	0.20	0.02	1.00000		68.8	38 - 103	2.66	20	
Acenaphthylene	0.696510	0.20	0.02	1.00000		69.7	41 - 102	2.00	20	
Anthracene	0.698560	0.20	0.01	1.00000		69.9	37 - 118	1.22	20	
Benzo(a)anthracene	0.791900	0.20	0.01	1.00000		79.2	42 - 118	1.67	20	
Benzo(a)pyrene	0.696140	0.20	0.01	1.00000		69.6	17 - 148	2.33	20	
Benzo(b)fluoranthene	0.811500	0.20	0.06	1.00000		81.2	33 - 126	1.40	20	
Benzo(g,h,i)perylene	0.721590	0.20	0.02	1.00000		72.2	33 - 123	0.697	20	
Benzo(k)fluoranthene	0.794240	0.20	0.02	1.00000		79.4	20 - 131	1.10	20	
Chrysene	0.745200	0.20	0.02	1.00000		74.5	44 - 127	0.261	20	
Dibenz(a,h)anthracene	0.792430	0.20	0.02	1.00000		79.2	31 - 122	0.461	20	
Fluoranthene	0.772070	0.20	0.02	1.00000		77.2	48 - 113	1.38	20	
Fluorene	0.737630	0.20	0.02	1.00000		73.8	46 - 100	0.437	20	
Indeno(1,2,3-cd)pyrene	0.762320	0.20	0.02	1.00000		76.2	35 - 123	1.61	20	
Naphthalene	0.704320	0.20	0.02	1.00000		70.4	35 - 115	0.359	20	
Phenanthrene	0.702930	0.20	0.02	1.00000		70.3	43 - 112	0.803	20	
Pyrene	0.772110	0.20	0.02	1.00000		77.2	47 - 116	1.29	20	
Surrogate: 1,2-Dichlorobenzene-	*0.7333*			*1.00000*		*73.3*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8521*			*1.00000*		*85.2*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.8699*			*1.00000*		*87.0*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*0.9920*			*1.00000*		*99.2*	*32 - 119*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 1

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐	2.6 Blue ice		

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax: 949-250-1114

SEND REPORT TO:
Attn: Bryan McCulloch Email: BMcCulloch@leightongroup.com
Company: Leighton
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618-005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments:

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPHg/TPHd; 8015(DRO) TPHo; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; PAHs 8270sim

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	TAT	Container #: Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn((Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	1703C40-01	LB1-GW	10-11-17	930	5	9	X		
2	-02	LB25-GW		1150			X		
3	-03	LB13-GW		1345			X		
4	-04	LB23-GW		1522			X		
5									
6									
7									
8									
9									
10									

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

SUBCONTRACT

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformated report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Kevin Hall — Submitter Print Name
Kevin C. Hall — Signature

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kevin C. Hall	10/11/17	1618	FEDEX	10/11/17	1618
FEDEX	10/11/17	1704	MPL	10/11/17	1704

ADVANCED TECHNOLOGY LABORATORIES

October 19, 2017

Brynn McCulloch
Leighton Consulting, Inc.
17781 Cowan Street
Irvine, CA 92614
Tel: (949) 394-2306
Fax:(949) 250-1114

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1703641
Client Reference : POLA Berth 191-193, 11618.005

Enclosed are the results for sample(s) received on October 11, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB5-0.5	1703641-01	Soil	10/11/17 10:10	10/11/17 16:18
LB5-2.5	1703641-02	Soil	10/11/17 10:12	10/11/17 16:18
LB5-5.0	1703641-03	Soil	10/11/17 10:14	10/11/17 16:18
LB9-0.5	1703641-04	Soil	10/11/17 10:24	10/11/17 16:18
LB9-2.5	1703641-05	Soil	10/11/17 10:26	10/11/17 16:18
LB9-5.0	1703641-06	Soil	10/11/17 10:28	10/11/17 16:18
LB14-0.5	1703641-07	Soil	10/11/17 10:44	10/11/17 16:18
LB14-2.5	1703641-08	Soil	10/11/17 10:46	10/11/17 16:18
LB14-5.0	1703641-09	Soil	10/11/17 10:48	10/11/17 16:18
LB20-0.5	1703641-10	Soil	10/11/17 11:12	10/11/17 16:18
LB3-0.5	1703641-11	Soil	10/11/17 7:54	10/11/17 16:18
LB3-2.5	1703641-12	Soil	10/11/17 7:56	10/11/17 16:18
LB3-5.0	1703641-13	Soil	10/11/17 7:58	10/11/17 16:18
LB4-0.5	1703641-14	Soil	10/11/17 8:34	10/11/17 16:18
LB4-2.5	1703641-15	Soil	10/11/17 8:36	10/11/17 16:18
LB4-3.5	1703641-16	Soil	10/11/17 8:38	10/11/17 16:18
LB1-0.5	1703641-17	Soil	10/11/17 9:22	10/11/17 16:18
LB1-2.5	1703641-18	Soil	10/11/17 9:24	10/11/17 16:18
LB1-5.0	1703641-19	Soil	10/11/17 9:26	10/11/17 16:18
LB2-0.5	1703641-20	Soil	10/11/17 9:59	10/11/17 16:18
LB20-2.5	1703641-21	Soil	10/11/17 11:15	10/11/17 16:18
LB20-5.0	1703641-22	Soil	10/11/17 11:18	10/11/17 16:18
LB25-0.5	1703641-23	Soil	10/11/17 11:42	10/11/17 16:18
LB25-2.5	1703641-24	Soil	10/11/17 11:45	10/11/17 16:18
LB25-5.0	1703641-25	Soil	10/11/17 11:47	10/11/17 16:18
LB24-0.5	1703641-26	Soil	10/11/17 12:52	10/11/17 16:18
LB24-2.5	1703641-27	Soil	10/11/17 12:54	10/11/17 16:18
LB24-5.0	1703641-28	Soil	10/11/17 12:56	10/11/17 16:18
LB19-0.5	1703641-29	Soil	10/11/17 13:05	10/11/17 16:18
LB19-2.5	1703641-30	Soil	10/11/17 13:07	10/11/17 16:18
LB19-5.0	1703641-31	Soil	10/11/17 13:09	10/11/17 16:18
LB13-0.5	1703641-32	Soil	10/11/17 13:40	10/11/17 16:18
LB13-2.5	1703641-33	Soil	10/11/17 13:42	10/11/17 16:18
LB13-5.0	1703641-34	Soil	10/11/17 13:44	10/11/17 16:18
LB8-0.5	1703641-35	Soil	10/11/17 14:02	10/11/17 16:18
LB8-2.5	1703641-36	Soil	10/11/17 14:04	10/11/17 16:18
LB8-5.0	1703641-37	Soil	10/11/17 14:06	10/11/17 16:18

Certificate of Analysis

Leighton Consulting, Inc.		Project Number :	POLA Berth 191-193, 11618.005
17781 Cowan Street		Report To :	Brynn McCulloch
Irvine , CA 92614		Reported :	10/19/2017

LB12-0.5	1703641-38	Soil	10/11/17 14:23	10/11/17 16:18
LB12-2.5	1703641-39	Soil	10/11/17 14:25	10/11/17 16:18
LB12-5.0	1703641-40	Soil	10/11/17 14:27	10/11/17 16:18
LB17-0.5	1703641-41	Soil	10/11/17 14:38	10/11/17 16:18
LB17-2.5	1703641-42	Soil	10/11/17 14:40	10/11/17 16:18
LB17-5.0	1703641-43	Soil	10/11/17 14:42	10/11/17 16:18
LB18-0.5	1703641-44	Soil	10/11/17 14:53	10/11/17 16:18
LB18-2.5	1703641-45	Soil	10/11/17 14:55	10/11/17 16:18
LB18-5.0	1703641-46	Soil	10/11/17 14:57	10/11/17 16:18
LB23-0.5	1703641-47	Soil	10/11/17 15:15	10/11/17 16:18
LB23-2.5	1703641-48	Soil	10/11/17 15:18	10/11/17 16:18
LB23-5.0	1703641-49	Soil	10/11/17 15:20	10/11/17 16:18
LB2-2.5	1703641-50	Soil	10/11/17 9:57	10/11/17 16:18
LB2-5.0	1703641-51	Soil	10/11/17 9:55	10/11/17 16:18

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB5-0.5

Lab ID: 1703641-01

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Arsenic	**2.8**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Barium	**73**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Chromium	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Cobalt	**5.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Copper	**22**	2.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Lead	**14**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Nickel	**12**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Vanadium	**23**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	
Zinc	**51**	1.0	1	B7J0379	10/16/2017	10/17/17 12:14	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0397	10/17/2017	10/17/17 15:29	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.1	1	B7J0257	10/12/2017	10/12/17 13:06	
Surrogate: 4-Bromofluorobenzene	*87.2 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 13:06*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**470**	100	50	B7J0415	10/16/2017	10/17/17 14:47	
ORO	**1500**	100	50	B7J0415	10/16/2017	10/17/17 14:47	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB5-0.5

Lab ID: 1703641-01

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 14:47*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB5-2.5

Lab ID: 1703641-02

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**2.5**	2.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Arsenic	**5.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Barium	**89**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Chromium	**12**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Cobalt	**5.1**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Copper	**51**	2.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Lead	**99**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Nickel	**12**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Vanadium	**23**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	
Zinc	**160**	1.0	1	B7J0379	10/16/2017	10/17/17 12:18	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**1.4**	0.10	1	B7J0397	10/17/2017	10/17/17 15:36	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.92	1	B7J0257	10/12/2017	10/12/17 13:24	
Surrogate: 4-Bromofluorobenzene	*100 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 13:24*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**20**	1.0	1	B7J0415	10/16/2017	10/17/17 16:47	
ORO	**46**	1.0	1	B7J0415	10/16/2017	10/17/17 16:47	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB5-2.5

Lab ID: 1703641-02

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*76.9 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 16:47*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB5-5.0

Lab ID: 1703641-03

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Arsenic	**1.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Barium	**47**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Chromium	**9.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Cobalt	**5.3**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Copper	**6.3**	2.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Nickel	**7.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Vanadium	**17**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	
Zinc	**25**	1.0	1	B7J0379	10/16/2017	10/17/17 12:19	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.18**	0.10	1	B7J0397	10/17/2017	10/17/17 15:38	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.1	1	B7J0257	10/12/2017	10/12/17 13:43	
Surrogate: 4-Bromofluorobenzene	*104 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 13:43*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**19**	1.0	1	B7J0415	10/16/2017	10/17/17 12:29	
ORO	**15**	1.0	1	B7J0415	10/16/2017	10/17/17 12:29	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB5-5.0

Lab ID: 1703641-03

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*111 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 12:29*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB9-0.5

Lab ID: 1703641-04

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Arsenic	**2.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Barium	**90**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Chromium	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Cobalt	**6.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Copper	**19**	2.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Lead	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Nickel	**12**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Vanadium	**27**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	
Zinc	**44**	1.0	1	B7J0379	10/16/2017	10/17/17 12:20	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.12**	0.10	1	B7J0397	10/17/2017	10/17/17 15:40	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.1	1	B7J0257	10/12/2017	10/12/17 14:01	
Surrogate: 4-Bromofluorobenzene	*95.2 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 14:01*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**690**	100	50	B7J0415	10/16/2017	10/17/17 16:30	
ORO	**2500**	100	50	B7J0415	10/16/2017	10/17/17 16:30	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB9-0.5

Lab ID: 1703641-04

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 16:30*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB9-2.5

Lab ID: 1703641-05

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Arsenic	**3.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Barium	**55**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Chromium	**11**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Cobalt	**5.9**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Copper	**14**	2.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Lead	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Nickel	**9.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Vanadium	**22**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	
Zinc	**46**	1.0	1	B7J0379	10/16/2017	10/17/17 12:21	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.27**	0.10	1	B7J0397	10/17/2017	10/17/17 15:42	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.94	1	B7J0257	10/12/2017	10/12/17 14:20	
Surrogate: 4-Bromofluorobenzene	*103 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 14:20*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**75**	20	20	B7J0415	10/16/2017	10/17/17 13:21	
ORO	**160**	20	20	B7J0415	10/16/2017	10/17/17 13:21	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB9-2.5

Lab ID: 1703641-05

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 13:21*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB9-5.0

Lab ID: 1703641-06

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Arsenic	**2.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Barium	**21**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Chromium	**5.8**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Cobalt	**3.1**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Copper	**2.6**	2.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Nickel	**3.8**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Vanadium	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	
Zinc	**14**	1.0	1	B7J0379	10/16/2017	10/17/17 12:22	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.12**	0.10	1	B7J0397	10/17/2017	10/17/17 15:48	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.86	1	B7J0257	10/12/2017	10/12/17 14:38	
Surrogate: 4-Bromofluorobenzene	*93.3 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 14:38*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.9**	1.0	1	B7J0415	10/16/2017	10/17/17 11:02	
ORO	**5.7**	1.0	1	B7J0415	10/16/2017	10/17/17 11:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB9-5.0

Lab ID: 1703641-06

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*125 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 11:02*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB14-0.5

Lab ID: 1703641-07

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Arsenic	**3.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Barium	**84**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Chromium	**24**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Cobalt	**6.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Copper	**33**	2.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Lead	**28**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Nickel	**16**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Vanadium	**27**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	
Zinc	**86**	1.0	1	B7J0379	10/16/2017	10/17/17 12:26	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.28**	0.10	1	B7J0397	10/17/2017	10/17/17 15:49	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0257	10/12/2017	10/12/17 14:56	
Surrogate: 4-Bromofluorobenzene	*94.3 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 14:56*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**160**	50	50	B7J0415	10/16/2017	10/17/17 13:04	
ORO	**440**	50	50	B7J0415	10/16/2017	10/17/17 13:04	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB14-0.5

Lab ID: 1703641-07

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 13:04*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB14-2.5

Lab ID: 1703641-08

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Arsenic	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Barium	**97**	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Chromium	**8.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Cobalt	**4.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Copper	**9.3**	2.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Nickel	**5.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Vanadium	**18**	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	
Zinc	**26**	1.0	1	B7J0379	10/16/2017	10/17/17 12:27	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.15**	0.10	1	B7J0397	10/17/2017	10/17/17 15:51	

Gasoline Range Organics by EPA 8015B (Modified) (5035)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.2	1	B7J0257	10/12/2017	10/12/17 15:15	
Surrogate: 4-Bromofluorobenzene	*55.1 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 15:15*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.2**	1.0	1	B7J0415	10/16/2017	10/17/17 12:46	
ORO	**15**	1.0	1	B7J0415	10/16/2017	10/17/17 12:46	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB14-2.5

Lab ID: 1703641-08

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*140 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 12:46*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB14-5.0

Lab ID: 1703641-09

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Arsenic	**1.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Barium	**57**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Chromium	**11**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Cobalt	**6.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Copper	**7.8**	2.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Nickel	**8.3**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Vanadium	**21**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	
Zinc	**30**	1.0	1	B7J0379	10/16/2017	10/17/17 12:28	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.21**	0.10	1	B7J0397	10/17/2017	10/17/17 15:53	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0257	10/12/2017	10/12/17 15:33	
Surrogate: 4-Bromofluorobenzene	*102 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 15:33*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.6**	1.0	1	B7J0415	10/16/2017	10/17/17 10:45	
ORO	**3.1**	1.0	1	B7J0415	10/16/2017	10/17/17 10:45	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB14-5.0

Lab ID: 1703641-09

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*77.7 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 10:45*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB20-0.5

Lab ID: 1703641-10

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Arsenic	**3.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Barium	**52**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Chromium	**15**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Cobalt	**6.1**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Copper	**39**	2.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Lead	**35**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Nickel	**21**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Vanadium	**32**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	
Zinc	**110**	1.0	1	B7J0379	10/16/2017	10/17/17 12:29	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.22**	0.10	1	B7J0397	10/17/2017	10/17/17 15:55	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0257	10/12/2017	10/12/17 15:52	
Surrogate: 4-Bromofluorobenzene	*106 %*	*50 - 138*		B7J0257	10/12/2017	*10/12/17 15:52*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**14**	1.0	1	B7J0415	10/16/2017	10/17/17 14:12	
ORO	**26**	1.0	1	B7J0415	10/16/2017	10/17/17 14:12	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB20-0.5

Lab ID: 1703641-10

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*132 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 14:12*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB3-0.5

Lab ID: 1703641-11

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Arsenic	**2.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Barium	**53**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Chromium	**10**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Cobalt	**4.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Copper	**8.8**	2.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Lead	**29**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Nickel	**7.9**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Vanadium	**20**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	
Zinc	**65**	1.0	1	B7J0379	10/16/2017	10/17/17 12:30	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.25**	0.10	1	B7J0397	10/17/2017	10/17/17 15:57	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0270	10/12/2017	10/12/17 21:24	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0270	10/12/2017	*10/12/17 21:24*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**20**	1.0	1	B7J0415	10/16/2017	10/17/17 15:55	
ORO	**41**	1.0	1	B7J0415	10/16/2017	10/17/17 15:55	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB3-0.5

Lab ID: 1703641-11

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*145 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 15:55*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB3-2.5

Lab ID: 1703641-12

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Arsenic	**2.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Barium	**29**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Chromium	**6.1**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Cobalt	**3.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Copper	**3.5**	2.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Nickel	**4.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Vanadium	**12**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	
Zinc	**18**	1.0	1	B7J0379	10/16/2017	10/17/17 12:32	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.15**	0.10	1	B7J0397	10/17/2017	10/17/17 15:59	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0270	10/12/2017	10/12/17 21:43	
Surrogate: 4-Bromofluorobenzene	*103 %*	*50 - 138*		B7J0270	10/12/2017	*10/12/17 21:43*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.1**	1.0	1	B7J0415	10/16/2017	10/17/17 11:54	
ORO	**5.4**	1.0	1	B7J0415	10/16/2017	10/17/17 11:54	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB3-2.5

Lab ID: 1703641-12

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*143 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 11:54*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB3-5.0

Lab ID: 1703641-13

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Arsenic	**1.4**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Barium	**33**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Chromium	**6.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Cobalt	**3.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Copper	**3.1**	2.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Nickel	**4.8**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Vanadium	**12**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	
Zinc	**18**	1.0	1	B7J0379	10/16/2017	10/17/17 12:33	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.12**	0.10	1	B7J0397	10/17/2017	10/17/17 16:01	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0270	10/12/2017	10/12/17 22:01	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0270	10/12/2017	*10/12/17 22:01*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**10**	1.0	1	B7J0415	10/16/2017	10/17/17 12:11	
ORO	**9.1**	1.0	1	B7J0415	10/16/2017	10/17/17 12:11	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB3-5.0

Lab ID: 1703641-13

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*99.2 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 12:11*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB4-0.5

Lab ID: 1703641-14

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**5.1**	2.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Arsenic	**2.3**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Barium	**96**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Chromium	**16**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Cobalt	**3.9**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Copper	**58**	2.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Lead	**130**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Nickel	**11**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Vanadium	**18**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	
Zinc	**160**	1.0	1	B7J0379	10/16/2017	10/17/17 12:34	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.72**	0.10	1	B7J0397	10/17/2017	10/17/17 16:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0270	10/12/2017	10/12/17 22:20	
Surrogate: 4-Bromofluorobenzene	*103 %*	*50 - 138*		B7J0270	10/12/2017	*10/12/17 22:20*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**640**	50	50	B7J0415	10/16/2017	10/17/17 16:12	
ORO	**1900**	50	50	B7J0415	10/16/2017	10/17/17 16:12	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB4-0.5

Lab ID: 1703641-14

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 16:12*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB4-2.5

Lab ID: 1703641-15

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Arsenic	**2.3**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Barium	**51**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Chromium	**7.4**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Cobalt	**3.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Copper	**11**	2.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Lead	**20**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Nickel	**6.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Vanadium	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	
Zinc	**43**	1.0	1	B7J0379	10/16/2017	10/17/17 12:35	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.34**	0.10	1	B7J0397	10/17/2017	10/17/17 16:04	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0270	10/12/2017	10/12/17 22:38	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0270	10/12/2017	*10/12/17 22:38*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**22**	5.0	5	B7J0415	10/16/2017	10/17/17 14:30	
ORO	**52**	5.0	5	B7J0415	10/16/2017	10/17/17 14:30	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB4-2.5

Lab ID: 1703641-15

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*87.1 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 14:30*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB4-3.5

Lab ID: 1703641-16

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Arsenic	**8.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Barium	**94**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Chromium	**8.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Cobalt	**4.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Copper	**590**	2.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Lead	**5.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Nickel	**8.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Vanadium	**23**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	
Zinc	**43**	1.0	1	B7J0379	10/16/2017	10/17/17 12:36	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.13**	0.10	1	B7J0397	10/17/2017	10/17/17 16:10	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 10:44	
Surrogate: 4-Bromofluorobenzene *112 %*		*50 - 138*		B7J0280	10/13/2017	*10/13/17 10:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**70**	20	20	B7J0415	10/16/2017	10/17/17 13:38	
ORO	**140**	20	20	B7J0415	10/16/2017	10/17/17 13:38	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB4-3.5

Lab ID: 1703641-16

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 13:38*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-0.5

Lab ID: 1703641-17

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Arsenic	**2.6**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Barium	**50**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Chromium	**9.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Cobalt	**5.1**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Copper	**29**	2.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Lead	**22**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Nickel	**11**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Vanadium	**23**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	
Zinc	**40**	1.0	1	B7J0379	10/16/2017	10/17/17 12:40	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.17**	0.10	1	B7J0397	10/17/2017	10/17/17 16:12	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 11:02	
Surrogate: 4-Bromofluorobenzene	*108 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 11:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**200**	50	50	B7J0415	10/16/2017	10/17/17 13:55	
ORO	**460**	50	50	B7J0415	10/16/2017	10/17/17 13:55	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-0.5

Lab ID: 1703641-17

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 13:55*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-2.5

Lab ID: 1703641-18

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Arsenic	**1.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Barium	**28**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Chromium	**6.3**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Cobalt	**2.9**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Copper	**2.9**	2.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Nickel	**4.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Vanadium	**13**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	
Zinc	**14**	1.0	1	B7J0379	10/16/2017	10/17/17 12:41	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.17**	0.10	1	B7J0397	10/17/2017	10/17/17 16:14	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 11:21	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 11:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.4**	1.0	1	B7J0415	10/16/2017	10/17/17 11:19	
ORO	**7.1**	1.0	1	B7J0415	10/16/2017	10/17/17 11:19	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-2.5

Lab ID: 1703641-18

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*83.1 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 11:19*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-5.0

Lab ID: 1703641-19

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Arsenic	**2.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Barium	**26**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Chromium	**6.7**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Cobalt	**3.5**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Copper	**3.8**	2.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Lead	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Molybdenum	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Nickel	**4.3**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Vanadium	**15**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	
Zinc	**16**	1.0	1	B7J0379	10/16/2017	10/17/17 12:42	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0397	10/17/2017	10/17/17 16:16	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 11:39	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 11:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.0**	1.0	1	B7J0415	10/16/2017	10/17/17 11:37	
ORO	**4.4**	1.0	1	B7J0415	10/16/2017	10/17/17 11:37	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB1-5.0

Lab ID: 1703641-19

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*106 %*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 11:37*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB2-0.5

Lab ID: 1703641-20

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Arsenic	**4.0**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Barium	**93**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Beryllium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Cadmium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Chromium	**29**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Cobalt	**7.2**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Copper	**670**	2.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Lead	**110**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Molybdenum	**1.9**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Nickel	**22**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Selenium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Silver	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Thallium	ND	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Vanadium	**30**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	
Zinc	**120**	1.0	1	B7J0379	10/16/2017	10/17/17 12:43	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.28**	0.10	1	B7J0397	10/17/2017	10/17/17 16:18	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 11:58	
Surrogate: 4-Bromofluorobenzene	*100 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 11:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**720**	100	100	B7J0415	10/16/2017	10/17/17 15:38	
ORO	**1700**	100	100	B7J0415	10/16/2017	10/17/17 15:38	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB2-0.5

Lab ID: 1703641-20

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0415	10/16/2017	*10/17/17 15:38*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB20-2.5

Lab ID: 1703641-21

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Arsenic	**3.3**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Barium	**30**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Chromium	**6.6**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Cobalt	**3.4**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Copper	**3.0**	2.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Lead	**1.8**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Nickel	**4.5**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Vanadium	**13**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	
Zinc	**17**	1.0	1	B7J0380	10/16/2017	10/17/17 12:28	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:23	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 12:16	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 12:16*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.2**	1.0	1	B7J0430	10/16/2017	10/17/17 11:27	
ORO	**3.7**	1.0	1	B7J0430	10/16/2017	10/17/17 11:27	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB20-2.5

Lab ID: 1703641-21

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*99.0 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 11:27*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB20-5.0

Lab ID: 1703641-22

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Arsenic	**2.9**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Barium	**36**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Chromium	**7.1**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Cobalt	**3.7**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Copper	**3.1**	2.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Lead	**2.3**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Nickel	**4.8**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Vanadium	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	
Zinc	**18**	1.0	1	B7J0380	10/16/2017	10/17/17 12:37	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:35	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 12:34	
Surrogate: 4-Bromofluorobenzene	*108 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 12:34*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.2**	1.0	1	B7J0430	10/16/2017	10/17/17 10:56	
ORO	**3.1**	1.0	1	B7J0430	10/16/2017	10/17/17 10:56	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB20-5.0

Lab ID: 1703641-22

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*85.3 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 10:56*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-0.5

Lab ID: 1703641-23

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Arsenic	**2.8**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Barium	**18**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Chromium	**5.8**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Cobalt	**2.6**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Copper	**2.4**	2.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Lead	**1.9**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Nickel	**3.2**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Vanadium	**17**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	
Zinc	**12**	1.0	1	B7J0380	10/16/2017	10/17/17 12:40	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:37	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 12:53	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 12:53*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.6**	1.0	1	B7J0430	10/16/2017	10/17/17 09:25	
ORO	**2.2**	1.0	1	B7J0430	10/16/2017	10/17/17 09:25	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-0.5

Lab ID: 1703641-23

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*76.0 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 09:25*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-2.5

Lab ID: 1703641-24

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Arsenic	**3.4**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Barium	**48**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Chromium	**8.6**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Cobalt	**5.0**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Copper	**4.7**	2.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Lead	**1.8**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Nickel	**6.5**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Vanadium	**18**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	
Zinc	**25**	1.0	1	B7J0380	10/16/2017	10/17/17 12:43	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:38	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 13:11	
Surrogate: 4-Bromofluorobenzene	*108 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 13:11*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.1**	1.0	1	B7J0430	10/16/2017	10/17/17 09:10	
ORO	**1.9**	1.0	1	B7J0430	10/16/2017	10/17/17 09:10	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-2.5

Lab ID: 1703641-24

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*54.0 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 09:10*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-5.0

Lab ID: 1703641-25

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Arsenic	**2.4**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Barium	**24**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Chromium	**5.6**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Cobalt	**2.6**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Copper	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Lead	**1.1**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Nickel	**3.5**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Vanadium	**12**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	
Zinc	**14**	1.0	1	B7J0380	10/16/2017	10/17/17 12:46	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:40	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 13:30	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 13:30*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.4**	1.0	1	B7J0430	10/16/2017	10/17/17 12:45	
ORO	**2.6**	1.0	1	B7J0430	10/16/2017	10/17/17 12:45	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB25-5.0

Lab ID: 1703641-25

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*81.2 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 12:45*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB24-0.5

Lab ID: 1703641-26

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Arsenic	**4.5**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Barium	**59**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Chromium	**12**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Cobalt	**6.7**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Copper	**9.7**	2.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Lead	**2.9**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Nickel	**9.4**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Vanadium	**28**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	
Zinc	**35**	1.0	1	B7J0380	10/16/2017	10/17/17 12:49	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:42	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 13:48	
Surrogate: 4-Bromofluorobenzene	*108 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 13:48*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.1**	1.0	1	B7J0430	10/16/2017	10/17/17 13:01	
ORO	**6.2**	1.0	1	B7J0430	10/16/2017	10/17/17 13:01	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB24-0.5

Lab ID: 1703641-26

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*140 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 13:01*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB24-2.5

Lab ID: 1703641-27

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Arsenic	**3.3**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Barium	**36**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Chromium	**7.2**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Cobalt	**3.7**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Copper	**3.3**	2.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Lead	**1.5**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Nickel	**5.2**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Vanadium	**14**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	
Zinc	**19**	1.0	1	B7J0380	10/16/2017	10/17/17 12:59	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:44	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 14:07	
Surrogate: 4-Bromofluorobenzene	*110 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 14:07*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.6**	1.0	1	B7J0430	10/16/2017	10/17/17 10:10	
ORO	**5.6**	1.0	1	B7J0430	10/16/2017	10/17/17 10:10	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB24-2.5

Lab ID: 1703641-27

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*102 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 10:10*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB24-5.0

Lab ID: 1703641-28

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Arsenic	**4.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Barium	**23**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Chromium	**5.8**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Cobalt	**2.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Copper	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Lead	**1.2**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Nickel	**3.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Vanadium	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	
Zinc	**14**	1.0	1	B7J0380	10/16/2017	10/17/17 13:48	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:46	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 23:21	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 23:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.3**	1.0	1	B7J0430	10/16/2017	10/17/17 12:30	
ORO	**4.7**	1.0	1	B7J0430	10/16/2017	10/17/17 12:30	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB24-5.0

Lab ID: 1703641-28

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*70.0 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 12:30*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB19-0.5

Lab ID: 1703641-29

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Arsenic	**3.1**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Barium	**37**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Chromium	**7.5**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Cobalt	**3.7**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Copper	**3.6**	2.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Lead	**1.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Nickel	**4.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Vanadium	**19**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	
Zinc	**21**	1.0	1	B7J0380	10/16/2017	10/17/17 13:05	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:48	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 14:44	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 14:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.8**	1.0	1	B7J0430	10/16/2017	10/17/17 12:14	
ORO	**7.9**	1.0	1	B7J0430	10/16/2017	10/17/17 12:14	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB19-0.5

Lab ID: 1703641-29

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*102 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 12:14*	

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1221	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1232	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1242	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1248	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1254	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1260	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1262	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1268	ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Surrogate: Decachlorobiphenyl	*52.8 %*	*18 - 136*		B7J0511	10/18/2017	*10/18/17 13:43*	
Surrogate: Tetrachloro-m-xylene	*80.2 %*	*30 - 130*		B7J0511	10/18/2017	*10/18/17 13:43*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB19-2.5

Lab ID: 1703641-30

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Arsenic	**3.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Barium	**20**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Chromium	**6.0**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Cobalt	**2.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Copper	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Lead	**1.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Nickel	**3.3**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Vanadium	**17**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	
Zinc	**14**	1.0	1	B7J0380	10/16/2017	10/17/17 13:08	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:50	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 15:02	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 15:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.3**	1.0	1	B7J0430	10/16/2017	10/17/17 11:12	
ORO	**3.7**	1.0	1	B7J0430	10/16/2017	10/17/17 11:12	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB19-2.5

Lab ID: 1703641-30

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*128 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 11:12*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB19-5.0

Lab ID: 1703641-31

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Arsenic	**3.0**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Barium	**33**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Chromium	**6.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Cobalt	**3.8**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Copper	**3.2**	2.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Lead	**1.1**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Nickel	**4.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Vanadium	**14**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	
Zinc	**19**	1.0	1	B7J0380	10/16/2017	10/17/17 13:11	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:55	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 15:21	
Surrogate: 4-Bromofluorobenzene	*83.2 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 15:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.9**	1.0	1	B7J0430	10/16/2017	10/17/17 08:55	
ORO	**4.0**	1.0	1	B7J0430	10/16/2017	10/17/17 08:55	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB19-5.0

Lab ID: 1703641-31

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*91.0 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 08:55*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-0.5

Lab ID: 1703641-32

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Arsenic	**4.8**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Barium	**100**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Chromium	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Cobalt	**5.5**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Copper	**34**	2.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Lead	**42**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Nickel	**13**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Vanadium	**27**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	
Zinc	**210**	1.0	1	B7J0380	10/16/2017	10/17/17 13:14	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.62**	0.10	1	B7J0398	10/17/2017	10/17/17 16:57	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0280	10/13/2017	10/13/17 15:39	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0280	10/13/2017	*10/13/17 15:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**350**	100	50	B7J0430	10/16/2017	10/17/17 14:21	
ORO	**1200**	100	50	B7J0430	10/16/2017	10/17/17 14:21	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-0.5

Lab ID: 1703641-32

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 14:21*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-2.5

Lab ID: 1703641-33

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Arsenic	**3.7**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Barium	**47**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Chromium	**9.3**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Cobalt	**4.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Copper	**6.3**	2.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Lead	**6.3**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Nickel	**7.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Vanadium	**22**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	
Zinc	**31**	1.0	1	B7J0380	10/16/2017	10/17/17 13:17	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 16:59	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 20:53	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 20:53*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.9**	1.0	1	B7J0430	10/16/2017	10/17/17 13:33	
ORO	**8.4**	1.0	1	B7J0430	10/16/2017	10/17/17 13:33	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-2.5

Lab ID: 1703641-33

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*118 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 13:33*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-5.0

Lab ID: 1703641-34

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Arsenic	**2.8**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Barium	**25**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Chromium	**6.7**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Cobalt	**3.1**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Copper	**2.0**	2.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Lead	**1.2**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Nickel	**4.0**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Vanadium	**17**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	
Zinc	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 13:20	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 17:01	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 21:12	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 21:12*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.7**	1.0	1	B7J0430	10/16/2017	10/17/17 09:40	
ORO	**6.7**	1.0	1	B7J0430	10/16/2017	10/17/17 09:40	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB13-5.0

Lab ID: 1703641-34

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*57.3 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 09:40*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB8-0.5

Lab ID: 1703641-35

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Arsenic	**5.0**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Barium	**100**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Chromium	**17**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Cobalt	**6.1**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Copper	**42**	2.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Lead	**29**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Nickel	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Vanadium	**27**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	
Zinc	**170**	1.0	1	B7J0380	10/16/2017	10/17/17 13:23	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.21**	0.10	1	B7J0398	10/17/2017	10/17/17 17:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 21:30	
Surrogate: 4-Bromofluorobenzene	*54.4 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 21:30*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**180**	50	50	B7J0430	10/16/2017	10/17/17 14:05	
ORO	**580**	50	50	B7J0430	10/16/2017	10/17/17 14:05	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB8-0.5

Lab ID: 1703641-35

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 14:05*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB8-2.5

Lab ID: 1703641-36

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Arsenic	**2.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Barium	**34**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Chromium	**6.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Cobalt	**3.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Copper	**3.5**	2.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Lead	**1.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Nickel	**4.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Vanadium	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	
Zinc	**18**	1.0	1	B7J0380	10/16/2017	10/17/17 13:26	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 17:05	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 21:49	
Surrogate: 4-Bromofluorobenzene	*110 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 21:49*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.8**	1.0	1	B7J0430	10/16/2017	10/17/17 10:26	
ORO	**5.0**	1.0	1	B7J0430	10/16/2017	10/17/17 10:26	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB8-2.5

Lab ID: 1703641-36

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*85.8 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 10:26*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB8-5.0

Lab ID: 1703641-37

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Arsenic	**2.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Barium	**26**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Chromium	**6.8**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Cobalt	**3.1**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Copper	**3.1**	2.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Lead	**2.0**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Nickel	**3.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Vanadium	**19**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	
Zinc	**15**	1.0	1	B7J0380	10/16/2017	10/17/17 13:35	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 17:07	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 22:57	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 22:57*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.7**	1.0	1	B7J0430	10/16/2017	10/17/17 10:41	
ORO	**3.7**	1.0	1	B7J0430	10/16/2017	10/17/17 10:41	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB8-5.0

Lab ID: 1703641-37

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*112 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 10:41*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB12-0.5

Lab ID: 1703641-38

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Arsenic	**5.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Barium	**140**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Chromium	**18**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Cobalt	**6.3**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Copper	**52**	2.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Lead	**38**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Nickel	**16**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Vanadium	**28**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	
Zinc	**200**	1.0	1	B7J0380	10/16/2017	10/17/17 13:38	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.34**	0.10	1	B7J0398	10/17/2017	10/17/17 17:08	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 22:25	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 22:25*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**180**	100	50	B7J0430	10/16/2017	10/17/17 13:49	
ORO	**420**	100	50	B7J0430	10/16/2017	10/17/17 13:49	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB12-0.5

Lab ID: 1703641-38

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 13:49*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB12-2.5

Lab ID: 1703641-39

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Arsenic	**3.4**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Barium	**30**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Chromium	**7.9**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Cobalt	**2.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Copper	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Lead	**1.2**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Nickel	**3.1**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Vanadium	**28**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	
Zinc	**13**	1.0	1	B7J0380	10/16/2017	10/17/17 13:41	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0398	10/17/2017	10/17/17 17:10	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 22:44	
Surrogate: 4-Bromofluorobenzene	*110 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 22:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.7**	1.0	1	B7J0430	10/16/2017	10/17/17 09:55	
ORO	**5.7**	1.0	1	B7J0430	10/16/2017	10/17/17 09:55	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB12-2.5

Lab ID: 1703641-39

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*94.9 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 09:55*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB12-5.0

Lab ID: 1703641-40

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Arsenic	**3.7**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Barium	**46**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Beryllium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Cadmium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Chromium	**8.5**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Cobalt	**4.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Copper	**4.7**	2.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Lead	**1.6**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Molybdenum	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Nickel	**6.0**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Selenium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Silver	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Thallium	ND	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Vanadium	**19**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	
Zinc	**23**	1.0	1	B7J0380	10/16/2017	10/17/17 13:45	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.17**	0.10	1	B7J0398	10/17/2017	10/17/17 17:12	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 23:02	
Surrogate: 4-Bromofluorobenzene	*110 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 23:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.4**	1.0	1	B7J0430	10/16/2017	10/17/17 13:17	
ORO	**6.6**	1.0	1	B7J0430	10/16/2017	10/17/17 13:17	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB12-5.0

Lab ID: 1703641-40

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*100 %*	*38 - 145*		B7J0430	10/16/2017	*10/17/17 13:17*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB17-0.5

Lab ID: 1703641-41

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Arsenic	**1.4**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Barium	**75**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Chromium	**14**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Cobalt	**4.0**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Copper	**16**	2.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Lead	**51**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Nickel	**10**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Vanadium	**22**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	
Zinc	**250**	1.0	1	B7J0381	10/16/2017	10/17/17 12:47	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.73**	0.10	1	B7J0399	10/17/2017	10/17/17 17:21	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 17:30	
Surrogate: 4-Bromofluorobenzene	*105 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 17:30*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**1400**	100	50	B7J0491	10/17/2017	10/18/17 14:02	
ORO	**3400**	100	50	B7J0491	10/17/2017	10/18/17 14:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB17-0.5

Lab ID: 1703641-41

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 14:02*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB17-2.5

Lab ID: 1703641-42

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Arsenic	**1.3**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Barium	**46**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Chromium	**9.1**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Cobalt	**4.9**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Copper	**6.0**	2.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Nickel	**6.7**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Vanadium	**20**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	
Zinc	**24**	1.0	1	B7J0381	10/16/2017	10/17/17 12:50	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0399	10/17/2017	10/17/17 17:29	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 17:49	
Surrogate: 4-Bromofluorobenzene	*80.1 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 17:49*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**11**	1.0	1	B7J0491	10/17/2017	10/18/17 12:52	
ORO	**9.6**	1.0	1	B7J0491	10/17/2017	10/18/17 12:52	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB17-2.5

Lab ID: 1703641-42

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*110 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 12:52*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB17-5.0

Lab ID: 1703641-43

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Arsenic	**1.0**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Barium	**51**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Chromium	**8.5**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Cobalt	**5.1**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Copper	**5.3**	2.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Nickel	**6.6**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Vanadium	**16**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	
Zinc	**24**	1.0	1	B7J0381	10/16/2017	10/17/17 12:58	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.10**	0.10	1	B7J0399	10/17/2017	10/17/17 17:31	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 18:07	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 18:07*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.7**	1.0	1	B7J0491	10/17/2017	10/18/17 11:08	
ORO	**6.2**	1.0	1	B7J0491	10/17/2017	10/18/17 11:08	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB17-5.0

Lab ID: 1703641-43

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*90.7 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 11:08*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB18-0.5

Lab ID: 1703641-44

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Arsenic	**2.5**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Barium	**99**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Chromium	**35**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Cobalt	**7.3**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Copper	**100**	2.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Lead	**33**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Molybdenum	**3.5**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Nickel	**32**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Vanadium	**23**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	
Zinc	**150**	1.0	1	B7J0381	10/16/2017	10/17/17 12:59	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.23**	0.10	1	B7J0399	10/17/2017	10/17/17 17:33	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 18:25	
Surrogate: 4-Bromofluorobenzene *112 %*		*50 - 138*		B7J0310	10/13/2017	*10/13/17 18:25*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**110**	25	25	B7J0491	10/17/2017	10/18/17 13:27	
ORO	**280**	25	25	B7J0491	10/17/2017	10/18/17 13:27	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB18-0.5

Lab ID: 1703641-44

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 13:27*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB18-2.5

Lab ID: 1703641-45

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Arsenic	**2.1**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Barium	**28**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Chromium	**7.0**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Cobalt	**3.3**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Copper	**3.1**	2.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Nickel	**4.5**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Vanadium	**16**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	
Zinc	**16**	1.0	1	B7J0381	10/16/2017	10/17/17 13:00	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0399	10/17/2017	10/17/17 17:35	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 18:44	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 18:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.1**	1.0	1	B7J0491	10/17/2017	10/18/17 11:26	
ORO	**5.9**	1.0	1	B7J0491	10/17/2017	10/18/17 11:26	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB18-2.5

Lab ID: 1703641-45

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*137 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 11:26*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB18-5.0

Lab ID: 1703641-46

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Arsenic	**2.2**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Barium	**35**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Chromium	**7.5**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Cobalt	**4.3**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Copper	**3.9**	2.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Nickel	**5.3**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Vanadium	**17**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	
Zinc	**18**	1.0	1	B7J0381	10/16/2017	10/17/17 13:01	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0399	10/17/2017	10/17/17 17:40	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 19:02	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 19:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**11**	1.0	1	B7J0491	10/17/2017	10/18/17 11:43	
ORO	**9.8**	1.0	1	B7J0491	10/17/2017	10/18/17 11:43	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB18-5.0

Lab ID: 1703641-46

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*90.9 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 11:43*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-0.5

Lab ID: 1703641-47

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Arsenic	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Barium	**24**	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Chromium	**6.0**	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Cobalt	**2.4**	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Copper	**2.8**	2.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Nickel	**3.0**	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Vanadium	**14**	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	
Zinc	**11**	1.0	1	B7J0381	10/16/2017	10/17/17 13:02	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0399	10/17/2017	10/17/17 17:42	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 19:21	
Surrogate: 4-Bromofluorobenzene	*101 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 19:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**14**	1.0	1	B7J0491	10/17/2017	10/18/17 12:00	
ORO	**12**	1.0	1	B7J0491	10/17/2017	10/18/17 12:00	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-0.5

Lab ID: 1703641-47

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*144 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 12:00*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-2.5

Lab ID: 1703641-48

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Arsenic	**1.1**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Barium	**36**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Chromium	**8.4**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Cobalt	**4.2**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Copper	**5.9**	2.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Nickel	**5.7**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Vanadium	**15**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	
Zinc	**20**	1.0	1	B7J0381	10/16/2017	10/17/17 13:03	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.10**	0.10	1	B7J0399	10/17/2017	10/17/17 17:44	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 19:39	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 19:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.3**	1.0	1	B7J0491	10/17/2017	10/18/17 12:17	
ORO	**7.1**	1.0	1	B7J0491	10/17/2017	10/18/17 12:17	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-2.5

Lab ID: 1703641-48

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*141 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 12:17*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-5.0

Lab ID: 1703641-49

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Arsenic	**1.7**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Barium	**28**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Chromium	**5.8**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Cobalt	**2.9**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Copper	**2.6**	2.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Lead	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Nickel	**4.0**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Vanadium	**10**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	
Zinc	**15**	1.0	1	B7J0381	10/16/2017	10/17/17 13:05	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0399	10/17/2017	10/17/17 17:46	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 19:58	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 19:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.7**	1.0	1	B7J0491	10/17/2017	10/18/17 10:51	
ORO	**7.6**	1.0	1	B7J0491	10/17/2017	10/18/17 10:51	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB23-5.0

Lab ID: 1703641-49

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*108 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 10:51*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB2-2.5

Lab ID: 1703641-50

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Arsenic	**1.7**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Barium	**50**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Cadmium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Chromium	**7.9**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Cobalt	**4.0**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Copper	**5.2**	2.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Lead	**5.8**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Nickel	**5.6**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Vanadium	**15**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	
Zinc	**32**	1.0	1	B7J0381	10/16/2017	10/17/17 13:06	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.16**	0.10	1	B7J0399	10/17/2017	10/17/17 17:48	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 20:16	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 20:16*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.7**	1.0	1	B7J0491	10/17/2017	10/18/17 13:10	
ORO	**13**	1.0	1	B7J0491	10/17/2017	10/18/17 13:10	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB2-2.5

Lab ID: 1703641-50

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*75.3 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 13:10*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB2-5.0

Lab ID: 1703641-51

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Arsenic	**3.5**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Barium	**25**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Beryllium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Cadmium	**1.2**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Chromium	**7.5**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Cobalt	**4.8**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Copper	**4.2**	2.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Lead	**1.7**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Molybdenum	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Nickel	**5.6**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Selenium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Silver	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Thallium	ND	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Vanadium	**15**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	
Zinc	**17**	1.0	1	B7J0381	10/16/2017	10/17/17 13:07	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.11**	0.10	1	B7J0399	10/17/2017	10/17/17 17:50	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0310	10/13/2017	10/13/17 20:35	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0310	10/13/2017	*10/13/17 20:35*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.1**	1.0	1	B7J0491	10/17/2017	10/18/17 12:35	
ORO	**8.3**	1.0	1	B7J0491	10/17/2017	10/18/17 12:35	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Client Sample ID LB2-5.0

Lab ID: 1703641-51

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*73.3 %*	*38 - 145*		B7J0491	10/17/2017	*10/18/17 12:35*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0379 - EPA 3050B_S										
Blank (B7J0379-BLK1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0379-BS1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	46.2293	2.0	0.51	50.0000		92.5	80 - 120			
Arsenic	46.7313	1.0	0.12	50.0000		93.5	80 - 120			
Barium	47.5238	1.0	0.12	50.0000		95.0	80 - 120			
Beryllium	46.0674	1.0	0.03	50.0000		92.1	80 - 120			
Cadmium	45.0805	1.0	0.14	50.0000		90.2	80 - 120			
Chromium	47.4288	1.0	0.26	50.0000		94.9	80 - 120			
Cobalt	47.2101	1.0	0.07	50.0000		94.4	80 - 120			
Copper	46.4091	2.0	0.19	50.0000		92.8	80 - 120			
Lead	47.5108	1.0	0.18	50.0000		95.0	80 - 120			
Molybdenum	47.6868	1.0	0.12	50.0000		95.4	80 - 120			
Nickel	45.6636	1.0	0.18	50.0000		91.3	80 - 120			
Selenium	44.7758	1.0	0.40	50.0000		89.6	80 - 120			
Silver	47.8175	1.0	0.12	50.0000		95.6	80 - 120			
Thallium	47.3894	1.0	0.38	50.0000		94.8	80 - 120			
Vanadium	46.9669	1.0	0.06	50.0000		93.9	80 - 120			
Zinc	45.8814	1.0	0.15	50.0000		91.8	80 - 120			
Matrix Spike (B7J0379-MS1)			**Source: 1703641-01**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	85.5382	2.0	0.51	125.000	ND	68.4	33 - 98			
Arsenic	111.456	1.0	0.12	125.000	2.79076	86.9	48 - 101			
Barium	166.942	1.0	0.12	125.000	72.6816	75.4	25 - 131			
Beryllium	98.3888	1.0	0.03	125.000	ND	78.7	56 - 97			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0379 - EPA 3050B_S (continued)										
Matrix Spike (B7J0379-MS1) - Continued			**Source: 1703641-01**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Cadmium	95.4847	1.0	0.14	125.000	0.168287	76.3	53 - 94			
Chromium	115.162	1.0	0.26	125.000	13.2773	81.5	45 - 113			
Cobalt	102.452	1.0	0.07	125.000	5.65825	77.4	51 - 97			
Copper	151.283	2.0	0.19	125.000	21.6896	104	51 - 113			
Lead	115.428	1.0	0.18	125.000	13.8384	81.3	33 - 127			
Molybdenum	103.279	1.0	0.12	125.000	ND	82.6	54 - 97			
Nickel	110.949	1.0	0.18	125.000	11.5540	79.5	46 - 102			
Selenium	98.5192	1.0	0.40	125.000	ND	78.8	52 - 93			
Silver	109.077	1.0	0.12	125.000	ND	87.3	58 - 98			
Thallium	91.5100	1.0	0.38	125.000	ND	73.2	46 - 93			
Vanadium	120.486	1.0	0.06	125.000	23.0841	77.9	55 - 104			
Zinc	154.026	1.0	0.15	125.000	50.5551	82.8	26 - 118			
Matrix Spike Dup (B7J0379-MSD1)			**Source: 1703641-01**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	93.2327	2.0	0.51	125.000	ND	74.6	33 - 98	8.61	20	
Arsenic	115.200	1.0	0.12	125.000	2.79076	89.9	48 - 101	3.30	20	
Barium	174.338	1.0	0.12	125.000	72.6816	81.3	25 - 131	4.33	20	
Beryllium	109.215	1.0	0.03	125.000	ND	87.4	56 - 97	10.4	20	
Cadmium	103.559	1.0	0.14	125.000	0.168287	82.7	53 - 94	8.11	20	
Chromium	126.520	1.0	0.26	125.000	13.2773	90.6	45 - 113	9.40	20	
Cobalt	110.255	1.0	0.07	125.000	5.65825	83.7	51 - 97	7.34	20	
Copper	149.962	2.0	0.19	125.000	21.6896	103	51 - 113	0.877	20	
Lead	121.817	1.0	0.18	125.000	13.8384	86.4	33 - 127	5.39	20	
Molybdenum	112.539	1.0	0.12	125.000	ND	90.0	54 - 97	8.58	20	
Nickel	119.986	1.0	0.18	125.000	11.5540	86.7	46 - 102	7.83	20	
Selenium	107.495	1.0	0.40	125.000	ND	86.0	52 - 93	8.71	20	
Silver	119.380	1.0	0.12	125.000	ND	95.5	58 - 98	9.02	20	
Thallium	100.374	1.0	0.38	125.000	ND	80.3	46 - 93	9.24	20	
Vanadium	129.178	1.0	0.06	125.000	23.0841	84.9	55 - 104	6.96	20	
Zinc	157.716	1.0	0.15	125.000	50.5551	85.7	26 - 118	2.37	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0380 - EPA 3050B_S										
Blank (B7J0380-BLK1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0380-BS1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	47.0305	2.0	0.51	50.0000		94.1	80 - 120			
Arsenic	46.2034	1.0	0.12	50.0000		92.4	80 - 120			
Barium	49.0116	1.0	0.12	50.0000		98.0	80 - 120			
Beryllium	50.0874	1.0	0.03	50.0000		100	80 - 120			
Cadmium	47.2200	1.0	0.14	50.0000		94.4	80 - 120			
Chromium	44.5935	1.0	0.26	50.0000		89.2	80 - 120			
Cobalt	48.2842	1.0	0.07	50.0000		96.6	80 - 120			
Copper	47.6718	2.0	0.19	50.0000		95.3	80 - 120			
Lead	47.6816	1.0	0.18	50.0000		95.4	80 - 120			
Molybdenum	47.2341	1.0	0.12	50.0000		94.5	80 - 120			
Nickel	46.7912	1.0	0.18	50.0000		93.6	80 - 120			
Selenium	45.8626	1.0	0.40	50.0000		91.7	80 - 120			
Silver	47.1944	1.0	0.12	50.0000		94.4	80 - 120			
Thallium	45.3317	1.0	0.38	50.0000		90.7	80 - 120			
Vanadium	48.4848	1.0	0.06	50.0000		97.0	80 - 120			
Zinc	47.9056	1.0	0.15	50.0000		95.8	80 - 120			
Matrix Spike (B7J0380-MS1)				**Source: 1703641-21**		Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	103.124	2.0	0.51	125.000	ND	82.5	33 - 98			
Arsenic	111.734	1.0	0.12	125.000	3.34353	86.7	48 - 101			
Barium	134.858	1.0	0.12	125.000	29.6164	84.2	25 - 131			
Beryllium	114.847	1.0	0.03	125.000	0.174839	91.7	56 - 97			
Cadmium	107.073	1.0	0.14	125.000	0.175724	85.5	53 - 94			
Chromium	105.960	1.0	0.26	125.000	6.59702	79.5	45 - 113			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0380 - EPA 3050B_S (continued)										
Matrix Spike (B7J0380-MS1) - Continued			**Source: 1703641-21**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Cobalt	109.839	1.0	0.07	125.000	3.43942	85.1	51 - 97			
Copper	114.968	2.0	0.19	125.000	2.96166	89.6	51 - 113			
Lead	107.460	1.0	0.18	125.000	1.77591	84.5	33 - 127			
Molybdenum	108.756	1.0	0.12	125.000	ND	87.0	54 - 97			
Nickel	109.287	1.0	0.18	125.000	4.54572	83.8	46 - 102			
Selenium	107.408	1.0	0.40	125.000	ND	85.9	52 - 93			
Silver	114.228	1.0	0.12	125.000	ND	91.4	58 - 98			
Thallium	103.067	1.0	0.38	125.000	ND	82.5	46 - 93			
Vanadium	122.976	1.0	0.06	125.000	13.2447	87.8	55 - 104			
Zinc	123.165	1.0	0.15	125.000	17.1458	84.8	26 - 118			
Matrix Spike Dup (B7J0380-MSD1)			**Source: 1703641-21**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	85.2524	2.0	0.51	125.000	ND	68.2	33 - 98	19.0	20	
Arsenic	92.2532	1.0	0.12	125.000	3.34353	71.1	48 - 101	19.1	20	
Barium	112.355	1.0	0.12	125.000	29.6164	66.2	25 - 131	18.2	20	
Beryllium	95.0320	1.0	0.03	125.000	0.174839	75.9	56 - 97	18.9	20	
Cadmium	90.7578	1.0	0.14	125.000	0.175724	72.5	53 - 94	16.5	20	
Chromium	88.4502	1.0	0.26	125.000	6.59702	65.5	45 - 113	18.0	20	
Cobalt	92.1372	1.0	0.07	125.000	3.43942	71.0	51 - 97	17.5	20	
Copper	94.5574	2.0	0.19	125.000	2.96166	73.3	51 - 113	19.5	20	
Lead	90.7600	1.0	0.18	125.000	1.77591	71.2	33 - 127	16.8	20	
Molybdenum	90.4325	1.0	0.12	125.000	ND	72.3	54 - 97	18.4	20	
Nickel	91.8061	1.0	0.18	125.000	4.54572	69.8	46 - 102	17.4	20	
Selenium	88.6278	1.0	0.40	125.000	ND	70.9	52 - 93	19.2	20	
Silver	95.4564	1.0	0.12	125.000	ND	76.4	58 - 98	17.9	20	
Thallium	87.3198	1.0	0.38	125.000	ND	69.9	46 - 93	16.5	20	
Vanadium	102.813	1.0	0.06	125.000	13.2447	71.7	55 - 104	17.9	20	
Zinc	104.554	1.0	0.15	125.000	17.1458	69.9	26 - 118	16.3	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0381 - EPA 3050B_S										
Blank (B7J0381-BLK1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0381-BS1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	47.1490	2.0	0.51	50.0000		94.3	80 - 120			
Arsenic	47.2644	1.0	0.12	50.0000		94.5	80 - 120			
Barium	49.7971	1.0	0.12	50.0000		99.6	80 - 120			
Beryllium	47.0830	1.0	0.03	50.0000		94.2	80 - 120			
Cadmium	47.5536	1.0	0.14	50.0000		95.1	80 - 120			
Chromium	49.6672	1.0	0.26	50.0000		99.3	80 - 120			
Cobalt	49.4810	1.0	0.07	50.0000		99.0	80 - 120			
Copper	48.1640	2.0	0.19	50.0000		96.3	80 - 120			
Lead	48.6745	1.0	0.18	50.0000		97.3	80 - 120			
Molybdenum	48.3511	1.0	0.12	50.0000		96.7	80 - 120			
Nickel	47.7093	1.0	0.18	50.0000		95.4	80 - 120			
Selenium	45.0212	1.0	0.40	50.0000		90.0	80 - 120			
Silver	48.6228	1.0	0.12	50.0000		97.2	80 - 120			
Thallium	48.5925	1.0	0.38	50.0000		97.2	80 - 120			
Vanadium	48.8791	1.0	0.06	50.0000		97.8	80 - 120			
Zinc	48.5428	1.0	0.15	50.0000		97.1	80 - 120			
Matrix Spike (B7J0381-MS1)				**Source: 1703641-41**		Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	82.9204	2.0	0.51	125.000	ND	66.3	33 - 98			
Arsenic	95.2105	1.0	0.12	125.000	1.42955	75.0	48 - 101			
Barium	156.472	1.0	0.12	125.000	74.7185	65.4	25 - 131			
Beryllium	90.3796	1.0	0.03	125.000	ND	72.3	56 - 97			
Cadmium	84.6792	1.0	0.14	125.000	0.273155	67.5	53 - 94			
Chromium	99.3616	1.0	0.26	125.000	13.8810	68.4	45 - 113			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0381 - EPA 3050B_S (continued)										
Matrix Spike (B7J0381-MS1) - Continued			**Source: 1703641-41**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Cobalt	89.9234	1.0	0.07	125.000	3.99737	68.7	51 - 97			
Copper	107.847	2.0	0.19	125.000	15.8790	73.6	51 - 113			
Lead	123.671	1.0	0.18	125.000	50.6071	58.5	33 - 127			
Molybdenum	89.8940	1.0	0.12	125.000	ND	71.9	54 - 97			
Nickel	93.4356	1.0	0.18	125.000	10.4888	66.4	46 - 102			
Selenium	89.7774	1.0	0.40	125.000	ND	71.8	52 - 93			
Silver	97.8449	1.0	0.12	125.000	ND	78.3	58 - 98			
Thallium	80.7193	1.0	0.38	125.000	ND	64.6	46 - 93			
Vanadium	107.243	1.0	0.06	125.000	21.9490	68.2	55 - 104			
Zinc	300.697	1.0	0.15	125.000	252.309	38.7	26 - 118			
Matrix Spike Dup (B7J0381-MSD1)			**Source: 1703641-41**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
Antimony	76.4826	2.0	0.51	125.000	ND	61.2	33 - 98	8.08	20	
Arsenic	87.1824	1.0	0.12	125.000	1.42955	68.6	48 - 101	8.80	20	
Barium	145.655	1.0	0.12	125.000	74.7185	56.7	25 - 131	7.16	20	
Beryllium	83.6556	1.0	0.03	125.000	ND	66.9	56 - 97	7.73	20	
Cadmium	76.7280	1.0	0.14	125.000	0.273155	61.2	53 - 94	9.85	20	
Chromium	89.0623	1.0	0.26	125.000	13.8810	60.1	45 - 113	10.9	20	
Cobalt	81.2796	1.0	0.07	125.000	3.99737	61.8	51 - 97	10.1	20	
Copper	100.785	2.0	0.19	125.000	15.8790	67.9	51 - 113	6.77	20	
Lead	129.823	1.0	0.18	125.000	50.6071	63.4	33 - 127	4.85	20	
Molybdenum	82.4236	1.0	0.12	125.000	ND	65.9	54 - 97	8.67	20	
Nickel	84.9296	1.0	0.18	125.000	10.4888	59.6	46 - 102	9.54	20	
Selenium	82.8578	1.0	0.40	125.000	ND	66.3	52 - 93	8.02	20	
Silver	89.5600	1.0	0.12	125.000	ND	71.6	58 - 98	8.84	20	
Thallium	74.0236	1.0	0.38	125.000	ND	59.2	46 - 93	8.65	20	
Vanadium	98.5222	1.0	0.06	125.000	21.9490	61.3	55 - 104	8.48	20	
Zinc	198.635	1.0	0.15	125.000	252.309	-42.9	26 - 118	40.9	20	M1, R

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0397 - EPA 7471_S										
Blank (B7J0397-BLK1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0397-BS1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.916266	0.10	0.005	0.833333		110	80 - 120			
Matrix Spike (B7J0397-MS1)			**Source: 1703641-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	1.06931	0.10	0.005	0.833333	0.047388	123	70 - 130			
Matrix Spike Dup (B7J0397-MSD1)			**Source: 1703641-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	1.05166	0.10	0.005	0.833333	0.047388	121	70 - 130	1.66	20	
Post Spike (B7J0397-PS1)			**Source: 1703641-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.004139			5.00000E-3	0.000569	71.4	85 - 115			M1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0398 - EPA 7471_S										
Blank (B7J0398-BLK1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0398-BS1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.879681	0.10	0.005	0.833333		106	80 - 120			
Matrix Spike (B7J0398-MS1)			**Source: 1703641-21**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.985725	0.10	0.005	0.833333	0.080635	109	70 - 130			
Matrix Spike Dup (B7J0398-MSD1)			**Source: 1703641-21**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	1.00107	0.10	0.005	0.833333	0.080635	110	70 - 130	1.54	20	
Post Spike (B7J0398-PS1)			**Source: 1703641-21**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.007328			5.00000E-3	0.000968	127	85 - 115			M1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0399 - EPA 7471_S										
Blank (B7J0399-BLK1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0399-BS1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.896462	0.10	0.005	0.833333		108	80 - 120			
Matrix Spike (B7J0399-MS1)			**Source: 1703641-41**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	1.49409	0.10	0.005	0.833333	0.729856	91.7	70 - 130			
Matrix Spike Dup (B7J0399-MSD1)			**Source: 1703641-41**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	1.97079	0.10	0.005	0.833333	0.729856	149	70 - 130	27.5	20	M1, R
Post Spike (B7J0399-PS1)			**Source: 1703641-41**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Mercury	0.014348			5.00000E-3	0.008758	112	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0257 - GCVOA_S										
Blank (B7J0257-BLK1)					Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2121*			*0.200000*		*106*	*50 - 138*			
LCS (B7J0257-BS1)					Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.68900	1.0	0.20	5.00000		93.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2074*			*0.200000*		*104*	*50 - 138*			
Duplicate (B7J0257-DUP1)			**Source: 1703635-01**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	ND	1.0	0.20		ND			NR	20	
Surrogate: 4-Bromofluorobenzene	*0.2071*			*0.200000*		*104*	*50 - 138*			
Matrix Spike (B7J0257-MS1)			**Source: 1703635-01**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.38500	1.0	0.20	5.00000	ND	87.7	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.1958*			*0.200000*		*97.9*	*50 - 138*			
Matrix Spike Dup (B7J0257-MSD1)			**Source: 1703635-01**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.26100	1.0	0.20	5.00000	ND	85.2	17 - 141	2.87	20	
Surrogate: 4-Bromofluorobenzene	*0.2107*			*0.200000*		*105*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0270 - GCVOA_S										
Blank (B7J0270-BLK1)					Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2132*			*0.200000*		*107*	*50 - 138*			
LCS (B7J0270-BS1)					Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.54800	1.0	0.20	5.00000		91.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2083*			*0.200000*		*104*	*50 - 138*			
Duplicate (B7J0270-DUP1)			**Source: 1703635-11**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	ND	1.0	0.20		ND			NR	20	
Surrogate: 4-Bromofluorobenzene	*0.2220*			*0.200000*		*111*	*50 - 138*			
Matrix Spike (B7J0270-MS1)			**Source: 1703635-11**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	3.85900	1.0	0.20	5.00000	ND	77.2	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2110*			*0.200000*		*105*	*50 - 138*			
Matrix Spike Dup (B7J0270-MSD1)			**Source: 1703635-11**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	3.55500	1.0	0.20	5.00000	ND	71.1	17 - 141	8.20	20	
Surrogate: 4-Bromofluorobenzene	*0.2072*			*0.200000*		*104*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0280 - GCVOA_S										
Blank (B7J0280-BLK1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2147*			*0.200000*		*107*	*50 - 138*			
LCS (B7J0280-BS1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Gasoline Range Organics	4.80500	1.0	0.20	5.00000		96.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2181*			*0.200000*		*109*	*50 - 138*			
Duplicate (B7J0280-DUP1)			**Source: 1703635-22**		Prepared: 10/13/2017 Analyzed: 10/13/2017					
Gasoline Range Organics	ND	1.0	0.20		ND			NR	20	
Surrogate: 4-Bromofluorobenzene	*0.2195*			*0.200000*		*110*	*50 - 138*			
Matrix Spike (B7J0280-MS1)			**Source: 1703635-22**		Prepared: 10/13/2017 Analyzed: 10/13/2017					
Gasoline Range Organics	4.16100	1.0	0.20	5.00000	ND	83.2	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2140*			*0.200000*		*107*	*50 - 138*			
Matrix Spike Dup (B7J0280-MSD1)			**Source: 1703635-22**		Prepared: 10/13/2017 Analyzed: 10/13/2017					
Gasoline Range Organics	3.37800	1.0	0.20	5.00000	ND	67.6	17 - 141	20.8	20	R
Surrogate: 4-Bromofluorobenzene	*0.2112*			*0.200000*		*106*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0310 - GCVOA_S										
Blank (B7J0310-BLK1)						Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2133*			*0.200000*		*107*	*50 - 138*			
LCS (B7J0310-BS1)						Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	4.56600	1.0	0.20	5.00000		91.3	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2092*			*0.200000*		*105*	*50 - 138*			
Matrix Spike (B7J0310-MS1)			**Source: 1703641-41**			Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	3.24800	1.0	0.20	5.00000	ND	65.0	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2185*			*0.200000*		*109*	*50 - 138*			
Matrix Spike Dup (B7J0310-MSD1)			**Source: 1703641-41**			Prepared: 10/13/2017 Analyzed: 10/13/2017				
Gasoline Range Organics	3.16200	1.0	0.20	5.00000	ND	63.2	17 - 141	2.68	20	
Surrogate: 4-Bromofluorobenzene	*0.2182*			*0.200000*		*109*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0349 - GCVOA_S										
Blank (B7J0349-BLK1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2160*			*0.200000*		*108*	*50 - 138*			
LCS (B7J0349-BS1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	4.44400	1.0	0.20	5.00000		88.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2107*			*0.200000*		*105*	*50 - 138*			
Matrix Spike (B7J0349-MS1)			**Source: 1703653-23**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.81800	1.0	0.20	5.00000	ND	76.4	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2287*			*0.200000*		*114*	*50 - 138*			
Matrix Spike Dup (B7J0349-MSD1)			**Source: 1703653-23**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.42900	1.0	0.20	5.00000	ND	68.6	17 - 141	10.7	20	
Surrogate: 4-Bromofluorobenzene	*0.2234*			*0.200000*		*112*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Gasoline Range Organics by EPA 8015B (Modified) (5035) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0257 - GCVOA_S										
Blank (B7J0257-BLK1)					Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2121*			*0.200000*		*106*	*50 - 138*			
LCS (B7J0257-BS1)					Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.68900	1.0	0.20	5.00000		93.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2074*			*0.200000*		*104*	*50 - 138*			
Duplicate (B7J0257-DUP1)			**Source: 1703635-01**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	ND	1.0	0.20		ND			NR	20	
Surrogate: 4-Bromofluorobenzene	*0.2071*			*0.200000*		*104*	*50 - 138*			
Matrix Spike (B7J0257-MS1)			**Source: 1703635-01**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.38500	1.0	0.20	5.00000	ND	87.7	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.1958*			*0.200000*		*97.9*	*50 - 138*			
Matrix Spike Dup (B7J0257-MSD1)			**Source: 1703635-01**		Prepared: 10/12/2017 Analyzed: 10/12/2017					
Gasoline Range Organics	4.26100	1.0	0.20	5.00000	ND	85.2	17 - 141	2.87	20	
Surrogate: 4-Bromofluorobenzene	*0.2107*			*0.200000*		*105*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0415 - GCSEMI_DRO_LL_S										
Blank (B7J0415-BLK1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*3.853*			*2.66667*		*144*	*38 - 145*			
LCS (B7J0415-BS1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	32.8157	1.0	1.0	33.3333		98.4	33 - 143			
Surrogate: p-Terphenyl	*3.614*			*2.66667*		*136*	*38 - 145*			
Matrix Spike (B7J0415-MS1)			**Source: 1703641-20**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	752.867	100	100	33.3333	717.800	105	20 - 159			
Surrogate: p-Terphenyl	*0.000*			*2.66667*		*NR*	*38 - 145*			S4
Matrix Spike Dup (B7J0415-MSD1)			**Source: 1703641-20**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	751.367	100	100	33.3333	717.800	101	20 - 159	0.199	20	
Surrogate: p-Terphenyl	*0.000*			*2.66667*		*NR*	*38 - 145*			S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0430 - GCSEMI_DRO_LL_S										
Blank (B7J0430-BLK1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*3.691*			*2.66667*		*138*	*38 - 145*			
LCS (B7J0430-BS1)						Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	36.2963	1.0	1.0	33.3333		109	33 - 143			
Surrogate: p-Terphenyl	*3.580*			*2.66667*		*134*	*38 - 145*			
Matrix Spike (B7J0430-MS1)			**Source: 1703641-21**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	26.1577	1.0	1.0	33.3333	3.16467	69.0	20 - 159			
Surrogate: p-Terphenyl	*2.875*			*2.66667*		*108*	*38 - 145*			
Matrix Spike Dup (B7J0430-MSD1)			**Source: 1703641-21**			Prepared: 10/16/2017 Analyzed: 10/17/2017				
DRO	24.4543	1.0	1.0	33.3333	3.16467	63.9	20 - 159	6.73	20	
Surrogate: p-Terphenyl	*2.799*			*2.66667*		*105*	*38 - 145*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0491 - GCSEMI_DRO_LL_S										
Blank (B7J0491-BLK1)						Prepared: 10/17/2017 Analyzed: 10/18/2017				
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*3.695*			*2.66667*		*139*	*38 - 145*			
LCS (B7J0491-BS1)						Prepared: 10/17/2017 Analyzed: 10/18/2017				
DRO	26.6803	1.0	1.0	33.3333		80.0	33 - 143			
Surrogate: p-Terphenyl	*4.167*			*5.33333*		*78.1*	*38 - 145*			
Matrix Spike (B7J0491-MS1)			**Source: 1703641-41**			Prepared: 10/17/2017 Analyzed: 10/18/2017				
DRO	972.300	100	100	33.3333	1427.37	-1370	20 - 159			M1
Surrogate: p-Terphenyl	*0.000*			*2.66667*		*NR*	*38 - 145*			S4
Matrix Spike Dup (B7J0491-MSD1)			**Source: 1703641-41**			Prepared: 10/17/2017 Analyzed: 10/18/2017				
DRO	833.367	100	100	33.3333	1427.37	-1780	20 - 159	15.4	20	M1
Surrogate: p-Terphenyl	*0.000*			*2.66667*		*NR*	*38 - 145*			S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0511 - GCSEMI_PCB/PEST_S										
Blank (B7J0511-BLK1)					Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*11.23*			*16.6667*		*67.4*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.91*			*16.6667*		*95.4*	*30 - 130*			
LCS (B7J0511-BS1)					Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	182.618	16	4.6	166.667		110	73 - 111			
Aroclor 1260	159.355	16	4.6	166.667		95.6	75 - 125			
Surrogate: Decachlorobiphenyl	*12.77*			*16.6667*		*76.6*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*18.82*			*16.6667*		*113*	*30 - 130*			
Duplicate (B7J0511-DUP1)			**Source: 1703681-24**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	ND	16	4.6		ND				20	
Aroclor 1260	ND	16	4.6		ND				20	
Surrogate: Decachlorobiphenyl	*8.908*			*16.6667*		*53.4*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*12.55*			*16.6667*		*75.3*	*30 - 130*			
Matrix Spike (B7J0511-MS1)			**Source: 1703681-22**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	142.130	16	4.6	166.667	ND	85.3	36 - 127			
Aroclor 1260	115.861	16	4.6	166.667	ND	69.5	31 - 142			
Surrogate: Decachlorobiphenyl	*8.673*			*16.6667*		*52.0*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.25*			*16.6667*		*85.5*	*30 - 130*			
Matrix Spike Dup (B7J0511-MSD1)			**Source: 1703681-22**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	137.276	16	4.6	166.667	ND	82.4	36 - 127	3.47	20	
Aroclor 1260	113.244	16	4.6	166.667	ND	67.9	31 - 142	2.29	20	
Surrogate: Decachlorobiphenyl	*8.437*			*16.6667*		*50.6*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*13.89*			*16.6667*		*83.4*	*30 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 10/19/2017

Notes and Definitions

S4	Surrogate was diluted out.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☑ OnTrac ☐ GSO ☐ Other:

Sample Conditions Upon Receipt

Condition	Y	N	Condition	Y	N
1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	2.6, 2.2	
4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax: 949-250-1114

SEND REPORT TO:
Attn: Bryan McCulloch Email: BMcCulloch@leightongroup.com
Company: Leighton Consulting
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Barth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO)	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	8015 TPH g/d/o	SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container #	Container Type	Container Material	Preservative	QA/QC	REMARKS
1	1703641 -01	LB5-0.5	10/11/17	1010							X		X	X					5	4					
2	-02	LB5-2.5		1012																					
3	-03	LB5-5.0		1014																					
4	-04	LB9-0.5		1024																					
5	-05	LB9-2.5		1026																					
6	-06	LB9-5.0		1028																					
7	-07	LB14-0.5		1044																					
8	-08	LB14-2.5		1046																					
9	-09	LB14-5.0		1048																					
10	-10	LB20-0.5		1112																					

Encircle or Write Requested Analysis

Encircle Sample Matrix

Container: # | Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister | Material: 1=Glass; 2=Plastic; 3=Metal | Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4AC; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS & CONDITIONS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformated report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Kevin Hall — Submitter Print Name
Kevin Hall — Signature

CUSTODY

Relinquished by: (Signature and Printed Name) Kevin Hall	Date: 10/11/17	Time: 1618	Received by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1618
Relinquished by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name) MTR	Date: 10/11/17	Time: 1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-753-9856 Fax: 949-250-1114

SEND REPORT TO:
Attn: Bryan McCulloch Email: BMcCulloch@leightongroup.com
Company: Leighton Consulting Inc.
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. PAyable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 kits collected

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO)	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	TPHg / TPHd 8015M	TPHd 8015M	SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	#	Container Type	Material	Preservative	QA/QC	REMARKS
1	1703C41-11	LB3-0.5	10-11-17	754							X		XX		X					5	4					
2	-12	LB3-2.5		756																						
3	-13	LB3-5.0		758																						
4	-14	LB4-0.5		834																						
5	-15	LB4-2.5		836																						
6	-16	LB4-3.5		838																						
7	-17	LBm1-0.5 KCH		922																						
8	-18	LBm1-2.5 KCH		924																						
9	-19	LBm1-5.0 KCH		926																						
10	-20	LB2-0.5		955																						

Container — Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister
Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (AcO); 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for fi ve (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-fi ve (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Ken C. Hall — Submitter Print Name
K. Hall — Signature

SAMPLE CUSTODY

		Date	Time
Relinquished by: (Signature and Printed Name)	Ken C. Hall	10/11/17	1619
Relinquished by: (Signature and Printed Name)	FPOWN	10/11/17	1704
Relinquished by: (Signature and Printed Name)			
Received by: (Signature and Printed Name)	FPOWN	10/11/17	1618
Received by: (Signature and Printed Name)	MFR	10/11/17	1704
Received by: (Signature and Printed Name)			

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver: 20130715
Method of Transport	**Sample Conditions Upon Receipt**			
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BmcCulloch@leightongroup.com
Company: 17781 Cowan Leighton
Address:
City: SAME State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Barth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015 (GRO) TPHg/A; 8015 (DRO) TPHe; 8270 (Semi-volatiles); 8081 (Organochlorine Pesticides); 8082 (PCBs); 6010 / 7000 (Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	TAT	Container #	Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	1703C41-21	LB20-2.5	10/11/17	1115	5	4				
2	-22	LB20-5.0		1118						
3	-23	LB25-0.5		1142						
4	-24	LB25-2.5		1145						
5	-25	LB25-5.0		1147						
6	-26	LB24-0.5		1252						
7	-27	LB24-2.5		1254						
8	-28	LB24-5.0		1256						
9	-29	LB19-0.5		1305						
10	-30	LB19-2.5		1307						

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformat ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Kevin C. Hall — Signature

CUSTODY

Relinquished by: (Signature and Printed Name) Kevin C. Hall	Date: 10/11/17	Time: 1618	Received by: (Signature and Printed Name) Fedex	Date: 10/11/17	Time: 1618
Relinquished by: (Signature and Printed Name) Fedex	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name) MFR	Date: 10/11/17	Time: 1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver: 20130715
Method of Transport	Sample Conditions Upon Receipt			
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (V0A)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: POLA Berth 141-143
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5074 Kits

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO) TPHg/d	8015(DRO) TPHd	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container: #	Container: Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container: Material: 1=Glass; 2=Plastic; 3=Metal	Container: Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	MN3641-31	LB19-5.0	10/11/17	1309		X	X				X		X					5	4				
2	-32	LB13-0.5		1340																			
3	-33	LB13-2.5		1342																			
4	-34	LB13-5.0		1344																			
5	-35	LB8-0.5		1402																			
6	-36	LB8-2.5		1404																			
7	-37	LB8-5.0		1406																			
8	-38	LB12-0.5		1423																			
9	-39	LB12-2.5		1425																			
10	-40	LB12-5.0		1427																			

CUSTODY TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Kenneth Hall — Signature

Relinquished by: (Signature and Printed Name) Kenneth Hall	Date: 10/11/17	Time: 1618	Received by: (Signature and Printed Name) FROM FEDEX	Date: 10/11/17	Time: 1618
Relinquished by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name) MER	Date: 10/11/17	Time: 1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 5 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☒	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Bryan McCulloch Email: BMcCulloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pole Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 kits

Encircle or Write Requested Analysis

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015 (GRO) TPHg/d	8015 (DRO) TPHo	8270 (Semi-volatiles)	8081 (Organochlorine Pesticides)	8082 (PCBs)	6010 / 7000 (Title 22 Metals)	TO-15	Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container #	Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3	QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV	REMARKS
1	1703641-41	LB17-0.5	10/11/17	1438	X	X					X		X					5	4				
2	-42	LB17-2.5		1440																			
3	-43	LB17-5.0		1442																			
4	-44	LB18-0.5		1453																			
5	-45	LB18-2.5		1455																			
6	-46	LB18-5.0		1457																			
7	-47	LB23-0.5		1515																			
8	-48	LB23-2.5		1518																			
9	-49	LB23-5.0		1520																			
10																							

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Submitter Print Name _____ Signature _____

Relinquished by: (Signature and Printed Name)	Date: 10/11/17	Time: 1618	Received by: (Signature and Printed Name) Fedex	Date: 10/11/17	
Relinquished by: (Signature and Printed Name) Fedex	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name)	Date: 10/11/17	
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☑ OnTrac ☐ GSO ☐ Other:

Sample Conditions Upon Receipt

Condition	Y	N	Condition	Y	N
1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☐	2.6, 2.2		

CUSTOMER

Company: Leighton Consulting Inc
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-7836 Fax: 949-250-1114

SEND REPORT TO:
Attn: Byron McCulloch Email: BMcculloch@leightongroup.com
Company: Leighton Consulting
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Barth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO); 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; 8015 TPHg/BTEX

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE/ FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

ITEM	Lab No.	Sample ID / Location	Date	Time	TAT	Container #	Container Type	Material	Preservative	QA/QC	REMARKS
1	1703641 -01	LB5-0.5	10/11/17	1010	5	4				☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV	
2	-02	LB5-2.5		1012							
3	-03	LB5-5.0		1014							
4	-04	LB9-0.5		1024							
5	-05	LB9-2.5		1026							
6	-06	LB9-5.0		1028							
7	-07	LB14-0.5		1044							
8	-08	LB14-2.5		1046							
9	-09	LB14-5.0		1048							
10	-10	LB20-0.5		1112							

Container: Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister
Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

SUBMITTAL TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Kevin Hall — Submitter Print Name
Kevin Hall — Signature

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kevin Hall	10/11/17	1618	FPOWA	10/11/17	1618
FPOWA	10/11/17	1704	MFR-ON	10/11/17	1704

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (V0A)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-753-9836 Fax: 949-250-1114

SEND REPORT TO:
Attn: Bryan McCulloch Email: BMcCulloch@leightongroup.com
Company: Leighton Consulting Inc.
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 kits collected

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO)	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	TPH8015M / TPH8015M	TPH8015M	Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container: #	Container: Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container: Material: 1=Glass; 2=Plastic; 3=Metal	Container: Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	1703C41-11	LB3-0.5	10-11-17	754							X	X	X	X	X					5	4			
2	-12	LB3-2.5		756																				
3	-13	LB3-5.0		758																				
4	-14	LB4-0.5		834																				
5	-15	LB4-2.5		836																				
6	-16	LB4-3.5		838																				
7	-17	LBmw1-0.5 KCH		922																				
8	-18	LBmw1-2.5 KCH		924																				
9	-19	LBmw1-5.0 KCH		926																				
10	-20	LB2-0.5		959 KH																				

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Ken C. Hall — Submitter Print Name
K. Hall — Signature

Relinquished by: (Signature and Printed Name) Ken C. Hall	Date: 10/11/17	Time: 1818	Received by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1818
Relinquished by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name) MFR	Date: 10/11A	Time: 1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: Bmcculloch@leightongroup.com
Company: 17781 Cowan Leighton
Address:
City: SAME State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Bartth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPHg/d; 8015(DRO) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # — Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister — Material: 1=Glass; 2=Plastic; 3=Metal — Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	Soil/Sediment/Sludge	TAT	#	REMARKS
1	1703C41-21	LB20 - 2.5	10/11/17	1115	X	5	4	
2	-22	LB20 - 5.0		1118				
3	-23	LB25 - 0.5		1142				
4	-24	LB25 - 2.5		1145				
5	-25	LB25 - 5.0		1147				
6	-26	LB24 - 0.5		1252				
7	-27	LB24 - 2.5		1254				
8	-28	LB24 - 5.0		1256				
9	-29	LB19 - 0.5		1305				
10	-30	LB19 - 2.5		1307				

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air Samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Kevin C. Hall — Signature

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kevin C. Hall	10/11/17	1618	Brown	10/11/17	1618
Brown	10/11/17	1704	MFR	10/11/17	1704

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc. Address: 17781 Cowan Tel: 949-253-9836
City: Irvine State: CA Zip: 92614 Fax:

SEND REPORT TO: Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: POLA Berth 141-143
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time
1	M03641-31	LB19-5.0	10/11/17	1309
2	-32	LB13-0.5		1340
3	-33	LB13-2.5		1342
4	-34	LB13-5.0		1344
5	-35	LB8-0.5		1402
6	-36	LB8-2.5		1404
7	-37	LB8-5.0		1406
8	-38	LB12-0.5		1423
9	-39	LB12-2.5		1425
10	-40	LB12-5.0		1427

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPHg/d; 8015(DRO) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

TAT: 5

Container: # 4
Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Ledlar; 7=Canister
Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

REMARKS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name — Signature

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
K. Hall	10/11/17	1618	FROM	10/11/17	1618
FROM	10/11/17	1704	MER	10/11/17	1704

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 5 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KH
Quote No:
PO #:
Special Instructions/Comments: 5035 kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015 (~~GRO~~) TPHg/d; 8015 (~~DRO~~) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE/ FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	8260	8015 TPHg/d	8015 TPHd	8270	8081	8082	6010/7000	TO-15	SOIL	WATER	TAT	#	REMARKS
1	1703641-41	LB17-0.5	10/11/17	1438		X	X				X		X		5	4	
2	-42	LB17-2.5		1440													
3	-43	LB17-5.0		1442													
4	-44	LB18-0.5		1453													
5	-45	LB18-2.5		1455													
6	-46	LB18-5.0		1457													
7	-47	LB23-0.5		1515													
8	-48	LB23-2.5		1518													
9	-49	LB23-5.0		1520													
10	-50	LB2-2.5	10/11/17	935	KH												
	-51	LB2-5.0	10/11/17	935	KH												

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday, Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Submitter Print Name _____ Signature _____

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kenc. Mcl	10/11/17	1618	Fedex	10/11/17	1618
Fedex	10/11/17	1704		10/11/17	1704

SAMPLE RECEIPT

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Conditions Upon Receipt

Condition	Y	N	Condition	Y	N
1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☑	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☐	2.6, 2.2		

CUSTOMER

Company: Leighton Consulting Inc
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax: 949-250-1114

SEND REPORT TO:
Attn: Byron McCulloch Email: BMcculloch@leightongroup.com
Company: Leighton Consulting
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Barth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO); 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; 8015 TPHg/BTEX

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

ITEM	Lab No.	Sample ID / Location	Date	Time	TAT	Container #	Container Type	Material	Preservative	REMARKS
1	1703641 -01	LB5-0.5	10/11/17	1010	5	4				
2	-02	LB5-2.5		1012						
3	-03	LB5-5.0		1014						
4	-04	LB9-0.5		1024						
5	-05	LB9-2.5		1026						
6	-06	LB9-5.0		1028						
7	-07	LB14-0.5		1044						
8	-08	LB14-2.5		1046						
9	-09	LB14-5.0		1048						
10	-10	LB20-0.5		1112						

Container: Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister
Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Kevin Hall — Submitter Print Name
Kevin Hall — Signature

SAMPLE RECEIPT

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kevin Hall	10/11/17	1618	FPDHL	10/11/17	1618
Relinquished by: (Signature and Printed Name) FPDHL	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name)	Date: 10/11/17	Time: 1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (V0A)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-753-9836 Fax: 949-250-1114

SEND REPORT TO:
Attn: Bryan McCulloch Email: BMcCulloch@leightongroup.com
Company: Leighton Consulting Inc.
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 kits collected

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO); 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; TPH-g / TPH 8015M; TPH-d 8015M

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	REMARKS
1	1703C41-11	LB3-0.5	10-11-17	754	
2	-12	LB3-2.5		756	
3	-13	LB3-5.0		758	
4	-14	LB4-0.5		834	
5	-15	LB4-2.5		836	
6	-16	LB4-3.5		838	
7	-17	LBrm1-0.5 KCH		922	
8	-18	LBrm1-2.5 KCH		924	
9	-19	LBrm1-5.0 KCH		926	
10	-20	LB2-0.5		959 KCH	

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Ken C. Hall — Submitter Print Name
K. Hall — Signature

Relinquished by: (Signature and Printed Name) Ken C. Hall	Date: 10/11/17	Time: 1818	Received by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1818
Relinquished by: (Signature and Printed Name) FEDEX	Date: 10/11/17	Time: 1704	Received by: (Signature and Printed Name) MFR	Date: 10/12	Time: 1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc. | Address: 17781 Cowan | City: Irvine | State: CA | Zip: 92614 | Tel: 949-253-9836 | Fax:

SEND REPORT TO:
Attn: Brynn McCulloch | Email: Bmcculloch@leightongroup.com
Company: 17781 Cowan Leighton
Address:
City: SAME | State: | Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable | Email:
Company:
Address: SAME
City: | State: | Zip:

PROJECT SAMPLES

Project Name: Pola Bartth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPHg/d; 8015(DRO) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260	8015(GRO)	8015(DRO)	8270	8081	8082	6010	TO-15	SOIL/SED	SOLIDS	WATER-DRINK	WATER-STORM	AQUEOUS	TAT	#	REMARKS
1	1703C41-21	LB20 - 2.5	10/11/17	1115		X	X				X		X					5	4	
2	-22	LB20 - 5.0		1118																
3	-23	LB25 - 0.5		1142																
4	-24	LB25 - 2.5		1145																
5	-25	LB25 - 5.0		1147																
6	-26	LB24 - 0.5		1252																
7	-27	LB24 - 2.5		1254																
8	-28	LB24 - 5.0		1256																
9	-29	LB19 - 0.5		1305						X										
10	-30	LB19 - 2.5		1307																

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air Samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformat ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Kevin C. Hall — Signature

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
Kevin C. Hall	10/11/17	1618	Brown	10/11/17	1618
Brown	10/11/17	1704	MFR	10/11/17	1704

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc. Address: 17781 Cowan Tel: 949-253-9836
City: Irvine State: CA Zip: 92614 Fax:

SEND REPORT TO: Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: POLA Berth 141-143
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time
1	M03641-31	LB19-5.0	10/11/17	1309
2	-32	LB13-0.5		1340
3	-33	LB13-2.5		1342
4	-34	LB13-5.0		1344
5	-35	LB8-0.5		1402
6	-36	LB8-2.5		1404
7	-37	LB8-5.0		1406
8	-38	LB12-0.5		1423
9	-39	LB12-2.5		1425
10	-40	LB12-5.0		1427

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPHg/d; 8015(DRO) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

TAT: 5

Container: # 4; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

REMARKS

SUBMITTAL

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name — Signature

	Date	Time		Date	Time
Relinquished by: (Signature and Printed Name)	10/11/17	1618	Received by: (Signature and Printed Name)	10/11/17	1618
Relinquished by: (Signature and Printed Name)	10/11/17	1704	Received by: (Signature and Printed Name)	10/11/17	1704
Relinquished by: (Signature and Printed Name)			Received by: (Signature and Printed Name)		

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 5 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (V0A)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KH
Quote No:
PO #:
Special Instructions/Comments: 5035 kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015 (~~GRO~~) TPHg/d; 8015 (~~DRO~~) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE/ FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	8260	8015 TPHg/d	8015 TPHd	8270	8081	8082	6010/7000	TO-15	SOIL	TAT	#	REMARKS
1	1703641-41	LB17-0.5	10/11/17	1438		X	X				X		X	5	4	
2	-42	LB17-2.5		1440												
3	-43	LB17-5.0		1442												
4	-44	LB18-0.5		1453												
5	-45	LB18-2.5		1455												
6	-46	LB18-5.0		1457												
7	-47	LB23-0.5		1515												
8	-48	LB23-2.5		1518												
9	-49	LB23-5.0		1520												
10	-50	LB2-2.5	10/11/17	935	KH											
	-51	LB2-5.0	10/11/17	935	KH											

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday, Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Submitter Print Name _____ Signature _____

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kenc. Mcl	10/11/17	1618	Fedex	10/11/17	1618
Fedex	10/11/17	1704		10/11/17	1704
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

SWITCH

ADVANCED TECHNOLOGY LABORATORIES

November 08, 2017

Brynn McCulloch
Leighton Consulting, Inc.
17781 Cowan Street
Irvine, CA 92614
Tel: (949) 394-2306
Fax:(949) 250-1114

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1703641
Client Reference : POLA Berth 191-193, 11618.005

Enclosed are the results for sample(s) received on October 11, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB5-0.5	1703641-01	Soil	10/11/17 10:10	10/11/17 16:18
LB5-2.5	1703641-02	Soil	10/11/17 10:12	10/11/17 16:18
LB9-0.5	1703641-04	Soil	10/11/17 10:24	10/11/17 16:18
LB9-2.5	1703641-05	Soil	10/11/17 10:26	10/11/17 16:18
LB4-0.5	1703641-14	Soil	10/11/17 8:34	10/11/17 16:18
LB4-2.5	1703641-15	Soil	10/11/17 8:36	10/11/17 16:18
LB4-3.5	1703641-16	Soil	10/11/17 8:38	10/11/17 16:18
LB2-0.5	1703641-20	Soil	10/11/17 9:59	10/11/17 16:18
LB19-0.5	1703641-29	Soil	10/11/17 13:05	10/11/17 16:18
LB13-0.5	1703641-32	Soil	10/11/17 13:40	10/11/17 16:18
LB13-2.5	1703641-33	Soil	10/11/17 13:42	10/11/17 16:18
LB17-0.5	1703641-41	Soil	10/11/17 14:38	10/11/17 16:18
LB17-2.5	1703641-42	Soil	10/11/17 14:40	10/11/17 16:18
LB2-2.5	1703641-50	Soil	10/11/17 9:57	10/11/17 16:18

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-0.5

Lab ID: 1703641-01

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1260	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 15:54	
Surrogate: Decachlorobiphenyl	*32.4 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 15:54*	
Surrogate: Tetrachloro-m-xylene	*50.2 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 15:54*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,1,1-Trichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,1,2,2-Tetrachloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,1,2-Trichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,1-Dichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,1-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,1-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2,3-Trichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2,3-Trichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2,4-Trichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2,4-Trimethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2-Dibromo-3-chloropropane	ND	9.1	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2-Dibromoethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2-Dichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,2-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,3,5-Trimethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,3-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,3-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
1,4-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
2,2-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-0.5

Lab ID: 1703641-01

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
4-Chlorotoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
4-Isopropyltoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Benzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Bromobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Bromochloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Bromodichloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Bromoform	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Bromomethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Carbon disulfide	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Carbon tetrachloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Chlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Chloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Chloroform	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Chloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
cis-1,2-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
cis-1,3-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Di-isopropyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Dibromochloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Dibromomethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Dichlorodifluoromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Ethyl Acetate	ND	46	1	B7J0750	10/25/2017	10/25/17 10:53	
Ethyl Ether	ND	46	1	B7J0750	10/25/2017	10/25/17 10:53	
Ethyl tert-butyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Ethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Freon-113	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Hexachlorobutadiene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Isopropylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
m,p-Xylene	ND	9.1	1	B7J0750	10/25/2017	10/25/17 10:53	
Methylene chloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
MTBE	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
n-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
n-Propylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Naphthalene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
o-Xylene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
sec-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Styrene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-0.5

Lab ID: 1703641-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
tert-Butanol	ND	91	1	B7J0750	10/25/2017	10/25/17 10:53	
tert-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Tetrachloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Toluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
trans-1,2-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
trans-1,3-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Trichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Trichlorofluoromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Vinyl acetate	ND	46	1	B7J0750	10/25/2017	10/25/17 10:53	
Vinyl chloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 10:53	
Surrogate: 1,2-Dichloroethane-d4	*105 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 10:53*	
Surrogate: 4-Bromofluorobenzene	*97.0 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 10:53*	
Surrogate: Dibromofluoromethane	*101 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 10:53*	
Surrogate: Toluene-d8	*107 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 10:53*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Acenaphthene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Acenaphthylene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Benzo(a)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Benzo(a)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Benzo(b)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Benzo(g,h,i)perylene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Benzo(k)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Chrysene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Dibenz(a,h)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Fluorene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Indeno(1,2,3-cd)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Naphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Phenanthrene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1
Pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 17:37	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-0.5

Lab ID: 1703641-01

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0757	10/25/2017	*10/25/17 17:37*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0757	10/25/2017	*10/25/17 17:37*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0757	10/25/2017	*10/25/17 17:37*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0757	10/25/2017	*10/25/17 17:37*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-2.5

Lab ID: 1703641-02

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**5.8**	1.0	20	B7J0849	10/30/2017	10/30/17 12:10	D1

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,1,1-Trichloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,1,2,2-Tetrachloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,1,2-Trichloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,1-Dichloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,1-Dichloroethene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,1-Dichloropropene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2,3-Trichloropropane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2,3-Trichlorobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2,4-Trichlorobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2,4-Trimethylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2-Dibromo-3-chloropropane	ND	10	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2-Dibromoethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2-Dichlorobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2-Dichloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,2-Dichloropropane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,3,5-Trimethylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,3-Dichlorobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,3-Dichloropropane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
1,4-Dichlorobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
2,2-Dichloropropane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
2-Chlorotoluene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
4-Chlorotoluene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
4-Isopropyltoluene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Benzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Bromobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Bromochloromethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Bromodichloromethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Bromoform	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Bromomethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Carbon disulfide	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-2.5

Lab ID: 1703641-02

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Chlorobenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Chloroethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Chloroform	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Chloromethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
cis-1,2-Dichloroethene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
cis-1,3-Dichloropropene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Di-isopropyl ether	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Dibromochloromethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Dibromomethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Dichlorodifluoromethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Ethyl Acetate	ND	52	1	B7J0750	10/25/2017	10/25/17 11:12	
Ethyl Ether	ND	52	1	B7J0750	10/25/2017	10/25/17 11:12	
Ethyl tert-butyl ether	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Ethylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Freon-113	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Hexachlorobutadiene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Isopropylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
m,p-Xylene	ND	10	1	B7J0750	10/25/2017	10/25/17 11:12	
Methylene chloride	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
MTBE	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
n-Butylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
n-Propylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Naphthalene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
o-Xylene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
sec-Butylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Styrene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
tert-Amyl methyl ether	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
tert-Butanol	ND	100	1	B7J0750	10/25/2017	10/25/17 11:12	
tert-Butylbenzene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Tetrachloroethene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Toluene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
trans-1,2-Dichloroethene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
trans-1,3-Dichloropropene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Trichloroethene	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Trichlorofluoromethane	ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Vinyl acetate	ND	52	1	B7J0750	10/25/2017	10/25/17 11:12	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB5-2.5

Lab ID: 1703641-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	5.2	1	B7J0750	10/25/2017	10/25/17 11:12	
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*32 - 140*		B7J0750	10/25/2017	*10/25/17 11:12*	
Surrogate: 4-Bromofluorobenzene	*96.5 %*		*68 - 131*		B7J0750	10/25/2017	*10/25/17 11:12*	
Surrogate: Dibromofluoromethane	*94.4 %*		*49 - 134*		B7J0750	10/25/2017	*10/25/17 11:12*	
Surrogate: Toluene-d8	*105 %*		*75 - 132*		B7J0750	10/25/2017	*10/25/17 11:12*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Acenaphthene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Acenaphthylene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Anthracene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Benzo(a)anthracene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Benzo(a)pyrene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Benzo(b)fluoranthene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Benzo(g,h,i)perylene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Benzo(k)fluoranthene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Chrysene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Dibenz(a,h)anthracene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Fluoranthene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Fluorene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Indeno(1,2,3-cd)pyrene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Naphthalene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Phenanthrene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Pyrene		ND	25	5	B7J0757	10/25/2017	10/25/17 18:07	
Surrogate: 1,2-Dichlorobenzene-d4	*58.6 %*		*29 - 109*		B7J0757	10/25/2017	*10/25/17 18:07*	
Surrogate: 2-Fluorobiphenyl	*77.0 %*		*39 - 108*		B7J0757	10/25/2017	*10/25/17 18:07*	
Surrogate: Nitrobenzene-d5	*52.2 %*		*0 - 146*		B7J0757	10/25/2017	*10/25/17 18:07*	
Surrogate: 4-Terphenyl-d14	*74.9 %*		*39 - 123*		B7J0757	10/25/2017	*10/25/17 18:07*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-0.5

Lab ID: 1703641-04

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1260	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 16:12	
Surrogate: Decachlorobiphenyl	*36.6 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 16:12*	
Surrogate: Tetrachloro-m-xylene	*54.5 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 16:12*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,1,1-Trichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,1,2,2-Tetrachloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,1,2-Trichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,1-Dichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,1-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,1-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2,3-Trichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2,3-Trichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2,4-Trichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2,4-Trimethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2-Dibromo-3-chloropropane	ND	9.3	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2-Dibromoethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2-Dichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,2-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,3,5-Trimethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,3-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,3-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
1,4-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
2,2-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-0.5

Lab ID: 1703641-04

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
4-Chlorotoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
4-Isopropyltoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Benzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Bromobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Bromochloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Bromodichloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Bromoform	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Bromomethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Carbon disulfide	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Carbon tetrachloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Chlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Chloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Chloroform	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Chloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
cis-1,2-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
cis-1,3-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Di-isopropyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Dibromochloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Dibromomethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Dichlorodifluoromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Ethyl Acetate	ND	46	1	B7J0750	10/25/2017	10/25/17 11:30	
Ethyl Ether	ND	46	1	B7J0750	10/25/2017	10/25/17 11:30	
Ethyl tert-butyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Ethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Freon-113	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Hexachlorobutadiene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Isopropylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
m,p-Xylene	ND	9.3	1	B7J0750	10/25/2017	10/25/17 11:30	
Methylene chloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
MTBE	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
n-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
n-Propylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Naphthalene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
o-Xylene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
sec-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Styrene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-0.5

Lab ID: 1703641-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
tert-Butanol	ND	93	1	B7J0750	10/25/2017	10/25/17 11:30	
tert-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Tetrachloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Toluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
trans-1,2-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
trans-1,3-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Trichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Trichlorofluoromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Vinyl acetate	ND	46	1	B7J0750	10/25/2017	10/25/17 11:30	
Vinyl chloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 11:30	
Surrogate: 1,2-Dichloroethane-d4	*102 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 11:30*	
Surrogate: 4-Bromofluorobenzene	*100 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 11:30*	
Surrogate: Dibromofluoromethane	*94.3 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 11:30*	
Surrogate: Toluene-d8	*106 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 11:30*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Acenaphthene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Acenaphthylene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Benzo(a)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Benzo(a)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Benzo(b)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Benzo(g,h,i)perylene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Benzo(k)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Chrysene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Dibenz(a,h)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Fluorene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Indeno(1,2,3-cd)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Naphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Phenanthrene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1
Pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 18:36	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-0.5

Lab ID: 1703641-04

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 18:36*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 18:36*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 18:36*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 18:36*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-2.5

Lab ID: 1703641-05

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,1,1-Trichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,1,2,2-Tetrachloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,1,2-Trichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,1-Dichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,1-Dichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,1-Dichloropropene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2,3-Trichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2,3-Trichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2,4-Trichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2,4-Trimethylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2-Dibromo-3-chloropropane	ND	11	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2-Dibromoethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2-Dichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2-Dichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,2-Dichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,3,5-Trimethylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,3-Dichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,3-Dichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
1,4-Dichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
2,2-Dichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
2-Chlorotoluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
4-Chlorotoluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
4-Isopropyltoluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Benzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Bromobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Bromochloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Bromodichloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Bromoform	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Bromomethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Carbon disulfide	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Carbon tetrachloride	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Chlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Chloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Chloroform	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Chloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
cis-1,2-Dichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-2.5

Lab ID: 1703641-05

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Di-isopropyl ether	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Dibromochloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Dibromomethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Dichlorodifluoromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Ethyl Acetate	ND	53	1	B7J0750	10/25/2017	10/25/17 11:49	
Ethyl Ether	ND	53	1	B7J0750	10/25/2017	10/25/17 11:49	
Ethyl tert-butyl ether	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Ethylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Freon-113	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Hexachlorobutadiene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Isopropylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
m,p-Xylene	ND	11	1	B7J0750	10/25/2017	10/25/17 11:49	
Methylene chloride	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
MTBE	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
n-Butylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
n-Propylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Naphthalene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
o-Xylene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
sec-Butylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Styrene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
tert-Amyl methyl ether	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
tert-Butanol	ND	110	1	B7J0750	10/25/2017	10/25/17 11:49	
tert-Butylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Tetrachloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Toluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
trans-1,2-Dichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
trans-1,3-Dichloropropene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Trichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Trichlorofluoromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Vinyl acetate	ND	53	1	B7J0750	10/25/2017	10/25/17 11:49	
Vinyl chloride	ND	5.3	1	B7J0750	10/25/2017	10/25/17 11:49	
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 11:49*	
Surrogate: 4-Bromofluorobenzene	*99.9 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 11:49*	
Surrogate: Dibromofluoromethane	*95.8 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 11:49*	
Surrogate: Toluene-d8	*110 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 11:49*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB9-2.5

Lab ID: 1703641-05

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Acenaphthene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Acenaphthylene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Anthracene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Benzo(a)anthracene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Benzo(a)pyrene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Benzo(b)fluoranthene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Benzo(g,h,i)perylene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Benzo(k)fluoranthene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Chrysene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Dibenz(a,h)anthracene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Fluoranthene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Fluorene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Indeno(1,2,3-cd)pyrene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Naphthalene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Phenanthrene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Pyrene	ND	250	50	B7J0757	10/25/2017	10/25/17 19:05	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 19:05*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 19:05*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 19:05*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 19:05*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-0.5

Lab ID: 1703641-14

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.25	5	B7J0818	10/27/2017	10/27/17 17:51	D1

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**3.7**	1.0	20	B7J0849	10/30/2017	10/30/17 12:14	D1

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1260	**79**	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 16:31	
Surrogate: Decachlorobiphenyl	*29.8 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 16:31*	
Surrogate: Tetrachloro-m-xylene	*47.5 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 16:31*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,1,1-Trichloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,1,2,2-Tetrachloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,1,2-Trichloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,1-Dichloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,1-Dichloroethene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,1-Dichloropropene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2,3-Trichloropropane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2,3-Trichlorobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-0.5

Lab ID: 1703641-14

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2,4-Trimethylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2-Dibromo-3-chloropropane	ND	9.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2-Dibromoethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2-Dichlorobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2-Dichloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,2-Dichloropropane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,3,5-Trimethylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,3-Dichlorobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,3-Dichloropropane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
1,4-Dichlorobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
2,2-Dichloropropane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
2-Chlorotoluene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
4-Chlorotoluene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
4-Isopropyltoluene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Benzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Bromobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Bromochloromethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Bromodichloromethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Bromoform	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Bromomethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Carbon disulfide	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Carbon tetrachloride	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Chlorobenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Chloroethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Chloroform	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Chloromethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
cis-1,2-Dichloroethene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
cis-1,3-Dichloropropene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Di-isopropyl ether	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Dibromochloromethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Dibromomethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Dichlorodifluoromethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Ethyl Acetate	ND	49	1	B7J0750	10/25/2017	10/25/17 12:08	
Ethyl Ether	ND	49	1	B7J0750	10/25/2017	10/25/17 12:08	
Ethyl tert-butyl ether	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Ethylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-0.5

Lab ID: 1703641-14

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Freon-113	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Hexachlorobutadiene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Isopropylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
m,p-Xylene	ND	9.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Methylene chloride	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
MTBE	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
n-Butylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
n-Propylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Naphthalene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
o-Xylene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
sec-Butylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Styrene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
tert-Amyl methyl ether	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
tert-Butanol	ND	99	1	B7J0750	10/25/2017	10/25/17 12:08	
tert-Butylbenzene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Tetrachloroethene	**27**	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Toluene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
trans-1,2-Dichloroethene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
trans-1,3-Dichloropropene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Trichloroethene	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Trichlorofluoromethane	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Vinyl acetate	ND	49	1	B7J0750	10/25/2017	10/25/17 12:08	
Vinyl chloride	ND	4.9	1	B7J0750	10/25/2017	10/25/17 12:08	
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 12:08*	
Surrogate: 4-Bromofluorobenzene	*97.3 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 12:08*	
Surrogate: Dibromofluoromethane	*96.0 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 12:08*	
Surrogate: Toluene-d8	*106 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 12:08*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-0.5

Lab ID: 1703641-14

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Acenaphthene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Acenaphthylene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Benzo(a)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Benzo(a)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Benzo(b)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Benzo(g,h,i)perylene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Benzo(k)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Chrysene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Dibenz(a,h)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Fluorene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Indeno(1,2,3-cd)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Naphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Phenanthrene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 19:34	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 19:34*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 19:34*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 19:34*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 19:34*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-2.5

Lab ID: 1703641-15

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,1,1-Trichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,1,2,2-Tetrachloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,1,2-Trichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,1-Dichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,1-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,1-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2,3-Trichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2,3-Trichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2,4-Trichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2,4-Trimethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2-Dibromo-3-chloropropane	ND	9.2	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2-Dibromoethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2-Dichloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,2-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,3,5-Trimethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,3-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,3-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
1,4-Dichlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
2,2-Dichloropropane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
2-Chlorotoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
4-Chlorotoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
4-Isopropyltoluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Benzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Bromobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Bromochloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Bromodichloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Bromoform	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Bromomethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Carbon disulfide	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Carbon tetrachloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Chlorobenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Chloroethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Chloroform	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Chloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
cis-1,2-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-2.5

Lab ID: 1703641-15

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Di-isopropyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Dibromochloromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Dibromomethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Dichlorodifluoromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Ethyl Acetate	ND	46	1	B7J0750	10/25/2017	10/25/17 12:26	
Ethyl Ether	ND	46	1	B7J0750	10/25/2017	10/25/17 12:26	
Ethyl tert-butyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Ethylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Freon-113	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Hexachlorobutadiene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Isopropylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
m,p-Xylene	ND	9.2	1	B7J0750	10/25/2017	10/25/17 12:26	
Methylene chloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
MTBE	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
n-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
n-Propylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Naphthalene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
o-Xylene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
sec-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Styrene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
tert-Amyl methyl ether	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
tert-Butanol	ND	92	1	B7J0750	10/25/2017	10/25/17 12:26	
tert-Butylbenzene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Tetrachloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Toluene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
trans-1,2-Dichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
trans-1,3-Dichloropropene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Trichloroethene	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Trichlorofluoromethane	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Vinyl acetate	ND	46	1	B7J0750	10/25/2017	10/25/17 12:26	
Vinyl chloride	ND	4.6	1	B7J0750	10/25/2017	10/25/17 12:26	
Surrogate: 1,2-Dichloroethane-d4	*105 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 12:26*	
Surrogate: 4-Bromofluorobenzene	*88.7 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 12:26*	
Surrogate: Dibromofluoromethane	*97.9 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 12:26*	
Surrogate: Toluene-d8	*101 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 12:26*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-2.5

Lab ID: 1703641-15

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Acenaphthene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Acenaphthylene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Anthracene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Benzo(a)anthracene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Benzo(a)pyrene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Benzo(b)fluoranthene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Benzo(g,h,i)perylene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Benzo(k)fluoranthene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Chrysene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Dibenz(a,h)anthracene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Fluoranthene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Fluorene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Indeno(1,2,3-cd)pyrene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Naphthalene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Phenanthrene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Pyrene	ND	100	20	B7J0757	10/25/2017	10/25/17 20:03	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 20:03*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 20:03*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 20:03*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 20:03*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB4-3.5

Lab ID: 1703641-16

STLC Metals by ICP-AES by EPA 6010B **Analyst: GO**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Copper	**18**	1.0	20	B7J0849	10/30/2017	10/30/17 12:16	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-0.5

Lab ID: 1703641-20

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.50	10	B7J0818	10/27/2017	10/27/17 18:17	D5

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Copper	**2.6**	1.0	20	B7J0849	10/30/2017	10/30/17 12:17	D1
Lead	**2.5**	1.0	20	B7J0849	10/30/2017	10/30/17 12:17	D1

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1260	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 16:50	
Surrogate: Decachlorobiphenyl	*27.9 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 16:50*	
Surrogate: Tetrachloro-m-xylene	*35.9 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 16:50*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,1,1-Trichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,1,2,2-Tetrachloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,1,2-Trichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,1-Dichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,1-Dichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,1-Dichloropropene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2,3-Trichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-0.5

Lab ID: 1703641-20

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,3-Trichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2,4-Trichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2,4-Trimethylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2-Dibromo-3-chloropropane	ND	9.3	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2-Dibromoethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2-Dichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2-Dichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,2-Dichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,3,5-Trimethylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,3-Dichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,3-Dichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
1,4-Dichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
2,2-Dichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
2-Chlorotoluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
4-Chlorotoluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
4-Isopropyltoluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Benzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Bromobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Bromochloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Bromodichloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Bromoform	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Bromomethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Carbon disulfide	**5.3**	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Carbon tetrachloride	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Chlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Chloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Chloroform	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Chloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
cis-1,2-Dichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
cis-1,3-Dichloropropene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Di-isopropyl ether	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Dibromochloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Dibromomethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Dichlorodifluoromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Ethyl Acetate	ND	47	1	B7J0750	10/25/2017	10/25/17 12:45	
Ethyl Ether	ND	47	1	B7J0750	10/25/2017	10/25/17 12:45	
Ethyl tert-butyl ether	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-0.5

Lab ID: 1703641-20

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Freon-113	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Hexachlorobutadiene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Isopropylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
m,p-Xylene	ND	9.3	1	B7J0750	10/25/2017	10/25/17 12:45	
Methylene chloride	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
MTBE	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
n-Butylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
n-Propylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Naphthalene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
o-Xylene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
sec-Butylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Styrene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
tert-Amyl methyl ether	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
tert-Butanol	ND	93	1	B7J0750	10/25/2017	10/25/17 12:45	
tert-Butylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Tetrachloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Toluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
trans-1,2-Dichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
trans-1,3-Dichloropropene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Trichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Trichlorofluoromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Vinyl acetate	ND	47	1	B7J0750	10/25/2017	10/25/17 12:45	
Vinyl chloride	ND	4.7	1	B7J0750	10/25/2017	10/25/17 12:45	
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 12:45*	
Surrogate: 4-Bromofluorobenzene	*99.1 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 12:45*	
Surrogate: Dibromofluoromethane	*95.0 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 12:45*	
Surrogate: Toluene-d8	*104 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 12:45*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-0.5

Lab ID: 1703641-20

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Acenaphthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Acenaphthylene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Benzo(a)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Benzo(a)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Benzo(b)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Benzo(g,h,i)perylene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Benzo(k)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Chrysene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Dibenz(a,h)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Fluorene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Indeno(1,2,3-cd)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Naphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Phenanthrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:31	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 20:31*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 20:31*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 20:31*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 20:31*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB19-0.5

Lab ID: 1703641-29

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1221		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1232		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1242		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1248		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1254		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1260		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1262		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Aroclor 1268		ND	16	1	B7J0511	10/18/2017	10/18/17 13:43	
Surrogate: Decachlorobiphenyl	*52.8 %*		*18 - 136*		B7J0511	10/18/2017	*10/18/17 13:43*	
Surrogate: Tetrachloro-m-xylene	*80.2 %*		*30 - 130*		B7J0511	10/18/2017	*10/18/17 13:43*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-0.5

Lab ID: 1703641-32

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1260	**21**	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 17:09	
Surrogate: Decachlorobiphenyl	*36.3 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 17:09*	
Surrogate: Tetrachloro-m-xylene	*52.8 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 17:09*	

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,1,1-Trichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,1,2,2-Tetrachloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,1,2-Trichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,1-Dichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,1-Dichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,1-Dichloropropene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2,3-Trichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2,3-Trichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2,4-Trichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2,4-Trimethylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2-Dibromo-3-chloropropane	ND	9.4	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2-Dibromoethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2-Dichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2-Dichloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,2-Dichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,3,5-Trimethylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,3-Dichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,3-Dichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
1,4-Dichlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
2,2-Dichloropropane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-0.5

Lab ID: 1703641-32

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
4-Chlorotoluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
4-Isopropyltoluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Benzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Bromobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Bromochloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Bromodichloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Bromoform	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Bromomethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Carbon disulfide	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Carbon tetrachloride	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Chlorobenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Chloroethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Chloroform	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Chloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
cis-1,2-Dichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
cis-1,3-Dichloropropene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Di-isopropyl ether	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Dibromochloromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Dibromomethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Dichlorodifluoromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Ethyl Acetate	ND	47	1	B7J0750	10/25/2017	10/25/17 13:23	
Ethyl Ether	ND	47	1	B7J0750	10/25/2017	10/25/17 13:23	
Ethyl tert-butyl ether	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Ethylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Freon-113	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Hexachlorobutadiene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Isopropylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
m,p-Xylene	ND	9.4	1	B7J0750	10/25/2017	10/25/17 13:23	
Methylene chloride	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
MTBE	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
n-Butylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
n-Propylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Naphthalene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
o-Xylene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
sec-Butylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Styrene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-0.5

Lab ID: 1703641-32

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
tert-Butanol	ND	94	1	B7J0750	10/25/2017	10/25/17 13:23	
tert-Butylbenzene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Tetrachloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Toluene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
trans-1,2-Dichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
trans-1,3-Dichloropropene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Trichloroethene	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Trichlorofluoromethane	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Vinyl acetate	ND	47	1	B7J0750	10/25/2017	10/25/17 13:23	
Vinyl chloride	ND	4.7	1	B7J0750	10/25/2017	10/25/17 13:23	
Surrogate: 1,2-Dichloroethane-d4	*102 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 13:23*	
Surrogate: 4-Bromofluorobenzene	*99.8 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 13:23*	
Surrogate: Dibromofluoromethane	*95.1 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 13:23*	
Surrogate: Toluene-d8	*101 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 13:23*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Acenaphthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Acenaphthylene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Benzo(a)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Benzo(a)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Benzo(b)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Benzo(g,h,i)perylene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Benzo(k)fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Chrysene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Dibenz(a,h)anthracene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Fluoranthene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Fluorene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Indeno(1,2,3-cd)pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Naphthalene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Phenanthrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1
Pyrene	ND	500	100	B7J0757	10/25/2017	10/25/17 20:59	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-0.5

Lab ID: 1703641-32

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0757	10/25/2017	*10/25/17 20:59*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0757	10/25/2017	*10/25/17 20:59*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0757	10/25/2017	*10/25/17 20:59*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0757	10/25/2017	*10/25/17 20:59*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-2.5

Lab ID: 1703641-33

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,1,1-Trichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,1,2,2-Tetrachloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,1,2-Trichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,1-Dichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,1-Dichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,1-Dichloropropene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2,3-Trichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2,3-Trichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2,4-Trichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2,4-Trimethylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2-Dibromo-3-chloropropane	ND	11	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2-Dibromoethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2-Dichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2-Dichloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,2-Dichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,3,5-Trimethylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,3-Dichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,3-Dichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
1,4-Dichlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
2,2-Dichloropropane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
2-Chlorotoluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
4-Chlorotoluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
4-Isopropyltoluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Benzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Bromobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Bromochloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Bromodichloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Bromoform	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Bromomethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Carbon disulfide	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Carbon tetrachloride	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Chlorobenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Chloroethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Chloroform	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Chloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
cis-1,2-Dichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-2.5

Lab ID: 1703641-33

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Di-isopropyl ether	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Dibromochloromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Dibromomethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Dichlorodifluoromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Ethyl Acetate	ND	53	1	B7J0750	10/25/2017	10/25/17 13:41	
Ethyl Ether	ND	53	1	B7J0750	10/25/2017	10/25/17 13:41	
Ethyl tert-butyl ether	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Ethylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Freon-113	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Hexachlorobutadiene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Isopropylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
m,p-Xylene	ND	11	1	B7J0750	10/25/2017	10/25/17 13:41	
Methylene chloride	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
MTBE	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
n-Butylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
n-Propylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Naphthalene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
o-Xylene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
sec-Butylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Styrene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
tert-Amyl methyl ether	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
tert-Butanol	ND	110	1	B7J0750	10/25/2017	10/25/17 13:41	
tert-Butylbenzene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Tetrachloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Toluene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
trans-1,2-Dichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
trans-1,3-Dichloropropene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Trichloroethene	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Trichlorofluoromethane	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Vinyl acetate	ND	53	1	B7J0750	10/25/2017	10/25/17 13:41	
Vinyl chloride	ND	5.3	1	B7J0750	10/25/2017	10/25/17 13:41	
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 13:41*	
Surrogate: 4-Bromofluorobenzene	*105 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 13:41*	
Surrogate: Dibromofluoromethane	*93.7 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 13:41*	
Surrogate: Toluene-d8	*106 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 13:41*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB13-2.5

Lab ID: 1703641-33

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Acenaphthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Acenaphthylene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Anthracene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Benzo(a)anthracene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Benzo(a)pyrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Benzo(b)fluoranthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Benzo(g,h,i)perylene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Benzo(k)fluoranthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Chrysene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Dibenz(a,h)anthracene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Fluoranthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Fluorene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Indeno(1,2,3-cd)pyrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Naphthalene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Phenanthrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Pyrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 13:31	
Surrogate: 1,2-Dichlorobenzene-d4	*63.8 %*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 13:31*	
Surrogate: 2-Fluorobiphenyl	*83.4 %*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 13:31*	
Surrogate: Nitrobenzene-d5	*52.4 %*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 13:31*	
Surrogate: 4-Terphenyl-d14	*82.8 %*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 13:31*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-0.5

Lab ID: 1703641-41

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**7.0**	1.0	20	B7J0849	10/30/2017	10/30/17 12:19	D1

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1260	**32**	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 17:28	
Surrogate: Decachlorobiphenyl	*39.4 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 17:28*	
Surrogate: Tetrachloro-m-xylene	*66.5 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 17:28*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,1,1-Trichloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,1,2,2-Tetrachloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,1,2-Trichloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,1-Dichloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,1-Dichloroethene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,1-Dichloropropene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2,3-Trichloropropane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2,3-Trichlorobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2,4-Trichlorobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2,4-Trimethylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2-Dibromo-3-chloropropane	ND	10	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2-Dibromoethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2-Dichlorobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,2-Dichloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-0.5

Lab ID: 1703641-41

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,3,5-Trimethylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,3-Dichlorobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,3-Dichloropropane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
1,4-Dichlorobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
2,2-Dichloropropane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
2-Chlorotoluene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
4-Chlorotoluene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
4-Isopropyltoluene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Benzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Bromobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Bromochloromethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Bromodichloromethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Bromoform	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Bromomethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Carbon disulfide	**12**	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Carbon tetrachloride	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Chlorobenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Chloroethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Chloroform	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Chloromethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
cis-1,2-Dichloroethene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
cis-1,3-Dichloropropene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Di-isopropyl ether	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Dibromochloromethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Dibromomethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Dichlorodifluoromethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Ethyl Acetate	ND	51	1	B7J0750	10/25/2017	10/25/17 14:00	
Ethyl Ether	ND	51	1	B7J0750	10/25/2017	10/25/17 14:00	
Ethyl tert-butyl ether	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Ethylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Freon-113	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Hexachlorobutadiene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Isopropylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
m,p-Xylene	ND	10	1	B7J0750	10/25/2017	10/25/17 14:00	
Methylene chloride	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
MTBE	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-0.5

Lab ID: 1703641-41

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
n-Propylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Naphthalene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
o-Xylene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
sec-Butylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Styrene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
tert-Amyl methyl ether	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
tert-Butanol	ND	100	1	B7J0750	10/25/2017	10/25/17 14:00	
tert-Butylbenzene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Tetrachloroethene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Toluene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
trans-1,2-Dichloroethene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
trans-1,3-Dichloropropene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Trichloroethene	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Trichlorofluoromethane	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Vinyl acetate	ND	51	1	B7J0750	10/25/2017	10/25/17 14:00	
Vinyl chloride	ND	5.1	1	B7J0750	10/25/2017	10/25/17 14:00	
Surrogate: 1,2-Dichloroethane-d4	*107 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 14:00*	
Surrogate: 4-Bromofluorobenzene	*102 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 14:00*	
Surrogate: Dibromofluoromethane	*98.6 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 14:00*	
Surrogate: Toluene-d8	*105 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 14:00*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Acenaphthene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Acenaphthylene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Anthracene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Benzo(a)anthracene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Benzo(a)pyrene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Benzo(b)fluoranthene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Benzo(g,h,i)perylene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Benzo(k)fluoranthene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Chrysene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Dibenz(a,h)anthracene	ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-0.5

Lab ID: 1703641-41

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Fluorene		ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Indeno(1,2,3-cd)pyrene		ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Naphthalene		ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Phenanthrene		ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Pyrene		ND	250	50	B7J0757	10/25/2017	10/25/17 21:28	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0757	10/25/2017	*10/25/17 21:28*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0757	10/25/2017	*10/25/17 21:28*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0757	10/25/2017	*10/25/17 21:28*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0757	10/25/2017	*10/25/17 21:28*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-2.5

Lab ID: 1703641-42

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,1,1-Trichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,1,2,2-Tetrachloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,1,2-Trichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,1-Dichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,1-Dichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,1-Dichloropropene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2,3-Trichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2,3-Trichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2,4-Trichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2,4-Trimethylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2-Dibromo-3-chloropropane	ND	11	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2-Dibromoethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2-Dichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2-Dichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,2-Dichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,3,5-Trimethylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,3-Dichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,3-Dichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
1,4-Dichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
2,2-Dichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
2-Chlorotoluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
4-Chlorotoluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
4-Isopropyltoluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Benzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Bromobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Bromochloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Bromodichloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Bromoform	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Bromomethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Carbon disulfide	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Carbon tetrachloride	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Chlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Chloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Chloroform	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Chloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
cis-1,2-Dichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-2.5

Lab ID: 1703641-42

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Di-isopropyl ether	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Dibromochloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Dibromomethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Dichlorodifluoromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Ethyl Acetate	ND	55	1	B7J0750	10/25/2017	10/25/17 14:18	
Ethyl Ether	ND	55	1	B7J0750	10/25/2017	10/25/17 14:18	
Ethyl tert-butyl ether	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Ethylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Freon-113	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Hexachlorobutadiene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Isopropylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
m,p-Xylene	ND	11	1	B7J0750	10/25/2017	10/25/17 14:18	
Methylene chloride	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
MTBE	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
n-Butylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
n-Propylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Naphthalene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
o-Xylene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
sec-Butylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Styrene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
tert-Amyl methyl ether	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
tert-Butanol	ND	110	1	B7J0750	10/25/2017	10/25/17 14:18	
tert-Butylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Tetrachloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Toluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
trans-1,2-Dichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
trans-1,3-Dichloropropene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Trichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Trichlorofluoromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Vinyl acetate	ND	55	1	B7J0750	10/25/2017	10/25/17 14:18	
Vinyl chloride	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:18	
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 14:18*	
Surrogate: 4-Bromofluorobenzene	*103 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 14:18*	
Surrogate: Dibromofluoromethane	*97.7 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 14:18*	
Surrogate: Toluene-d8	*108 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 14:18*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB17-2.5

Lab ID: 1703641-42

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Acenaphthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Acenaphthylene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Anthracene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Benzo(a)anthracene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Benzo(a)pyrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Benzo(b)fluoranthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Benzo(g,h,i)perylene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Benzo(k)fluoranthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Chrysene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Dibenz(a,h)anthracene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Fluoranthene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Fluorene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Indeno(1,2,3-cd)pyrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Naphthalene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Phenanthrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Pyrene	ND	5.0	1	B7J0757	10/25/2017	10/25/17 17:07	
Surrogate: 1,2-Dichlorobenzene-d4	*59.9 %*	*29 - 109*		B7J0757	10/25/2017	*10/25/17 17:07*	
Surrogate: 2-Fluorobiphenyl	*82.2 %*	*39 - 108*		B7J0757	10/25/2017	*10/25/17 17:07*	
Surrogate: Nitrobenzene-d5	*54.1 %*	*0 - 146*		B7J0757	10/25/2017	*10/25/17 17:07*	
Surrogate: 4-Terphenyl-d14	*79.9 %*	*39 - 123*		B7J0757	10/25/2017	*10/25/17 17:07*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-2.5

Lab ID: 1703641-50

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: VW**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,1,1-Trichloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,1,2,2-Tetrachloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,1,2-Trichloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,1-Dichloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,1-Dichloroethene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,1-Dichloropropene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2,3-Trichloropropane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2,3-Trichlorobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2,4-Trichlorobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2,4-Trimethylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2-Dibromo-3-chloropropane	ND	8.6	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2-Dibromoethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2-Dichlorobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2-Dichloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,2-Dichloropropane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,3,5-Trimethylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,3-Dichlorobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,3-Dichloropropane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
1,4-Dichlorobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
2,2-Dichloropropane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
2-Chlorotoluene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
4-Chlorotoluene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
4-Isopropyltoluene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Benzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Bromobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Bromochloromethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Bromodichloromethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Bromoform	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Bromomethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Carbon disulfide	**7.4**	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Carbon tetrachloride	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Chlorobenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Chloroethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Chloroform	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Chloromethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
cis-1,2-Dichloroethene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-2.5

Lab ID: 1703641-50

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: VW**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Di-isopropyl ether	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Dibromochloromethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Dibromomethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Dichlorodifluoromethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Ethyl Acetate	ND	43	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Ethyl Ether	ND	43	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Ethyl tert-butyl ether	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Ethylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Freon-113	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Hexachlorobutadiene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Isopropylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
m,p-Xylene	ND	8.6	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Methylene chloride	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
MTBE	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
n-Butylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
n-Propylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Naphthalene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
o-Xylene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
sec-Butylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Styrene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
tert-Amyl methyl ether	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
tert-Butanol	ND	86	1	B7K0166	11/07/2017	11/07/17 17:07	H7
tert-Butylbenzene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Tetrachloroethene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Toluene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
trans-1,2-Dichloroethene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
trans-1,3-Dichloropropene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Trichloroethene	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Trichlorofluoromethane	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Vinyl acetate	ND	43	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Vinyl chloride	ND	4.3	1	B7K0166	11/07/2017	11/07/17 17:07	H7
Surrogate: 1,2-Dichloroethane-d4	*120 %*	*32 - 140*		B7K0166	11/07/2017	*11/07/17 17:07*	
Surrogate: 4-Bromofluorobenzene	*105 %*	*68 - 131*		B7K0166	11/07/2017	*11/07/17 17:07*	
Surrogate: Dibromofluoromethane	*106 %*	*49 - 134*		B7K0166	11/07/2017	*11/07/17 17:07*	
Surrogate: Toluene-d8	*104 %*	*75 - 132*		B7K0166	11/07/2017	*11/07/17 17:07*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Client Sample ID LB2-2.5

Lab ID: 1703641-50

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Acenaphthene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Acenaphthylene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Anthracene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Benzo(a)anthracene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Benzo(a)pyrene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Benzo(b)fluoranthene	**10**	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Benzo(g,h,i)perylene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Benzo(k)fluoranthene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Chrysene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Dibenz(a,h)anthracene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Fluoranthene	**12**	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Fluorene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Indeno(1,2,3-cd)pyrene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Naphthalene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Phenanthrene	ND	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Pyrene	**11**	10	2	B7K0185	11/07/2017	11/07/17 17:12	H4
Surrogate: 1,2-Dichlorobenzene-d4	*50.8 %*	*29 - 109*		B7K0185	11/07/2017	*11/07/17 17:12*	
Surrogate: 2-Fluorobiphenyl	*70.0 %*	*39 - 108*		B7K0185	11/07/2017	*11/07/17 17:12*	
Surrogate: Nitrobenzene-d5	*46.3 %*	*0 - 146*		B7K0185	11/07/2017	*11/07/17 17:12*	
Surrogate: 4-Terphenyl-d14	*66.6 %*	*39 - 123*		B7K0185	11/07/2017	*11/07/17 17:12*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

QUALITY CONTROL SECTION

TCLP Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0818 - EPA 3010A_S										
Blank (B7J0818-BLK1)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	ND	0.050	0.0047							
Blank (B7J0818-BLK2)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	ND	0.050	0.0047							
LCS (B7J0818-BS1)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	0.937282	0.050	0.0047	1.00000		93.7	80 - 120			
Duplicate (B7J0818-DUP1)			**Source: 1703718-01**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	ND	0.50	0.047		0.055943			NR	20	
Duplicate (B7J0818-DUP2)			**Source: 1703720-02**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	0.913033	0.62	0.059		0.821568			10.5	20	
Matrix Spike (B7J0818-MS1)			**Source: 1703718-01**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	2.32879	0.50	0.047	2.50000	0.055943	90.9	78 - 109			
Matrix Spike (B7J0818-MS2)			**Source: 1703653-04**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	11.7478	0.25	0.024	2.50000	0.040223	468	78 - 109			M1
Matrix Spike Dup (B7J0818-MSD1)			**Source: 1703718-01**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	2.28561	0.50	0.047	2.50000	0.055943	89.2	78 - 109	1.87	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0849 - STLC_S Extraction										
Blank (B7J0849-BLK1)						Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	ND	1.0	0.076							
Lead	ND	1.0	0.094							
LCS (B7J0849-BS1)						Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	1.82832			2.00000		91.4	80 - 120			
Lead	1.94441			2.00000		97.2	80 - 120			
Matrix Spike (B7J0849-MS1)			**Source: 1703641-02**			Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	4.54437			2.50000	2.49998	81.8	62 - 129			
Lead	7.43540			2.50000	5.75609	67.2	44 - 130			
Matrix Spike Dup (B7J0849-MSD1)			**Source: 1703641-02**			Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	4.56573			2.50000	2.49998	82.6	62 - 129	0.469	20	
Lead	7.68783			2.50000	5.75609	77.3	44 - 130	3.34	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0820 - EPA 7471_S										
Blank (B7J0820-BLK1)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0820-BS1)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Mercury	0.871909	0.10	0.005	0.833333		105	80 - 120			
Duplicate (B7J0820-DUP1)			**Source: 1703641-46RE1**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Mercury	0.470609	0.10	0.005		0.140500			108	20	R
Matrix Spike (B7J0820-MS1)			**Source: 1703641-46RE1**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Mercury	0.995021	0.10	0.005	0.833333	0.140500	103	70 - 130			
Matrix Spike Dup (B7J0820-MSD1)			**Source: 1703641-46RE1**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Mercury	0.975706	0.10	0.005	0.833333	0.140500	100	70 - 130	1.96	20	
Post Spike (B7J0820-PS1)			**Source: 1703641-46RE1**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Mercury	0.007902			5.00000E-3	0.001686	124	85 - 115			M1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0511 - GCSEMI_PCB/PEST_S										
Blank (B7J0511-BLK1)					Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*11.23*			*16.6667*		*67.4*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.91*			*16.6667*		*95.4*	*30 - 130*			
LCS (B7J0511-BS1)					Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	182.618	16	4.6	166.667		110	73 - 111			
Aroclor 1260	159.355	16	4.6	166.667		95.6	75 - 125			
Surrogate: Decachlorobiphenyl	*12.77*			*16.6667*		*76.6*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*18.82*			*16.6667*		*113*	*30 - 130*			
Duplicate (B7J0511-DUP1)			**Source: 1703681-24**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	ND	16	4.6		ND				20	
Aroclor 1260	ND	16	4.6		ND				20	
Surrogate: Decachlorobiphenyl	*8.908*			*16.6667*		*53.4*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*12.55*			*16.6667*		*75.3*	*30 - 130*			
Matrix Spike (B7J0511-MS1)			**Source: 1703681-22**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	142.130	16	4.6	166.667	ND	85.3	36 - 127			
Aroclor 1260	115.861	16	4.6	166.667	ND	69.5	31 - 142			
Surrogate: Decachlorobiphenyl	*8.673*			*16.6667*		*52.0*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.25*			*16.6667*		*85.5*	*30 - 130*			
Matrix Spike Dup (B7J0511-MSD1)			**Source: 1703681-22**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Aroclor 1016	137.276	16	4.6	166.667	ND	82.4	36 - 127	3.47	20	
Aroclor 1260	113.244	16	4.6	166.667	ND	67.9	31 - 142	2.29	20	
Surrogate: Decachlorobiphenyl	*8.437*			*16.6667*		*50.6*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*13.89*			*16.6667*		*83.4*	*30 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0724 - GCSEMI_PCB/PEST_S										
Blank (B7J0724-BLK2)						Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*13.23*			*16.6667*		*79.4*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.64*			*16.6667*		*87.8*	*30 - 130*			
LCS (B7J0724-BS2)						Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	149.223	16	4.6	166.667		89.5	73 - 111			
Aroclor 1260	155.316	16	4.6	166.667		93.2	75 - 125			
Surrogate: Decachlorobiphenyl	*13.98*			*16.6667*		*83.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.23*			*16.6667*		*91.4*	*30 - 130*			
Matrix Spike (B7J0724-MS3)			**Source: 1703770-02**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	77.6048	16	4.6	166.667	ND	46.6	36 - 127			
Aroclor 1260	86.5117	16	4.6	166.667	ND	51.9	31 - 142			
Surrogate: Decachlorobiphenyl	*7.514*			*16.6667*		*45.1*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*6.630*			*16.6667*		*39.8*	*30 - 130*			
Matrix Spike (B7J0724-MS4)			**Source: 1703770-03**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	89.5710	16	4.6	166.667	ND	53.7	36 - 127			
Aroclor 1260	95.6437	16	4.6	166.667	ND	57.4	31 - 142			
Surrogate: Decachlorobiphenyl	*8.150*			*16.6667*		*48.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*8.857*			*16.6667*		*53.1*	*30 - 130*			
Matrix Spike Dup (B7J0724-MSD3)			**Source: 1703770-02**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	87.3318	16	4.6	166.667	ND	52.4	36 - 127	11.8	20	
Aroclor 1260	82.0210	16	4.6	166.667	ND	49.2	31 - 142	5.33	20	
Surrogate: Decachlorobiphenyl	*6.951*			*16.6667*		*41.7*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*6.484*			*16.6667*		*38.9*	*30 - 130*			
Matrix Spike Dup (B7J0724-MSD4)			**Source: 1703770-03**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	100.878	16	4.6	166.667	ND	60.5	36 - 127	11.9	20	
Aroclor 1260	102.184	16	4.6	166.667	ND	61.3	31 - 142	6.61	20	
Surrogate: Decachlorobiphenyl	*9.008*			*16.6667*		*54.0*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*9.429*			*16.6667*		*56.6*	*30 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S										
Blank (B7J0750-BLK1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							
1,1,1-Trichloroethane	ND	5.0	1.1							
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							
1,1,2-Trichloroethane	ND	5.0	1.6							
1,1-Dichloroethane	ND	5.0	0.81							
1,1-Dichloroethene	ND	5.0	2.6							
1,1-Dichloropropene	ND	5.0	2.3							
1,2,3-Trichloropropane	ND	5.0	0.54							
1,2,3-Trichlorobenzene	ND	5.0	1.2							
1,2,4-Trichlorobenzene	ND	5.0	1.1							
1,2,4-Trimethylbenzene	ND	5.0	1.5							
1,2-Dibromo-3-chloropropane	ND	10	1.6							
1,2-Dibromoethane	ND	5.0	3.2							
1,2-Dichlorobenzene	ND	5.0	1.1							
1,2-Dichloroethane	ND	5.0	1.2							
1,2-Dichloropropane	ND	5.0	1.8							
1,3,5-Trimethylbenzene	ND	5.0	1.7							
1,3-Dichlorobenzene	ND	5.0	1.3							
1,3-Dichloropropane	ND	5.0	1.1							
1,4-Dichlorobenzene	ND	5.0	1.2							
2,2-Dichloropropane	ND	5.0	1.2							
2-Chlorotoluene	ND	5.0	1.6							
4-Chlorotoluene	ND	5.0	1.5							
4-Isopropyltoluene	ND	5.0	2.3							
Benzene	ND	5.0	0.64							
Bromobenzene	ND	5.0	1.1							
Bromochloromethane	ND	5.0	0.64							
Bromodichloromethane	ND	5.0	1.2							
Bromoform	ND	5.0	0.80							
Bromomethane	ND	5.0	2.5							
Carbon disulfide	ND	5.0	3.5							
Carbon tetrachloride	ND	5.0	1.2							
Chlorobenzene	ND	5.0	1.0							
Chloroethane	ND	5.0	1.1							
Chloroform	ND	5.0	0.82							
Chloromethane	ND	5.0	1.4							
cis-1,2-Dichloroethene	ND	5.0	0.67							
cis-1,3-Dichloropropene	ND	5.0	1.9							
Di-isopropyl ether	ND	5.0	0.55							
Dibromochloromethane	ND	5.0	1.0							
Dibromomethane	ND	5.0	1.6							

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618.005
Report To : Brynn McCulloch
Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
Blank (B7J0750-BLK1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
Dichlorodifluoromethane	ND	5.0	2.2							
Ethyl Acetate	ND	50	8.1							
Ethyl Ether	ND	50	6.1							
Ethyl tert-butyl ether	ND	5.0	0.67							
Ethylbenzene	ND	5.0	0.91							
Freon-113	ND	5.0	2.8							
Hexachlorobutadiene	ND	5.0	2.5							
Isopropylbenzene	ND	5.0	1.8							
m,p-Xylene	ND	10	1.5							
Methylene chloride	ND	5.0	2.3							
MTBE	ND	5.0	0.63							
n-Butylbenzene	ND	5.0	2.4							
n-Propylbenzene	ND	5.0	2.2							
Naphthalene	ND	5.0	0.97							
o-Xylene	ND	5.0	0.87							
sec-Butylbenzene	ND	5.0	2.3							
Styrene	ND	5.0	1.5							
tert-Amyl methyl ether	ND	5.0	0.59							
tert-Butanol	ND	100	19							
tert-Butylbenzene	ND	5.0	2.0							
Tetrachloroethene	ND	5.0	1.6							
Toluene	ND	5.0	0.94							
trans-1,2-Dichloroethene	ND	5.0	0.59							
trans-1,3-Dichloropropene	ND	5.0	2.1							
Trichloroethene	ND	5.0	3.1							
Trichlorofluoromethane	ND	5.0	1.4							
Vinyl acetate	ND	50	9.8							
Vinyl chloride	ND	5.0	1.7							
Surrogate: 1,2-Dichloroethane-d4	*42.17*			*50.0000*		*84.3*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*50.38*			*50.0000*		*101*	*68 - 131*			
Surrogate: Dibromofluoromethan	*43.07*			*50.0000*		*86.1*	*49 - 134*			
Surrogate: Toluene-d8	*49.82*			*50.0000*		*99.6*	*75 - 132*			
LCS (B7J0750-BS1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,1,1,2-Tetrachloroethane	45.3800	5.0	0.96	50.0000		90.8	80 - 117			
1,1,1-Trichloroethane	46.3500	5.0	1.1	50.0000		92.7	70 - 122			
1,1,2,2-Tetrachloroethane	47.1400	5.0	0.62	50.0000		94.3	69 - 115			
1,1,2-Trichloroethane	48.3600	5.0	1.6	50.0000		96.7	74 - 120			
1,1-Dichloroethane	47.7700	5.0	0.81	50.0000		95.5	72 - 118			
1,1-Dichloroethene	48.1100	5.0	2.6	50.0000		96.2	61 - 124			
1,1-Dichloropropene	48.2400	5.0	2.3	50.0000		96.5	74 - 128			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS (B7J0750-BS1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,2,3-Trichloropropane	44.5200	5.0	0.54	50.0000		89.0	67 - 116			
1,2,3-Trichlorobenzene	45.7500	5.0	1.2	50.0000		91.5	86 - 127			
1,2,4-Trichlorobenzene	47.7100	5.0	1.1	50.0000		95.4	88 - 137			
1,2,4-Trimethylbenzene	49.0700	5.0	1.5	50.0000		98.1	78 - 125			
1,2-Dibromo-3-chloropropane	47.0900	10	1.6	50.0000		94.2	70 - 134			
1,2-Dibromoethane	46.9600	5.0	3.2	50.0000		93.9	73 - 127			
1,2-Dichlorobenzene	47.6300	5.0	1.1	50.0000		95.3	85 - 116			
1,2-Dichloroethane	47.2900	5.0	1.2	50.0000		94.6	65 - 120			
1,2-Dichloropropane	48.6000	5.0	1.8	50.0000		97.2	81 - 114			
1,3,5-Trimethylbenzene	48.7800	5.0	1.7	50.0000		97.6	76 - 125			
1,3-Dichlorobenzene	47.6100	5.0	1.3	50.0000		95.2	83 - 117			
1,3-Dichloropropane	48.4200	5.0	1.1	50.0000		96.8	79 - 119			
1,4-Dichlorobenzene	48.7500	5.0	1.2	50.0000		97.5	84 - 115			
2,2-Dichloropropane	47.6000	5.0	1.2	50.0000		95.2	72 - 121			
2-Chlorotoluene	47.5000	5.0	1.6	50.0000		95.0	76 - 120			
4-Chlorotoluene	48.5700	5.0	1.5	50.0000		97.1	77 - 122			
4-Isopropyltoluene	50.1100	5.0	2.3	50.0000		100	77 - 131			
Benzene	95.0900	5.0	0.64	100.000		95.1	78 - 115			
Bromobenzene	46.0900	5.0	1.1	50.0000		92.2	79 - 113			
Bromochloromethane	44.1200	5.0	0.64	50.0000		88.2	66 - 123			
Bromodichloromethane	45.6800	5.0	1.2	50.0000		91.4	79 - 112			
Bromoform	45.0000	5.0	0.80	50.0000		90.0	67 - 125			
Bromomethane	66.9100	5.0	2.5	50.0000		134	49 - 150			
Carbon disulfide	52.1500	5.0	3.5	50.0000		104	61 - 146			
Carbon tetrachloride	46.3700	5.0	1.2	50.0000		92.7	65 - 133			
Chlorobenzene	47.2400	5.0	1.0	50.0000		94.5	82 - 113			
Chloroethane	54.5300	5.0	1.1	50.0000		109	46 - 146			
Chloroform	45.6600	5.0	0.82	50.0000		91.3	73 - 116			
Chloromethane	51.3500	5.0	1.4	50.0000		103	46 - 158			
cis-1,2-Dichloroethene	47.0800	5.0	0.67	50.0000		94.2	72 - 121			
cis-1,3-Dichloropropene	47.3000	5.0	1.9	50.0000		94.6	79 - 123			
Di-isopropyl ether	48.6600	5.0	0.55	50.0000		97.3	67 - 125			
Dibromochloromethane	46.2500	5.0	1.0	50.0000		92.5	79 - 116			
Dibromomethane	46.6700	5.0	1.6	50.0000		93.3	72 - 117			
Dichlorodifluoromethane	52.6200	5.0	2.2	50.0000		105	38 - 168			
Ethyl Acetate	526.690	50	8.1	500.000		105	55 - 144			
Ethyl Ether	475.190	50	6.1	500.000		95.0	52 - 133			
Ethyl tert-butyl ether	49.5600	5.0	0.67	50.0000		99.1	68 - 126			
Ethylbenzene	95.7800	5.0	0.91	100.000		95.8	79 - 116			
Freon-113	49.7500	5.0	2.8	50.0000		99.5	66 - 134			
Hexachlorobutadiene	47.3300	5.0	2.5	50.0000		94.7	84 - 133			
Isopropylbenzene	48.0100	5.0	1.8	50.0000		96.0	67 - 134			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS (B7J0750-BS1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
m,p-Xylene	99.6700	10	1.5	100.000		99.7	78 - 126			
Methylene chloride	49.8300	5.0	2.3	50.0000		99.7	31 - 148			
MTBE	46.4700	5.0	0.63	50.0000		92.9	59 - 131			
n-Butylbenzene	50.8900	5.0	2.4	50.0000		102	75 - 141			
n-Propylbenzene	48.5700	5.0	2.2	50.0000		97.1	73 - 127			
Naphthalene	47.2300	5.0	0.97	50.0000		94.5	78 - 129			
o-Xylene	91.8500	5.0	0.87	100.000		91.8	81 - 113			
sec-Butylbenzene	48.9100	5.0	2.3	50.0000		97.8	73 - 129			
Styrene	50.1800	5.0	1.5	50.0000		100	88 - 118			
tert-Amyl methyl ether	47.2700	5.0	0.59	50.0000		94.5	62 - 122			
tert-Butanol	235.130	100	19	250.000		94.1	36 - 142			
tert-Butylbenzene	48.3000	5.0	2.0	50.0000		96.6	74 - 126			
Tetrachloroethene	47.3700	5.0	1.6	50.0000		94.7	74 - 127			
Toluene	96.5300	5.0	0.94	100.000		96.5	79 - 119			
trans-1,2-Dichloroethene	39.2100	5.0	0.59	50.0000		78.4	61 - 128			
trans-1,3-Dichloropropene	48.4800	5.0	2.1	50.0000		97.0	75 - 116			
Trichloroethene	46.7000	5.0	3.1	50.0000		93.4	76 - 123			
Trichlorofluoromethane	50.2600	5.0	1.4	50.0000		101	58 - 134			
Vinyl acetate	526.560	50	9.8	500.000		105	63 - 143			
Vinyl chloride	53.9100	5.0	1.7	50.0000		108	51 - 145			
Surrogate: 1,2-Dichloroethane-d4	*52.52*			*50.0000*		*105*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*49.88*			*50.0000*		*99.8*	*68 - 131*			
Surrogate: Dibromofluoromethan	*49.24*			*50.0000*		*98.5*	*49 - 134*			
Surrogate: Toluene-d8	*52.12*			*50.0000*		*104*	*75 - 132*			
LCS Dup (B7J0750-BSD1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,1,1,2-Tetrachloroethane	45.1500	5.0	0.96	50.0000		90.3	80 - 117	0.508	20	
1,1,1-Trichloroethane	44.5900	5.0	1.1	50.0000		89.2	70 - 122	3.87	20	
1,1,2,2-Tetrachloroethane	45.8800	5.0	0.62	50.0000		91.8	69 - 115	2.71	20	
1,1,2-Trichloroethane	46.7000	5.0	1.6	50.0000		93.4	74 - 120	3.49	20	
1,1-Dichloroethane	45.7000	5.0	0.81	50.0000		91.4	72 - 118	4.43	20	
1,1-Dichloroethene	44.3500	5.0	2.6	50.0000		88.7	61 - 124	8.13	20	
1,1-Dichloropropene	45.6500	5.0	2.3	50.0000		91.3	74 - 128	5.52	20	
1,2,3-Trichloropropane	42.5900	5.0	0.54	50.0000		85.2	67 - 116	4.43	20	
1,2,3-Trichlorobenzene	47.6400	5.0	1.2	50.0000		95.3	86 - 127	4.05	20	
1,2,4-Trichlorobenzene	50.2200	5.0	1.1	50.0000		100	88 - 137	5.13	20	
1,2,4-Trimethylbenzene	48.2600	5.0	1.5	50.0000		96.5	78 - 125	1.66	20	
1,2-Dibromo-3-chloropropane	52.0400	10	1.6	50.0000		104	70 - 134	9.99	20	
1,2-Dibromoethane	50.4600	5.0	3.2	50.0000		101	73 - 127	7.19	20	
1,2-Dichlorobenzene	47.6800	5.0	1.1	50.0000		95.4	85 - 116	0.105	20	
1,2-Dichloroethane	48.0600	5.0	1.2	50.0000		96.1	65 - 120	1.62	20	

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618.005
Report To : Brynn McCulloch
Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS Dup (B7J0750-BSD1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,2-Dichloropropane	47.9800	5.0	1.8	50.0000		96.0	81 - 114	1.28	20	
1,3,5-Trimethylbenzene	47.8300	5.0	1.7	50.0000		95.7	76 - 125	1.97	20	
1,3-Dichlorobenzene	47.3400	5.0	1.3	50.0000		94.7	83 - 117	0.569	20	
1,3-Dichloropropane	47.8600	5.0	1.1	50.0000		95.7	79 - 119	1.16	20	
1,4-Dichlorobenzene	47.8100	5.0	1.2	50.0000		95.6	84 - 115	1.95	20	
2,2-Dichloropropane	45.3600	5.0	1.2	50.0000		90.7	72 - 121	4.82	20	
2-Chlorotoluene	46.8100	5.0	1.6	50.0000		93.6	76 - 120	1.46	20	
4-Chlorotoluene	46.8400	5.0	1.5	50.0000		93.7	77 - 122	3.63	20	
4-Isopropyltoluene	48.8600	5.0	2.3	50.0000		97.7	77 - 131	2.53	20	
Benzene	92.7300	5.0	0.64	100.000		92.7	78 - 115	2.51	20	
Bromobenzene	45.4600	5.0	1.1	50.0000		90.9	79 - 113	1.38	20	
Bromochloromethane	43.8600	5.0	0.64	50.0000		87.7	66 - 123	0.591	20	
Bromodichloromethane	45.2700	5.0	1.2	50.0000		90.5	79 - 112	0.902	20	
Bromoform	45.1200	5.0	0.80	50.0000		90.2	67 - 125	0.266	20	
Bromomethane	61.8300	5.0	2.5	50.0000		124	49 - 150	7.89	20	
Carbon disulfide	48.8400	5.0	3.5	50.0000		97.7	61 - 146	6.56	20	
Carbon tetrachloride	44.7600	5.0	1.2	50.0000		89.5	65 - 133	3.53	20	
Chlorobenzene	46.6700	5.0	1.0	50.0000		93.3	82 - 113	1.21	20	
Chloroethane	54.5900	5.0	1.1	50.0000		109	46 - 146	0.110	20	
Chloroform	44.7800	5.0	0.82	50.0000		89.6	73 - 116	1.95	20	
Chloromethane	49.2800	5.0	1.4	50.0000		98.6	46 - 158	4.11	20	
cis-1,2-Dichloroethene	46.4800	5.0	0.67	50.0000		93.0	72 - 121	1.28	20	
cis-1,3-Dichloropropene	48.6300	5.0	1.9	50.0000		97.3	79 - 123	2.77	20	
Di-isopropyl ether	47.0800	5.0	0.55	50.0000		94.2	67 - 125	3.30	20	
Dibromochloromethane	45.0900	5.0	1.0	50.0000		90.2	79 - 116	2.54	20	
Dibromomethane	46.6500	5.0	1.6	50.0000		93.3	72 - 117	0.0429	20	
Dichlorodifluoromethane	48.9500	5.0	2.2	50.0000		97.9	38 - 168	7.23	20	
Ethyl Acetate	520.010	50	8.1	500.000		104	55 - 144	1.28	20	
Ethyl Ether	450.520	50	6.1	500.000		90.1	52 - 133	5.33	20	
Ethyl tert-butyl ether	47.9700	5.0	0.67	50.0000		95.9	68 - 126	3.26	20	
Ethylbenzene	93.3400	5.0	0.91	100.000		93.3	79 - 116	2.58	20	
Freon-113	46.9800	5.0	2.8	50.0000		94.0	66 - 134	5.73	20	
Hexachlorobutadiene	49.9500	5.0	2.5	50.0000		99.9	84 - 133	5.39	20	
Isopropylbenzene	46.5300	5.0	1.8	50.0000		93.1	67 - 134	3.13	20	
m,p-Xylene	98.2100	10	1.5	100.000		98.2	78 - 126	1.48	20	
Methylene chloride	63.3200	5.0	2.3	50.0000		127	31 - 148	23.8	20	R
MTBE	46.3500	5.0	0.63	50.0000		92.7	59 - 131	0.259	20	
n-Butylbenzene	50.1400	5.0	2.4	50.0000		100	75 - 141	1.48	20	
n-Propylbenzene	46.8400	5.0	2.2	50.0000		93.7	73 - 127	3.63	20	
Naphthalene	47.9900	5.0	0.97	50.0000		96.0	78 - 129	1.60	20	
o-Xylene	91.2700	5.0	0.87	100.000		91.3	81 - 113	0.633	20	
sec-Butylbenzene	48.1200	5.0	2.3	50.0000		96.2	73 - 129	1.63	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS Dup (B7J0750-BSD1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
Styrene	49.8200	5.0	1.5	50.0000		99.6	88 - 118	0.720	20	
tert-Amyl methyl ether	45.3500	5.0	0.59	50.0000		90.7	62 - 122	4.15	20	
tert-Butanol	224.480	100	19	250.000		89.8	36 - 142	4.63	20	
tert-Butylbenzene	46.7200	5.0	2.0	50.0000		93.4	74 - 126	3.33	20	
Tetrachloroethene	45.8800	5.0	1.6	50.0000		91.8	74 - 127	3.20	20	
Toluene	94.2800	5.0	0.94	100.000		94.3	79 - 119	2.36	20	
trans-1,2-Dichloroethene	44.9700	5.0	0.59	50.0000		89.9	61 - 128	13.7	20	
trans-1,3-Dichloropropene	48.0700	5.0	2.1	50.0000		96.1	75 - 116	0.849	20	
Trichloroethene	46.3600	5.0	3.1	50.0000		92.7	76 - 123	0.731	20	
Trichlorofluoromethane	44.9000	5.0	1.4	50.0000		89.8	58 - 134	11.3	20	
Vinyl acetate	493.040	50	9.8	500.000		98.6	63 - 143	6.58	20	
Vinyl chloride	50.5400	5.0	1.7	50.0000		101	51 - 145	6.45	20	
Surrogate: 1,2-Dichloroethane-d4	*51.52*			*50.0000*		*103*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*50.20*			*50.0000*		*100*	*68 - 131*			
Surrogate: Dibromofluoromethan	*47.79*			*50.0000*		*95.6*	*49 - 134*			
Surrogate: Toluene-d8	*51.39*			*50.0000*		*103*	*75 - 132*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0166 - MSVOA_S										
Blank (B7K0166-BLK1)					Prepared: 11/7/2017 Analyzed: 11/7/2017					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							
1,1,1-Trichloroethane	ND	5.0	1.1							
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							
1,1,2-Trichloroethane	ND	5.0	1.6							
1,1-Dichloroethane	ND	5.0	0.81							
1,1-Dichloroethene	ND	5.0	2.6							
1,1-Dichloropropene	ND	5.0	2.3							
1,2,3-Trichloropropane	ND	5.0	0.54							
1,2,3-Trichlorobenzene	ND	5.0	1.2							
1,2,4-Trichlorobenzene	ND	5.0	1.1							
1,2,4-Trimethylbenzene	ND	5.0	1.5							
1,2-Dibromo-3-chloropropane	ND	10	1.6							
1,2-Dibromoethane	ND	5.0	3.2							
1,2-Dichlorobenzene	ND	5.0	1.1							
1,2-Dichloroethane	ND	5.0	1.2							
1,2-Dichloropropane	ND	5.0	1.8							
1,3,5-Trimethylbenzene	ND	5.0	1.7							
1,3-Dichlorobenzene	ND	5.0	1.3							
1,3-Dichloropropane	ND	5.0	1.1							
1,4-Dichlorobenzene	ND	5.0	1.2							
2,2-Dichloropropane	ND	5.0	1.2							
2-Chlorotoluene	ND	5.0	1.6							
4-Chlorotoluene	ND	5.0	1.5							
4-Isopropyltoluene	ND	5.0	2.3							
Benzene	ND	5.0	0.64							
Bromobenzene	ND	5.0	1.1							
Bromochloromethane	ND	5.0	0.64							
Bromodichloromethane	ND	5.0	1.2							
Bromoform	ND	5.0	0.80							
Bromomethane	ND	5.0	2.5							
Carbon disulfide	ND	5.0	3.5							
Carbon tetrachloride	ND	5.0	1.2							
Chlorobenzene	ND	5.0	1.0							
Chloroethane	ND	5.0	1.1							
Chloroform	ND	5.0	0.82							
Chloromethane	ND	5.0	1.4							
cis-1,2-Dichloroethene	ND	5.0	0.67							
cis-1,3-Dichloropropene	ND	5.0	1.9							
Di-isopropyl ether	ND	5.0	0.55							
Dibromochloromethane	ND	5.0	1.0							
Dibromomethane	ND	5.0	1.6							

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0166 - MSVOA_S (continued)										
Blank (B7K0166-BLK1) - Continued						Prepared: 11/7/2017 Analyzed: 11/7/2017				
Dichlorodifluoromethane	ND	5.0	2.2							
Ethyl Acetate	ND	50	8.1							
Ethyl Ether	ND	50	6.1							
Ethyl tert-butyl ether	ND	5.0	0.67							
Ethylbenzene	ND	5.0	0.91							
Freon-113	ND	5.0	2.8							
Hexachlorobutadiene	ND	5.0	2.5							
Isopropylbenzene	ND	5.0	1.8							
m,p-Xylene	ND	10	1.5							
Methylene chloride	ND	5.0	2.3							
MTBE	ND	5.0	0.63							
n-Butylbenzene	ND	5.0	2.4							
n-Propylbenzene	ND	5.0	2.2							
Naphthalene	ND	5.0	0.97							
o-Xylene	ND	5.0	0.87							
sec-Butylbenzene	ND	5.0	2.3							
Styrene	ND	5.0	1.5							
tert-Amyl methyl ether	ND	5.0	0.59							
tert-Butanol	ND	100	19							
tert-Butylbenzene	ND	5.0	2.0							
Tetrachloroethene	ND	5.0	1.6							
Toluene	ND	5.0	0.94							
trans-1,2-Dichloroethene	ND	5.0	0.59							
trans-1,3-Dichloropropene	ND	5.0	2.1							
Trichloroethene	ND	5.0	3.1							
Trichlorofluoromethane	ND	5.0	1.4							
Vinyl acetate	ND	50	9.8							
Vinyl chloride	ND	5.0	1.7							
Surrogate: 1,2-Dichloroethane-d4	*47.81*			*50.0000*		*95.6*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*52.27*			*50.0000*		*105*	*68 - 131*			
Surrogate: Dibromofluoromethan	*46.03*			*50.0000*		*92.1*	*49 - 134*			
Surrogate: Toluene-d8	*53.18*			*50.0000*		*106*	*75 - 132*			
LCS (B7K0166-BS1)						Prepared: 11/7/2017 Analyzed: 11/7/2017				
1,1,1,2-Tetrachloroethane	53.7000	5.0	0.96	50.0000		107	80 - 117			
1,1,1-Trichloroethane	51.8000	5.0	1.1	50.0000		104	70 - 122			
1,1,2,2-Tetrachloroethane	52.3700	5.0	0.62	50.0000		105	69 - 115			
1,1,2-Trichloroethane	51.2700	5.0	1.6	50.0000		103	74 - 120			
1,1-Dichloroethane	49.9700	5.0	0.81	50.0000		99.9	72 - 118			
1,1-Dichloroethene	45.0600	5.0	2.6	50.0000		90.1	61 - 124			
1,1-Dichloropropene	50.0200	5.0	2.3	50.0000		100	74 - 128			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0166 - MSVOA_S (continued)										
LCS (B7K0166-BS1) - Continued					Prepared: 11/7/2017 Analyzed: 11/7/2017					
1,2,3-Trichloropropane	52.9300	5.0	0.54	50.0000		106	67 - 116			
1,2,3-Trichlorobenzene	51.6600	5.0	1.2	50.0000		103	86 - 127			
1,2,4-Trichlorobenzene	55.4000	5.0	1.1	50.0000		111	88 - 137			
1,2,4-Trimethylbenzene	58.5800	5.0	1.5	50.0000		117	78 - 125			
1,2-Dibromo-3-chloropropane	58.2100	10	1.6	50.0000		116	70 - 134			
1,2-Dibromoethane	55.5400	5.0	3.2	50.0000		111	73 - 127			
1,2-Dichlorobenzene	55.2600	5.0	1.1	50.0000		111	85 - 116			
1,2-Dichloroethane	54.2900	5.0	1.2	50.0000		109	65 - 120			
1,2-Dichloropropane	52.3600	5.0	1.8	50.0000		105	81 - 114			
1,3,5-Trimethylbenzene	58.5900	5.0	1.7	50.0000		117	76 - 125			
1,3-Dichlorobenzene	56.0300	5.0	1.3	50.0000		112	83 - 117			
1,3-Dichloropropane	53.6900	5.0	1.1	50.0000		107	79 - 119			
1,4-Dichlorobenzene	56.0100	5.0	1.2	50.0000		112	84 - 115			
2,2-Dichloropropane	54.4900	5.0	1.2	50.0000		109	72 - 121			
2-Chlorotoluene	56.7100	5.0	1.6	50.0000		113	76 - 120			
4-Chlorotoluene	57.4700	5.0	1.5	50.0000		115	77 - 122			
4-Isopropyltoluene	60.3700	5.0	2.3	50.0000		121	77 - 131			
Benzene	98.1500	5.0	0.64	100.000		98.2	78 - 115			
Bromobenzene	53.2700	5.0	1.1	50.0000		107	79 - 113			
Bromochloromethane	46.1400	5.0	0.64	50.0000		92.3	66 - 123			
Bromodichloromethane	51.7700	5.0	1.2	50.0000		104	79 - 112			
Bromoform	50.5800	5.0	0.80	50.0000		101	67 - 125			
Bromomethane	61.2400	5.0	2.5	50.0000		122	49 - 150			
Carbon disulfide	49.4900	5.0	3.5	50.0000		99.0	61 - 146			
Carbon tetrachloride	51.5400	5.0	1.2	50.0000		103	65 - 133			
Chlorobenzene	53.3800	5.0	1.0	50.0000		107	82 - 113			
Chloroethane	53.7300	5.0	1.1	50.0000		107	46 - 146			
Chloroform	50.1200	5.0	0.82	50.0000		100	73 - 116			
Chloromethane	51.3900	5.0	1.4	50.0000		103	46 - 158			
cis-1,2-Dichloroethene	47.4300	5.0	0.67	50.0000		94.9	72 - 121			
cis-1,3-Dichloropropene	49.4400	5.0	1.9	50.0000		98.9	79 - 123			
Di-isopropyl ether	51.8300	5.0	0.55	50.0000		104	67 - 125			
Dibromochloromethane	51.8400	5.0	1.0	50.0000		104	79 - 116			
Dibromomethane	49.7700	5.0	1.6	50.0000		99.5	72 - 117			
Dichlorodifluoromethane	51.8500	5.0	2.2	50.0000		104	38 - 168			
Ethyl Acetate	562.800	50	8.1	500.000		113	55 - 144			
Ethyl Ether	471.550	50	6.1	500.000		94.3	52 - 133			
Ethyl tert-butyl ether	52.4800	5.0	0.67	50.0000		105	68 - 126			
Ethylbenzene	109.560	5.0	0.91	100.000		110	79 - 116			
Freon-113	50.4900	5.0	2.8	50.0000		101	66 - 134			
Hexachlorobutadiene	59.2600	5.0	2.5	50.0000		119	84 - 133			
Isopropylbenzene	55.9600	5.0	1.8	50.0000		112	67 - 134			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0166 - MSVOA_S (continued)										
LCS (B7K0166-BS1) - Continued					Prepared: 11/7/2017 Analyzed: 11/7/2017					
m,p-Xylene	116.320	10	1.5	100.000		116	78 - 126			
Methylene chloride	58.6900	5.0	2.3	50.0000		117	31 - 148			
MTBE	48.2200	5.0	0.63	50.0000		96.4	59 - 131			
n-Butylbenzene	62.7600	5.0	2.4	50.0000		126	75 - 141			
n-Propylbenzene	57.4700	5.0	2.2	50.0000		115	73 - 127			
Naphthalene	50.4600	5.0	0.97	50.0000		101	78 - 129			
o-Xylene	106.770	5.0	0.87	100.000		107	81 - 113			
sec-Butylbenzene	59.4800	5.0	2.3	50.0000		119	73 - 129			
Styrene	56.8500	5.0	1.5	50.0000		114	88 - 118			
tert-Amyl methyl ether	50.4400	5.0	0.59	50.0000		101	62 - 122			
tert-Butanol	91.8600	100	19	250.000		36.7	36 - 142			
tert-Butylbenzene	57.3500	5.0	2.0	50.0000		115	74 - 126			
Tetrachloroethene	51.4800	5.0	1.6	50.0000		103	74 - 127			
Toluene	112.860	5.0	0.94	100.000		113	79 - 119			
trans-1,2-Dichloroethene	46.0800	5.0	0.59	50.0000		92.2	61 - 128			
trans-1,3-Dichloropropene	56.7000	5.0	2.1	50.0000		113	75 - 116			
Trichloroethene	48.5600	5.0	3.1	50.0000		97.1	76 - 123			
Trichlorofluoromethane	51.6300	5.0	1.4	50.0000		103	58 - 134			
Vinyl acetate	547.720	50	9.8	500.000		110	63 - 143			
Vinyl chloride	52.0400	5.0	1.7	50.0000		104	51 - 145			
Surrogate: 1,2-Dichloroethane-d4	*57.29*			*50.0000*		*115*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*52.94*			*50.0000*		*106*	*68 - 131*			
Surrogate: Dibromofluoromethan	*48.70*			*50.0000*		*97.4*	*49 - 134*			
Surrogate: Toluene-d8	*52.52*			*50.0000*		*105*	*75 - 132*			
LCS Dup (B7K0166-BSD1)					Prepared: 11/7/2017 Analyzed: 11/7/2017					
1,1,1,2-Tetrachloroethane	48.6600	5.0	0.96	50.0000		97.3	80 - 117	9.85	20	
1,1,1-Trichloroethane	48.9800	5.0	1.1	50.0000		98.0	70 - 122	5.60	20	
1,1,2,2-Tetrachloroethane	49.8200	5.0	0.62	50.0000		99.6	69 - 115	4.99	20	
1,1,2-Trichloroethane	51.8300	5.0	1.6	50.0000		104	74 - 120	1.09	20	
1,1-Dichloroethane	47.7500	5.0	0.81	50.0000		95.5	72 - 118	4.54	20	
1,1-Dichloroethene	45.4500	5.0	2.6	50.0000		90.9	61 - 124	0.862	20	
1,1-Dichloropropene	46.1400	5.0	2.3	50.0000		92.3	74 - 128	8.07	20	
1,2,3-Trichloropropane	48.1700	5.0	0.54	50.0000		96.3	67 - 116	9.42	20	
1,2,3-Trichlorobenzene	51.0800	5.0	1.2	50.0000		102	86 - 127	1.13	20	
1,2,4-Trichlorobenzene	53.6400	5.0	1.1	50.0000		107	88 - 137	3.23	20	
1,2,4-Trimethylbenzene	51.6100	5.0	1.5	50.0000		103	78 - 125	12.7	20	
1,2-Dibromo-3-chloropropane	56.9000	10	1.6	50.0000		114	70 - 134	2.28	20	
1,2-Dibromoethane	50.9400	5.0	3.2	50.0000		102	73 - 127	8.64	20	
1,2-Dichlorobenzene	51.0600	5.0	1.1	50.0000		102	85 - 116	7.90	20	
1,2-Dichloroethane	50.5900	5.0	1.2	50.0000		101	65 - 120	7.06	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0166 - MSVOA_S (continued)										
LCS Dup (B7K0166-BSD1) - Continued					Prepared: 11/7/2017 Analyzed: 11/7/2017					
1,2-Dichloropropane	50.0400	5.0	1.8	50.0000		100	81 - 114	4.53	20	
1,3,5-Trimethylbenzene	50.9300	5.0	1.7	50.0000		102	76 - 125	14.0	20	
1,3-Dichlorobenzene	50.3600	5.0	1.3	50.0000		101	83 - 117	10.7	20	
1,3-Dichloropropane	49.8800	5.0	1.1	50.0000		99.8	79 - 119	7.36	20	
1,4-Dichlorobenzene	50.5400	5.0	1.2	50.0000		101	84 - 115	10.3	20	
2,2-Dichloropropane	50.0800	5.0	1.2	50.0000		100	72 - 121	8.43	20	
2-Chlorotoluene	50.9800	5.0	1.6	50.0000		102	76 - 120	10.6	20	
4-Chlorotoluene	50.3100	5.0	1.5	50.0000		101	77 - 122	13.3	20	
4-Isopropyltoluene	51.9200	5.0	2.3	50.0000		104	77 - 131	15.1	20	
Benzene	93.5800	5.0	0.64	100.000		93.6	78 - 115	4.77	20	
Bromobenzene	48.4100	5.0	1.1	50.0000		96.8	79 - 113	9.56	20	
Bromochloromethane	47.8700	5.0	0.64	50.0000		95.7	66 - 123	3.68	20	
Bromodichloromethane	48.8900	5.0	1.2	50.0000		97.8	79 - 112	5.72	20	
Bromoform	49.0000	5.0	0.80	50.0000		98.0	67 - 125	3.17	20	
Bromomethane	66.2700	5.0	2.5	50.0000		133	49 - 150	7.89	20	
Carbon disulfide	47.5100	5.0	3.5	50.0000		95.0	61 - 146	4.08	20	
Carbon tetrachloride	46.6800	5.0	1.2	50.0000		93.4	65 - 133	9.90	20	
Chlorobenzene	48.2800	5.0	1.0	50.0000		96.6	82 - 113	10.0	20	
Chloroethane	50.4700	5.0	1.1	50.0000		101	46 - 146	6.26	20	
Chloroform	49.7900	5.0	0.82	50.0000		99.6	73 - 116	0.661	20	
Chloromethane	48.4000	5.0	1.4	50.0000		96.8	46 - 158	5.99	20	
cis-1,2-Dichloroethene	48.5700	5.0	0.67	50.0000		97.1	72 - 121	2.37	20	
cis-1,3-Dichloropropene	48.0800	5.0	1.9	50.0000		96.2	79 - 123	2.79	20	
Di-isopropyl ether	51.1300	5.0	0.55	50.0000		102	67 - 125	1.36	20	
Dibromochloromethane	47.8600	5.0	1.0	50.0000		95.7	79 - 116	7.98	20	
Dibromomethane	48.4300	5.0	1.6	50.0000		96.9	72 - 117	2.73	20	
Dichlorodifluoromethane	46.5800	5.0	2.2	50.0000		93.2	38 - 168	10.7	20	
Ethyl Acetate	565.940	50	8.1	500.000		113	55 - 144	0.556	20	
Ethyl Ether	487.780	50	6.1	500.000		97.6	52 - 133	3.38	20	
Ethyl tert-butyl ether	52.4500	5.0	0.67	50.0000		105	68 - 126	0.0572	20	
Ethylbenzene	98.1800	5.0	0.91	100.000		98.2	79 - 116	11.0	20	
Freon-113	47.9300	5.0	2.8	50.0000		95.9	66 - 134	5.20	20	
Hexachlorobutadiene	53.5400	5.0	2.5	50.0000		107	84 - 133	10.1	20	
Isopropylbenzene	48.8500	5.0	1.8	50.0000		97.7	67 - 134	13.6	20	
m,p-Xylene	101.840	10	1.5	100.000		102	78 - 126	13.3	20	
Methylene chloride	57.8700	5.0	2.3	50.0000		116	31 - 148	1.41	20	
MTBE	48.9900	5.0	0.63	50.0000		98.0	59 - 131	1.58	20	
n-Butylbenzene	53.5800	5.0	2.4	50.0000		107	75 - 141	15.8	20	
n-Propylbenzene	50.3100	5.0	2.2	50.0000		101	73 - 127	13.3	20	
Naphthalene	50.4500	5.0	0.97	50.0000		101	78 - 129	0.0198	20	
o-Xylene	96.2600	5.0	0.87	100.000		96.3	81 - 113	10.4	20	
sec-Butylbenzene	50.5600	5.0	2.3	50.0000		101	73 - 129	16.2	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0166 - MSVOA_S (continued)										
LCS Dup (B7K0166-BSD1) - Continued					Prepared: 11/7/2017 Analyzed: 11/7/2017					
Styrene	51.4400	5.0	1.5	50.0000		103	88 - 118	9.99	20	
tert-Amyl methyl ether	50.3000	5.0	0.59	50.0000		101	62 - 122	0.278	20	
tert-Butanol	99.6600	100	19	250.000		39.9	36 - 142	8.15	20	
tert-Butylbenzene	50.1400	5.0	2.0	50.0000		100	74 - 126	13.4	20	
Tetrachloroethene	46.0700	5.0	1.6	50.0000		92.1	74 - 127	11.1	20	
Toluene	106.450	5.0	0.94	100.000		106	79 - 119	5.85	20	
trans-1,2-Dichloroethene	44.8300	5.0	0.59	50.0000		89.7	61 - 128	2.75	20	
trans-1,3-Dichloropropene	55.4200	5.0	2.1	50.0000		111	75 - 116	2.28	20	
Trichloroethene	45.9700	5.0	3.1	50.0000		91.9	76 - 123	5.48	20	
Trichlorofluoromethane	47.2200	5.0	1.4	50.0000		94.4	58 - 134	8.92	20	
Vinyl acetate	545.980	50	9.8	500.000		109	63 - 143	0.318	20	
Vinyl chloride	49.0600	5.0	1.7	50.0000		98.1	51 - 145	5.90	20	
Surrogate: 1,2-Dichloroethane-d4	*57.05*			*50.0000*		*114*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*49.76*			*50.0000*		*99.5*	*68 - 131*			
Surrogate: Dibromofluoromethan	*51.58*			*50.0000*		*103*	*49 - 134*			
Surrogate: Toluene-d8	*52.18*			*50.0000*		*104*	*75 - 132*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0757 - MSSEMI_S										
Blank (B7J0757-BLK1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
2-Methylnaphthalene	ND	5.0	0.60							
Acenaphthene	ND	5.0	0.41							
Acenaphthylene	ND	5.0	0.41							
Anthracene	ND	5.0	0.56							
Benzo(a)anthracene	ND	5.0	0.56							
Benzo(a)pyrene	ND	5.0	0.69							
Benzo(b)fluoranthene	ND	5.0	2.2							
Benzo(g,h,i)perylene	ND	5.0	0.80							
Benzo(k)fluoranthene	ND	5.0	0.70							
Chrysene	ND	5.0	0.61							
Dibenz(a,h)anthracene	ND	5.0	0.88							
Fluoranthene	ND	5.0	0.45							
Fluorene	ND	5.0	0.35							
Indeno(1,2,3-cd)pyrene	ND	5.0	0.82							
Naphthalene	ND	5.0	0.56							
Phenanthrene	ND	5.0	0.34							
Pyrene	ND	5.0	0.51							
Surrogate: 1,2-Dichlorobenzene-d	*21.72*			*33.3333*		*65.2*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*26.50*			*33.3333*		*79.5*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*17.05*			*33.3333*		*51.1*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*31.30*			*33.3333*		*93.9*	*39 - 123*			
LCS (B7J0757-BS1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
2-Methylnaphthalene	15.4713	5.0	0.60	33.3333		46.4	23 - 127			
Acenaphthene	17.9283	5.0	0.41	33.3333		53.8	35 - 91			
Acenaphthylene	18.3447	5.0	0.41	33.3333		55.0	35 - 92			
Anthracene	19.9567	5.0	0.56	33.3333		59.9	43 - 109			
Benzo(a)anthracene	24.4347	5.0	0.56	33.3333		73.3	46 - 121			
Benzo(a)pyrene	21.8650	5.0	0.69	33.3333		65.6	49 - 126			
Benzo(b)fluoranthene	28.0460	5.0	2.2	33.3333		84.1	34 - 137			
Benzo(g,h,i)perylene	28.6290	5.0	0.80	33.3333		85.9	40 - 124			
Benzo(k)fluoranthene	23.0450	5.0	0.70	33.3333		69.1	21 - 132			
Chrysene	21.9727	5.0	0.61	33.3333		65.9	51 - 124			
Dibenz(a,h)anthracene	30.3893	5.0	0.88	33.3333		91.2	38 - 123			
Fluoranthene	23.2743	5.0	0.45	33.3333		69.8	47 - 105			
Fluorene	20.2763	5.0	0.35	33.3333		60.8	34 - 95			
Indeno(1,2,3-cd)pyrene	28.1337	5.0	0.82	33.3333		84.4	45 - 124			
Naphthalene	21.1413	5.0	0.56	33.3333		63.4	26 - 110			
Phenanthrene	20.3483	5.0	0.34	33.3333		61.0	39 - 108			
Pyrene	22.9497	5.0	0.51	33.3333		68.8	47 - 107			
Surrogate: 1,2-Dichlorobenzene-d	*21.74*			*33.3333*		*65.2*	*29 - 109*			

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618.005
Report To : Brynn McCulloch
Reported : 11/08/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0757 - MSSEMI_S (continued)										
LCS (B7J0757-BS1) - Continued						Prepared: 10/25/2017 Analyzed: 10/25/2017				
Surrogate: 2-Fluorobiphenyl	*25.54*			*33.3333*		*76.6*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*17.26*			*33.3333*		*51.8*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*30.92*			*33.3333*		*92.8*	*39 - 123*			
Matrix Spike (B7J0757-MS1)			**Source: 1703641-33**			Prepared: 10/25/2017 Analyzed: 10/25/2017				
2-Methylnaphthalene	16.0677	5.0	0.60	33.3333	ND	48.2	30 - 141			
Acenaphthene	18.3313	5.0	0.41	33.3333	ND	55.0	9 - 155			
Acenaphthylene	19.1713	5.0	0.41	33.3333	ND	57.5	43 - 110			
Anthracene	19.6413	5.0	0.56	33.3333	ND	58.9	33 - 146			
Benzo(a)anthracene	24.1603	5.0	0.56	33.3333	0.886000	69.8	49 - 130			
Benzo(a)pyrene	22.4533	5.0	0.69	33.3333	0.972000	64.4	36 - 134			
Benzo(b)fluoranthene	28.1877	5.0	2.2	33.3333	ND	84.6	26 - 148			
Benzo(g,h,i)perylene	27.3003	5.0	0.80	33.3333	1.07733	78.7	16 - 156			
Benzo(k)fluoranthene	21.5640	5.0	0.70	33.3333	ND	64.7	29 - 132			
Chrysene	21.7687	5.0	0.61	33.3333	0.950333	62.5	0 - 184			
Dibenz(a,h)anthracene	26.4073	5.0	0.88	33.3333	ND	79.2	29 - 149			
Fluoranthene	24.6230	5.0	0.45	33.3333	1.39000	69.7	14 - 162			
Fluorene	20.6440	5.0	0.35	33.3333	ND	61.9	48 - 111			
Indeno(1,2,3-cd)pyrene	26.3657	5.0	0.82	33.3333	ND	79.1	37 - 135			
Naphthalene	21.3907	5.0	0.56	33.3333	ND	64.2	34 - 126			
Phenanthrene	21.0370	5.0	0.34	33.3333	0.683333	61.1	19 - 155			
Pyrene	24.2550	5.0	0.51	33.3333	1.37100	68.7	13 - 162			
Surrogate: 1,2-Dichlorobenzene-d	*20.75*			*33.3333*		*62.3*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*26.44*			*33.3333*		*79.3*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*17.07*			*33.3333*		*51.2*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*26.58*			*33.3333*		*79.7*	*39 - 123*			
Matrix Spike Dup (B7J0757-MSD1)			**Source: 1703641-33**			Prepared: 10/25/2017 Analyzed: 10/25/2017				
2-Methylnaphthalene	14.5860	5.0	0.60	33.3333	ND	43.8	30 - 141	9.67	20	
Acenaphthene	17.5750	5.0	0.41	33.3333	ND	52.7	9 - 155	4.21	20	
Acenaphthylene	18.6233	5.0	0.41	33.3333	ND	55.9	43 - 110	2.90	20	
Anthracene	18.6273	5.0	0.56	33.3333	ND	55.9	33 - 146	5.30	20	
Benzo(a)anthracene	22.8487	5.0	0.56	33.3333	0.886000	65.9	49 - 130	5.58	20	
Benzo(a)pyrene	20.7357	5.0	0.69	33.3333	0.972000	59.3	36 - 134	7.95	20	
Benzo(b)fluoranthene	24.9090	5.0	2.2	33.3333	ND	74.7	26 - 148	12.3	20	
Benzo(g,h,i)perylene	25.5220	5.0	0.80	33.3333	1.07733	73.3	16 - 156	6.73	20	
Benzo(k)fluoranthene	21.3153	5.0	0.70	33.3333	ND	63.9	29 - 132	1.16	20	
Chrysene	20.3623	5.0	0.61	33.3333	0.950333	58.2	0 - 184	6.68	20	
Dibenz(a,h)anthracene	25.4717	5.0	0.88	33.3333	ND	76.4	29 - 149	3.61	20	
Fluoranthene	23.2487	5.0	0.45	33.3333	1.39000	65.6	14 - 162	5.74	20	
Fluorene	19.7670	5.0	0.35	33.3333	ND	59.3	48 - 111	4.34	20	
Indeno(1,2,3-cd)pyrene	25.2027	5.0	0.82	33.3333	ND	75.6	37 - 135	4.51	20	

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618.005
Report To : Brynn McCulloch
Reported : 11/08/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0757 - MSSEMI_S (continued)										
Matrix Spike Dup (B7J0757-MSD1) - Continued			**Source: 1703641-33**		Prepared: 10/25/2017 Analyzed: 10/25/2017					
Naphthalene	19.5670	5.0	0.56	33.3333	ND	58.7	34 - 126	8.91	20	
Phenanthrene	19.8897	5.0	0.34	33.3333	0.683333	57.6	19 - 155	5.61	20	
Pyrene	22.3383	5.0	0.51	33.3333	1.37100	62.9	13 - 162	8.23	20	
Surrogate: 1,2-Dichlorobenzene-d	*18.94*			*33.3333*		*56.8*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*25.06*			*33.3333*		*75.2*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*16.15*			*33.3333*		*48.5*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*25.38*			*33.3333*		*76.1*	*39 - 123*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0185 - MSSEMI_S										
Blank (B7K0185-BLK1)					Prepared: 11/7/2017 Analyzed: 11/7/2017					
2-Methylnaphthalene	ND	5.0	0.60							
Acenaphthene	ND	5.0	0.41							
Acenaphthylene	ND	5.0	0.41							
Anthracene	ND	5.0	0.56							
Benzo(a)anthracene	ND	5.0	0.56							
Benzo(a)pyrene	ND	5.0	0.69							
Benzo(b)fluoranthene	ND	5.0	2.2							
Benzo(g,h,i)perylene	ND	5.0	0.80							
Benzo(k)fluoranthene	ND	5.0	0.70							
Chrysene	ND	5.0	0.61							
Dibenz(a,h)anthracene	ND	5.0	0.88							
Fluoranthene	ND	5.0	0.45							
Fluorene	ND	5.0	0.35							
Indeno(1,2,3-cd)pyrene	ND	5.0	0.82							
Naphthalene	ND	5.0	0.56							
Phenanthrene	ND	5.0	0.34							
Pyrene	ND	5.0	0.51							
Surrogate: 1,2-Dichlorobenzene-d	*27.25*			*33.3333*		*81.8*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*34.29*			*33.3333*		*103*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*24.62*			*33.3333*		*73.9*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*33.84*			*33.3333*		*102*	*39 - 123*			
LCS (B7K0185-BS1)					Prepared: 11/7/2017 Analyzed: 11/7/2017					
2-Methylnaphthalene	20.1087	5.0	0.60	33.3333		60.3	23 - 127			
Acenaphthene	19.6647	5.0	0.41	33.3333		59.0	35 - 91			
Acenaphthylene	20.9243	5.0	0.41	33.3333		62.8	35 - 92			
Anthracene	23.4547	5.0	0.56	33.3333		70.4	43 - 109			
Benzo(a)anthracene	23.4143	5.0	0.56	33.3333		70.2	46 - 121			
Benzo(a)pyrene	20.3937	5.0	0.69	33.3333		61.2	49 - 126			
Benzo(b)fluoranthene	24.8267	5.0	2.2	33.3333		74.5	34 - 137			
Benzo(g,h,i)perylene	26.5013	5.0	0.80	33.3333		79.5	40 - 124			
Benzo(k)fluoranthene	21.3610	5.0	0.70	33.3333		64.1	21 - 132			
Chrysene	21.0713	5.0	0.61	33.3333		63.2	51 - 124			
Dibenz(a,h)anthracene	28.1980	5.0	0.88	33.3333		84.6	38 - 123			
Fluoranthene	21.9470	5.0	0.45	33.3333		65.8	47 - 105			
Fluorene	21.3553	5.0	0.35	33.3333		64.1	34 - 95			
Indeno(1,2,3-cd)pyrene	26.7523	5.0	0.82	33.3333		80.3	45 - 124			
Naphthalene	26.7567	5.0	0.56	33.3333		80.3	26 - 110			
Phenanthrene	23.8837	5.0	0.34	33.3333		71.7	39 - 108			
Pyrene	21.2220	5.0	0.51	33.3333		63.7	47 - 107			
Surrogate: 1,2-Dichlorobenzene-d	*23.78*			*33.3333*		*71.3*	*29 - 109*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0185 - MSSEMI_S (continued)										
LCS (B7K0185-BS1) - Continued						Prepared: 11/7/2017 Analyzed: 11/7/2017				
Surrogate: 2-Fluorobiphenyl	*29.51*			*33.3333*		*88.5*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*22.01*			*33.3333*		*66.0*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*35.70*			*33.3333*		*107*	*39 - 123*			
Matrix Spike (B7K0185-MS1)			**Source: 1703641-50**			Prepared: 11/7/2017 Analyzed: 11/7/2017				
2-Methylnaphthalene	18.9647	10	1.2	33.3333	ND	56.9	30 - 141			
Acenaphthene	19.3413	10	0.81	33.3333	ND	58.0	9 - 155			
Acenaphthylene	19.8833	10	0.82	33.3333	ND	59.6	43 - 110			
Anthracene	20.7007	10	1.1	33.3333	ND	62.1	33 - 146			
Benzo(a)anthracene	21.0707	10	1.1	33.3333	7.46467	40.8	49 - 130			M2
Benzo(a)pyrene	18.6480	10	1.4	33.3333	6.18400	37.4	36 - 134			
Benzo(b)fluoranthene	22.2553	10	4.3	33.3333	10.4213	35.5	26 - 148			
Benzo(g,h,i)perylene	23.8513	10	1.6	33.3333	6.74933	51.3	16 - 156			
Benzo(k)fluoranthene	19.1973	10	1.4	33.3333	3.38667	47.4	29 - 132			
Chrysene	19.5920	10	1.2	33.3333	7.70800	35.7	0 - 184			
Dibenz(a,h)anthracene	23.9493	10	1.8	33.3333	1.83333	66.3	29 - 149			
Fluoranthene	21.0953	10	0.90	33.3333	12.0507	27.1	14 - 162			
Fluorene	20.4567	10	0.70	33.3333	ND	61.4	48 - 111			
Indeno(1,2,3-cd)pyrene	23.8653	10	1.6	33.3333	5.13200	56.2	37 - 135			
Naphthalene	24.7907	10	1.1	33.3333	ND	74.4	34 - 126			
Phenanthrene	22.4720	10	0.68	33.3333	2.67733	59.4	19 - 155			
Pyrene	20.7007	10	1.0	33.3333	11.3913	27.9	13 - 162			
Surrogate: 1,2-Dichlorobenzene-d	*21.05*			*33.3333*		*63.2*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*29.50*			*33.3333*		*88.5*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*19.02*			*33.3333*		*57.1*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*30.92*			*33.3333*		*92.8*	*39 - 123*			
Matrix Spike Dup (B7K0185-MSD1)			**Source: 1703641-50**			Prepared: 11/7/2017 Analyzed: 11/7/2017				
2-Methylnaphthalene	18.6940	10	1.2	33.3333	ND	56.1	30 - 141	1.44	20	
Acenaphthene	18.8967	10	0.81	33.3333	ND	56.7	9 - 155	2.33	20	
Acenaphthylene	20.0773	10	0.82	33.3333	ND	60.2	43 - 110	0.971	20	
Anthracene	22.3647	10	1.1	33.3333	ND	67.1	33 - 146	7.73	20	
Benzo(a)anthracene	22.6600	10	1.1	33.3333	7.46467	45.6	49 - 130	7.27	20	M2
Benzo(a)pyrene	19.1027	10	1.4	33.3333	6.18400	38.8	36 - 134	2.41	20	
Benzo(b)fluoranthene	23.3067	10	4.3	33.3333	10.4213	38.7	26 - 148	4.61	20	
Benzo(g,h,i)perylene	28.8453	10	1.6	33.3333	6.74933	66.3	16 - 156	19.0	20	
Benzo(k)fluoranthene	18.7720	10	1.4	33.3333	3.38667	46.2	29 - 132	2.24	20	
Chrysene	22.0927	10	1.2	33.3333	7.70800	43.2	0 - 184	12.0	20	
Dibenz(a,h)anthracene	23.8720	10	1.8	33.3333	1.83333	66.1	29 - 149	0.323	20	
Fluoranthene	22.2113	10	0.90	33.3333	12.0507	30.5	14 - 162	5.15	20	
Fluorene	20.2513	10	0.70	33.3333	ND	60.8	48 - 111	1.01	20	
Indeno(1,2,3-cd)pyrene	24.7347	10	1.6	33.3333	5.13200	58.8	37 - 135	3.58	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0185 - MSSEMI_S (continued)										
Matrix Spike Dup (B7K0185-MSD1) - Continued			**Source: 1703641-50**		Prepared: 11/7/2017 Analyzed: 11/7/2017					
Naphthalene	24.6073	10	1.1	33.3333	ND	73.8	34 - 126	0.742	20	
Phenanthrene	23.2120	10	0.68	33.3333	2.67733	61.6	19 - 155	3.24	20	
Pyrene	22.2207	10	1.0	33.3333	11.3913	32.5	13 - 162	7.08	20	
Surrogate: 1,2-Dichlorobenzene-d	*21.01*			*33.3333*		*63.0*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*29.74*			*33.3333*		*89.2*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*19.37*			*33.3333*		*58.1*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*28.87*			*33.3333*		*86.6*	*39 - 123*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/08/2017

Notes and Definitions

S4	Surrogate was diluted out.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
H7	The sample was logged past hold time.
H4	Change order analysis requested past the sample holding time.
D5	Sample diluted due to failing internal standard in the original run.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Ceres Analytical Laboratory, Inc.
4919 Windplay Dr., Suite 1
El Dorado Hills, CA 95762

October 30, 2017 Ceres ID: 11677

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755

The following report contains the results for the one soil sample received on October 25, 2017. This sample was analyzed for tetra through octa chlorinated dioxins and dibenzofurans by EPA method 8290A. Routine turn-around time was provided for this work.

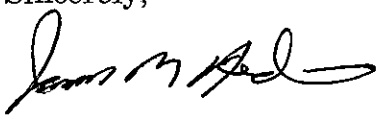
Sample results are reported on a dry weight basis.

This work was authorized under Advanced Technology Laboratories' Work Order # 1703641 and P.O. # SC12135.

The report consists of a Cover Letter, Sample Inventory (Section I), Data Summary (Section II), Sample Tracking (Section VI), and Qualifiers/Abbreviations (Section VII). Raw Data (Section III), Continuing Calibration (Section IV), and Initial Calibration (Section V) are available in a full report (.pdf format) upon request.

If you have any questions regarding this report, please feel free to contact me at (916)932-5011.

Sincerely,



James M. Hedin
Director of Operations/CEO
jhedin@ceres-lab.com

Section I: Sample Inventory

Ceres Sample ID:	Sample ID	Date Received	Collection Date	&Time
11677-001	1703641-41 / LB17-0.5	10/25/2017	10/11/2017	14:38

Section II: Data Summary

CERES Analytical Laboratory, Inc.
4919 Windplay Dr. Suite 1, El Dorado Hills, CA 95762

EPA Method 8290A

Quality Assurance Sample **Method Blank**	**QC Batch #:** 1677 **Matrix:** Soil	**Date Received:** NA **Date Extracted:** 10/26/2017 **ZB-5MS Analysis:** 10/27/2017
Project ID: 1703641	**Sample Size:** 10.00 g	

Analyte	Conc. (pg/g)	MDL	Qualifiers	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 0.487	0.172		13C-2378-TCDD	92.3	40-135	
12378-PeCDD	DL= 0.985	0.327		13C-12378-PeCDD	82.0	40-135	
123478-HxCDD	DL= 1.14	0.327		13C-123478-HxCDD	101	40-135	
123678-HxCDD	DL= 1.29	0.655		13C-123678-HxCDD	108	40-135	
123789-HxCDD	DL= 1.17	0.315		13C-1234678-HpCDD	90.0	40-135	
1234678-HpCDD	DL= 1.73	0.409		13C-OCDD	99.9	40-135	
OCDD	DL= 1.64	1.01		13C-2378-TCDF	118	40-135	
2,3,7,8-TCDF	DL= 0.458	0.0886		13C-12378-PeCDF	94.5	40-135	
12378-PeCDF	DL= 0.684	0.412		13C-23478-PeCDF	105	40-135	
23478-PeCDF	DL= 0.627	0.422		13C-123478-HxCDF	109	40-135	
123478-HxCDF	DL= 0.710	0.518		13C-123678-HxCDF	125	40-135	
123678-HxCDF	DL= 0.606	0.533		13C-234678-HxCDF	118	40-135	
234678-HxCDF	DL= 0.705	0.319		13C-123789-HxCDF	107	40-135	
123789-HxCDF	DL= 0.964	0.425		13C-1234678-HpCDF	112	40-135	
1234678-HpCDF	DL= 0.794	0.279		13C-1234789-HpCDF	112	40-135	
1234789-HpCDF	DL= 1.09	0.378					
OCDF	DL= 1.84	0.461					

Totals	Conc. (pg/g)	EMPC
Total TCDD	DL= 0.487	
Total PeCDD	DL= 0.985	
Total HxCDD	DL= 1.29	
Total HpCDD	DL= 1.73	
Total TCDF	DL= 0.458	
Total PeCDF	DL= 0.684	
Total HxCDF	DL= 0.964	
Total HpCDF	DL= 1.09	

CRS

37Cl4-2378-TCDD	115	40-135

DL - Signifies Non-Detect (ND) at sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 0.0 pg/g

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr. Suite 1, El Dorado Hills, CA 95762

EPA Method 8290A

Quality Assurance Samples Laboratory Control Samples		Date Received: NA
	QC Batch #: 1677	Date Extracted: 10/26/2017
	Matrix: Soil	ZB-5MS Analysis: 10/27/2017
Project ID: 1703641	Sample Size: 10.00 g	

Analyte	LCS1 % Rec.	LCS2 % Rec.	%RSD
2,3,7,8-TCDD	109	114	3.17
12378-PeCDD	119	113	3.66
123478-HxCDD	114	121	4.21
123678-HxCDD	117	115	1.22
123789-HxCDD	117	113	2.46
1234678-HpCDD	123	122	0.58
OCDD	119	124	2.91
2,3,7,8-TCDF	122	117	2.96
12378-PeCDF	117	118	0.60
23478-PeCDF	112	102	6.61
123478-HxCDF	109	112	1.92
123678-HxCDF	111	113	1.26
234678-HxCDF	114	114	0.00
123789-HxCDF	116	119	1.81
1234678-HpCDF	106	107	0.66
1234789-HpCDF	104	103	0.68
OCDF	121	127	3.42

Labeled Standards	LCS1 % Rec.	LCS2 % Rec	Limits (a)
13C-2378-TCDD	81.5	89.3	40-135
13C-12378-PeCDD	73.6	79.9	40-135
13C-123478-HxCDD	98.2	93.0	40-135
13C-123678-HxCDD	107	105	40-135
13C-1234678-HpCDD	97.1	89.6	40-135
13C-OCDD	104	86.2	40-135
13C-2378-TCDF	99.1	92.6	40-135
13C-12378-PeCDF	90.8	90.8	40-135
13C-23478-PeCDF	94.9	101	40-135
13C-123478-HxCDF	113	113	40-135
13C-123678-HxCDF	124	123	40-135
13C-234678-HxCDF	118	108	40-135
13C-123789-HxCDF	101	96.8	40-135
13C-1234678-HpCDF	113	103	40-135
13C-1234789-HpCDF	117	108	40-135
CRS			
37Cl4-2378-TCDD	101	114	40-135

(a) Limits based on method acceptance criteria.

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr Suite 1, El Dorado Hills, CA 95762

EPA Method 8290A

Client Sample ID: 1703641-41 / LB17-0.5		
Project ID: 1703641	**Ceres Sample ID:** 11677-001	**Date Received:** 10/25/2017
	QC Batch #: 1677	**Date Extracted:** 10/26/2017
Date Collected: 10/11/2017	**Matrix:** Soil	**ZB-5MS Analysis:** 10/27/2017
Time Collected: 2:38 PM	**Sample Size:** 10.02 g **% Solids:** 100	**Q-225 Analysis:** NA

Analyte	Conc. (pg/g)	MDL	Qualifiers
2,3,7,8-TCDD	DL= 0.480	0.172	
12378-PeCDD	DL= 0.988	0.327	
123478-HxCDD	DL= 1.67	0.327	
123678-HxCDD	7.34	0.655	
123789-HxCDD	DL= 1.62	0.315	
1234678-HpCDD	245	0.409	
OCDD	2,150	1.01	
2,3,7,8-TCDF	DL= 0.424	0.0886	
12378-PeCDF	DL= 0.781	0.412	
23478-PeCDF	2.82	0.422	J
123478-HxCDF	DL= 1.38	0.518	
123678-HxCDF	3.47	0.533	J
234678-HxCDF	DL= 1.30	0.319	
123789-HxCDF	DL= 2.37	0.425	
1234678-HpCDF	22.6	0.279	
1234789-HpCDF	DL= 2.05	0.378	
OCDF	86.7	0.461	

Totals	Conc. (pg/g)	EMPC
Total TCDD	DL= 0.480	
Total PeCDD	8.34	
Total HxCDD	80.9	
Total HpCDD	564	
Total TCDF	26.8	
Total PeCDF	44.1	50.5
Total HxCDF	48.1	
Total HpCDF	66.7	

Labeled Standards	% R	LCL-UCL (a)	Qualifiers
13C-2378-TCDD	59.4	40-135	
13C-12378-PeCDD	70.4	40-135	
13C-123478-HxCDD	79.7	40-135	
13C-123678-HxCDD	87.1	40-135	
13C-1234678-HpCDD	69.5	40-135	
13C-OCDD	61.2	40-135	
13C-2378-TCDF	71.5	40-135	
13C-12378-PeCDF	74.3	40-135	
13C-23478-PeCDF	75.5	40-135	
13C-123478-HxCDF	93.8	40-135	
13C-123678-HxCDF	94.9	40-135	
13C-234678-HxCDF	92.5	40-135	
13C-123789-HxCDF	73.7	40-135	
13C-1234678-HpCDF	87.6	40-135	
13C-1234789-HpCDF	104	40-135	

CRS

37Cl4-2378-TCDD	69.7	40-135

DL - Signifies Non-Detect (ND) at sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 5.27 pg/g

Analyst: JMH **Reviewed by: BS**

Section VI: Sample Tracking

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1703641

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: KCH

RECEIVING LABORATORY:

Ceres Analytical Laboratory, Inc.
4919 Windplay Dr., Suite 1
El Dorado Hills, CA 95762
Phone :(916) 932-5011
Fax: (888) 932-5011
PO#: SC12135- STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1703641-41 / LB17-0.5		**Soil**	**10/11/17 14:38**	**Dioxins/Furan**
8290_SUB	**11/08/17 17:00**	11/10/17 14:38		PLEASE NOTE HOLDING TIME
[Dioxins and Dibenzofurans]				
1-Glass Jar - 4 oz				

Released By	10/24/17 Date	ONTRAC D10011183853368 Received By	10/24/17 Date
DM Trac Released By	Date	Received By	10/25/17 10:50 Date

Sample Receipt Check List

Ceres ID: 11677	Date/Time: 10/25/17 10:50
Client Project ID: 1703641	Received Temp: 2.3 °C Acceptable: (Y) / N
Chain of Custody Relinquished by signed?	(Y) / N
Custody Seals? Present?	Y / N
Intact?	Y / N
NA:	(NA)
Unlabeled / Illegible Samples	Y / (N)
Proper Containers:	(Y) / N
Preservation Acceptable (Chemical or Temperature)?	(Y) / N
Drinking Water, Sodium Thiosulfate present?	Y / N / (NA)
Residual Cl?	Y / N
Aqueous sample pH: NA	
List COC discrepancies:	
List Damaged Samples:	

Section VII: Qualifiers/Abbreviations

J	Concentration found below the lower quantitation limit but greater than zero.
B	Analyte present in the associated Method Blank.
E	Concentration found exceeds the Calibration range of the HRGC/HRMS.
D	This analyte concentration was calculated from a dilution.
X	The concentration found is the estimated maximum possible concentration due to chlorinated diphenyl ethers present in the sample.
H	Recovery limits exceeded. See cover letter.
*****	Results taken from dilution.
I	Interference. See cover letter.
Conc.	Concentration Found
DL	Calculated Detection Limit
ND	Non-Detect
% Rec.	Percent Recovery

Dominic Mata

From: Brynn McCulloch [bmcculloch@leightongroup.com]
Sent: Tuesday, October 24, 2017 4:50 PM
To: Dominic Mata
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Hi Dominic,

Please run the STLC and TCLP tests as shown below.

Thank you!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Tuesday, October 24, 2017 10:48 AM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Good morning Brynn,

I received your request for additional analyses below. There are no delays with soils so they will not need to be subbed out. Also, we will make sure the groundwater sample gets ran before the hold time is up. It has 14 days from the sampled date giving us until Friday but we plan to run before that. If I can further assist, please let me know.

Thanks,
Dominic

From: Brynn McCulloch [mailto:bmcculloch@leightongroup.com]
Sent: Monday, October 23, 2017 9:27 PM
To: Dominic Mata
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Hi Dominic,

For the groundwater 8260, I'm fine with waiting as long as hold times are met.

For the soil samples, we need the following additional analyses for the samples listed below. If we need to sub out the soil samples for 8260 to meet hold times, please do.

VOCs (8260B) and PAHs (8270SIM)
LB2-0.5, LB2-2.5
LB4-0.5, LB4-2.5
LB5-0.5, LB5-2.5
LB9-0.5, LB9-2.5
LB13-0.5, LB13-2.5
LB17-0.5, LB17-2.5
LB28-5.0

PCBs (8082)
LB2-0.5
LB4-0.5
LB5-0.5
LB9-0.5
LB13-0.5
LB17-0.5
LB28-5.0

Dioxins/Furans
LB17-0.5

Please run the above analyses on normal turnaround time.

The list below is the potential samples requiring STLC and TCLP, I will confirm tomorrow if we need to proceed with these tests, but I wanted to give you a heads up in case we have limited sample recovery.

STLCs
LB2-0.5 – Lead and Copper
LB4-0.5 – Lead
LB4-3.5 – Copper
LB5-2.5 – Lead
LB11-0.5 – Lead, Copper, and Mercury
LB17-0.5 – Lead
LB27-0.5 – Lead
LB28-0.5 – Lead
LB28-2.5 – Lead
LB30-2.5 – Lead
LB31-0.5 – Lead
LB33-2.5 – Lead

TCLPs
LB2-0.5 – Lead
LB4-0.5 – Lead
LB11-0.5 – Lead and Mercury
LB27-0.5 – Lead
LB30-2.5 – Lead

LB31-0.5 – Lead
LB33-2.5 – Lead

Thank you!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Monday, October 23, 2017 4:16 PM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Good afternoon Brynn,

Here's an update for your two work orders due today:

- DRO in 1703653 will be done tomorrow
- 8260 water sample - our instrument has been down for several days and is now running but due to the back log, samples with hold times expiring are being prioritized. Would you like to have this sample sub contracted out or keep it in house and looking to have it run Wed (10/25) or Thurs (10/26)? Also, I can provided an updated partial report that includes the DRO for this work order.

Thanks,
Dominic

From: Brynn McCulloch [mailto:bmcculloch@leightongroup.com]
Sent: Monday, October 23, 2017 11:47 AM
To: Dominic Mata
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Any partial results would be helpful, thank you!

Brynn McCulloch, PG 8798

ADVANCED TECHNOLOGY LABORATORIES

November 02, 2017

Brynn McCulloch
Leighton Consulting, Inc.
17781 Cowan Street
Irvine, CA 92614
Tel: (949) 394-2306
Fax:(949) 250-1114

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1703653
Client Reference : POLA Berth 191-193, 11618.005

Enclosed are the results for sample(s) received on October 12, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB7-0.5	1703653-01	Soil	10/12/17 7:26	10/12/17 15:41
LB7-2.5	1703653-02	Soil	10/12/17 7:28	10/12/17 15:41
LB7-5.0	1703653-03	Soil	10/12/17 7:30	10/12/17 15:41
LB11-0.5	1703653-04	Soil	10/12/17 7:50	10/12/17 15:41
LB11-2.5	1703653-05	Soil	10/12/17 7:52	10/12/17 15:41
LB11-5.0	1703653-06	Soil	10/12/17 7:54	10/12/17 15:41
LB16-0.5	1703653-07	Soil	10/12/17 8:10	10/12/17 15:41
LB16-2.5	1703653-08	Soil	10/12/17 8:12	10/12/17 15:41
LB16-5.0	1703653-09	Soil	10/12/17 8:14	10/12/17 15:41
LB22-0.5	1703653-10	Soil	10/12/17 8:26	10/12/17 15:41
LB22-2.5	1703653-11	Soil	10/12/17 8:28	10/12/17 15:41
LB22-5.0	1703653-12	Soil	10/12/17 8:30	10/12/17 15:41
LB27-0.5	1703653-13	Soil	10/12/17 8:56	10/12/17 15:41
LB27-2.5	1703653-14	Soil	10/12/17 8:58	10/12/17 15:41
LB27-5.0	1703653-15	Soil	10/12/17 9:00	10/12/17 15:41
LB30-0.5	1703653-16	Soil	10/12/17 9:30	10/12/17 15:41
LB30-2.5	1703653-17	Soil	10/12/17 9:32	10/12/17 15:41
LB30-5.0	1703653-18	Soil	10/12/17 9:34	10/12/17 15:41
LB32-0.5	1703653-23	Soil	10/12/17 9:50	10/12/17 15:41
LB32-2.5	1703653-24	Soil	10/12/17 9:52	10/12/17 15:41
LB32-5.0	1703653-25	Soil	10/12/17 9:55	10/12/17 15:41
LB33-0.5	1703653-26	Soil	10/12/17 10:06	10/12/17 15:41
LB33-2.5	1703653-27	Soil	10/12/17 10:08	10/12/17 15:41
LB33-5.0	1703653-28	Soil	10/12/17 10:10	10/12/17 15:41
LB31-0.5	1703653-29	Soil	10/12/17 10:38	10/12/17 15:41
LB31-2.5	1703653-30	Soil	10/12/17 10:40	10/12/17 15:41
LB31-5.0	1703653-31	Soil	10/12/17 10:42	10/12/17 15:41
LB29-0.5	1703653-32	Soil	10/12/17 11:20	10/12/17 15:41
LB29-2.5	1703653-33	Soil	10/12/17 11:22	10/12/17 15:41
LB29-5.0	1703653-34	Soil	10/12/17 11:24	10/12/17 15:41
LB28-0.5	1703653-35	Soil	10/12/17 11:46	10/12/17 15:41
LB28-2.5	1703653-36	Soil	10/12/17 11:48	10/12/17 15:41
LB28-5.0	1703653-37	Soil	10/12/17 11:50	10/12/17 15:41
LB26-0.5	1703653-38	Soil	10/12/17 12:02	10/12/17 15:41
LB26-2.5	1703653-39	Soil	10/12/17 12:04	10/12/17 15:41
LB26-5.0	1703653-40	Soil	10/12/17 12:06	10/12/17 15:41
LB21-0.5	1703653-41	Soil	10/12/17 12:22	10/12/17 15:41

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

LB21-2.5	1703653-42	Soil	10/12/17 12:24	10/12/17 15:41
LB21-5.0	1703653-43	Soil	10/12/17 12:26	10/12/17 15:41
LB15-0.5	1703653-44	Soil	10/12/17 12:40	10/12/17 15:41
LB15-2.5	1703653-45	Soil	10/12/17 12:42	10/12/17 15:41
LB15-5.0	1703653-46	Soil	10/12/17 12:44	10/12/17 15:41
LB10-0.5	1703653-47	Soil	10/12/17 12:56	10/12/17 15:41
LB10-2.5	1703653-48	Soil	10/12/17 12:58	10/12/17 15:41
LB10-5.0	1703653-49	Soil	10/12/17 13:00	10/12/17 15:41
LB6-0.5	1703653-50	Soil	10/12/17 13:15	10/12/17 15:41
LB6-2.5	1703653-51	Soil	10/12/17 13:17	10/12/17 15:41
LB6-5.0	1703653-52	Soil	10/12/17 13:19	10/12/17 15:41
LB6-GW	1703653-53	Groundwater	10/12/17 13:22	10/12/17 15:41
LB27-GW	1703653-54	Groundwater	10/12/17 9:02	10/12/17 15:41
LB31-GW	1703653-55	Groundwater	10/12/17 10:44	10/12/17 15:41

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB7-0.5

Lab ID: 1703653-01

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Arsenic	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Barium	**110**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Chromium	**12**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Cobalt	**11**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Copper	**27**	2.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Lead	**16**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Nickel	**12**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Vanadium	**36**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	
Zinc	**71**	1.0	1	B7J0512	10/18/2017	10/19/17 09:22	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:10	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 09:44	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 09:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**270**	25	25	B7J0525	10/18/2017	10/19/17 06:45	
ORO	**630**	25	25	B7J0525	10/18/2017	10/19/17 06:45	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB7-0.5

Lab ID: 1703653-01

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 06:45*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB7-2.5

Lab ID: 1703653-02

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Arsenic	**1.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Barium	**52**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Chromium	**9.3**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Cobalt	**4.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Copper	**50**	2.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Lead	**49**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Nickel	**14**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Silver	**1.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Vanadium	**16**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	
Zinc	**89**	1.0	1	B7J0512	10/18/2017	10/19/17 09:25	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.25**	0.10	1	B7J0517	10/18/2017	10/19/17 12:17	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 10:03	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 10:03*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**92**	1.0	1	B7J0525	10/18/2017	10/19/17 07:19	
ORO	**130**	1.0	1	B7J0525	10/18/2017	10/19/17 07:19	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB7-2.5

Lab ID: 1703653-02

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*82.4 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 07:19*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB7-5.0

Lab ID: 1703653-03

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Arsenic	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Barium	**29**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Chromium	**6.6**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Cobalt	**3.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Copper	**4.1**	2.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Lead	**1.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Nickel	**5.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Vanadium	**13**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	
Zinc	**19**	1.0	1	B7J0512	10/18/2017	10/19/17 09:27	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:19	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 10:21	
Surrogate: 4-Bromofluorobenzene	*108 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 10:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**10**	1.0	1	B7J0525	10/18/2017	10/19/17 02:45	
ORO	**11**	1.0	1	B7J0525	10/18/2017	10/19/17 02:45	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB7-5.0

Lab ID: 1703653-03

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*106 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 02:45*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-0.5

Lab ID: 1703653-04

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Arsenic	**12**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Barium	**61**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Chromium	**25**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Cobalt	**5.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Copper	**890**	2.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Lead	**150**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Nickel	**11**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Vanadium	**17**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	
Zinc	**780**	1.0	1	B7J0512	10/18/2017	10/19/17 09:28	

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Copper	**0.77**	0.25	5	B7J0818	10/27/2017	10/27/17 17:54	
Lead	ND	0.25	5	B7J0818	10/27/2017	10/27/17 17:54	D1

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Copper	**25**	1.0	20	B7J0849	10/30/2017	10/30/17 12:20	D1
Lead	**2.2**	1.0	20	B7J0849	10/30/2017	10/30/17 12:20	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-0.5

Lab ID: 1703653-04

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**2.2**	0.10	1	B7J0517	10/18/2017	10/19/17 12:21	

STLC Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	1.0	1	B7J0854	10/30/2017	10/30/17 14:28	

TCLP Mercury by AA (Cold Vapor) by EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0833	10/27/2017	10/30/17 10:27	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 10:39	
Surrogate: 4-Bromofluorobenzene *106 %*		*50 - 138*		B7J0337	10/14/2017	*10/14/17 10:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**310**	25	25	B7J0525	10/18/2017	10/19/17 06:11	
ORO	**730**	25	25	B7J0525	10/18/2017	10/19/17 06:11	
Surrogate: p-Terphenyl *0%*		*38 - 145*		B7J0525	10/18/2017	*10/19/17 06:11*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Aroclor 1221	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Aroclor 1232	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-0.5

Lab ID: 1703653-04

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1242	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Aroclor 1248	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Aroclor 1254	**870**	160	10	B7J0770	10/25/2017	10/30/17 17:12	
Aroclor 1260	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Aroclor 1262	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Aroclor 1268	ND	16	1	B7J0770	10/25/2017	10/25/17 22:48	
Surrogate: Decachlorobiphenyl	*42.5 %*	*18 - 136*		B7J0770	10/25/2017	*10/25/17 22:48*	
Surrogate: Decachlorobiphenyl	*85.8 %*	*18 - 136*		B7J0770	10/25/2017	*10/30/17 17:12*	
Surrogate: Tetrachloro-m-xylene	*86.5 %*	*30 - 130*		B7J0770	10/25/2017	*10/30/17 17:12*	
Surrogate: Tetrachloro-m-xylene	*69.6 %*	*30 - 130*		B7J0770	10/25/2017	*10/25/17 22:48*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,1,1-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,1,2,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,1,2-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,1-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,1-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,1-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2,3-Trichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2,3-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2,4-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2,4-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2-Dibromo-3-chloropropane	ND	9.5	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2-Dibromoethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,3,5-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,3-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,3-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
1,4-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
2,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
2-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-0.5

Lab ID: 1703653-04

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
4-Isopropyltoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Benzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Bromobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Bromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Bromodichloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Bromoform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Bromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Carbon disulfide	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Carbon tetrachloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Chlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Chloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Chloroform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Chloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
cis-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
cis-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Di-isopropyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Dibromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Dibromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Dichlorodifluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Ethyl Acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 15:11	
Ethyl Ether	ND	47	1	B7J0791	10/26/2017	10/26/17 15:11	
Ethyl tert-butyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Ethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Freon-113	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Hexachlorobutadiene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Isopropylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
m,p-Xylene	ND	9.5	1	B7J0791	10/26/2017	10/26/17 15:11	
Methylene chloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
MTBE	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
n-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
n-Propylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Naphthalene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
o-Xylene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
sec-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Styrene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
tert-Amyl methyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-0.5

Lab ID: 1703653-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	95	1	B7J0791	10/26/2017	10/26/17 15:11	
tert-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Tetrachloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Toluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
trans-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
trans-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Trichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Trichlorofluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Vinyl acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 15:11	
Vinyl chloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:11	
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 15:11*	
Surrogate: 4-Bromofluorobenzene	*102 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 15:11*	
Surrogate: Dibromofluoromethane	*97.3 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 15:11*	
Surrogate: Toluene-d8	*107 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 15:11*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Acenaphthene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Acenaphthylene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Anthracene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Benzo(a)anthracene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Benzo(a)pyrene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Benzo(b)fluoranthene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Benzo(g,h,i)perylene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Benzo(k)fluoranthene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Chrysene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Dibenz(a,h)anthracene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Fluoranthene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Fluorene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Indeno(1,2,3-cd)pyrene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Naphthalene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Phenanthrene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Pyrene	ND	100	20	B7J0764	10/25/2017	10/27/17 13:31	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0764	10/25/2017	*10/27/17 13:31*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-0.5

Lab ID: 1703653-04

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0764	10/25/2017	*10/27/17 13:31*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0764	10/25/2017	*10/27/17 13:31*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0764	10/25/2017	*10/27/17 13:31*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-2.5

Lab ID: 1703653-05

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Arsenic	**5.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Barium	**79**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Chromium	**14**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Cobalt	**9.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Copper	**16**	2.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Lead	**3.9**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Nickel	**13**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Vanadium	**32**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	
Zinc	**38**	1.0	1	B7J0512	10/18/2017	10/19/17 09:29	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:23	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 10:58	
Surrogate: 4-Bromofluorobenzene	*85.6 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 10:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.6**	1.0	1	B7J0525	10/18/2017	10/19/17 01:20	
ORO	**7.9**	1.0	1	B7J0525	10/18/2017	10/19/17 01:20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-2.5
Lab ID: 1703653-05

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*73.3 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 01:20*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,1,1-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,1,2,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,1,2-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,1-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,1-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,1-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2,3-Trichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2,3-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2,4-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2,4-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2-Dibromo-3-chloropropane	ND	9.5	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2-Dibromoethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,3,5-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,3-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,3-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
1,4-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
2,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
2-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
4-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
4-Isopropyltoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Benzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Bromobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Bromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Bromodichloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Bromoform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Bromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Carbon disulfide	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-2.5

Lab ID: 1703653-05

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Chlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Chloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Chloroform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Chloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
cis-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
cis-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Di-isopropyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Dibromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Dibromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Dichlorodifluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Ethyl Acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 15:29	
Ethyl Ether	ND	47	1	B7J0791	10/26/2017	10/26/17 15:29	
Ethyl tert-butyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Ethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Freon-113	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Hexachlorobutadiene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Isopropylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
m,p-Xylene	ND	9.5	1	B7J0791	10/26/2017	10/26/17 15:29	
Methylene chloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
MTBE	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
n-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
n-Propylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Naphthalene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
o-Xylene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
sec-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Styrene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
tert-Amyl methyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
tert-Butanol	ND	95	1	B7J0791	10/26/2017	10/26/17 15:29	
tert-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Tetrachloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Toluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
trans-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
trans-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Trichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Trichlorofluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Vinyl acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 15:29	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-2.5

Lab ID: 1703653-05

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	4.7	1	B7J0791	10/26/2017	10/26/17 15:29	
Surrogate: 1,2-Dichloroethane-d4	*99.3 %*		*32 - 140*		B7J0791	10/26/2017	*10/26/17 15:29*	
Surrogate: 4-Bromofluorobenzene	*105 %*		*68 - 131*		B7J0791	10/26/2017	*10/26/17 15:29*	
Surrogate: Dibromofluoromethane	*94.9 %*		*49 - 134*		B7J0791	10/26/2017	*10/26/17 15:29*	
Surrogate: Toluene-d8	*108 %*		*75 - 132*		B7J0791	10/26/2017	*10/26/17 15:29*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Acenaphthene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Acenaphthylene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Anthracene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Benzo(a)anthracene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Benzo(a)pyrene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Benzo(b)fluoranthene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Benzo(g,h,i)perylene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Benzo(k)fluoranthene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Chrysene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Dibenz(a,h)anthracene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Fluoranthene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Fluorene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Naphthalene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Phenanthrene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Pyrene		ND	5.0	1	B7J0764	10/25/2017	10/27/17 10:55	
Surrogate: 1,2-Dichlorobenzene-d4	*74.6 %*		*29 - 109*		B7J0764	10/25/2017	*10/27/17 10:55*	
Surrogate: 2-Fluorobiphenyl	*99.6 %*		*39 - 108*		B7J0764	10/25/2017	*10/27/17 10:55*	
Surrogate: Nitrobenzene-d5	*71.6 %*		*0 - 146*		B7J0764	10/25/2017	*10/27/17 10:55*	
Surrogate: 4-Terphenyl-d14	*102 %*		*39 - 123*		B7J0764	10/25/2017	*10/27/17 10:55*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-5.0

Lab ID: 1703653-06

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Arsenic	**2.9**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Barium	**110**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Chromium	**19**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Cobalt	**9.3**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Copper	**19**	2.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Lead	**3.9**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Nickel	**14**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Vanadium	**33**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	
Zinc	**46**	1.0	1	B7J0512	10/18/2017	10/19/17 09:30	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:33	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 11:16	
Surrogate: 4-Bromofluorobenzene	*110 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 11:16*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**12**	1.0	1	B7J0525	10/18/2017	10/19/17 01:37	
ORO	**9.3**	1.0	1	B7J0525	10/18/2017	10/19/17 01:37	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB11-5.0

Lab ID: 1703653-06

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*128 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 01:37*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-0.5

Lab ID: 1703653-07

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Arsenic	**2.2**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Barium	**74**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Chromium	**6.7**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Cobalt	**6.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Copper	**27**	2.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Lead	**5.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Nickel	**7.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Vanadium	**17**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	
Zinc	**180**	1.0	1	B7J0512	10/18/2017	10/19/17 09:34	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:35	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 11:35	
Surrogate: 4-Bromofluorobenzene	*115 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 11:35*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**7.7**	1.0	1	B7J0525	10/18/2017	10/19/17 03:03	
ORO	**10**	1.0	1	B7J0525	10/18/2017	10/19/17 03:03	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-0.5

Lab ID: 1703653-07

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*144 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 03:03*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-2.5
Lab ID: 1703653-08

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Arsenic	**2.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Barium	**78**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Chromium	**10**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Cobalt	**5.6**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Copper	**19**	2.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Lead	**33**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Nickel	**11**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Vanadium	**18**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	
Zinc	**160**	1.0	1	B7J0512	10/18/2017	10/19/17 09:35	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:37	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 11:53	
Surrogate: 4-Bromofluorobenzene	*104 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 11:53*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**390**	50	50	B7J0525	10/18/2017	10/19/17 07:02	
ORO	**1100**	50	50	B7J0525	10/18/2017	10/19/17 07:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-2.5
Lab ID: 1703653-08

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 07:02*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1221	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1232	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1242	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1248	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1254	**110**	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1260	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1262	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Aroclor 1268	ND	16	1	B7J0770	10/25/2017	10/25/17 23:07	
Surrogate: Decachlorobiphenyl	*41.9 %*	*18 - 136*		B7J0770	10/25/2017	*10/25/17 23:07*	
Surrogate: Tetrachloro-m-xylene	*76.1 %*	*30 - 130*		B7J0770	10/25/2017	*10/25/17 23:07*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,1,1-Trichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,1,2,2-Tetrachloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,1,2-Trichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,1-Dichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,1-Dichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,1-Dichloropropene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2,3-Trichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2,3-Trichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2,4-Trichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2,4-Trimethylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2-Dibromo-3-chloropropane	ND	9.7	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2-Dibromoethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2-Dichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,2-Dichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-2.5

Lab ID: 1703653-08

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,3,5-Trimethylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,3-Dichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,3-Dichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
1,4-Dichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
2,2-Dichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
2-Chlorotoluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
4-Chlorotoluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
4-Isopropyltoluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Benzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Bromobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Bromochloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Bromodichloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Bromoform	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Bromomethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Carbon disulfide	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Carbon tetrachloride	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Chlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Chloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Chloroform	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Chloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
cis-1,2-Dichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
cis-1,3-Dichloropropene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Di-isopropyl ether	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Dibromochloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Dibromomethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Dichlorodifluoromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Ethyl Acetate	ND	49	1	B7J0791	10/26/2017	10/26/17 15:48	
Ethyl Ether	ND	49	1	B7J0791	10/26/2017	10/26/17 15:48	
Ethyl tert-butyl ether	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Ethylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Freon-113	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Hexachlorobutadiene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Isopropylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
m,p-Xylene	ND	9.7	1	B7J0791	10/26/2017	10/26/17 15:48	
Methylene chloride	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
MTBE	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-2.5

Lab ID: 1703653-08

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
n-Propylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Naphthalene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
o-Xylene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
sec-Butylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Styrene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
tert-Amyl methyl ether	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
tert-Butanol	ND	97	1	B7J0791	10/26/2017	10/26/17 15:48	
tert-Butylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Tetrachloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Toluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
trans-1,2-Dichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
trans-1,3-Dichloropropene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Trichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Trichlorofluoromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Vinyl acetate	ND	49	1	B7J0791	10/26/2017	10/26/17 15:48	
Vinyl chloride	ND	4.9	1	B7J0791	10/26/2017	10/26/17 15:48	
Surrogate: 1,2-Dichloroethane-d4	*106 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 15:48*	
Surrogate: 4-Bromofluorobenzene	*103 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 15:48*	
Surrogate: Dibromofluoromethane	*96.8 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 15:48*	
Surrogate: Toluene-d8	*107 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 15:48*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Acenaphthene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Acenaphthylene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Anthracene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Benzo(a)anthracene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Benzo(a)pyrene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Benzo(b)fluoranthene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Benzo(g,h,i)perylene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Benzo(k)fluoranthene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Chrysene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Dibenz(a,h)anthracene	ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-2.5

Lab ID: 1703653-08

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Fluorene		ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Indeno(1,2,3-cd)pyrene		ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Naphthalene		ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Phenanthrene		ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Pyrene		ND	250	50	B7J0764	10/25/2017	10/30/17 11:32	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0764	10/25/2017	*10/30/17 11:32*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0764	10/25/2017	*10/30/17 11:32*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0764	10/25/2017	*10/30/17 11:32*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0764	10/25/2017	*10/30/17 11:32*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-5.0

Lab ID: 1703653-09

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Arsenic	**2.4**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Barium	**65**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Chromium	**7.3**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Cobalt	**3.7**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Copper	**12**	2.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Lead	**4.9**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Nickel	**6.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Vanadium	**14**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	
Zinc	**39**	1.0	1	B7J0512	10/18/2017	10/19/17 09:36	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:39	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 12:12	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 12:12*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**63**	10	10	B7J0525	10/18/2017	10/19/17 05:36	
ORO	**130**	10	10	B7J0525	10/18/2017	10/19/17 05:36	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-5.0

Lab ID: 1703653-09

Diesel Range Organics by EPA 8015B — **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 05:36*	S4

Volatile Organic Compounds by EPA 5035/EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,1,1-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,1,2,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,1,2-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,1-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,1-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,1-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2,3-Trichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2,3-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2,4-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2,4-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2-Dibromo-3-chloropropane	ND	9.4	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2-Dibromoethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,3,5-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,3-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,3-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
1,4-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
2,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
2-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
4-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
4-Isopropyltoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Benzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Bromobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Bromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Bromodichloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Bromoform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Bromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Carbon disulfide	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-5.0

Lab ID: 1703653-09

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Chlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Chloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Chloroform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Chloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
cis-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
cis-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Di-isopropyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Dibromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Dibromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Dichlorodifluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Ethyl Acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 16:06	
Ethyl Ether	ND	47	1	B7J0791	10/26/2017	10/26/17 16:06	
Ethyl tert-butyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Ethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Freon-113	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Hexachlorobutadiene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Isopropylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
m,p-Xylene	ND	9.4	1	B7J0791	10/26/2017	10/26/17 16:06	
Methylene chloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
MTBE	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
n-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
n-Propylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Naphthalene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
o-Xylene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
sec-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Styrene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
tert-Amyl methyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
tert-Butanol	ND	94	1	B7J0791	10/26/2017	10/26/17 16:06	
tert-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Tetrachloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Toluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
trans-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
trans-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Trichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Trichlorofluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Vinyl acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 16:06	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB16-5.0

Lab ID: 1703653-09

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:06	
Surrogate: 1,2-Dichloroethane-d4	*103 %*		*32 - 140*		B7J0791	10/26/2017	*10/26/17 16:06*	
Surrogate: 4-Bromofluorobenzene	*102 %*		*68 - 131*		B7J0791	10/26/2017	*10/26/17 16:06*	
Surrogate: Dibromofluoromethane	*96.9 %*		*49 - 134*		B7J0791	10/26/2017	*10/26/17 16:06*	
Surrogate: Toluene-d8	*107 %*		*75 - 132*		B7J0791	10/26/2017	*10/26/17 16:06*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Acenaphthene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Acenaphthylene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Anthracene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Benzo(a)anthracene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Benzo(a)pyrene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Benzo(b)fluoranthene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Benzo(g,h,i)perylene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Benzo(k)fluoranthene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Chrysene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Dibenz(a,h)anthracene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Fluoranthene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Fluorene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Indeno(1,2,3-cd)pyrene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Naphthalene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Phenanthrene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Pyrene		ND	250	50	B7J0764	10/25/2017	10/27/17 13:59	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0764	10/25/2017	*10/27/17 13:59*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0764	10/25/2017	*10/27/17 13:59*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0764	10/25/2017	*10/27/17 13:59*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0764	10/25/2017	*10/27/17 13:59*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB22-0.5

Lab ID: 1703653-10

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Arsenic	**2.3**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Barium	**50**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Chromium	**11**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Cobalt	**5.3**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Copper	**9.8**	2.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Lead	**5.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Nickel	**8.7**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Vanadium	**19**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	
Zinc	**97**	1.0	1	B7J0512	10/18/2017	10/19/17 09:37	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:41	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 12:30	
Surrogate: 4-Bromofluorobenzene	*115 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 12:30*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**11**	1.0	1	B7J0525	10/18/2017	10/19/17 05:54	
ORO	**21**	1.0	1	B7J0525	10/18/2017	10/19/17 05:54	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB22-0.5

Lab ID: 1703653-10

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*91.8 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 05:54*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB22-2.5

Lab ID: 1703653-11

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Arsenic	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Barium	**69**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Chromium	**15**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Cobalt	**7.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Copper	**12**	2.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Lead	**1.3**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Nickel	**11**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Vanadium	**23**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	
Zinc	**40**	1.0	1	B7J0512	10/18/2017	10/19/17 09:38	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.17**	0.10	1	B7J0517	10/18/2017	10/19/17 12:43	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 12:49	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 12:49*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.6**	1.0	1	B7J0525	10/18/2017	10/19/17 03:20	
ORO	**10**	1.0	1	B7J0525	10/18/2017	10/19/17 03:20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB22-2.5

Lab ID: 1703653-11

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*133 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 03:20*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB22-5.0

Lab ID: 1703653-12

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Arsenic	**1.7**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Barium	**19**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Chromium	**4.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Cobalt	**2.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Copper	**2.5**	2.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Lead	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Nickel	**2.9**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Vanadium	**7.2**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	
Zinc	**10**	1.0	1	B7J0512	10/18/2017	10/19/17 09:39	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:44	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 13:07	
Surrogate: 4-Bromofluorobenzene	*107 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 13:07*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.6**	1.0	1	B7J0525	10/18/2017	10/19/17 01:54	
ORO	**9.2**	1.0	1	B7J0525	10/18/2017	10/19/17 01:54	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB22-5.0

Lab ID: 1703653-12

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*90.8 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 01:54*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-0.5

Lab ID: 1703653-13

Title 22 Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Arsenic	**4.0**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Barium	**98**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Beryllium	ND	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Cadmium	ND	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Chromium	**18**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Cobalt	**8.7**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Copper	**28**	2.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Lead	**130**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Molybdenum	ND	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Nickel	**15**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Selenium	ND	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Silver	ND	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Thallium	ND	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Vanadium	**32**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	
Zinc	**120**	1.0	1	B7J0914	10/31/2017	11/01/17 13:07	

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**0.33**	0.25	5	B7J0818	10/27/2017	10/27/17 17:56	D1

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**1.9**	1.0	20	B7K0042	11/02/2017	11/02/17 11:37	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:46	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-0.5

Lab ID: 1703653-13

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics		ND	1.0	1	B7J0337	10/14/2017	10/14/17 13:26	
Surrogate: 4-Bromofluorobenzene	*108 %*		*50 - 138*		B7J0337	10/14/2017	*10/14/17 13:26*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO		**41**	5.0	5	B7J0525	10/18/2017	10/19/17 05:19	
ORO		**80**	5.0	5	B7J0525	10/18/2017	10/19/17 05:19	
Surrogate: p-Terphenyl	*132 %*		*38 - 145*		B7J0525	10/18/2017	*10/19/17 05:19*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-2.5

Lab ID: 1703653-14

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Arsenic	**2.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Barium	**43**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Chromium	**9.4**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Cobalt	**5.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Copper	**6.5**	2.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Lead	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Nickel	**7.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Vanadium	**16**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	
Zinc	**26**	1.0	1	B7J0512	10/18/2017	10/19/17 09:42	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:48	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 13:44	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 13:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.5**	1.0	1	B7J0525	10/18/2017	10/19/17 03:37	
ORO	**11**	1.0	1	B7J0525	10/18/2017	10/19/17 03:37	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-2.5

Lab ID: 1703653-14

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*144 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 03:37*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-5.0

Lab ID: 1703653-15

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Arsenic	**1.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Barium	**16**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Chromium	**3.8**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Cobalt	**1.8**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Copper	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Lead	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Nickel	**2.4**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Vanadium	**6.7**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	
Zinc	**9.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:43	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:50	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 14:02	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 14:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.1**	1.0	1	B7J0525	10/18/2017	10/19/17 02:11	
ORO	**8.4**	1.0	1	B7J0525	10/18/2017	10/19/17 02:11	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-5.0

Lab ID: 1703653-15

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*116 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 02:11*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB30-0.5

Lab ID: 1703653-16

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Arsenic	**1.6**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Barium	**48**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Chromium	**10**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Cobalt	**4.6**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Copper	**8.3**	2.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Lead	**5.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Nickel	**6.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Vanadium	**18**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	
Zinc	**26**	1.0	1	B7J0512	10/18/2017	10/19/17 09:44	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:56	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 14:21	
Surrogate: 4-Bromofluorobenzene	*115 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 14:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**32**	1.0	1	B7J0525	10/18/2017	10/19/17 04:11	
ORO	**36**	1.0	1	B7J0525	10/18/2017	10/19/17 04:11	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB30-0.5

Lab ID: 1703653-16

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*96.0 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 04:11*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB30-2.5

Lab ID: 1703653-17

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Arsenic	**1.6**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Barium	**82**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Chromium	**16**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Cobalt	**5.4**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Copper	**91**	2.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Lead	**180**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Nickel	**24**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Vanadium	**38**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	
Zinc	**130**	1.0	1	B7J0512	10/18/2017	10/19/17 09:48	

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.25	5	B7J0818	10/27/2017	10/27/17 18:01	D1

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.2**	1.0	20	B7J0849	10/30/2017	10/30/17 14:32	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.25**	0.10	1	B7J0517	10/18/2017	10/19/17 12:58	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB30-2.5

Lab ID: 1703653-17

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics		ND	1.0	1	B7J0337	10/14/2017	10/14/17 14:39	
Surrogate: 4-Bromofluorobenzene	*69.8 %*		*50 - 138*		B7J0337	10/14/2017	*10/14/17 14:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO		**220**	5.0	5	B7J0525	10/18/2017	10/19/17 06:28	
ORO		**450**	5.0	5	B7J0525	10/18/2017	10/19/17 06:28	
Surrogate: p-Terphenyl	*138 %*		*38 - 145*		B7J0525	10/18/2017	*10/19/17 06:28*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB30-5.0

Lab ID: 1703653-18

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Arsenic	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Barium	**44**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Chromium	**10**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Cobalt	**7.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Copper	**8.1**	2.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Lead	**3.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Nickel	**7.4**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Vanadium	**18**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	
Zinc	**29**	1.0	1	B7J0512	10/18/2017	10/19/17 09:49	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 12:59	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0337	10/14/2017	10/14/17 14:58	
Surrogate: 4-Bromofluorobenzene	*105 %*	*50 - 138*		B7J0337	10/14/2017	*10/14/17 14:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.2**	1.0	1	B7J0525	10/18/2017	10/19/17 02:28	
ORO	**13**	1.0	1	B7J0525	10/18/2017	10/19/17 02:28	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB30-5.0

Lab ID: 1703653-18

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*118 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 02:28*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB32-0.5

Lab ID: 1703653-23

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Arsenic	**3.7**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Barium	**60**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Chromium	**13**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Cobalt	**6.1**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Copper	**29**	2.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Lead	**7.5**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Nickel	**11**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Vanadium	**22**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	
Zinc	**48**	1.0	1	B7J0512	10/18/2017	10/19/17 09:50	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 13:01	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 17:44	
Surrogate: 4-Bromofluorobenzene	*117 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 17:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**170**	25	25	B7J0525	10/18/2017	10/19/17 05:02	
ORO	**360**	25	25	B7J0525	10/18/2017	10/19/17 05:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB32-0.5

Lab ID: 1703653-23

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 05:02*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB32-2.5

Lab ID: 1703653-24

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Arsenic	**1.6**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Barium	**28**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Beryllium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Cadmium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Chromium	**5.9**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Cobalt	**3.0**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Copper	**3.3**	2.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Lead	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Molybdenum	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Nickel	**4.4**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Selenium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Silver	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Thallium	ND	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Vanadium	**10**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	
Zinc	**19**	1.0	1	B7J0512	10/18/2017	10/19/17 09:51	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0517	10/18/2017	10/19/17 13:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 18:02	
Surrogate: 4-Bromofluorobenzene	*117 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 18:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.8**	1.0	1	B7J0525	10/18/2017	10/19/17 03:54	
ORO	**9.5**	1.0	1	B7J0525	10/18/2017	10/19/17 03:54	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB32-2.5

Lab ID: 1703653-24

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*129 %*	*38 - 145*		B7J0525	10/18/2017	*10/19/17 03:54*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB32-5.0

Lab ID: 1703653-25

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Arsenic	**1.7**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Barium	**63**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Chromium	**11**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Cobalt	**6.6**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Copper	**9.7**	2.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Nickel	**9.1**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Vanadium	**20**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	
Zinc	**32**	1.0	1	B7J0513	10/18/2017	10/19/17 09:55	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:09	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 18:21	
Surrogate: 4-Bromofluorobenzene	*89.0 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 18:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**13**	1.0	1	B7J0547	10/18/2017	10/19/17 11:46	
ORO	**12**	1.0	1	B7J0547	10/18/2017	10/19/17 11:46	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB32-5.0

Lab ID: 1703653-25

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*119 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 11:46*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-0.5

Lab ID: 1703653-26

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Arsenic	**1.7**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Barium	**44**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Chromium	**13**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Cobalt	**6.2**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Copper	**6.1**	2.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Lead	**1.5**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Nickel	**9.3**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Vanadium	**22**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	
Zinc	**34**	1.0	1	B7J0513	10/18/2017	10/19/17 09:58	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:20	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 18:39	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 18:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**78**	10	10	B7J0547	10/18/2017	10/19/17 15:15	
ORO	**160**	10	10	B7J0547	10/18/2017	10/19/17 15:15	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-0.5

Lab ID: 1703653-26

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 15:15*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-2.5

Lab ID: 1703653-27

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Arsenic	**6.9**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Barium	**73**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Chromium	**14**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Cobalt	**9.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Copper	**230**	2.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Lead	**110**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Nickel	**20**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Vanadium	**22**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	
Zinc	**790**	1.0	1	B7J0513	10/18/2017	10/19/17 10:02	

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.25	5	B7J0818	10/27/2017	10/27/17 18:02	D1

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**11**	1.0	20	B7J0849	10/30/2017	10/30/17 12:27	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.23**	0.10	1	B7J0518	10/18/2017	10/19/17 13:22	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-2.5

Lab ID: 1703653-27

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics		ND	1.0	1	B7J0349	10/14/2017	10/14/17 18:58	
Surrogate: 4-Bromofluorobenzene	*109 %*		*50 - 138*		B7J0349	10/14/2017	*10/14/17 18:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO		**2500**	200	100	B7J0547	10/18/2017	10/19/17 16:25	
ORO		**6800**	200	100	B7J0547	10/18/2017	10/19/17 16:25	
Surrogate: p-Terphenyl	*0%*		*38 - 145*		B7J0547	10/18/2017	*10/19/17 16:25*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1221		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1232		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1242		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1248		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1254		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1260		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1262		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Aroclor 1268		ND	32	2	B7J0770	10/25/2017	10/25/17 23:26	
Surrogate: Decachlorobiphenyl	*29.5 %*		*18 - 136*		B7J0770	10/25/2017	*10/25/17 23:26*	
Surrogate: Tetrachloro-m-xylene	*58.9 %*		*30 - 130*		B7J0770	10/25/2017	*10/25/17 23:26*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,1,1-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,1,2,2-Tetrachloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,1,2-Trichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,1-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-2.5

Lab ID: 1703653-27

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,1-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2,3-Trichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2,3-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2,4-Trichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2,4-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2-Dibromo-3-chloropropane	ND	9.4	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2-Dibromoethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2-Dichloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,3,5-Trimethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,3-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,3-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
1,4-Dichlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
2,2-Dichloropropane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
2-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
4-Chlorotoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
4-Isopropyltoluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Benzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Bromobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Bromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Bromodichloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Bromoform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Bromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Carbon disulfide	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Carbon tetrachloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Chlorobenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Chloroethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Chloroform	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Chloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
cis-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
cis-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Di-isopropyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Dibromochloromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Dibromomethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Dichlorodifluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-2.5

Lab ID: 1703653-27

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethyl Acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 16:25	
Ethyl Ether	ND	47	1	B7J0791	10/26/2017	10/26/17 16:25	
Ethyl tert-butyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Ethylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Freon-113	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Hexachlorobutadiene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Isopropylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
m,p-Xylene	ND	9.4	1	B7J0791	10/26/2017	10/26/17 16:25	
Methylene chloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
MTBE	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
n-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
n-Propylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Naphthalene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
o-Xylene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
sec-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Styrene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
tert-Amyl methyl ether	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
tert-Butanol	ND	94	1	B7J0791	10/26/2017	10/26/17 16:25	
tert-Butylbenzene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Tetrachloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Toluene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
trans-1,2-Dichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
trans-1,3-Dichloropropene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Trichloroethene	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Trichlorofluoromethane	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Vinyl acetate	ND	47	1	B7J0791	10/26/2017	10/26/17 16:25	
Vinyl chloride	ND	4.7	1	B7J0791	10/26/2017	10/26/17 16:25	
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 16:25*	
Surrogate: 4-Bromofluorobenzene	*104 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 16:25*	
Surrogate: Dibromofluoromethane	*94.4 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 16:25*	
Surrogate: Toluene-d8	*103 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 16:25*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-2.5

Lab ID: 1703653-27

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Acenaphthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Acenaphthylene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Benzo(a)anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Benzo(a)pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Benzo(b)fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Benzo(g,h,i)perylene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Benzo(k)fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Chrysene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Dibenz(a,h)anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Fluorene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Indeno(1,2,3-cd)pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Naphthalene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Phenanthrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 14:28	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0764	10/25/2017	*10/27/17 14:28*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0764	10/25/2017	*10/27/17 14:28*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0764	10/25/2017	*10/27/17 14:28*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0764	10/25/2017	*10/27/17 14:28*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-5.0

Lab ID: 1703653-28

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Arsenic	**2.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Barium	**55**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Chromium	**9.7**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Cobalt	**6.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Copper	**7.9**	2.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Nickel	**8.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Vanadium	**19**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	
Zinc	**29**	1.0	1	B7J0513	10/18/2017	10/19/17 10:03	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:24	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 19:16	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 19:16*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.0**	1.0	1	B7J0547	10/18/2017	10/19/17 10:19	
ORO	**8.1**	1.0	1	B7J0547	10/18/2017	10/19/17 10:19	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-5.0

Lab ID: 1703653-28

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*107 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 10:19*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,1,1-Trichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,1,2,2-Tetrachloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,1,2-Trichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,1-Dichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,1-Dichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,1-Dichloropropene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2,3-Trichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2,3-Trichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2,4-Trichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2,4-Trimethylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2-Dibromo-3-chloropropane	ND	10	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2-Dibromoethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2-Dichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2-Dichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,2-Dichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,3,5-Trimethylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,3-Dichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,3-Dichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
1,4-Dichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
2,2-Dichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
2-Chlorotoluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
4-Chlorotoluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
4-Isopropyltoluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Benzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Bromobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Bromochloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Bromodichloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Bromoform	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Bromomethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Carbon disulfide	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-5.0

Lab ID: 1703653-28

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Chlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Chloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Chloroform	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Chloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
cis-1,2-Dichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
cis-1,3-Dichloropropene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Di-isopropyl ether	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Dibromochloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Dibromomethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Dichlorodifluoromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Ethyl Acetate	ND	52	1	B7J0791	10/26/2017	10/26/17 16:44	
Ethyl Ether	ND	52	1	B7J0791	10/26/2017	10/26/17 16:44	
Ethyl tert-butyl ether	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Ethylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Freon-113	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Hexachlorobutadiene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Isopropylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
m,p-Xylene	ND	10	1	B7J0791	10/26/2017	10/26/17 16:44	
Methylene chloride	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
MTBE	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
n-Butylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
n-Propylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Naphthalene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
o-Xylene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
sec-Butylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Styrene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
tert-Amyl methyl ether	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
tert-Butanol	ND	100	1	B7J0791	10/26/2017	10/26/17 16:44	
tert-Butylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Tetrachloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Toluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
trans-1,2-Dichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
trans-1,3-Dichloropropene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Trichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Trichlorofluoromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Vinyl acetate	ND	52	1	B7J0791	10/26/2017	10/26/17 16:44	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB33-5.0

Lab ID: 1703653-28

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	5.2	1	B7J0791	10/26/2017	10/26/17 16:44	
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*32 - 140*		B7J0791	10/26/2017	*10/26/17 16:44*	
Surrogate: 4-Bromofluorobenzene	*102 %*		*68 - 131*		B7J0791	10/26/2017	*10/26/17 16:44*	
Surrogate: Dibromofluoromethane	*95.3 %*		*49 - 134*		B7J0791	10/26/2017	*10/26/17 16:44*	
Surrogate: Toluene-d8	*107 %*		*75 - 132*		B7J0791	10/26/2017	*10/26/17 16:44*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Acenaphthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Acenaphthylene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Anthracene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Benzo(a)anthracene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Benzo(a)pyrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Benzo(b)fluoranthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Benzo(g,h,i)perylene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Benzo(k)fluoranthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Chrysene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Dibenz(a,h)anthracene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Fluoranthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Fluorene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Indeno(1,2,3-cd)pyrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Naphthalene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Phenanthrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Pyrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:23	
Surrogate: 1,2-Dichlorobenzene-d4	*65.8 %*	*29 - 109*		B7J0764	10/25/2017	*10/27/17 11:23*	
Surrogate: 2-Fluorobiphenyl	*98.2 %*	*39 - 108*		B7J0764	10/25/2017	*10/27/17 11:23*	
Surrogate: Nitrobenzene-d5	*68.2 %*	*0 - 146*		B7J0764	10/25/2017	*10/27/17 11:23*	
Surrogate: 4-Terphenyl-d14	*87.3 %*	*39 - 123*		B7J0764	10/25/2017	*10/27/17 11:23*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-0.5

Lab ID: 1703653-29

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Arsenic	**4.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Barium	**63**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Chromium	**12**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Cobalt	**5.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Copper	**110**	2.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Lead	**110**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Nickel	**9.7**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Vanadium	**21**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	
Zinc	**140**	1.0	1	B7J0513	10/18/2017	10/19/17 10:04	

TCLP Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**0.33**	0.25	5	B7J0818	10/27/2017	10/27/17 18:03	D1

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**13**	1.0	20	B7J0849	10/30/2017	10/30/17 12:29	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.89**	0.10	1	B7J0518	10/18/2017	10/19/17 13:26	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-0.5

Lab ID: 1703653-29

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: VW**

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics		ND	1.0	1	B7J0349	10/14/2017	10/14/17 19:35	
Surrogate: 4-Bromofluorobenzene	*112 %*		*50 - 138*		B7J0349	10/14/2017	*10/14/17 19:35*	

Diesel Range Organics by EPA 8015B — **Analyst: TKT**

Analyte		Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO		**230**	10	10	B7J0547	10/18/2017	10/19/17 14:57	
ORO		**490**	10	10	B7J0547	10/18/2017	10/19/17 14:57	
Surrogate: p-Terphenyl	*0%*		*38 - 145*		B7J0547	10/18/2017	*10/19/17 14:57*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-2.5

Lab ID: 1703653-30

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Arsenic	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Barium	**13**	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Chromium	**3.6**	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Cobalt	**1.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Copper	**2.2**	2.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Nickel	**2.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Vanadium	**6.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	
Zinc	**8.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:05	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:28	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 13:49	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 13:49*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.7**	1.0	1	B7J0547	10/18/2017	10/19/17 10:36	
ORO	**6.0**	1.0	1	B7J0547	10/18/2017	10/19/17 10:36	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-2.5

Lab ID: 1703653-30

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*101 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 10:36*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-5.0

Lab ID: 1703653-31

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Arsenic	**1.6**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Barium	**53**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Chromium	**9.6**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Cobalt	**5.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Copper	**6.8**	2.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Nickel	**7.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Vanadium	**17**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	
Zinc	**29**	1.0	1	B7J0513	10/18/2017	10/19/17 10:07	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:30	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 20:11	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 20:11*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.3**	1.0	1	B7J0547	10/18/2017	10/19/17 10:54	
ORO	**9.4**	1.0	1	B7J0547	10/18/2017	10/19/17 10:54	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-5.0

Lab ID: 1703653-31

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*104 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 10:54*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB29-0.5

Lab ID: 1703653-32

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Arsenic	**2.4**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Barium	**17**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Chromium	**4.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Cobalt	**2.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Copper	**10**	2.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Lead	**10**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Nickel	**4.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Vanadium	**9.7**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	
Zinc	**43**	1.0	1	B7J0513	10/18/2017	10/19/17 10:08	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:31	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 20:30	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 20:30*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**54**	10	10	B7J0547	10/18/2017	10/19/17 14:40	
ORO	**100**	10	10	B7J0547	10/18/2017	10/19/17 14:40	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB29-0.5

Lab ID: 1703653-32

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 14:40*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB29-2.5

Lab ID: 1703653-33

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Arsenic	**2.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Barium	**18**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Chromium	**5.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Cobalt	**2.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Copper	**2.1**	2.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Nickel	**3.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Vanadium	**9.9**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	
Zinc	**11**	1.0	1	B7J0513	10/18/2017	10/19/17 10:09	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:33	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 20:48	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 20:48*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**8.8**	1.0	1	B7J0547	10/18/2017	10/19/17 11:11	
ORO	**8.8**	1.0	1	B7J0547	10/18/2017	10/19/17 11:11	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB29-2.5

Lab ID: 1703653-33

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*83.7 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 11:11*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB29-5.0

Lab ID: 1703653-34

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Arsenic	**1.4**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Barium	**35**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Chromium	**7.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Cobalt	**3.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Copper	**4.4**	2.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Nickel	**5.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Vanadium	**12**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	
Zinc	**19**	1.0	1	B7J0513	10/18/2017	10/19/17 10:10	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:35	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 21:07	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 21:07*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.4**	1.0	1	B7J0547	10/18/2017	10/19/17 11:28	
ORO	**5.6**	1.0	1	B7J0547	10/18/2017	10/19/17 11:28	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB29-5.0

Lab ID: 1703653-34

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*98.3 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 11:28*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-0.5

Lab ID: 1703653-35

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Arsenic	**4.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Barium	**45**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Chromium	**8.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Cobalt	**4.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Copper	**17**	2.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Lead	**85**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Nickel	**12**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Vanadium	**16**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	
Zinc	**190**	1.0	1	B7J0513	10/18/2017	10/19/17 10:11	

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**4.8**	1.0	20	B7J0849	10/30/2017	10/30/17 12:30	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:41	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 21:25	
Surrogate: 4-Bromofluorobenzene	*111 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 21:25*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-0.5

Lab ID: 1703653-35

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**530**	50	50	B7J0547	10/18/2017	10/19/17 15:32	
ORO	**930**	50	50	B7J0547	10/18/2017	10/19/17 15:32	
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 15:32*	S4

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,1,1-Trichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,1,2,2-Tetrachloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,1,2-Trichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,1-Dichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,1-Dichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,1-Dichloropropene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2,3-Trichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2,3-Trichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2,4-Trichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2,4-Trimethylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2-Dibromo-3-chloropropane	ND	10	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2-Dibromoethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2-Dichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2-Dichloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,2-Dichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,3,5-Trimethylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,3-Dichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,3-Dichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
1,4-Dichlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
2,2-Dichloropropane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
2-Chlorotoluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
4-Chlorotoluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
4-Isopropyltoluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Benzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Bromobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Bromochloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Bromodichloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Bromoform	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-0.5

Lab ID: 1703653-35

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Carbon disulfide	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Carbon tetrachloride	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Chlorobenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Chloroethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Chloroform	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Chloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
cis-1,2-Dichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
cis-1,3-Dichloropropene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Di-isopropyl ether	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Dibromochloromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Dibromomethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Dichlorodifluoromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Ethyl Acetate	ND	52	1	B7J0791	10/26/2017	10/26/17 17:02	
Ethyl Ether	ND	52	1	B7J0791	10/26/2017	10/26/17 17:02	
Ethyl tert-butyl ether	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Ethylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Freon-113	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Hexachlorobutadiene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Isopropylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
m,p-Xylene	ND	10	1	B7J0791	10/26/2017	10/26/17 17:02	
Methylene chloride	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
MTBE	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
n-Butylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
n-Propylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Naphthalene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
o-Xylene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
sec-Butylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Styrene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
tert-Amyl methyl ether	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
tert-Butanol	ND	100	1	B7J0791	10/26/2017	10/26/17 17:02	
tert-Butylbenzene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Tetrachloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Toluene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
trans-1,2-Dichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
trans-1,3-Dichloropropene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Trichloroethene	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-0.5

Lab ID: 1703653-35

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Vinyl acetate	ND	52	1	B7J0791	10/26/2017	10/26/17 17:02	
Vinyl chloride	ND	5.2	1	B7J0791	10/26/2017	10/26/17 17:02	
Surrogate: 1,2-Dichloroethane-d4	*106 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 17:02*	
Surrogate: 4-Bromofluorobenzene	*107 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 17:02*	
Surrogate: Dibromofluoromethane	*95.8 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 17:02*	
Surrogate: Toluene-d8	*106 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 17:02*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Acenaphthene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Acenaphthylene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Anthracene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Benzo(a)anthracene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Benzo(a)pyrene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Benzo(b)fluoranthene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Benzo(g,h,i)perylene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Benzo(k)fluoranthene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Chrysene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Dibenz(a,h)anthracene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Fluoranthene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Fluorene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Indeno(1,2,3-cd)pyrene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Naphthalene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Phenanthrene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Pyrene	ND	250	50	B7J0764	10/25/2017	10/27/17 14:56	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0764	10/25/2017	*10/27/17 14:56*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0764	10/25/2017	*10/27/17 14:56*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0764	10/25/2017	*10/27/17 14:56*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0764	10/25/2017	*10/27/17 14:56*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-2.5

Lab ID: 1703653-36

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Arsenic	**5.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Barium	**63**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Chromium	**13**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Cobalt	**5.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Copper	**27**	2.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Lead	**53**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Nickel	**13**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Vanadium	**20**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	
Zinc	**120**	1.0	1	B7J0513	10/18/2017	10/19/17 10:12	

STLC Metals by ICP-AES by EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**1.0**	1.0	20	B7J0849	10/30/2017	10/30/17 14:39	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:43	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 21:44	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 21:44*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-2.5

Lab ID: 1703653-36

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**480**	50	50	B7J0547	10/18/2017	10/19/17 16:07	
ORO	**1000**	50	50	B7J0547	10/18/2017	10/19/17 16:07	
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 16:07*	S4

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,1,1-Trichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,1,2,2-Tetrachloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,1,2-Trichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,1-Dichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,1-Dichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,1-Dichloropropene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2,3-Trichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2,3-Trichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2,4-Trichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2,4-Trimethylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2-Dibromo-3-chloropropane	ND	9.8	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2-Dibromoethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2-Dichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2-Dichloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,2-Dichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,3,5-Trimethylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,3-Dichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,3-Dichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
1,4-Dichlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
2,2-Dichloropropane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
2-Chlorotoluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
4-Chlorotoluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
4-Isopropyltoluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Benzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Bromobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Bromochloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Bromodichloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Bromoform	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-2.5

Lab ID: 1703653-36

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Carbon disulfide	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Carbon tetrachloride	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Chlorobenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Chloroethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Chloroform	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Chloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
cis-1,2-Dichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
cis-1,3-Dichloropropene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Di-isopropyl ether	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Dibromochloromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Dibromomethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Dichlorodifluoromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Ethyl Acetate	ND	49	1	B7J0791	10/26/2017	10/26/17 17:21	
Ethyl Ether	ND	49	1	B7J0791	10/26/2017	10/26/17 17:21	
Ethyl tert-butyl ether	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Ethylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Freon-113	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Hexachlorobutadiene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Isopropylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
m,p-Xylene	ND	9.8	1	B7J0791	10/26/2017	10/26/17 17:21	
Methylene chloride	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
MTBE	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
n-Butylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
n-Propylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Naphthalene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
o-Xylene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
sec-Butylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Styrene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
tert-Amyl methyl ether	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
tert-Butanol	ND	98	1	B7J0791	10/26/2017	10/26/17 17:21	
tert-Butylbenzene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Tetrachloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Toluene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
trans-1,2-Dichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
trans-1,3-Dichloropropene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Trichloroethene	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-2.5
Lab ID: 1703653-36

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Vinyl acetate	ND	49	1	B7J0791	10/26/2017	10/26/17 17:21	
Vinyl chloride	ND	4.9	1	B7J0791	10/26/2017	10/26/17 17:21	
Surrogate: 1,2-Dichloroethane-d4	*108 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 17:21*	
Surrogate: 4-Bromofluorobenzene	*97.9 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 17:21*	
Surrogate: Dibromofluoromethane	*96.0 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 17:21*	
Surrogate: Toluene-d8	*107 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 17:21*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Acenaphthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Acenaphthylene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Benzo(a)anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Benzo(a)pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Benzo(b)fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Benzo(g,h,i)perylene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Benzo(k)fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Chrysene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Dibenz(a,h)anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Fluorene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Indeno(1,2,3-cd)pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Naphthalene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Phenanthrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:25	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*	*29 - 109*		B7J0764	10/25/2017	*10/27/17 15:25*	S4
Surrogate: 2-Fluorobiphenyl	*0%*	*39 - 108*		B7J0764	10/25/2017	*10/27/17 15:25*	S4
Surrogate: Nitrobenzene-d5	*0%*	*0 - 146*		B7J0764	10/25/2017	*10/27/17 15:25*	
Surrogate: 4-Terphenyl-d14	*0%*	*39 - 123*		B7J0764	10/25/2017	*10/27/17 15:25*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-5.0

Lab ID: 1703653-37

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Arsenic	**2.5**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Barium	**81**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Chromium	**19**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Cobalt	**4.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Copper	**9.2**	2.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Lead	**4.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Nickel	**11**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Vanadium	**18**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	
Zinc	**50**	1.0	1	B7J0513	10/18/2017	10/19/17 10:16	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:45	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	**400**	50	50	B7J0311	10/14/2017	10/14/17 06:07	
Surrogate: 4-Bromofluorobenzene	*45.6 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 06:07*	S7

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**11000**	200	200	B7J0547	10/18/2017	10/19/17 16:42	
ORO	**5600**	200	200	B7J0547	10/18/2017	10/19/17 16:42	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-5.0

Lab ID: 1703653-37

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 16:42*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1221	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1232	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1242	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1248	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1254	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1260	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1262	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Aroclor 1268	ND	16	1	B7J0724	10/24/2017	10/25/17 17:47	
Surrogate: Decachlorobiphenyl	*40.3 %*	*18 - 136*		B7J0724	10/24/2017	*10/25/17 17:47*	
Surrogate: Tetrachloro-m-xylene	*50.1 %*	*30 - 130*		B7J0724	10/24/2017	*10/25/17 17:47*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,1,1-Trichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,1,2,2-Tetrachloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,1,2-Trichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,1-Dichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,1-Dichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,1-Dichloropropene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2,3-Trichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2,3-Trichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2,4-Trichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2,4-Trimethylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2-Dibromo-3-chloropropane	ND	11	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2-Dibromoethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2-Dichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,2-Dichloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-5.0

Lab ID: 1703653-37

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,3,5-Trimethylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,3-Dichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,3-Dichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
1,4-Dichlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
2,2-Dichloropropane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
2-Chlorotoluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
4-Chlorotoluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
4-Isopropyltoluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Benzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Bromobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Bromochloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Bromodichloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Bromoform	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Bromomethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Carbon disulfide	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Carbon tetrachloride	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Chlorobenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Chloroethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Chloroform	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Chloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
cis-1,2-Dichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
cis-1,3-Dichloropropene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Di-isopropyl ether	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Dibromochloromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Dibromomethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Dichlorodifluoromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Ethyl Acetate	ND	55	1	B7J0750	10/25/2017	10/25/17 14:37	
Ethyl Ether	ND	55	1	B7J0750	10/25/2017	10/25/17 14:37	
Ethyl tert-butyl ether	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Ethylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Freon-113	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Hexachlorobutadiene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Isopropylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
m,p-Xylene	ND	11	1	B7J0750	10/25/2017	10/25/17 14:37	
Methylene chloride	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
MTBE	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-5.0

Lab ID: 1703653-37

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
n-Propylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Naphthalene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
o-Xylene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
sec-Butylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Styrene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
tert-Amyl methyl ether	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
tert-Butanol	ND	110	1	B7J0750	10/25/2017	10/25/17 14:37	
tert-Butylbenzene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Tetrachloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Toluene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
trans-1,2-Dichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
trans-1,3-Dichloropropene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Trichloroethene	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Trichlorofluoromethane	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Vinyl acetate	ND	55	1	B7J0750	10/25/2017	10/25/17 14:37	
Vinyl chloride	ND	5.5	1	B7J0750	10/25/2017	10/25/17 14:37	
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*32 - 140*		B7J0750	10/25/2017	*10/25/17 14:37*	
Surrogate: 4-Bromofluorobenzene	*107 %*	*68 - 131*		B7J0750	10/25/2017	*10/25/17 14:37*	
Surrogate: Dibromofluoromethane	*95.5 %*	*49 - 134*		B7J0750	10/25/2017	*10/25/17 14:37*	
Surrogate: Toluene-d8	*106 %*	*75 - 132*		B7J0750	10/25/2017	*10/25/17 14:37*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	**7800**	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Acenaphthene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Acenaphthylene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Anthracene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Benzo(a)anthracene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Benzo(a)pyrene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Benzo(b)fluoranthene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Benzo(g,h,i)perylene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Benzo(k)fluoranthene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Chrysene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Dibenz(a,h)anthracene	ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB28-5.0

Lab ID: 1703653-37

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Fluorene		ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Indeno(1,2,3-cd)pyrene		ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Naphthalene		ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Phenanthrene		ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Pyrene		ND	100	20	B7J0757	10/25/2017	10/25/17 21:56	
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0757	10/25/2017	*10/25/17 21:56*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0757	10/25/2017	*10/25/17 21:56*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0757	10/25/2017	*10/25/17 21:56*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0757	10/25/2017	*10/25/17 21:56*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB26-0.5

Lab ID: 1703653-38

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Arsenic	**2.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Barium	**13**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Chromium	**4.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Cobalt	**2.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Copper	**2.4**	2.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Lead	**1.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Nickel	**2.7**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Vanadium	**8.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	
Zinc	**11**	1.0	1	B7J0513	10/18/2017	10/19/17 10:17	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:46	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 22:02	
Surrogate: 4-Bromofluorobenzene	*115 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 22:02*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**11**	1.0	1	B7J0547	10/18/2017	10/19/17 13:48	
ORO	**14**	1.0	1	B7J0547	10/18/2017	10/19/17 13:48	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB26-0.5

Lab ID: 1703653-38

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*131 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 13:48*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB26-2.5

Lab ID: 1703653-39

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Arsenic	**2.0**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Barium	**23**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Chromium	**5.5**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Cobalt	**2.6**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Copper	**2.7**	2.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Nickel	**3.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Vanadium	**8.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	
Zinc	**14**	1.0	1	B7J0513	10/18/2017	10/19/17 10:18	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:48	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 22:20	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 22:20*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**12**	1.0	1	B7J0547	10/18/2017	10/19/17 12:03	
ORO	**12**	1.0	1	B7J0547	10/18/2017	10/19/17 12:03	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB26-2.5

Lab ID: 1703653-39

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*142 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 12:03*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB26-5.0
Lab ID: 1703653-40

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Arsenic	**1.6**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Barium	**62**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Chromium	**9.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Cobalt	**5.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Copper	**7.0**	2.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Nickel	**7.7**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Vanadium	**18**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	
Zinc	**30**	1.0	1	B7J0513	10/18/2017	10/19/17 10:19	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:50	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0349	10/14/2017	10/14/17 22:39	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0349	10/14/2017	*10/14/17 22:39*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**20**	1.0	1	B7J0547	10/18/2017	10/19/17 14:06	
ORO	**18**	1.0	1	B7J0547	10/18/2017	10/19/17 14:06	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB26-5.0

Lab ID: 1703653-40

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*89.3 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 14:06*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB21-0.5

Lab ID: 1703653-41

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Arsenic	**1.3**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Barium	**20**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Chromium	**5.6**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Cobalt	**2.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Copper	**3.1**	2.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Nickel	**3.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Vanadium	**12**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	
Zinc	**14**	1.0	1	B7J0513	10/18/2017	10/19/17 10:20	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:52	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 03:03	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 03:03*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**9.1**	1.0	1	B7J0547	10/18/2017	10/19/17 12:56	
ORO	**9.9**	1.0	1	B7J0547	10/18/2017	10/19/17 12:56	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB21-0.5

Lab ID: 1703653-41

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*74.4 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 12:56*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB21-2.5

Lab ID: 1703653-42

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Arsenic	**2.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Barium	**38**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Chromium	**8.1**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Cobalt	**4.4**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Copper	**4.8**	2.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Nickel	**6.2**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Vanadium	**14**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	
Zinc	**22**	1.0	1	B7J0513	10/18/2017	10/19/17 10:21	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:54	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 03:21	
Surrogate: 4-Bromofluorobenzene	*115 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 03:21*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**20**	1.0	1	B7J0547	10/18/2017	10/19/17 13:13	
ORO	**17**	1.0	1	B7J0547	10/18/2017	10/19/17 13:13	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB21-2.5

Lab ID: 1703653-42

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*138 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 13:13*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB21-5.0

Lab ID: 1703653-43

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Arsenic	**2.4**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Barium	**65**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Chromium	**11**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Cobalt	**6.5**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Copper	**8.3**	2.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Lead	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Nickel	**8.9**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Vanadium	**19**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	
Zinc	**33**	1.0	1	B7J0513	10/18/2017	10/19/17 10:23	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:56	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 03:40	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 03:40*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**7.2**	1.0	1	B7J0547	10/18/2017	10/19/17 13:31	
ORO	**8.5**	1.0	1	B7J0547	10/18/2017	10/19/17 13:31	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB21-5.0

Lab ID: 1703653-43

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*127 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 13:31*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB15-0.5

Lab ID: 1703653-44

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Arsenic	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Barium	**78**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Beryllium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Cadmium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Chromium	**7.8**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Cobalt	**3.9**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Copper	**9.2**	2.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Lead	**4.5**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Molybdenum	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Nickel	**6.4**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Selenium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Silver	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Thallium	ND	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Vanadium	**15**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	
Zinc	**31**	1.0	1	B7J0513	10/18/2017	10/19/17 10:24	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0518	10/18/2017	10/19/17 13:58	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 03:58	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 03:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**20**	1.0	1	B7J0547	10/18/2017	10/19/17 14:23	
ORO	**35**	1.0	1	B7J0547	10/18/2017	10/19/17 14:23	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB15-0.5

Lab ID: 1703653-44

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*73.6 %*	*38 - 145*		B7J0547	10/18/2017	*10/19/17 14:23*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB15-2.5
Lab ID: 1703653-45

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Barium	**15**	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Chromium	**2.9**	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Cobalt	**1.8**	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Copper	**2.1**	2.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Lead	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Nickel	**2.3**	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Vanadium	**5.6**	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	
Zinc	**8.7**	1.0	1	B7J0514	10/18/2017	10/19/17 10:30	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.22**	0.10	1	B7J0519	10/18/2017	10/19/17 11:54	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 04:17	
Surrogate: 4-Bromofluorobenzene	*110 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 04:17*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.0**	1.0	1	B7J0581	10/19/2017	10/19/17 17:33	
ORO	**4.6**	1.0	1	B7J0581	10/19/2017	10/19/17 17:33	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB15-2.5

Lab ID: 1703653-45

Diesel Range Organics by EPA 8015B **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*135 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 17:33*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB15-5.0

Lab ID: 1703653-46

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Barium	**8.3**	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Chromium	**1.7**	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Cobalt	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Copper	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Lead	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Nickel	**1.2**	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Vanadium	**2.8**	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	
Zinc	**4.6**	1.0	1	B7J0514	10/18/2017	10/19/17 10:34	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.17**	0.10	1	B7J0519	10/18/2017	10/19/17 12:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 04:35	
Surrogate: 4-Bromofluorobenzene	*112 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 04:35*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.9**	1.0	1	B7J0581	10/19/2017	10/19/17 15:59	
ORO	**2.5**	1.0	1	B7J0581	10/19/2017	10/19/17 15:59	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB15-5.0

Lab ID: 1703653-46

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*57.7 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 15:59*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-0.5

Lab ID: 1703653-47

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Barium	**21**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Chromium	**3.1**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Cobalt	**1.6**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Copper	**5.7**	2.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Lead	**5.0**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Nickel	**4.7**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Vanadium	**6.3**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	
Zinc	**18**	1.0	1	B7J0514	10/18/2017	10/19/17 10:35	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.21**	0.10	1	B7J0519	10/18/2017	10/19/17 12:05	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 04:53	
Surrogate: 4-Bromofluorobenzene	*95.5 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 04:53*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**840**	200	100	B7J0581	10/19/2017	10/19/17 21:26	
ORO	**3800**	200	100	B7J0581	10/19/2017	10/19/17 21:26	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-0.5

Lab ID: 1703653-47

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 21:26*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1221	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1232	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1242	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1248	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1254	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1260	**19**	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1262	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Aroclor 1268	ND	16	1	B7J0770	10/25/2017	10/25/17 23:44	
Surrogate: Decachlorobiphenyl	*34.7 %*	*18 - 136*		B7J0770	10/25/2017	*10/25/17 23:44*	
Surrogate: Tetrachloro-m-xylene	*84.4 %*	*30 - 130*		B7J0770	10/25/2017	*10/25/17 23:44*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,1,1-Trichloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,1,2,2-Tetrachloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,1,2-Trichloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,1-Dichloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,1-Dichloroethene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,1-Dichloropropene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2,3-Trichloropropane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2,3-Trichlorobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2,4-Trichlorobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2,4-Trimethylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2-Dibromo-3-chloropropane	ND	9.7	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2-Dibromoethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2-Dichlorobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,2-Dichloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-0.5

Lab ID: 1703653-47

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,3,5-Trimethylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,3-Dichlorobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,3-Dichloropropane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
1,4-Dichlorobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
2,2-Dichloropropane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
2-Chlorotoluene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
4-Chlorotoluene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
4-Isopropyltoluene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Benzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Bromobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Bromochloromethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Bromodichloromethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Bromoform	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Bromomethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Carbon disulfide	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Carbon tetrachloride	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Chlorobenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Chloroethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Chloroform	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Chloromethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
cis-1,2-Dichloroethene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
cis-1,3-Dichloropropene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Di-isopropyl ether	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Dibromochloromethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Dibromomethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Dichlorodifluoromethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Ethyl Acetate	ND	48	1	B7J0791	10/26/2017	10/26/17 17:40	
Ethyl Ether	ND	48	1	B7J0791	10/26/2017	10/26/17 17:40	
Ethyl tert-butyl ether	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Ethylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Freon-113	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Hexachlorobutadiene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Isopropylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
m,p-Xylene	ND	9.7	1	B7J0791	10/26/2017	10/26/17 17:40	
Methylene chloride	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
MTBE	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-0.5

Lab ID: 1703653-47

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
n-Propylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Naphthalene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
o-Xylene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
sec-Butylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Styrene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
tert-Amyl methyl ether	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
tert-Butanol	ND	97	1	B7J0791	10/26/2017	10/26/17 17:40	
tert-Butylbenzene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Tetrachloroethene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Toluene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
trans-1,2-Dichloroethene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
trans-1,3-Dichloropropene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Trichloroethene	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Trichlorofluoromethane	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Vinyl acetate	ND	48	1	B7J0791	10/26/2017	10/26/17 17:40	
Vinyl chloride	ND	4.8	1	B7J0791	10/26/2017	10/26/17 17:40	
Surrogate: 1,2-Dichloroethane-d4	*107 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 17:40*	
Surrogate: 4-Bromofluorobenzene	*97.1 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 17:40*	
Surrogate: Dibromofluoromethane	*100 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 17:40*	
Surrogate: Toluene-d8	*108 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 17:40*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Acenaphthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Acenaphthylene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Benzo(a)anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Benzo(a)pyrene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Benzo(b)fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Benzo(g,h,i)perylene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Benzo(k)fluoranthene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Chrysene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Dibenz(a,h)anthracene	ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-0.5

Lab ID: 1703653-47

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Fluorene		ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Indeno(1,2,3-cd)pyrene		ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Naphthalene		ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Phenanthrene		ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Pyrene		ND	1000	200	B7J0764	10/25/2017	10/27/17 15:53	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0764	10/25/2017	*10/27/17 15:53*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0764	10/25/2017	*10/27/17 15:53*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0764	10/25/2017	*10/27/17 15:53*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0764	10/25/2017	*10/27/17 15:53*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-2.5

Lab ID: 1703653-48

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Barium	**21**	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Chromium	**3.8**	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Cobalt	**2.2**	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Copper	**2.3**	2.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Lead	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Nickel	**3.0**	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Vanadium	**6.5**	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	
Zinc	**11**	1.0	1	B7J0514	10/18/2017	10/19/17 10:36	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.51**	0.10	1	B7J0519	10/18/2017	10/19/17 12:07	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 14:07	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 14:07*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.2**	1.0	1	B7J0581	10/19/2017	10/19/17 18:19	
ORO	**7.3**	1.0	1	B7J0581	10/19/2017	10/19/17 18:19	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-2.5
Lab ID: 1703653-48

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*89.5 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 18:19*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,1,1-Trichloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,1,2,2-Tetrachloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,1,2-Trichloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,1-Dichloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,1-Dichloroethene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,1-Dichloropropene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2,3-Trichloropropane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2,3-Trichlorobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2,4-Trichlorobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2,4-Trimethylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2-Dibromo-3-chloropropane	ND	8.7	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2-Dibromoethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2-Dichlorobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2-Dichloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,2-Dichloropropane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,3,5-Trimethylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,3-Dichlorobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,3-Dichloropropane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
1,4-Dichlorobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
2,2-Dichloropropane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
2-Chlorotoluene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
4-Chlorotoluene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
4-Isopropyltoluene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Benzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Bromobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Bromochloromethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Bromodichloromethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Bromoform	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Bromomethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Carbon disulfide	**13**	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-2.5

Lab ID: 1703653-48

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Chlorobenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Chloroethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Chloroform	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Chloromethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
cis-1,2-Dichloroethene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
cis-1,3-Dichloropropene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Di-isopropyl ether	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Dibromochloromethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Dibromomethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Dichlorodifluoromethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Ethyl Acetate	ND	44	1	B7J0791	10/26/2017	10/26/17 17:58	
Ethyl Ether	ND	44	1	B7J0791	10/26/2017	10/26/17 17:58	
Ethyl tert-butyl ether	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Ethylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Freon-113	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Hexachlorobutadiene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Isopropylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
m,p-Xylene	ND	8.7	1	B7J0791	10/26/2017	10/26/17 17:58	
Methylene chloride	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
MTBE	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
n-Butylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
n-Propylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Naphthalene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
o-Xylene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
sec-Butylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Styrene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
tert-Amyl methyl ether	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
tert-Butanol	ND	87	1	B7J0791	10/26/2017	10/26/17 17:58	
tert-Butylbenzene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Tetrachloroethene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Toluene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
trans-1,2-Dichloroethene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
trans-1,3-Dichloropropene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Trichloroethene	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Trichlorofluoromethane	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Vinyl acetate	ND	44	1	B7J0791	10/26/2017	10/26/17 17:58	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-2.5

Lab ID: 1703653-48

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride	ND	4.4	1	B7J0791	10/26/2017	10/26/17 17:58	
Surrogate: 1,2-Dichloroethane-d4	*104 %*	*32 - 140*		B7J0791	10/26/2017	*10/26/17 17:58*	
Surrogate: 4-Bromofluorobenzene	*101 %*	*68 - 131*		B7J0791	10/26/2017	*10/26/17 17:58*	
Surrogate: Dibromofluoromethane	*96.6 %*	*49 - 134*		B7J0791	10/26/2017	*10/26/17 17:58*	
Surrogate: Toluene-d8	*111 %*	*75 - 132*		B7J0791	10/26/2017	*10/26/17 17:58*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Acenaphthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Acenaphthylene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Anthracene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Benzo(a)anthracene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Benzo(a)pyrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Benzo(b)fluoranthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Benzo(g,h,i)perylene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Benzo(k)fluoranthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Chrysene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Dibenz(a,h)anthracene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Fluoranthene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Fluorene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Indeno(1,2,3-cd)pyrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Naphthalene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Phenanthrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Pyrene	ND	5.0	1	B7J0764	10/25/2017	10/27/17 11:51	
Surrogate: 1,2-Dichlorobenzene-d4	*33.8 %*	*29 - 109*		B7J0764	10/25/2017	*10/27/17 11:51*	
Surrogate: 2-Fluorobiphenyl	*60.8 %*	*39 - 108*		B7J0764	10/25/2017	*10/27/17 11:51*	
Surrogate: Nitrobenzene-d5	*40.0 %*	*0 - 146*		B7J0764	10/25/2017	*10/27/17 11:51*	
Surrogate: 4-Terphenyl-d14	*69.5 %*	*39 - 123*		B7J0764	10/25/2017	*10/27/17 11:51*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-5.0

Lab ID: 1703653-49

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Barium	**11**	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Chromium	**2.4**	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Cobalt	**1.3**	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Copper	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Lead	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Nickel	**1.6**	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Vanadium	**3.8**	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	
Zinc	**6.4**	1.0	1	B7J0514	10/18/2017	10/19/17 10:37	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.24**	0.10	1	B7J0519	10/18/2017	10/19/17 12:09	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 14:25	
Surrogate: 4-Bromofluorobenzene	*104 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 14:25*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**1.3**	1.0	1	B7J0581	10/19/2017	10/19/17 17:02	
ORO	**1.5**	1.0	1	B7J0581	10/19/2017	10/19/17 17:02	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB10-5.0

Lab ID: 1703653-49

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*77.6 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 17:02*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-0.5

Lab ID: 1703653-50

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Barium	**12**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Chromium	**2.9**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Cobalt	**1.2**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Copper	**2.4**	2.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Lead	**7.3**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Nickel	**2.1**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Vanadium	**4.9**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	
Zinc	**16**	1.0	1	B7J0514	10/18/2017	10/19/17 10:38	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.16**	0.10	1	B7J0519	10/18/2017	10/19/17 12:15	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 05:12	
Surrogate: 4-Bromofluorobenzene *108 %*		*50 - 138*		B7J0311	10/14/2017	*10/14/17 05:12*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**7.1**	1.0	1	B7J0581	10/19/2017	10/19/17 20:23	
ORO	**16**	1.0	1	B7J0581	10/19/2017	10/19/17 20:23	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-0.5

Lab ID: 1703653-50

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*137 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 20:23*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-2.5

Lab ID: 1703653-51

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Barium	**9.8**	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Chromium	**2.1**	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Cobalt	**1.2**	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Copper	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Lead	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Nickel	**1.6**	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Vanadium	**3.7**	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	
Zinc	**6.7**	1.0	1	B7J0514	10/18/2017	10/19/17 10:39	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.16**	0.10	1	B7J0519	10/18/2017	10/19/17 12:17	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 05:30	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 05:30*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.8**	1.0	1	B7J0581	10/19/2017	10/19/17 16:15	
ORO	**5.1**	1.0	1	B7J0581	10/19/2017	10/19/17 16:15	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-2.5

Lab ID: 1703653-51

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*84.0 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 16:15*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-5.0

Lab ID: 1703653-52

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Arsenic	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Barium	**9.1**	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Beryllium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Cadmium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Chromium	**1.7**	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Cobalt	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Copper	ND	2.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Lead	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Molybdenum	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Nickel	**1.2**	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Selenium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Silver	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Thallium	ND	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Vanadium	**3.0**	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	
Zinc	**5.3**	1.0	1	B7J0514	10/18/2017	10/19/17 10:40	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.20**	0.10	1	B7J0519	10/18/2017	10/19/17 12:19	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0311	10/14/2017	10/14/17 05:49	
Surrogate: 4-Bromofluorobenzene	*109 %*	*50 - 138*		B7J0311	10/14/2017	*10/14/17 05:49*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**1.2**	1.0	1	B7J0581	10/19/2017	10/19/17 17:17	
ORO	**1.6**	1.0	1	B7J0581	10/19/2017	10/19/17 17:17	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-5.0

Lab ID: 1703653-52

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*54.4 %*	*38 - 145*		B7J0581	10/19/2017	*10/19/17 17:17*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-GW
Lab ID: 1703653-53

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:28	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:28	
Barium	**0.098**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Chromium	**0.0087**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Cobalt	**0.0035**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Copper	**0.0090**	0.0090	1	B7J0455	10/17/2017	10/17/17 17:28	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:28	
Molybdenum	**0.022**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:28	
Nickel	**0.0067**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:28	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:28	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:28	
Vanadium	**0.018**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:28	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:28	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:21	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	**0.09**	0.05	1	B7J0434	10/17/2017	10/17/17 10:13	
Surrogate: 4-Bromofluorobenzene	*97.3 %*	*70 - 130*		B7J0434	10/17/2017	*10/17/17 10:13*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.47**	0.05	1	B7J0338	10/13/2017	10/14/17 11:10	
ORO	**0.43**	0.05	1	B7J0338	10/13/2017	10/14/17 11:10	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-GW
Lab ID: 1703653-53

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*128 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 11:10*	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,1,1-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,1,2-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,1-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,1-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,1-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2,3-Trichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2,3-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2,4-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2,4-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2-Dibromoethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,3,5-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,3-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,3-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
1,4-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
2,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
2-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
4-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
4-Isopropyltoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Benzene	**0.81**	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Bromobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Bromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Bromodichloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Bromoform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Bromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Carbon disulfide	ND	1.0	1	B7J0319	10/13/2017	10/13/17 17:44	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-GW

Lab ID: 1703653-53

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Chlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Chloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Chloroform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Chloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
cis-1,2-Dichloroethene	**78**	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
cis-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Di-isopropyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Dibromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Dibromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Dichlorodifluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Ethyl Acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 17:44	
Ethyl Ether	ND	10	1	B7J0319	10/13/2017	10/13/17 17:44	
Ethyl tert-butyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Ethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Freon-113	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Hexachlorobutadiene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Isopropylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
m,p-Xylene	ND	1.0	1	B7J0319	10/13/2017	10/13/17 17:44	
Methylene chloride	ND	1.0	1	B7J0319	10/13/2017	10/13/17 17:44	
MTBE	**19**	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
n-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
n-Propylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Naphthalene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
o-Xylene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
sec-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Styrene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
tert-Amyl methyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
tert-Butanol	ND	10	1	B7J0319	10/13/2017	10/13/17 17:44	
tert-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Tetrachloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Toluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
trans-1,2-Dichloroethene	**33**	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
trans-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Trichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Trichlorofluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Vinyl acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 17:44	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB6-GW

Lab ID: 1703653-53

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride	**43**	0.50	1	B7J0319	10/13/2017	10/13/17 17:44	
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*70 - 166*		B7J0319	10/13/2017	*10/13/17 17:44*	
Surrogate: 4-Bromofluorobenzene	*93.1 %*	*88 - 120*		B7J0319	10/13/2017	*10/13/17 17:44*	
Surrogate: Dibromofluoromethane	*105 %*	*80 - 150*		B7J0319	10/13/2017	*10/13/17 17:44*	
Surrogate: Toluene-d8	*102 %*	*87 - 121*		B7J0319	10/13/2017	*10/13/17 17:44*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Acenaphthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Acenaphthylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Benzo(a)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Benzo(a)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Benzo(b)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Benzo(g,h,i)perylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Benzo(k)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Chrysene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Dibenz(a,h)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Fluorene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Naphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Phenanthrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 15:31	
Surrogate: 1,2-Dichlorobenzene-d4	*63.0 %*	*32 - 99*		B7J0413	10/16/2017	*10/16/17 15:31*	
Surrogate: 2-Fluorobiphenyl	*69.6 %*	*29 - 105*		B7J0413	10/16/2017	*10/16/17 15:31*	
Surrogate: Nitrobenzene-d5	*80.8 %*	*17 - 123*		B7J0413	10/16/2017	*10/16/17 15:31*	
Surrogate: 4-Terphenyl-d14	*80.6 %*	*32 - 119*		B7J0413	10/16/2017	*10/16/17 15:31*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-GW
Lab ID: 1703653-54

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:32	
Arsenic	**0.013**	0.010	1	B7J0455	10/17/2017	10/17/17 17:32	
Barium	**0.31**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Chromium	**0.022**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Cobalt	**0.0086**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Copper	**0.016**	0.0090	1	B7J0455	10/17/2017	10/17/17 17:32	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:32	
Molybdenum	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:32	
Nickel	**0.016**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:32	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:32	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:32	
Vanadium	**0.034**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:32	
Zinc	**0.090**	0.025	1	B7J0455	10/17/2017	10/17/17 17:32	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:23	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7J0434	10/17/2017	10/17/17 10:33	
Surrogate: 4-Bromofluorobenzene	*101 %*	*70 - 130*		B7J0434	10/17/2017	*10/17/17 10:33*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.35**	0.05	1	B7J0338	10/13/2017	10/14/17 11:27	
ORO	**0.27**	0.05	1	B7J0338	10/13/2017	10/14/17 11:27	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-GW
Lab ID: 1703653-54

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*132 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 11:27*	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,1,1-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,1,2-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,1-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,1-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,1-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2,3-Trichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2-Dibromoethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,3-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,3-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
1,4-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
2,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
2-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
4-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
4-Isopropyltoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Benzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Bromobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Bromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Bromodichloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Bromoform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Bromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Carbon disulfide	ND	1.0	1	B7J0319	10/13/2017	10/13/17 18:09	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-GW

Lab ID: 1703653-54

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Chlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Chloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Chloroform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Chloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
cis-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
cis-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Di-isopropyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Dibromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Dibromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Dichlorodifluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Ethyl Acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 18:09	
Ethyl Ether	ND	10	1	B7J0319	10/13/2017	10/13/17 18:09	
Ethyl tert-butyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Ethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Freon-113	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Hexachlorobutadiene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Isopropylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
m,p-Xylene	ND	1.0	1	B7J0319	10/13/2017	10/13/17 18:09	
Methylene chloride	ND	1.0	1	B7J0319	10/13/2017	10/13/17 18:09	
MTBE	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
n-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
n-Propylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Naphthalene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
o-Xylene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
sec-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Styrene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
tert-Amyl methyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
tert-Butanol	ND	10	1	B7J0319	10/13/2017	10/13/17 18:09	
tert-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Tetrachloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Toluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
trans-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
trans-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Trichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Trichlorofluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Vinyl acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 18:09	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB27-GW
Lab ID: 1703653-54

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:09	
Surrogate: 1,2-Dichloroethane-d4	*99.3 %*		*70 - 166*		B7J0319	10/13/2017	*10/13/17 18:09*	
Surrogate: 4-Bromofluorobenzene	*94.1 %*		*88 - 120*		B7J0319	10/13/2017	*10/13/17 18:09*	
Surrogate: Dibromofluoromethane	*102 %*		*80 - 150*		B7J0319	10/13/2017	*10/13/17 18:09*	
Surrogate: Toluene-d8	*101 %*		*87 - 121*		B7J0319	10/13/2017	*10/13/17 18:09*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Acenaphthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Acenaphthylene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Anthracene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Benzo(a)anthracene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Benzo(a)pyrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Benzo(b)fluoranthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Benzo(g,h,i)perylene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Benzo(k)fluoranthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Chrysene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Dibenz(a,h)anthracene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Fluoranthene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Fluorene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Indeno(1,2,3-cd)pyrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Naphthalene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Phenanthrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Pyrene		ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:00	
Surrogate: 1,2-Dichlorobenzene-d4	*54.5 %*		*32 - 99*		B7J0413	10/16/2017	*10/16/17 16:00*	
Surrogate: 2-Fluorobiphenyl	*52.0 %*		*29 - 105*		B7J0413	10/16/2017	*10/16/17 16:00*	
Surrogate: Nitrobenzene-d5	*70.2 %*		*17 - 123*		B7J0413	10/16/2017	*10/16/17 16:00*	
Surrogate: 4-Terphenyl-d14	*63.6 %*		*32 - 119*		B7J0413	10/16/2017	*10/16/17 16:00*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-GW
Lab ID: 1703653-55

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:33	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:33	
Barium	**0.047**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Chromium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Cobalt	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Copper	ND	0.0090	1	B7J0455	10/17/2017	10/17/17 17:33	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:33	
Molybdenum	**0.0059**	0.0050	1	B7J0455	10/17/2017	10/17/17 17:33	
Nickel	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:33	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:33	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:33	
Vanadium	**0.0067**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:33	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:33	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:26	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7J0434	10/17/2017	10/17/17 10:54	
Surrogate: 4-Bromofluorobenzene	*99.7 %*	*70 - 130*		B7J0434	10/17/2017	*10/17/17 10:54*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.38**	0.05	1	B7J0338	10/13/2017	10/14/17 11:44	
ORO	**0.33**	0.05	1	B7J0338	10/13/2017	10/14/17 11:44	
Surrogate: p-Terphenyl	*119 %*	*20 - 150*		B7J0338	10/13/2017	*10/14/17 11:44*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-GW

Lab ID: 1703653-55

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,1,1-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,1,2-Trichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,1-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,1-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,1-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2,3-Trichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2,3-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2,4-Trichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2,4-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2-Dibromoethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2-Dichloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,3,5-Trimethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,3-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,3-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
1,4-Dichlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
2,2-Dichloropropane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
2-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
4-Chlorotoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
4-Isopropyltoluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Benzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Bromobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Bromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Bromodichloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Bromoform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Bromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Carbon disulfide	ND	1.0	1	B7J0319	10/13/2017	10/13/17 18:33	
Carbon tetrachloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Chlorobenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Chloroethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Chloroform	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Chloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
cis-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-GW
Lab ID: 1703653-55

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Di-isopropyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Dibromochloromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Dibromomethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Dichlorodifluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Ethyl Acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 18:33	
Ethyl Ether	ND	10	1	B7J0319	10/13/2017	10/13/17 18:33	
Ethyl tert-butyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Ethylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Freon-113	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Hexachlorobutadiene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Isopropylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
m,p-Xylene	ND	1.0	1	B7J0319	10/13/2017	10/13/17 18:33	
Methylene chloride	ND	1.0	1	B7J0319	10/13/2017	10/13/17 18:33	
MTBE	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
n-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
n-Propylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Naphthalene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
o-Xylene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
sec-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Styrene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
tert-Amyl methyl ether	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
tert-Butanol	ND	10	1	B7J0319	10/13/2017	10/13/17 18:33	
tert-Butylbenzene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Tetrachloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Toluene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
trans-1,2-Dichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
trans-1,3-Dichloropropene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Trichloroethene	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Trichlorofluoromethane	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Vinyl acetate	ND	10	1	B7J0319	10/13/2017	10/13/17 18:33	
Vinyl chloride	ND	0.50	1	B7J0319	10/13/2017	10/13/17 18:33	
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*70 - 166*		B7J0319	10/13/2017	*10/13/17 18:33*	
Surrogate: 4-Bromofluorobenzene	*93.4 %*	*88 - 120*		B7J0319	10/13/2017	*10/13/17 18:33*	
Surrogate: Dibromofluoromethane	*105 %*	*80 - 150*		B7J0319	10/13/2017	*10/13/17 18:33*	
Surrogate: Toluene-d8	*101 %*	*87 - 121*		B7J0319	10/13/2017	*10/13/17 18:33*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Client Sample ID LB31-GW
Lab ID: 1703653-55

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Acenaphthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Acenaphthylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Benzo(a)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Benzo(a)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Benzo(b)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Benzo(g,h,i)perylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Benzo(k)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Chrysene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Dibenz(a,h)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Fluorene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Naphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Phenanthrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:29	
Surrogate: 1,2-Dichlorobenzene-d4	*68.4 %*	*32 - 99*		B7J0413	10/16/2017	*10/16/17 16:29*	
Surrogate: 2-Fluorobiphenyl	*68.0 %*	*29 - 105*		B7J0413	10/16/2017	*10/16/17 16:29*	
Surrogate: Nitrobenzene-d5	*84.7 %*	*17 - 123*		B7J0413	10/16/2017	*10/16/17 16:29*	
Surrogate: 4-Terphenyl-d14	*80.1 %*	*32 - 119*		B7J0413	10/16/2017	*10/16/17 16:29*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0455 - EPA 3010A_W										
Blank (B7J0455-BLK1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	ND	0.010	0.0088							
Arsenic	ND	0.010	0.0078							
Barium	ND	0.0030	0.0026							
Beryllium	ND	0.0030	0.0016							
Cadmium	ND	0.0030	0.0024							
Chromium	ND	0.0030	0.0020							
Cobalt	ND	0.0030	0.0016							
Copper	ND	0.0090	0.0038							
Lead	ND	0.0050	0.0047							
Molybdenum	ND	0.0050	0.0030							
Nickel	ND	0.0050	0.0046							
Selenium	ND	0.010	0.0093							
Silver	ND	0.0030	0.0024							
Thallium	ND	0.015	0.0085							
Vanadium	ND	0.0030	0.0022							
Zinc	ND	0.025	0.0057							
LCS (B7J0455-BS1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	0.929102	0.010	0.0088	1.00000		92.9	80 - 120			
Arsenic	0.941062	0.010	0.0078	1.00000		94.1	80 - 120			
Barium	0.969431	0.0030	0.0026	1.00000		96.9	80 - 120			
Beryllium	0.952237	0.0030	0.0016	1.00000		95.2	80 - 120			
Cadmium	0.923200	0.0030	0.0024	1.00000		92.3	80 - 120			
Chromium	0.964497	0.0030	0.0020	1.00000		96.4	80 - 120			
Cobalt	0.960800	0.0030	0.0016	1.00000		96.1	80 - 120			
Copper	0.947343	0.0090	0.0038	1.00000		94.7	80 - 120			
Lead	0.953769	0.0050	0.0047	1.00000		95.4	80 - 120			
Molybdenum	0.936200	0.0050	0.0030	1.00000		93.6	80 - 120			
Nickel	0.929993	0.0050	0.0046	1.00000		93.0	80 - 120			
Selenium	0.907008	0.010	0.0093	1.00000		90.7	80 - 120			
Silver	1.18499	0.0030	0.0024	1.00000		118	80 - 120			
Thallium	0.946903	0.015	0.0085	1.00000		94.7	80 - 120			
Vanadium	0.953132	0.0030	0.0022	1.00000		95.3	80 - 120			
Zinc	0.930909	0.025	0.0057	1.00000		93.1	80 - 120			
Matrix Spike (B7J0455-MS1)			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	2.45296	0.010	0.0088	2.50000	ND	98.1	60 - 130			
Arsenic	2.51904	0.010	0.0078	2.50000	ND	101	69 - 123			
Barium	2.59554	0.0030	0.0026	2.50000	0.106382	99.6	67 - 129			
Beryllium	2.52702	0.0030	0.0016	2.50000	ND	101	74 - 120			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0455 - EPA 3010A_W (continued)										
Matrix Spike (B7J0455-MS1) - Continued			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Cadmium	2.37069	0.0030	0.0024	2.50000	ND	94.8	69 - 116			
Chromium	2.49293	0.0030	0.0020	2.50000	0.014934	99.1	74 - 120			
Cobalt	2.43594	0.0030	0.0016	2.50000	0.002840	97.3	70 - 116			
Copper	2.53772	0.0090	0.0038	2.50000	0.01129	101	76 - 123			
Lead	2.42425	0.0050	0.0047	2.50000	ND	97.0	69 - 117			
Molybdenum	2.53677	0.0050	0.0030	2.50000	0.026825	100	68 - 120			
Nickel	2.38734	0.0050	0.0046	2.50000	0.011243	95.0	70 - 115			
Selenium	2.39006	0.010	0.0093	2.50000	ND	95.6	66 - 120			
Silver	2.66866	0.0030	0.0024	2.50000	ND	107	73 - 123			
Thallium	2.34797	0.015	0.0085	2.50000	ND	93.9	57 - 124			
Vanadium	2.52252	0.0030	0.0022	2.50000	0.010942	100	72 - 123			
Zinc	2.38635	0.025	0.0057	2.50000	0.023691	94.5	73 - 111			
Matrix Spike Dup (B7J0455-MSD1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Antimony	2.42439	0.010	0.0088	2.50000	ND	97.0	60 - 130	1.17	20	
Arsenic	2.47205	0.010	0.0078	2.50000	ND	98.9	69 - 123	1.88	20	
Barium	2.56504	0.0030	0.0026	2.50000	0.106382	98.3	67 - 129	1.18	20	
Beryllium	2.49000	0.0030	0.0016	2.50000	ND	99.6	74 - 120	1.48	20	
Cadmium	2.33304	0.0030	0.0024	2.50000	ND	93.3	69 - 116	1.60	20	
Chromium	2.44862	0.0030	0.0020	2.50000	0.014934	97.3	74 - 120	1.79	20	
Cobalt	2.39427	0.0030	0.0016	2.50000	0.002840	95.7	70 - 116	1.73	20	
Copper	2.50095	0.0090	0.0038	2.50000	0.01129	99.6	76 - 123	1.46	20	
Lead	2.39216	0.0050	0.0047	2.50000	ND	95.7	69 - 117	1.33	20	
Molybdenum	2.50298	0.0050	0.0030	2.50000	0.026825	99.0	68 - 120	1.34	20	
Nickel	2.35861	0.0050	0.0046	2.50000	0.011243	93.9	70 - 115	1.21	20	
Selenium	2.34170	0.010	0.0093	2.50000	ND	93.7	66 - 120	2.04	20	
Silver	2.62202	0.0030	0.0024	2.50000	ND	105	73 - 123	1.76	20	
Thallium	2.34150	0.015	0.0085	2.50000	ND	93.7	57 - 124	0.276	20	
Vanadium	2.48646	0.0030	0.0022	2.50000	0.010942	99.0	72 - 123	1.44	20	
Zinc	2.35433	0.025	0.0057	2.50000	0.023691	93.2	73 - 111	1.35	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0512 - EPA 3050B_S										
Blank (B7J0512-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0512-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	42.8347	2.0	0.51	50.0000		85.7	80 - 120			
Arsenic	41.9015	1.0	0.12	50.0000		83.8	80 - 120			
Barium	44.6627	1.0	0.12	50.0000		89.3	80 - 120			
Beryllium	42.8990	1.0	0.03	50.0000		85.8	80 - 120			
Cadmium	41.2118	1.0	0.14	50.0000		82.4	80 - 120			
Chromium	44.3845	1.0	0.26	50.0000		88.8	80 - 120			
Cobalt	44.1090	1.0	0.07	50.0000		88.2	80 - 120			
Copper	43.9566	2.0	0.19	50.0000		87.9	80 - 120			
Lead	43.4095	1.0	0.18	50.0000		86.8	80 - 120			
Molybdenum	43.5882	1.0	0.12	50.0000		87.2	80 - 120			
Nickel	42.4423	1.0	0.18	50.0000		84.9	80 - 120			
Selenium	40.9294	1.0	0.40	50.0000		81.9	80 - 120			
Silver	44.0698	1.0	0.12	50.0000		88.1	80 - 120			
Thallium	43.6014	1.0	0.38	50.0000		87.2	80 - 120			
Vanadium	43.7901	1.0	0.06	50.0000		87.6	80 - 120			
Zinc	42.7615	1.0	0.15	50.0000		85.5	80 - 120			
Matrix Spike (B7J0512-MS1)				**Source: 1703653-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	85.1956	2.0	0.51	125.000	ND	68.2	33 - 98			
Arsenic	96.4253	1.0	0.12	125.000	ND	77.1	48 - 101			
Barium	211.469	1.0	0.12	125.000	112.544	79.1	25 - 131			
Beryllium	96.6163	1.0	0.03	125.000	ND	77.3	56 - 97			
Cadmium	88.7228	1.0	0.14	125.000	0.217274	70.8	53 - 94			
Chromium	109.976	1.0	0.26	125.000	12.2492	78.2	45 - 113			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0512 - EPA 3050B_S (continued)										
Matrix Spike (B7J0512-MS1) - Continued			**Source: 1703653-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Cobalt	104.019	1.0	0.07	125.000	11.0846	74.3	51 - 97			
Copper	131.604	2.0	0.19	125.000	27.3024	83.4	51 - 113			
Lead	100.946	1.0	0.18	125.000	15.8065	68.1	33 - 127			
Molybdenum	97.2690	1.0	0.12	125.000	ND	77.8	54 - 97			
Nickel	102.447	1.0	0.18	125.000	12.2521	72.2	46 - 102			
Selenium	93.8541	1.0	0.40	125.000	ND	75.1	52 - 93			
Silver	109.536	1.0	0.12	125.000	ND	87.6	58 - 98			
Thallium	82.6166	1.0	0.38	125.000	ND	66.1	46 - 93			
Vanadium	136.896	1.0	0.06	125.000	35.7809	80.9	55 - 104			
Zinc	156.721	1.0	0.15	125.000	71.1020	68.5	26 - 118			
Matrix Spike Dup (B7J0512-MSD1)			**Source: 1703653-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Antimony	85.7494	2.0	0.51	125.000	ND	68.6	33 - 98	0.648	20	
Arsenic	97.1357	1.0	0.12	125.000	ND	77.7	48 - 101	0.734	20	
Barium	201.928	1.0	0.12	125.000	112.544	71.5	25 - 131	4.62	20	
Beryllium	97.1872	1.0	0.03	125.000	ND	77.7	56 - 97	0.589	20	
Cadmium	89.6008	1.0	0.14	125.000	0.217274	71.5	53 - 94	0.985	20	
Chromium	109.026	1.0	0.26	125.000	12.2492	77.4	45 - 113	0.868	20	
Cobalt	104.407	1.0	0.07	125.000	11.0846	74.7	51 - 97	0.373	20	
Copper	130.933	2.0	0.19	125.000	27.3024	82.9	51 - 113	0.511	20	
Lead	101.004	1.0	0.18	125.000	15.8065	68.2	33 - 127	0.0567	20	
Molybdenum	98.0695	1.0	0.12	125.000	ND	78.5	54 - 97	0.820	20	
Nickel	102.569	1.0	0.18	125.000	12.2521	72.3	46 - 102	0.119	20	
Selenium	93.9946	1.0	0.40	125.000	ND	75.2	52 - 93	0.150	20	
Silver	109.182	1.0	0.12	125.000	ND	87.3	58 - 98	0.323	20	
Thallium	84.1898	1.0	0.38	125.000	ND	67.4	46 - 93	1.89	20	
Vanadium	132.623	1.0	0.06	125.000	35.7809	77.5	55 - 104	3.17	20	
Zinc	153.308	1.0	0.15	125.000	71.1020	65.8	26 - 118	2.20	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0513 - EPA 3050B_S										
Blank (B7J0513-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0513-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	46.5207	2.0	0.51	50.0000		93.0	80 - 120			
Arsenic	45.4538	1.0	0.12	50.0000		90.9	80 - 120			
Barium	49.9204	1.0	0.12	50.0000		99.8	80 - 120			
Beryllium	46.4558	1.0	0.03	50.0000		92.9	80 - 120			
Cadmium	45.9970	1.0	0.14	50.0000		92.0	80 - 120			
Chromium	49.5866	1.0	0.26	50.0000		99.2	80 - 120			
Cobalt	49.0946	1.0	0.07	50.0000		98.2	80 - 120			
Copper	48.8124	2.0	0.19	50.0000		97.6	80 - 120			
Lead	47.0606	1.0	0.18	50.0000		94.1	80 - 120			
Molybdenum	47.6148	1.0	0.12	50.0000		95.2	80 - 120			
Nickel	47.1630	1.0	0.18	50.0000		94.3	80 - 120			
Selenium	43.8917	1.0	0.40	50.0000		87.8	80 - 120			
Silver	50.0478	1.0	0.12	50.0000		100	80 - 120			
Thallium	47.9518	1.0	0.38	50.0000		95.9	80 - 120			
Vanadium	48.8748	1.0	0.06	50.0000		97.7	80 - 120			
Zinc	47.0921	1.0	0.15	50.0000		94.2	80 - 120			
Matrix Spike (B7J0513-MS1)				**Source: 1703653-25**		Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	86.3357	2.0	0.51	125.000	ND	69.1	33 - 98			
Arsenic	99.3593	1.0	0.12	125.000	1.67277	78.1	48 - 101			
Barium	174.340	1.0	0.12	125.000	63.4571	88.7	25 - 131			
Beryllium	99.5367	1.0	0.03	125.000	ND	79.6	56 - 97			
Cadmium	95.0267	1.0	0.14	125.000	ND	76.0	53 - 94			
Chromium	113.848	1.0	0.26	125.000	11.3153	82.0	45 - 113			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0513 - EPA 3050B_S (continued)										
Matrix Spike (B7J0513-MS1) - Continued			**Source: 1703653-25**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
Cobalt	104.573	1.0	0.07	125.000	6.56633	78.4	51 - 97			
Copper	118.700	2.0	0.19	125.000	9.73521	87.2	51 - 113			
Lead	97.8200	1.0	0.18	125.000	0.930096	77.5	33 - 127			
Molybdenum	99.5364	1.0	0.12	125.000	ND	79.6	54 - 97			
Nickel	104.694	1.0	0.18	125.000	9.07944	76.5	46 - 102			
Selenium	94.7546	1.0	0.40	125.000	ND	75.8	52 - 93			
Silver	113.129	1.0	0.12	125.000	ND	90.5	58 - 98			
Thallium	87.8820	1.0	0.38	125.000	ND	70.3	46 - 93			
Vanadium	126.363	1.0	0.06	125.000	20.1248	85.0	55 - 104			
Zinc	130.724	1.0	0.15	125.000	31.5438	79.3	26 - 118			
Matrix Spike Dup (B7J0513-MSD1)			**Source: 1703653-25**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	88.6622	2.0	0.51	125.000	ND	70.9	33 - 98	2.66	20	
Arsenic	101.471	1.0	0.12	125.000	1.67277	79.8	48 - 101	2.10	20	
Barium	169.425	1.0	0.12	125.000	63.4571	84.8	25 - 131	2.86	20	
Beryllium	100.498	1.0	0.03	125.000	ND	80.4	56 - 97	0.962	20	
Cadmium	95.3203	1.0	0.14	125.000	ND	76.3	53 - 94	0.308	20	
Chromium	114.144	1.0	0.26	125.000	11.3153	82.3	45 - 113	0.259	20	
Cobalt	105.011	1.0	0.07	125.000	6.56633	78.8	51 - 97	0.418	20	
Copper	119.259	2.0	0.19	125.000	9.73521	87.6	51 - 113	0.470	20	
Lead	97.6286	1.0	0.18	125.000	0.930096	77.4	33 - 127	0.196	20	
Molybdenum	101.840	1.0	0.12	125.000	ND	81.5	54 - 97	2.29	20	
Nickel	104.799	1.0	0.18	125.000	9.07944	76.6	46 - 102	0.101	20	
Selenium	95.4904	1.0	0.40	125.000	ND	76.4	52 - 93	0.773	20	
Silver	112.822	1.0	0.12	125.000	ND	90.3	58 - 98	0.271	20	
Thallium	89.2306	1.0	0.38	125.000	ND	71.4	46 - 93	1.52	20	
Vanadium	125.893	1.0	0.06	125.000	20.1248	84.6	55 - 104	0.372	20	
Zinc	127.428	1.0	0.15	125.000	31.5438	76.7	26 - 118	2.55	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0514 - EPA 3050B_S										
Blank (B7J0514-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0514-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	44.8754	2.0	0.51	50.0000		89.8	80 - 120			
Arsenic	44.0749	1.0	0.12	50.0000		88.1	80 - 120			
Barium	48.6405	1.0	0.12	50.0000		97.3	80 - 120			
Beryllium	44.9154	1.0	0.03	50.0000		89.8	80 - 120			
Cadmium	44.1805	1.0	0.14	50.0000		88.4	80 - 120			
Chromium	48.1236	1.0	0.26	50.0000		96.2	80 - 120			
Cobalt	47.3911	1.0	0.07	50.0000		94.8	80 - 120			
Copper	47.1627	2.0	0.19	50.0000		94.3	80 - 120			
Lead	45.5098	1.0	0.18	50.0000		91.0	80 - 120			
Molybdenum	46.6074	1.0	0.12	50.0000		93.2	80 - 120			
Nickel	45.6339	1.0	0.18	50.0000		91.3	80 - 120			
Selenium	42.6339	1.0	0.40	50.0000		85.3	80 - 120			
Silver	48.5596	1.0	0.12	50.0000		97.1	80 - 120			
Thallium	45.8797	1.0	0.38	50.0000		91.8	80 - 120			
Vanadium	47.2307	1.0	0.06	50.0000		94.5	80 - 120			
Zinc	45.3834	1.0	0.15	50.0000		90.8	80 - 120			
Matrix Spike (B7J0514-MS1)				**Source: 1703653-45**		Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	99.7452	2.0	0.51	125.000	ND	79.8	33 - 98			
Arsenic	103.717	1.0	0.12	125.000	0.714668	82.4	48 - 101			
Barium	127.717	1.0	0.12	125.000	14.9466	90.2	25 - 131			
Beryllium	107.156	1.0	0.03	125.000	ND	85.7	56 - 97			
Cadmium	103.290	1.0	0.14	125.000	ND	82.6	53 - 94			
Chromium	113.945	1.0	0.26	125.000	2.86796	88.9	45 - 113			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0514 - EPA 3050B_S (continued)										
Matrix Spike (B7J0514-MS1) - Continued			**Source: 1703653-45**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Cobalt	109.483	1.0	0.07	125.000	1.75757	86.2	51 - 97			
Copper	113.994	2.0	0.19	125.000	2.06066	89.5	51 - 113			
Lead	104.033	1.0	0.18	125.000	0.370006	82.9	33 - 127			
Molybdenum	108.330	1.0	0.12	125.000	ND	86.7	54 - 97			
Nickel	107.913	1.0	0.18	125.000	2.31202	84.5	46 - 102			
Selenium	99.8651	1.0	0.40	125.000	ND	79.9	52 - 93			
Silver	117.364	1.0	0.12	125.000	ND	93.9	58 - 98			
Thallium	101.860	1.0	0.38	125.000	ND	81.5	46 - 93			
Vanadium	117.475	1.0	0.06	125.000	5.59419	89.5	55 - 104			
Zinc	113.861	1.0	0.15	125.000	8.67915	84.1	26 - 118			
Matrix Spike Dup (B7J0514-MSD1)			**Source: 1703653-45**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Antimony	98.7102	2.0	0.51	125.000	ND	79.0	33 - 98	1.04	20	
Arsenic	103.773	1.0	0.12	125.000	0.714668	82.4	48 - 101	0.0539	20	
Barium	135.508	1.0	0.12	125.000	14.9466	96.4	25 - 131	5.92	20	
Beryllium	103.603	1.0	0.03	125.000	ND	82.9	56 - 97	3.37	20	
Cadmium	101.155	1.0	0.14	125.000	ND	80.9	53 - 94	2.09	20	
Chromium	112.810	1.0	0.26	125.000	2.86796	88.0	45 - 113	1.00	20	
Cobalt	107.790	1.0	0.07	125.000	1.75757	84.8	51 - 97	1.56	20	
Copper	114.003	2.0	0.19	125.000	2.06066	89.6	51 - 113	0.00790	20	
Lead	105.636	1.0	0.18	125.000	0.370006	84.2	33 - 127	1.53	20	
Molybdenum	107.204	1.0	0.12	125.000	ND	85.8	54 - 97	1.05	20	
Nickel	106.278	1.0	0.18	125.000	2.31202	83.2	46 - 102	1.53	20	
Selenium	99.8978	1.0	0.40	125.000	ND	79.9	52 - 93	0.0328	20	
Silver	115.381	1.0	0.12	125.000	ND	92.3	58 - 98	1.70	20	
Thallium	100.274	1.0	0.38	125.000	ND	80.2	46 - 93	1.57	20	
Vanadium	118.562	1.0	0.06	125.000	5.59419	90.4	55 - 104	0.921	20	
Zinc	115.503	1.0	0.15	125.000	8.67915	85.5	26 - 118	1.43	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0914 - EPA 3050B_S										
Blank (B7J0914-BLK1)						Prepared: 10/31/2017 Analyzed: 11/1/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0914-BS1)						Prepared: 10/31/2017 Analyzed: 11/1/2017				
Antimony	47.2629	2.0	0.51	50.0000		94.5	80 - 120			
Arsenic	46.2836	1.0	0.12	50.0000		92.6	80 - 120			
Barium	50.4184	1.0	0.12	50.0000		101	80 - 120			
Beryllium	47.4649	1.0	0.03	50.0000		94.9	80 - 120			
Cadmium	46.4815	1.0	0.14	50.0000		93.0	80 - 120			
Chromium	50.5600	1.0	0.26	50.0000		101	80 - 120			
Cobalt	47.6976	1.0	0.07	50.0000		95.4	80 - 120			
Copper	50.5507	2.0	0.19	50.0000		101	80 - 120			
Lead	48.3161	1.0	0.18	50.0000		96.6	80 - 120			
Molybdenum	49.0683	1.0	0.12	50.0000		98.1	80 - 120			
Nickel	45.8171	1.0	0.18	50.0000		91.6	80 - 120			
Selenium	43.9757	1.0	0.40	50.0000		88.0	80 - 120			
Silver	51.1884	1.0	0.12	50.0000		102	80 - 120			
Thallium	47.9448	1.0	0.38	50.0000		95.9	80 - 120			
Vanadium	50.3659	1.0	0.06	50.0000		101	80 - 120			
Zinc	46.6677	1.0	0.15	50.0000		93.3	80 - 120			
Matrix Spike (B7J0914-MS1)			**Source: 1703653-13RE1**			Prepared: 10/31/2017 Analyzed: 11/1/2017				
Antimony	74.8246	2.0	0.51	125.000	ND	59.9	33 - 98			
Arsenic	93.0384	1.0	0.12	125.000	4.01457	71.2	48 - 101			
Barium	190.896	1.0	0.12	125.000	98.0676	74.3	25 - 131			
Beryllium	90.4578	1.0	0.03	125.000	ND	72.4	56 - 97			
Cadmium	84.1044	1.0	0.14	125.000	0.420542	66.9	53 - 94			
Chromium	109.112	1.0	0.26	125.000	17.7746	73.1	45 - 113			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0914 - EPA 3050B_S (continued)										
Matrix Spike (B7J0914-MS1) - Continued			**Source: 1703653-13RE1**		Prepared: 10/31/2017 Analyzed: 11/1/2017					
Cobalt	92.1824	1.0	0.07	125.000	8.69976	66.8	51 - 97			
Copper	124.746	2.0	0.19	125.000	27.5392	77.8	51 - 113			
Lead	201.782	1.0	0.18	125.000	133.179	54.9	33 - 127			
Molybdenum	92.0352	1.0	0.12	125.000	ND	73.6	54 - 97			
Nickel	95.9636	1.0	0.18	125.000	15.1979	64.6	46 - 102			
Selenium	84.9134	1.0	0.40	125.000	ND	67.9	52 - 93			
Silver	101.927	1.0	0.12	125.000	ND	81.5	58 - 98			
Thallium	77.2187	1.0	0.38	125.000	ND	61.8	46 - 93			
Vanadium	125.532	1.0	0.06	125.000	32.1264	74.7	55 - 104			
Zinc	208.978	1.0	0.15	125.000	122.398	69.3	26 - 118			
Matrix Spike Dup (B7J0914-MSD1)			**Source: 1703653-13RE1**		Prepared: 10/31/2017 Analyzed: 11/1/2017					
Antimony	72.8254	2.0	0.51	125.000	ND	58.3	33 - 98	2.71	20	
Arsenic	89.9830	1.0	0.12	125.000	4.01457	68.8	48 - 101	3.34	20	
Barium	213.836	1.0	0.12	125.000	98.0676	92.6	25 - 131	11.3	20	
Beryllium	89.7414	1.0	0.03	125.000	ND	71.8	56 - 97	0.795	20	
Cadmium	82.4770	1.0	0.14	125.000	0.420542	65.6	53 - 94	1.95	20	
Chromium	108.905	1.0	0.26	125.000	17.7746	72.9	45 - 113	0.190	20	
Cobalt	96.2006	1.0	0.07	125.000	8.69976	70.0	51 - 97	4.27	20	
Copper	128.997	2.0	0.19	125.000	27.5392	81.2	51 - 113	3.35	20	
Lead	182.650	1.0	0.18	125.000	133.179	39.6	33 - 127	9.95	20	
Molybdenum	88.7940	1.0	0.12	125.000	ND	71.0	54 - 97	3.58	20	
Nickel	100.557	1.0	0.18	125.000	15.1979	68.3	46 - 102	4.67	20	
Selenium	84.1308	1.0	0.40	125.000	ND	67.3	52 - 93	0.926	20	
Silver	100.359	1.0	0.12	125.000	ND	80.3	58 - 98	1.55	20	
Thallium	73.5252	1.0	0.38	125.000	ND	58.8	46 - 93	4.90	20	
Vanadium	128.234	1.0	0.06	125.000	32.1264	76.9	55 - 104	2.13	20	
Zinc	218.179	1.0	0.15	125.000	122.398	76.6	26 - 118	4.31	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

TCLP Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0818 - EPA 3010A_S										
Blank (B7J0818-BLK1)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	ND	0.050	0.0047							
Blank (B7J0818-BLK2)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	ND	0.050	0.0047							
LCS (B7J0818-BS1)					Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	0.937282	0.050	0.0047	1.00000		93.7	80 - 120			
Duplicate (B7J0818-DUP1)			**Source: 1703718-01**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	ND	0.50	0.047		0.055943			NR	20	
Duplicate (B7J0818-DUP2)			**Source: 1703720-02**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	0.913033	0.62	0.059		0.821568			10.5	20	
Matrix Spike (B7J0818-MS1)			**Source: 1703718-01**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	2.32879	0.50	0.047	2.50000	0.055943	90.9	78 - 109			
Matrix Spike (B7J0818-MS2)			**Source: 1703653-04**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	11.7478	0.25	0.024	2.50000	0.040223	468	78 - 109			M1
Matrix Spike Dup (B7J0818-MSD1)			**Source: 1703718-01**		Prepared: 10/27/2017 Analyzed: 10/27/2017					
Lead	2.28561	0.50	0.047	2.50000	0.055943	89.2	78 - 109	1.87	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0849 - STLC_S Extraction										
Blank (B7J0849-BLK1)						Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	ND	1.0	0.076							
Lead	ND	1.0	0.094							
LCS (B7J0849-BS1)						Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	1.82832			2.00000		91.4	80 - 120			
Lead	1.94441			2.00000		97.2	80 - 120			
Matrix Spike (B7J0849-MS1)			**Source: 1703641-02**			Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	4.54437			2.50000	2.49998	81.8	62 - 129			
Lead	7.43540			2.50000	5.75609	67.2	44 - 130			
Matrix Spike Dup (B7J0849-MSD1)			**Source: 1703641-02**			Prepared: 10/30/2017 Analyzed: 10/30/2017				
Copper	4.56573			2.50000	2.49998	82.6	62 - 129	0.469	20	
Lead	7.68783			2.50000	5.75609	77.3	44 - 130	3.34	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7K0042 - STLC_S Extraction										
Blank (B7K0042-BLK1)					Prepared: 11/2/2017 Analyzed: 11/2/2017					
Copper	ND	1.0	0.076							
Lead	ND	1.0	0.094							
LCS (B7K0042-BS1)					Prepared: 11/2/2017 Analyzed: 11/2/2017					
Copper	1.90442			2.00000		95.2	80 - 120			
Lead	1.93454			2.00000		96.7	80 - 120			
Matrix Spike (B7K0042-MS1)			**Source: 1703653-13RE1**		Prepared: 11/2/2017 Analyzed: 11/2/2017					
Copper	3.13407			2.50000	1.01489	84.8	62 - 129			
Lead	3.98799			2.50000	1.93875	82.0	44 - 130			
Matrix Spike Dup (B7K0042-MSD1)			**Source: 1703653-13RE1**		Prepared: 11/2/2017 Analyzed: 11/2/2017					
Copper	3.08973			2.50000	1.01489	83.0	62 - 129	1.42	20	
Lead	4.02118			2.50000	1.93875	83.3	44 - 130	0.829	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0458 - EPA 245.1/7470_W										
Blank (B7J0458-BLK1)					Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	ND	0.20	0.05							
LCS (B7J0458-BS1)					Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	9.54958	0.20	0.05	10.0000		95.5	80 - 120			
Matrix Spike (B7J0458-MS1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	9.82494	0.20	0.05	10.0000	0.066603	97.6	70 - 130			
Matrix Spike Dup (B7J0458-MSD1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	10.2498	0.20	0.05	10.0000	0.066603	102	70 - 130	4.23	20	
Post Spike (B7J0458-PS1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	4.94797			5.00000	0.066603	97.6	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0517 - EPA 7471_S										
Blank (B7J0517-BLK1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0517-BS1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.709973	0.10	0.005	0.833333		85.2	80 - 120			
Matrix Spike (B7J0517-MS1)			**Source: 1703653-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.799106	0.10	0.005	0.833333	0.086615	85.5	70 - 130			
Matrix Spike Dup (B7J0517-MSD1)			**Source: 1703653-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.782249	0.10	0.005	0.833333	0.086615	83.5	70 - 130	2.13	20	
Post Spike (B7J0517-PS1)			**Source: 1703653-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.006157			5.00000E-3	0.001039	102	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0518 - EPA 7471_S										
Blank (B7J0518-BLK1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0518-BS1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.787788	0.10	0.005	0.833333		94.5	80 - 120			
Matrix Spike (B7J0518-MS1)			**Source: 1703653-25**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.877261	0.10	0.005	0.833333	0.026099	102	70 - 130			
Matrix Spike Dup (B7J0518-MSD1)			**Source: 1703653-25**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.862597	0.10	0.005	0.833333	0.026099	100	70 - 130	1.69	20	
Post Spike (B7J0518-PS1)			**Source: 1703653-25**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.005830			5.00000E-3	3.132E-4	110	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0519 - EPA 7471_S										
Blank (B7J0519-BLK1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0519-BS1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.795421	0.10	0.005	0.833333		95.5	80 - 120			
Matrix Spike (B7J0519-MS1)			**Source: 1703653-45**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	1.06796	0.10	0.005	0.833333	0.215105	102	70 - 130			
Matrix Spike Dup (B7J0519-MSD1)			**Source: 1703653-45**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.996882	0.10	0.005	0.833333	0.215105	93.8	70 - 130	6.89	20	
Post Spike (B7J0519-PS1)			**Source: 1703653-45**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	8.6043E-3			5.00000E-3	0.002581	120	85 - 115			M1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

STLC Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0854 - EPA 245.1/7470_S										
Blank (B7J0854-BLK1)					Prepared: 10/30/2017 Analyzed: 10/30/2017					
Mercury	ND	0.20	0.05							
LCS (B7J0854-BS1)					Prepared: 10/30/2017 Analyzed: 10/30/2017					
Mercury	9.99994	0.20	0.05	10.0000		100	80 - 120			
Matrix Spike (B7J0854-MS1)			**Source: 1703653-04**		Prepared: 10/30/2017 Analyzed: 10/30/2017					
Mercury	48.5370	1.0	0.23	50.0000	ND	97.1	70 - 130			
Matrix Spike Dup (B7J0854-MSD1)			**Source: 1703653-04**		Prepared: 10/30/2017 Analyzed: 10/30/2017					
Mercury	48.7846	1.0	0.23	50.0000	ND	97.6	70 - 130	0.509	20	
Post Spike (B7J0854-PS1)			**Source: 1703653-04**		Prepared: 10/30/2017 Analyzed: 10/30/2017					
Mercury	5.14350			5.00000	-0.002775	103	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

TCLP Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0833 - EPA 245.1/7470_S										
Blank (B7J0833-BLK1)					Prepared: 10/27/2017 Analyzed: 10/30/2017					
Mercury	ND	0.20	0.05							
LCS (B7J0833-BS1)					Prepared: 10/27/2017 Analyzed: 10/30/2017					
Mercury	10.0418	0.20	0.05	10.0000		100	80 - 120			
Matrix Spike (B7J0833-MS1)			**Source: 1703653-04**		Prepared: 10/27/2017 Analyzed: 10/30/2017					
Mercury	9.95622	0.20	0.05	10.0000	0.080743	98.8	70 - 130			
Matrix Spike Dup (B7J0833-MSD1)			**Source: 1703653-04**		Prepared: 10/27/2017 Analyzed: 10/30/2017					
Mercury	9.87210	0.20	0.05	10.0000	0.080743	97.9	70 - 130	0.849	20	
Post Spike (B7J0833-PS1)			**Source: 1703653-04**		Prepared: 10/27/2017 Analyzed: 10/30/2017					
Mercury	4.91872			5.00000	0.080743	96.8	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0311 - GCVOA_S										
Blank (B7J0311-BLK1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2162*			*0.200000*		*108*	*50 - 138*			
LCS (B7J0311-BS1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	4.43100	1.0	0.20	5.00000		88.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2087*			*0.200000*		*104*	*50 - 138*			
Matrix Spike (B7J0311-MS1)			**Source: 1703658-01**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.83600	1.0	0.20	5.00000	ND	76.7	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2319*			*0.200000*		*116*	*50 - 138*			
Matrix Spike Dup (B7J0311-MSD1)			**Source: 1703658-01**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.65500	1.0	0.20	5.00000	ND	73.1	17 - 141	4.83	20	
Surrogate: 4-Bromofluorobenzene	*0.2203*			*0.200000*		*110*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0337 - GCVOA_S										
Blank (B7J0337-BLK1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2175*			*0.200000*		*109*	*50 - 138*			
LCS (B7J0337-BS1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	4.75300	1.0	0.20	5.00000		95.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2192*			*0.200000*		*110*	*50 - 138*			
Matrix Spike (B7J0337-MS1)			**Source: 1703653-01**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.29800	1.0	0.20	5.00000	ND	66.0	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2209*			*0.200000*		*110*	*50 - 138*			
Matrix Spike Dup (B7J0337-MSD1)			**Source: 1703653-01**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.45900	1.0	0.20	5.00000	ND	69.2	17 - 141	4.77	20	
Surrogate: 4-Bromofluorobenzene	*0.2225*			*0.200000*		*111*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0349 - GCVOA_S										
Blank (B7J0349-BLK1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2160*			*0.200000*		*108*	*50 - 138*			
LCS (B7J0349-BS1)						Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	4.44400	1.0	0.20	5.00000		88.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2107*			*0.200000*		*105*	*50 - 138*			
Matrix Spike (B7J0349-MS1)			**Source: 1703653-23**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.81800	1.0	0.20	5.00000	ND	76.4	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2287*			*0.200000*		*114*	*50 - 138*			
Matrix Spike Dup (B7J0349-MSD1)			**Source: 1703653-23**			Prepared: 10/14/2017 Analyzed: 10/14/2017				
Gasoline Range Organics	3.42900	1.0	0.20	5.00000	ND	68.6	17 - 141	10.7	20	
Surrogate: 4-Bromofluorobenzene	*0.2234*			*0.200000*		*112*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0362 - GCVOA_S										
Blank (B7J0362-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2112*			*0.400000*		*52.8*	*50 - 138*			
LCS (B7J0362-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	4.55900	1.0	0.20	5.00000		91.2	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2227*			*0.400000*		*55.7*	*50 - 138*			
Duplicate (B7J0362-DUP1)			**Source: 1703671-02**		Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	ND	1.0	0.20		ND			NR	20	
Surrogate: 4-Bromofluorobenzene	*0.2124*			*0.400000*		*53.1*	*50 - 138*			
Matrix Spike (B7J0362-MS1)			**Source: 1703671-02**		Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	3.95500	1.0	0.20	5.00000	ND	79.1	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2115*			*0.400000*		*52.9*	*50 - 138*			
Matrix Spike Dup (B7J0362-MSD1)			**Source: 1703671-02**		Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	3.51900	1.0	0.20	5.00000	ND	70.4	17 - 141	11.7	20	
Surrogate: 4-Bromofluorobenzene	*0.2040*			*0.400000*		*51.0*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0434 - GCVOA_W										
Blank (B7J0434-BLK1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Gasoline Range Organics	ND	0.05	0.05							
Surrogate: 4-Bromofluorobenzene	*0.1009*			*0.100000*		*101*	*70 - 130*			
LCS (B7J0434-BS1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Gasoline Range Organics	0.736000	0.05	0.05	1.00000		73.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1016*			*0.100000*		*102*	*70 - 130*			
LCS Dup (B7J0434-BSD1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Gasoline Range Organics	0.848000	0.05	0.05	1.00000		84.8	70 - 130	14.1	20	
Surrogate: 4-Bromofluorobenzene	*0.1029*			*0.100000*		*103*	*70 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0338 - GCSEMI_DRO_W										
Blank (B7J0338-BLK1)						Prepared: 10/13/2017 Analyzed: 10/14/2017				
DRO	ND	0.05	0.05							
ORO	ND	0.05	0.05							
Surrogate: p-Terphenyl	*0.1079*			*8.00000E-2*		*135*	*20 - 150*			
LCS (B7J0338-BS1)						Prepared: 10/13/2017 Analyzed: 10/14/2017				
DRO	0.547070	0.05	0.05	1.00000		54.7	42 - 142			
Surrogate: p-Terphenyl	*0.1020*			*8.00000E-2*		*128*	*20 - 150*			
LCS Dup (B7J0338-BSD1)						Prepared: 10/13/2017 Analyzed: 10/14/2017				
DRO	0.504190	0.05	0.05	1.00000		50.4	42 - 142	8.16	20	
Surrogate: p-Terphenyl	*0.1056*			*8.00000E-2*		*132*	*20 - 150*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0525 - GCSEMI_DRO_LL_S										
Blank (B7J0525-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*3.572*			*2.66667*		*134*	*38 - 145*			
LCS (B7J0525-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	31.1437	1.0	1.0	33.3333		93.4	33 - 143			
Surrogate: p-Terphenyl	*3.401*			*2.66667*		*128*	*38 - 145*			
Matrix Spike (B7J0525-MS1)			**Source: 1703653-16**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	37.2963	1.0	1.0	33.3333	32.4327	14.6	20 - 159			M1
Surrogate: p-Terphenyl	*3.647*			*2.66667*		*137*	*38 - 145*			
Matrix Spike Dup (B7J0525-MSD1)			**Source: 1703653-16**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	41.7943	1.0	1.0	33.3333	32.4327	28.1	20 - 159	11.4	20	
Surrogate: p-Terphenyl	*3.867*			*5.33333*		*72.5*	*38 - 145*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0547 - GCSEMI_DRO_LL_S										
Blank (B7J0547-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*4.911*			*5.33333*		*92.1*	*38 - 145*			
LCS (B7J0547-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	43.0820	1.0	1.0	33.3333		129	33 - 143			
Surrogate: p-Terphenyl	*5.111*			*5.33333*		*95.8*	*38 - 145*			
Matrix Spike (B7J0547-MS1)			**Source: 1703653-39**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	42.8017	1.0	1.0	33.3333	12.4963	90.9	20 - 159			
Surrogate: p-Terphenyl	*4.301*			*5.33333*		*80.6*	*38 - 145*			
Matrix Spike Dup (B7J0547-MSD1)			**Source: 1703653-39**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
DRO	40.4547	1.0	1.0	33.3333	12.4963	83.9	20 - 159	5.64	20	
Surrogate: p-Terphenyl	*4.121*			*5.33333*		*77.3*	*38 - 145*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0581 - GCSEMI_DRO_LL_S										
Blank (B7J0581-BLK1)						Prepared: 10/19/2017 Analyzed: 10/19/2017				
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*3.053*			*2.66667*		*114*	*38 - 145*			
LCS (B7J0581-BS1)						Prepared: 10/19/2017 Analyzed: 10/19/2017				
DRO	33.9177	1.0	1.0	33.3333		102	33 - 143			
Surrogate: p-Terphenyl	*3.107*			*2.66667*		*117*	*38 - 145*			
Matrix Spike (B7J0581-MS1)			**Source: 1703653-45**			Prepared: 10/19/2017 Analyzed: 10/19/2017				
DRO	31.4457	1.0	1.0	33.3333	3.99100	82.4	20 - 159			
Surrogate: p-Terphenyl	*2.185*			*2.66667*		*81.9*	*38 - 145*			
Matrix Spike Dup (B7J0581-MSD1)			**Source: 1703653-45**			Prepared: 10/19/2017 Analyzed: 10/19/2017				
DRO	29.1940	1.0	1.0	33.3333	3.99100	75.6	20 - 159	7.43	20	
Surrogate: p-Terphenyl	*1.957*			*2.66667*		*73.4*	*38 - 145*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0724 - GCSEMI_PCB/PEST_S										
Blank (B7J0724-BLK2)						Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*13.23*			*16.6667*		*79.4*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.64*			*16.6667*		*87.8*	*30 - 130*			
LCS (B7J0724-BS2)						Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	149.223	16	4.6	166.667		89.5	73 - 111			
Aroclor 1260	155.316	16	4.6	166.667		93.2	75 - 125			
Surrogate: Decachlorobiphenyl	*13.98*			*16.6667*		*83.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.23*			*16.6667*		*91.4*	*30 - 130*			
Matrix Spike (B7J0724-MS3)			**Source: 1703770-02**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	77.6048	16	4.6	166.667	ND	46.6	36 - 127			
Aroclor 1260	86.5117	16	4.6	166.667	ND	51.9	31 - 142			
Surrogate: Decachlorobiphenyl	*7.514*			*16.6667*		*45.1*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*6.630*			*16.6667*		*39.8*	*30 - 130*			
Matrix Spike (B7J0724-MS4)			**Source: 1703770-03**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	89.5710	16	4.6	166.667	ND	53.7	36 - 127			
Aroclor 1260	95.6437	16	4.6	166.667	ND	57.4	31 - 142			
Surrogate: Decachlorobiphenyl	*8.150*			*16.6667*		*48.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*8.857*			*16.6667*		*53.1*	*30 - 130*			
Matrix Spike Dup (B7J0724-MSD3)			**Source: 1703770-02**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	87.3318	16	4.6	166.667	ND	52.4	36 - 127	11.8	20	
Aroclor 1260	82.0210	16	4.6	166.667	ND	49.2	31 - 142	5.33	20	
Surrogate: Decachlorobiphenyl	*6.951*			*16.6667*		*41.7*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*6.484*			*16.6667*		*38.9*	*30 - 130*			
Matrix Spike Dup (B7J0724-MSD4)			**Source: 1703770-03**			Prepared: 10/24/2017 Analyzed: 10/25/2017				
Aroclor 1016	100.878	16	4.6	166.667	ND	60.5	36 - 127	11.9	20	
Aroclor 1260	102.184	16	4.6	166.667	ND	61.3	31 - 142	6.61	20	
Surrogate: Decachlorobiphenyl	*9.008*			*16.6667*		*54.0*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*9.429*			*16.6667*		*56.6*	*30 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0770 - GCSEMI_PCB/PEST_S										
Blank (B7J0770-BLK1)						Prepared: 10/25/2017 Analyzed: 10/25/2017				
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*9.262*			*16.6667*		*55.6*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.52*			*16.6667*		*87.1*	*30 - 130*			
LCS (B7J0770-BS1)						Prepared: 10/25/2017 Analyzed: 10/25/2017				
Aroclor 1016	154.310	16	4.6	166.667		92.6	73 - 111			
Aroclor 1260	153.660	16	4.6	166.667		92.2	75 - 125			
Surrogate: Decachlorobiphenyl	*10.31*			*16.6667*		*61.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.73*			*16.6667*		*94.4*	*30 - 130*			
Matrix Spike (B7J0770-MS1)			**Source: 1703653-47**			Prepared: 10/25/2017 Analyzed: 10/25/2017				
Aroclor 1016	163.694	16	4.6	166.667	ND	98.2	36 - 127			
Aroclor 1260	143.278	16	4.6	166.667	19.3135	74.4	31 - 142			
Surrogate: Decachlorobiphenyl	*6.911*			*16.6667*		*41.5*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*13.12*			*16.6667*		*78.7*	*30 - 130*			
Matrix Spike Dup (B7J0770-MSD1)			**Source: 1703653-47**			Prepared: 10/25/2017 Analyzed: 10/25/2017				
Aroclor 1016	145.422	16	4.6	166.667	ND	87.3	36 - 127	11.8	20	
Aroclor 1260	138.026	16	4.6	166.667	19.3135	71.2	31 - 142	3.73	20	
Surrogate: Decachlorobiphenyl	*6.632*			*16.6667*		*39.8*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*13.38*			*16.6667*		*80.3*	*30 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W										
Blank (B7J0319-BLK1)							Prepared: 10/13/2017 Analyzed: 10/13/2017			
1,1,1,2-Tetrachloroethane	ND	0.50	0.13							
1,1,1-Trichloroethane	ND	0.50	0.38							
1,1,2,2-Tetrachloroethane	ND	0.50	0.20							
1,1,2-Trichloroethane	ND	0.50	0.19							
1,1-Dichloroethane	ND	0.50	0.20							
1,1-Dichloroethene	ND	0.50	0.28							
1,1-Dichloropropene	ND	0.50	0.36							
1,2,3-Trichloropropane	ND	0.50	0.16							
1,2,3-Trichlorobenzene	ND	0.50	0.06							
1,2,4-Trichlorobenzene	ND	0.50	0.07							
1,2,4-Trimethylbenzene	ND	0.50	0.09							
1,2-Dibromo-3-chloropropane	ND	0.50	0.20							
1,2-Dibromoethane	ND	0.50	0.13							
1,2-Dichlorobenzene	ND	0.50	0.12							
1,2-Dichloroethane	ND	0.50	0.39							
1,2-Dichloropropane	ND	0.50	0.47							
1,3,5-Trimethylbenzene	ND	0.50	0.08							
1,3-Dichlorobenzene	ND	0.50	0.13							
1,3-Dichloropropane	ND	0.50	0.08							
1,4-Dichlorobenzene	ND	0.50	0.18							
2,2-Dichloropropane	ND	0.50	0.23							
2-Chlorotoluene	ND	0.50	0.12							
4-Chlorotoluene	ND	0.50	0.11							
4-Isopropyltoluene	ND	0.50	0.12							
Benzene	ND	0.50	0.21							
Bromobenzene	ND	0.50	0.12							
Bromochloromethane	ND	0.50	0.10							
Bromodichloromethane	ND	0.50	0.32							
Bromoform	ND	0.50	0.14							
Bromomethane	ND	0.50	0.22							
Carbon disulfide	ND	1.0	0.21							
Carbon tetrachloride	ND	0.50	0.31							
Chlorobenzene	ND	0.50	0.16							
Chloroethane	ND	0.50	0.29							
Chloroform	ND	0.50	0.16							
Chloromethane	ND	0.50	0.19							
cis-1,2-Dichloroethene	ND	0.50	0.39							
cis-1,3-Dichloropropene	ND	0.50	0.08							
Di-isopropyl ether	ND	0.50	0.14							
Dibromochloromethane	ND	0.50	0.11							
Dibromomethane	ND	0.50	0.09							

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
Blank (B7J0319-BLK1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Dichlorodifluoromethane	ND	0.50	0.31							
Ethyl Acetate	ND	10	1.1							
Ethyl Ether	ND	10	1.4							
Ethyl tert-butyl ether	ND	0.50	0.08							
Ethylbenzene	ND	0.50	0.08							
Freon-113	ND	0.50	0.34							
Hexachlorobutadiene	ND	0.50	0.22							
Isopropylbenzene	ND	0.50	0.10							
m,p-Xylene	ND	1.0	0.18							
Methylene chloride	ND	1.0	0.26							
MTBE	ND	0.50	0.09							
n-Butylbenzene	ND	0.50	0.15							
n-Propylbenzene	ND	0.50	0.14							
Naphthalene	ND	0.50	0.09							
o-Xylene	ND	0.50	0.04							
sec-Butylbenzene	ND	0.50	0.15							
Styrene	ND	0.50	0.05							
tert-Amyl methyl ether	ND	0.50	0.10							
tert-Butanol	ND	10	3.0							
tert-Butylbenzene	ND	0.50	0.11							
Tetrachloroethene	ND	0.50	0.18							
Toluene	ND	0.50	0.14							
trans-1,2-Dichloroethene	ND	0.50	0.15							
trans-1,3-Dichloropropene	ND	0.50	0.09							
Trichloroethene	ND	0.50	0.15							
Trichlorofluoromethane	ND	0.50	0.33							
Vinyl acetate	ND	10	1.9							
Vinyl chloride	ND	0.50	0.25							
Surrogate: 1,2-Dichloroethane-d4	*24.67*			*25.0000*		*98.7*	*70 - 166*			
Surrogate: 4-Bromofluorobenzene	*23.05*			*25.0000*		*92.2*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.32*			*25.0000*		*101*	*80 - 150*			
Surrogate: Toluene-d8	*25.18*			*25.0000*		*101*	*87 - 121*			
LCS (B7J0319-BS1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,1,1,2-Tetrachloroethane	7.43000	0.50	0.13	10.0000		74.3	73 - 136			
1,1,1-Trichloroethane	9.16000	0.50	0.38	10.0000		91.6	73 - 143			
1,1,2,2-Tetrachloroethane	9.50000	0.50	0.20	10.0000		95.0	62 - 127			
1,1,2-Trichloroethane	10.3500	0.50	0.19	10.0000		104	72 - 122			
1,1-Dichloroethane	10.0700	0.50	0.20	10.0000		101	73 - 138			
1,1-Dichloroethene	9.99000	0.50	0.28	10.0000		99.9	74 - 132			
1,1-Dichloropropene	13.1800	0.50	0.36	10.0000		132	70 - 143			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS (B7J0319-BS1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,2,3-Trichloropropane	10.3200	0.50	0.16	10.0000		103	66 - 119			
1,2,3-Trichlorobenzene	10.1600	0.50	0.06	10.0000		102	70 - 131			
1,2,4-Trichlorobenzene	10.1400	0.50	0.07	10.0000		101	70 - 128			
1,2,4-Trimethylbenzene	10.2400	0.50	0.09	10.0000		102	74 - 142			
1,2-Dibromo-3-chloropropane	6.24000	0.50	0.20	10.0000		62.4	56 - 118			
1,2-Dibromoethane	10.4100	0.50	0.13	10.0000		104	73 - 122			
1,2-Dichlorobenzene	10.4900	0.50	0.12	10.0000		105	75 - 128			
1,2-Dichloroethane	13.3700	0.50	0.39	10.0000		134	70 - 131			L4
1,2-Dichloropropane	10.6900	0.50	0.47	10.0000		107	69 - 124			
1,3,5-Trimethylbenzene	10.3000	0.50	0.08	10.0000		103	73 - 144			
1,3-Dichlorobenzene	10.5500	0.50	0.13	10.0000		106	75 - 131			
1,3-Dichloropropane	10.5900	0.50	0.08	10.0000		106	70 - 122			
1,4-Dichlorobenzene	10.5200	0.50	0.18	10.0000		105	75 - 127			
2,2-Dichloropropane	8.20000	0.50	0.23	10.0000		82.0	68 - 151			
2-Chlorotoluene	10.2100	0.50	0.12	10.0000		102	72 - 138			
4-Chlorotoluene	10.0800	0.50	0.11	10.0000		101	72 - 140			
4-Isopropyltoluene	10.4200	0.50	0.12	10.0000		104	74 - 149			
Benzene	27.1300	0.50	0.21	20.0000		136	67 - 138			
Bromobenzene	10.4900	0.50	0.12	10.0000		105	73 - 127			
Bromochloromethane	10.0900	0.50	0.10	10.0000		101	74 - 123			
Bromodichloromethane	8.40000	0.50	0.32	10.0000		84.0	74 - 129			
Bromoform	6.12000	0.50	0.14	10.0000		61.2	63 - 131			L4
Bromomethane	16.3300	0.50	0.22	10.0000		163	57 - 216			
Carbon disulfide	10.2300	1.0	0.21	10.0000		102	81 - 147			
Carbon tetrachloride	9.47000	0.50	0.31	10.0000		94.7	77 - 151			
Chlorobenzene	10.1800	0.50	0.16	10.0000		102	73 - 125			
Chloroethane	11.2000	0.50	0.29	10.0000		112	54 - 154			
Chloroform	10.3200	0.50	0.16	10.0000		103	77 - 132			
Chloromethane	5.64000	0.50	0.19	10.0000		56.4	57 - 142			L4
cis-1,2-Dichloroethene	9.86000	0.50	0.39	10.0000		98.6	73 - 126			
cis-1,3-Dichloropropene	8.28000	0.50	0.08	10.0000		82.8	76 - 120			
Di-isopropyl ether	9.00000	0.50	0.14	10.0000		90.0	54 - 147			
Dibromochloromethane	7.27000	0.50	0.11	10.0000		72.7	71 - 126			
Dibromomethane	10.0000	0.50	0.09	10.0000		100	73 - 121			
Dichlorodifluoromethane	8.66000	0.50	0.31	10.0000		86.6	48 - 152			
Ethyl Acetate	95.8800	10	1.1	100.000		95.9	50 - 144			
Ethyl Ether	94.3500	10	1.4	100.000		94.4	67 - 140			
Ethyl tert-butyl ether	8.68000	0.50	0.08	10.0000		86.8	58 - 137			
Ethylbenzene	20.9500	0.50	0.08	20.0000		105	72 - 134			
Freon-113	11.3900	0.50	0.34	10.0000		114	75 - 157			
Hexachlorobutadiene	10.1900	0.50	0.22	10.0000		102	72 - 139			
Isopropylbenzene	10.4400	0.50	0.10	10.0000		104	73 - 146			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS (B7J0319-BS1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
m,p-Xylene	20.3800	1.0	0.18	20.0000		102	75 - 138			
Methylene chloride	9.38000	1.0	0.26	10.0000		93.8	52 - 154			
MTBE	8.97000	0.50	0.09	10.0000		89.7	62 - 129			
n-Butylbenzene	10.7000	0.50	0.15	10.0000		107	72 - 151			
n-Propylbenzene	10.7300	0.50	0.14	10.0000		107	69 - 149			
Naphthalene	10.2600	0.50	0.09	10.0000		103	61 - 122			
o-Xylene	20.4900	0.50	0.04	20.0000		102	66 - 147			
sec-Butylbenzene	10.6400	0.50	0.15	10.0000		106	72 - 148			
Styrene	9.95000	0.50	0.05	10.0000		99.5	72 - 138			
tert-Amyl methyl ether	8.61000	0.50	0.10	10.0000		86.1	53 - 122			
tert-Butanol	35.6900	10	3.0	50.0000		71.4	21 - 149			
tert-Butylbenzene	10.3600	0.50	0.11	10.0000		104	70 - 145			
Tetrachloroethene	10.4100	0.50	0.18	10.0000		104	61 - 145			
Toluene	21.3400	0.50	0.14	20.0000		107	70 - 140			
trans-1,2-Dichloroethene	10.1800	0.50	0.15	10.0000		102	73 - 130			
trans-1,3-Dichloropropene	7.14000	0.50	0.09	10.0000		71.4	72 - 129			L4
Trichloroethene	10.5000	0.50	0.15	10.0000		105	69 - 126			
Trichlorofluoromethane	11.2000	0.50	0.33	10.0000		112	70 - 159			
Vinyl acetate	80.0100	10	1.9	100.000		80.0	69 - 170			
Vinyl chloride	9.61000	0.50	0.25	10.0000		96.1	56 - 151			
Surrogate: 1,2-Dichloroethane-d4	*24.98*			*25.0000*		*99.9*	*70 - 166*			
Surrogate: 4-Bromofluorobenzene	*24.03*			*25.0000*		*96.1*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.30*			*25.0000*		*101*	*80 - 150*			
Surrogate: Toluene-d8	*24.91*			*25.0000*		*99.6*	*87 - 121*			
LCS Dup (B7J0319-BSD1)					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,1,1,2-Tetrachloroethane	7.41000	0.50	0.13	10.0000		74.1	73 - 136	0.270	20	
1,1,1-Trichloroethane	9.63000	0.50	0.38	10.0000		96.3	73 - 143	5.00	20	
1,1,2,2-Tetrachloroethane	9.37000	0.50	0.20	10.0000		93.7	62 - 127	1.38	20	
1,1,2-Trichloroethane	10.4100	0.50	0.19	10.0000		104	72 - 122	0.578	20	
1,1-Dichloroethane	10.3600	0.50	0.20	10.0000		104	73 - 138	2.84	20	
1,1-Dichloroethene	10.3300	0.50	0.28	10.0000		103	74 - 132	3.35	20	
1,1-Dichloropropene	13.5800	0.50	0.36	10.0000		136	70 - 143	2.99	20	
1,2,3-Trichloropropane	10.1300	0.50	0.16	10.0000		101	66 - 119	1.86	20	
1,2,3-Trichlorobenzene	10.1500	0.50	0.06	10.0000		102	70 - 131	0.0985	20	
1,2,4-Trichlorobenzene	9.99000	0.50	0.07	10.0000		99.9	70 - 128	1.49	20	
1,2,4-Trimethylbenzene	10.2100	0.50	0.09	10.0000		102	74 - 142	0.293	20	
1,2-Dibromo-3-chloropropane	6.13000	0.50	0.20	10.0000		61.3	56 - 118	1.78	20	
1,2-Dibromoethane	10.2900	0.50	0.13	10.0000		103	73 - 122	1.16	20	
1,2-Dichlorobenzene	10.5000	0.50	0.12	10.0000		105	75 - 128	0.0953	20	
1,2-Dichloroethane	12.8400	0.50	0.39	10.0000		128	70 - 131	4.04	20	

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618.005
Report To : Brynn McCulloch
Reported : 11/02/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS Dup (B7J0319-BSD1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
1,2-Dichloropropane	10.7400	0.50	0.47	10.0000		107	69 - 124	0.467	20	
1,3,5-Trimethylbenzene	10.2400	0.50	0.08	10.0000		102	73 - 144	0.584	20	
1,3-Dichlorobenzene	10.5500	0.50	0.13	10.0000		106	75 - 131	0.00	20	
1,3-Dichloropropane	10.5400	0.50	0.08	10.0000		105	70 - 122	0.473	20	
1,4-Dichlorobenzene	10.4100	0.50	0.18	10.0000		104	75 - 127	1.05	20	
2,2-Dichloropropane	8.14000	0.50	0.23	10.0000		81.4	68 - 151	0.734	20	
2-Chlorotoluene	10.1800	0.50	0.12	10.0000		102	72 - 138	0.294	20	
4-Chlorotoluene	10.1200	0.50	0.11	10.0000		101	72 - 140	0.396	20	
4-Isopropyltoluene	10.3200	0.50	0.12	10.0000		103	74 - 149	0.964	20	
Benzene	28.3500	0.50	0.21	20.0000		142	67 - 138	4.40	20	L4
Bromobenzene	10.4600	0.50	0.12	10.0000		105	73 - 127	0.286	20	
Bromochloromethane	10.1700	0.50	0.10	10.0000		102	74 - 123	0.790	20	
Bromodichloromethane	8.68000	0.50	0.32	10.0000		86.8	74 - 129	3.28	20	
Bromoform	6.11000	0.50	0.14	10.0000		61.1	63 - 131	0.164	20	L4
Bromomethane	16.9000	0.50	0.22	10.0000		169	57 - 216	3.43	20	
Carbon disulfide	10.6700	1.0	0.21	10.0000		107	81 - 147	4.21	20	
Carbon tetrachloride	9.68000	0.50	0.31	10.0000		96.8	77 - 151	2.19	20	
Chlorobenzene	10.2200	0.50	0.16	10.0000		102	73 - 125	0.392	20	
Chloroethane	11.5100	0.50	0.29	10.0000		115	54 - 154	2.73	20	
Chloroform	10.6300	0.50	0.16	10.0000		106	77 - 132	2.96	20	
Chloromethane	5.59000	0.50	0.19	10.0000		55.9	57 - 142	0.890	20	L4
cis-1,2-Dichloroethene	10.1300	0.50	0.39	10.0000		101	73 - 126	2.70	20	
cis-1,3-Dichloropropene	8.26000	0.50	0.08	10.0000		82.6	76 - 120	0.242	20	
Di-isopropyl ether	9.44000	0.50	0.14	10.0000		94.4	54 - 147	4.77	20	
Dibromochloromethane	7.14000	0.50	0.11	10.0000		71.4	71 - 126	1.80	20	
Dibromomethane	10.3200	0.50	0.09	10.0000		103	73 - 121	3.15	20	
Dichlorodifluoromethane	8.66000	0.50	0.31	10.0000		86.6	48 - 152	0.00	20	
Ethyl Acetate	97.6000	10	1.1	100.000		97.6	50 - 144	1.78	20	
Ethyl Ether	96.4500	10	1.4	100.000		96.4	67 - 140	2.20	20	
Ethyl tert-butyl ether	8.98000	0.50	0.08	10.0000		89.8	58 - 137	3.40	20	
Ethylbenzene	21.1400	0.50	0.08	20.0000		106	72 - 134	0.903	20	
Freon-113	11.5900	0.50	0.34	10.0000		116	75 - 157	1.74	20	
Hexachlorobutadiene	10.1700	0.50	0.22	10.0000		102	72 - 139	0.196	20	
Isopropylbenzene	10.3400	0.50	0.10	10.0000		103	73 - 146	0.962	20	
m,p-Xylene	20.4300	1.0	0.18	20.0000		102	75 - 138	0.245	20	
Methylene chloride	9.82000	1.0	0.26	10.0000		98.2	52 - 154	4.58	20	
MTBE	9.11000	0.50	0.09	10.0000		91.1	62 - 129	1.55	20	
n-Butylbenzene	10.6000	0.50	0.15	10.0000		106	72 - 151	0.939	20	
n-Propylbenzene	10.6800	0.50	0.14	10.0000		107	69 - 149	0.467	20	
Naphthalene	9.85000	0.50	0.09	10.0000		98.5	61 - 122	4.08	20	
o-Xylene	20.2200	0.50	0.04	20.0000		101	66 - 147	1.33	20	
sec-Butylbenzene	10.6700	0.50	0.15	10.0000		107	72 - 148	0.282	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0319 - MSVOA_LL_W (continued)										
LCS Dup (B7J0319-BSD1) - Continued					Prepared: 10/13/2017 Analyzed: 10/13/2017					
Styrene	9.96000	0.50	0.05	10.0000		99.6	72 - 138	0.100	20	
tert-Amyl methyl ether	8.70000	0.50	0.10	10.0000		87.0	53 - 122	1.04	20	
tert-Butanol	36.6800	10	3.0	50.0000		73.4	21 - 149	2.74	20	
tert-Butylbenzene	10.4400	0.50	0.11	10.0000		104	70 - 145	0.769	20	
Tetrachloroethene	10.4900	0.50	0.18	10.0000		105	61 - 145	0.766	20	
Toluene	21.5800	0.50	0.14	20.0000		108	70 - 140	1.12	20	
trans-1,2-Dichloroethene	10.3700	0.50	0.15	10.0000		104	73 - 130	1.85	20	
trans-1,3-Dichloropropene	7.17000	0.50	0.09	10.0000		71.7	72 - 129	0.419	20	L4
Trichloroethene	10.7200	0.50	0.15	10.0000		107	69 - 126	2.07	20	
Trichlorofluoromethane	11.4800	0.50	0.33	10.0000		115	70 - 159	2.47	20	
Vinyl acetate	77.8800	10	1.9	100.000		77.9	69 - 170	2.70	20	
Vinyl chloride	9.76000	0.50	0.25	10.0000		97.6	56 - 151	1.55	20	
Surrogate: 1,2-Dichloroethane-d4	*25.28*			*25.0000*		*101*	*70 - 166*			
Surrogate: 4-Bromofluorobenzene	*24.08*			*25.0000*		*96.3*	*88 - 120*			
Surrogate: Dibromofluoromethan	*25.78*			*25.0000*		*103*	*80 - 150*			
Surrogate: Toluene-d8	*24.72*			*25.0000*		*98.9*	*87 - 121*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S										
Blank (B7J0750-BLK1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							
1,1,1-Trichloroethane	ND	5.0	1.1							
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							
1,1,2-Trichloroethane	ND	5.0	1.6							
1,1-Dichloroethane	ND	5.0	0.81							
1,1-Dichloroethene	ND	5.0	2.6							
1,1-Dichloropropene	ND	5.0	2.3							
1,2,3-Trichloropropane	ND	5.0	0.54							
1,2,3-Trichlorobenzene	ND	5.0	1.2							
1,2,4-Trichlorobenzene	ND	5.0	1.1							
1,2,4-Trimethylbenzene	ND	5.0	1.5							
1,2-Dibromo-3-chloropropane	ND	10	1.6							
1,2-Dibromoethane	ND	5.0	3.2							
1,2-Dichlorobenzene	ND	5.0	1.1							
1,2-Dichloroethane	ND	5.0	1.2							
1,2-Dichloropropane	ND	5.0	1.8							
1,3,5-Trimethylbenzene	ND	5.0	1.7							
1,3-Dichlorobenzene	ND	5.0	1.3							
1,3-Dichloropropane	ND	5.0	1.1							
1,4-Dichlorobenzene	ND	5.0	1.2							
2,2-Dichloropropane	ND	5.0	1.2							
2-Chlorotoluene	ND	5.0	1.6							
4-Chlorotoluene	ND	5.0	1.5							
4-Isopropyltoluene	ND	5.0	2.3							
Benzene	ND	5.0	0.64							
Bromobenzene	ND	5.0	1.1							
Bromochloromethane	ND	5.0	0.64							
Bromodichloromethane	ND	5.0	1.2							
Bromoform	ND	5.0	0.80							
Bromomethane	ND	5.0	2.5							
Carbon disulfide	ND	5.0	3.5							
Carbon tetrachloride	ND	5.0	1.2							
Chlorobenzene	ND	5.0	1.0							
Chloroethane	ND	5.0	1.1							
Chloroform	ND	5.0	0.82							
Chloromethane	ND	5.0	1.4							
cis-1,2-Dichloroethene	ND	5.0	0.67							
cis-1,3-Dichloropropene	ND	5.0	1.9							
Di-isopropyl ether	ND	5.0	0.55							
Dibromochloromethane	ND	5.0	1.0							
Dibromomethane	ND	5.0	1.6							

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
Blank (B7J0750-BLK1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
Dichlorodifluoromethane	ND	5.0	2.2							
Ethyl Acetate	ND	50	8.1							
Ethyl Ether	ND	50	6.1							
Ethyl tert-butyl ether	ND	5.0	0.67							
Ethylbenzene	ND	5.0	0.91							
Freon-113	ND	5.0	2.8							
Hexachlorobutadiene	ND	5.0	2.5							
Isopropylbenzene	ND	5.0	1.8							
m,p-Xylene	ND	10	1.5							
Methylene chloride	ND	5.0	2.3							
MTBE	ND	5.0	0.63							
n-Butylbenzene	ND	5.0	2.4							
n-Propylbenzene	ND	5.0	2.2							
Naphthalene	ND	5.0	0.97							
o-Xylene	ND	5.0	0.87							
sec-Butylbenzene	ND	5.0	2.3							
Styrene	ND	5.0	1.5							
tert-Amyl methyl ether	ND	5.0	0.59							
tert-Butanol	ND	100	19							
tert-Butylbenzene	ND	5.0	2.0							
Tetrachloroethene	ND	5.0	1.6							
Toluene	ND	5.0	0.94							
trans-1,2-Dichloroethene	ND	5.0	0.59							
trans-1,3-Dichloropropene	ND	5.0	2.1							
Trichloroethene	ND	5.0	3.1							
Trichlorofluoromethane	ND	5.0	1.4							
Vinyl acetate	ND	50	9.8							
Vinyl chloride	ND	5.0	1.7							
Surrogate: 1,2-Dichloroethane-d4	*42.17*			*50.0000*		*84.3*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*50.38*			*50.0000*		*101*	*68 - 131*			
Surrogate: Dibromofluoromethan	*43.07*			*50.0000*		*86.1*	*49 - 134*			
Surrogate: Toluene-d8	*49.82*			*50.0000*		*99.6*	*75 - 132*			
LCS (B7J0750-BS1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,1,1,2-Tetrachloroethane	45.3800	5.0	0.96	50.0000		90.8	80 - 117			
1,1,1-Trichloroethane	46.3500	5.0	1.1	50.0000		92.7	70 - 122			
1,1,2,2-Tetrachloroethane	47.1400	5.0	0.62	50.0000		94.3	69 - 115			
1,1,2-Trichloroethane	48.3600	5.0	1.6	50.0000		96.7	74 - 120			
1,1-Dichloroethane	47.7700	5.0	0.81	50.0000		95.5	72 - 118			
1,1-Dichloroethene	48.1100	5.0	2.6	50.0000		96.2	61 - 124			
1,1-Dichloropropene	48.2400	5.0	2.3	50.0000		96.5	74 - 128			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS (B7J0750-BS1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,2,3-Trichloropropane	44.5200	5.0	0.54	50.0000		89.0	67 - 116			
1,2,3-Trichlorobenzene	45.7500	5.0	1.2	50.0000		91.5	86 - 127			
1,2,4-Trichlorobenzene	47.7100	5.0	1.1	50.0000		95.4	88 - 137			
1,2,4-Trimethylbenzene	49.0700	5.0	1.5	50.0000		98.1	78 - 125			
1,2-Dibromo-3-chloropropane	47.0900	10	1.6	50.0000		94.2	70 - 134			
1,2-Dibromoethane	46.9600	5.0	3.2	50.0000		93.9	73 - 127			
1,2-Dichlorobenzene	47.6300	5.0	1.1	50.0000		95.3	85 - 116			
1,2-Dichloroethane	47.2900	5.0	1.2	50.0000		94.6	65 - 120			
1,2-Dichloropropane	48.6000	5.0	1.8	50.0000		97.2	81 - 114			
1,3,5-Trimethylbenzene	48.7800	5.0	1.7	50.0000		97.6	76 - 125			
1,3-Dichlorobenzene	47.6100	5.0	1.3	50.0000		95.2	83 - 117			
1,3-Dichloropropane	48.4200	5.0	1.1	50.0000		96.8	79 - 119			
1,4-Dichlorobenzene	48.7500	5.0	1.2	50.0000		97.5	84 - 115			
2,2-Dichloropropane	47.6000	5.0	1.2	50.0000		95.2	72 - 121			
2-Chlorotoluene	47.5000	5.0	1.6	50.0000		95.0	76 - 120			
4-Chlorotoluene	48.5700	5.0	1.5	50.0000		97.1	77 - 122			
4-Isopropyltoluene	50.1100	5.0	2.3	50.0000		100	77 - 131			
Benzene	95.0900	5.0	0.64	100.000		95.1	78 - 115			
Bromobenzene	46.0900	5.0	1.1	50.0000		92.2	79 - 113			
Bromochloromethane	44.1200	5.0	0.64	50.0000		88.2	66 - 123			
Bromodichloromethane	45.6800	5.0	1.2	50.0000		91.4	79 - 112			
Bromoform	45.0000	5.0	0.80	50.0000		90.0	67 - 125			
Bromomethane	66.9100	5.0	2.5	50.0000		134	49 - 150			
Carbon disulfide	52.1500	5.0	3.5	50.0000		104	61 - 146			
Carbon tetrachloride	46.3700	5.0	1.2	50.0000		92.7	65 - 133			
Chlorobenzene	47.2400	5.0	1.0	50.0000		94.5	82 - 113			
Chloroethane	54.5300	5.0	1.1	50.0000		109	46 - 146			
Chloroform	45.6600	5.0	0.82	50.0000		91.3	73 - 116			
Chloromethane	51.3500	5.0	1.4	50.0000		103	46 - 158			
cis-1,2-Dichloroethene	47.0800	5.0	0.67	50.0000		94.2	72 - 121			
cis-1,3-Dichloropropene	47.3000	5.0	1.9	50.0000		94.6	79 - 123			
Di-isopropyl ether	48.6600	5.0	0.55	50.0000		97.3	67 - 125			
Dibromochloromethane	46.2500	5.0	1.0	50.0000		92.5	79 - 116			
Dibromomethane	46.6700	5.0	1.6	50.0000		93.3	72 - 117			
Dichlorodifluoromethane	52.6200	5.0	2.2	50.0000		105	38 - 168			
Ethyl Acetate	526.690	50	8.1	500.000		105	55 - 144			
Ethyl Ether	475.190	50	6.1	500.000		95.0	52 - 133			
Ethyl tert-butyl ether	49.5600	5.0	0.67	50.0000		99.1	68 - 126			
Ethylbenzene	95.7800	5.0	0.91	100.000		95.8	79 - 116			
Freon-113	49.7500	5.0	2.8	50.0000		99.5	66 - 134			
Hexachlorobutadiene	47.3300	5.0	2.5	50.0000		94.7	84 - 133			
Isopropylbenzene	48.0100	5.0	1.8	50.0000		96.0	67 - 134			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS (B7J0750-BS1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
m,p-Xylene	99.6700	10	1.5	100.000		99.7	78 - 126			
Methylene chloride	49.8300	5.0	2.3	50.0000		99.7	31 - 148			
MTBE	46.4700	5.0	0.63	50.0000		92.9	59 - 131			
n-Butylbenzene	50.8900	5.0	2.4	50.0000		102	75 - 141			
n-Propylbenzene	48.5700	5.0	2.2	50.0000		97.1	73 - 127			
Naphthalene	47.2300	5.0	0.97	50.0000		94.5	78 - 129			
o-Xylene	91.8500	5.0	0.87	100.000		91.8	81 - 113			
sec-Butylbenzene	48.9100	5.0	2.3	50.0000		97.8	73 - 129			
Styrene	50.1800	5.0	1.5	50.0000		100	88 - 118			
tert-Amyl methyl ether	47.2700	5.0	0.59	50.0000		94.5	62 - 122			
tert-Butanol	235.130	100	19	250.000		94.1	36 - 142			
tert-Butylbenzene	48.3000	5.0	2.0	50.0000		96.6	74 - 126			
Tetrachloroethene	47.3700	5.0	1.6	50.0000		94.7	74 - 127			
Toluene	96.5300	5.0	0.94	100.000		96.5	79 - 119			
trans-1,2-Dichloroethene	39.2100	5.0	0.59	50.0000		78.4	61 - 128			
trans-1,3-Dichloropropene	48.4800	5.0	2.1	50.0000		97.0	75 - 116			
Trichloroethene	46.7000	5.0	3.1	50.0000		93.4	76 - 123			
Trichlorofluoromethane	50.2600	5.0	1.4	50.0000		101	58 - 134			
Vinyl acetate	526.560	50	9.8	500.000		105	63 - 143			
Vinyl chloride	53.9100	5.0	1.7	50.0000		108	51 - 145			
Surrogate: 1,2-Dichloroethane-d4	*52.52*			*50.0000*		*105*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*49.88*			*50.0000*		*99.8*	*68 - 131*			
Surrogate: Dibromofluoromethan	*49.24*			*50.0000*		*98.5*	*49 - 134*			
Surrogate: Toluene-d8	*52.12*			*50.0000*		*104*	*75 - 132*			
LCS Dup (B7J0750-BSD1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,1,1,2-Tetrachloroethane	45.1500	5.0	0.96	50.0000		90.3	80 - 117	0.508	20	
1,1,1-Trichloroethane	44.5900	5.0	1.1	50.0000		89.2	70 - 122	3.87	20	
1,1,2,2-Tetrachloroethane	45.8800	5.0	0.62	50.0000		91.8	69 - 115	2.71	20	
1,1,2-Trichloroethane	46.7000	5.0	1.6	50.0000		93.4	74 - 120	3.49	20	
1,1-Dichloroethane	45.7000	5.0	0.81	50.0000		91.4	72 - 118	4.43	20	
1,1-Dichloroethene	44.3500	5.0	2.6	50.0000		88.7	61 - 124	8.13	20	
1,1-Dichloropropene	45.6500	5.0	2.3	50.0000		91.3	74 - 128	5.52	20	
1,2,3-Trichloropropane	42.5900	5.0	0.54	50.0000		85.2	67 - 116	4.43	20	
1,2,3-Trichlorobenzene	47.6400	5.0	1.2	50.0000		95.3	86 - 127	4.05	20	
1,2,4-Trichlorobenzene	50.2200	5.0	1.1	50.0000		100	88 - 137	5.13	20	
1,2,4-Trimethylbenzene	48.2600	5.0	1.5	50.0000		96.5	78 - 125	1.66	20	
1,2-Dibromo-3-chloropropane	52.0400	10	1.6	50.0000		104	70 - 134	9.99	20	
1,2-Dibromoethane	50.4600	5.0	3.2	50.0000		101	73 - 127	7.19	20	
1,2-Dichlorobenzene	47.6800	5.0	1.1	50.0000		95.4	85 - 116	0.105	20	
1,2-Dichloroethane	48.0600	5.0	1.2	50.0000		96.1	65 - 120	1.62	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS Dup (B7J0750-BSD1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
1,2-Dichloropropane	47.9800	5.0	1.8	50.0000		96.0	81 - 114	1.28	20	
1,3,5-Trimethylbenzene	47.8300	5.0	1.7	50.0000		95.7	76 - 125	1.97	20	
1,3-Dichlorobenzene	47.3400	5.0	1.3	50.0000		94.7	83 - 117	0.569	20	
1,3-Dichloropropane	47.8600	5.0	1.1	50.0000		95.7	79 - 119	1.16	20	
1,4-Dichlorobenzene	47.8100	5.0	1.2	50.0000		95.6	84 - 115	1.95	20	
2,2-Dichloropropane	45.3600	5.0	1.2	50.0000		90.7	72 - 121	4.82	20	
2-Chlorotoluene	46.8100	5.0	1.6	50.0000		93.6	76 - 120	1.46	20	
4-Chlorotoluene	46.8400	5.0	1.5	50.0000		93.7	77 - 122	3.63	20	
4-Isopropyltoluene	48.8600	5.0	2.3	50.0000		97.7	77 - 131	2.53	20	
Benzene	92.7300	5.0	0.64	100.000		92.7	78 - 115	2.51	20	
Bromobenzene	45.4600	5.0	1.1	50.0000		90.9	79 - 113	1.38	20	
Bromochloromethane	43.8600	5.0	0.64	50.0000		87.7	66 - 123	0.591	20	
Bromodichloromethane	45.2700	5.0	1.2	50.0000		90.5	79 - 112	0.902	20	
Bromoform	45.1200	5.0	0.80	50.0000		90.2	67 - 125	0.266	20	
Bromomethane	61.8300	5.0	2.5	50.0000		124	49 - 150	7.89	20	
Carbon disulfide	48.8400	5.0	3.5	50.0000		97.7	61 - 146	6.56	20	
Carbon tetrachloride	44.7600	5.0	1.2	50.0000		89.5	65 - 133	3.53	20	
Chlorobenzene	46.6700	5.0	1.0	50.0000		93.3	82 - 113	1.21	20	
Chloroethane	54.5900	5.0	1.1	50.0000		109	46 - 146	0.110	20	
Chloroform	44.7800	5.0	0.82	50.0000		89.6	73 - 116	1.95	20	
Chloromethane	49.2800	5.0	1.4	50.0000		98.6	46 - 158	4.11	20	
cis-1,2-Dichloroethene	46.4800	5.0	0.67	50.0000		93.0	72 - 121	1.28	20	
cis-1,3-Dichloropropene	48.6300	5.0	1.9	50.0000		97.3	79 - 123	2.77	20	
Di-isopropyl ether	47.0800	5.0	0.55	50.0000		94.2	67 - 125	3.30	20	
Dibromochloromethane	45.0900	5.0	1.0	50.0000		90.2	79 - 116	2.54	20	
Dibromomethane	46.6500	5.0	1.6	50.0000		93.3	72 - 117	0.0429	20	
Dichlorodifluoromethane	48.9500	5.0	2.2	50.0000		97.9	38 - 168	7.23	20	
Ethyl Acetate	520.010	50	8.1	500.000		104	55 - 144	1.28	20	
Ethyl Ether	450.520	50	6.1	500.000		90.1	52 - 133	5.33	20	
Ethyl tert-butyl ether	47.9700	5.0	0.67	50.0000		95.9	68 - 126	3.26	20	
Ethylbenzene	93.3400	5.0	0.91	100.000		93.3	79 - 116	2.58	20	
Freon-113	46.9800	5.0	2.8	50.0000		94.0	66 - 134	5.73	20	
Hexachlorobutadiene	49.9500	5.0	2.5	50.0000		99.9	84 - 133	5.39	20	
Isopropylbenzene	46.5300	5.0	1.8	50.0000		93.1	67 - 134	3.13	20	
m,p-Xylene	98.2100	10	1.5	100.000		98.2	78 - 126	1.48	20	
Methylene chloride	63.3200	5.0	2.3	50.0000		127	31 - 148	23.8	20	R
MTBE	46.3500	5.0	0.63	50.0000		92.7	59 - 131	0.259	20	
n-Butylbenzene	50.1400	5.0	2.4	50.0000		100	75 - 141	1.48	20	
n-Propylbenzene	46.8400	5.0	2.2	50.0000		93.7	73 - 127	3.63	20	
Naphthalene	47.9900	5.0	0.97	50.0000		96.0	78 - 129	1.60	20	
o-Xylene	91.2700	5.0	0.87	100.000		91.3	81 - 113	0.633	20	
sec-Butylbenzene	48.1200	5.0	2.3	50.0000		96.2	73 - 129	1.63	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0750 - MSVOA_S (continued)										
LCS Dup (B7J0750-BSD1) - Continued					Prepared: 10/25/2017 Analyzed: 10/25/2017					
Styrene	49.8200	5.0	1.5	50.0000		99.6	88 - 118	0.720	20	
tert-Amyl methyl ether	45.3500	5.0	0.59	50.0000		90.7	62 - 122	4.15	20	
tert-Butanol	224.480	100	19	250.000		89.8	36 - 142	4.63	20	
tert-Butylbenzene	46.7200	5.0	2.0	50.0000		93.4	74 - 126	3.33	20	
Tetrachloroethene	45.8800	5.0	1.6	50.0000		91.8	74 - 127	3.20	20	
Toluene	94.2800	5.0	0.94	100.000		94.3	79 - 119	2.36	20	
trans-1,2-Dichloroethene	44.9700	5.0	0.59	50.0000		89.9	61 - 128	13.7	20	
trans-1,3-Dichloropropene	48.0700	5.0	2.1	50.0000		96.1	75 - 116	0.849	20	
Trichloroethene	46.3600	5.0	3.1	50.0000		92.7	76 - 123	0.731	20	
Trichlorofluoromethane	44.9000	5.0	1.4	50.0000		89.8	58 - 134	11.3	20	
Vinyl acetate	493.040	50	9.8	500.000		98.6	63 - 143	6.58	20	
Vinyl chloride	50.5400	5.0	1.7	50.0000		101	51 - 145	6.45	20	
Surrogate: 1,2-Dichloroethane-d4	*51.52*			*50.0000*		*103*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*50.20*			*50.0000*		*100*	*68 - 131*			
Surrogate: Dibromofluoromethan	*47.79*			*50.0000*		*95.6*	*49 - 134*			
Surrogate: Toluene-d8	*51.39*			*50.0000*		*103*	*75 - 132*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S										
Blank (B7J0791-BLK1)					Prepared: 10/26/2017 Analyzed: 10/26/2017					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							
1,1,1-Trichloroethane	ND	5.0	1.1							
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							
1,1,2-Trichloroethane	ND	5.0	1.6							
1,1-Dichloroethane	ND	5.0	0.81							
1,1-Dichloroethene	ND	5.0	2.6							
1,1-Dichloropropene	ND	5.0	2.3							
1,2,3-Trichloropropane	ND	5.0	0.54							
1,2,3-Trichlorobenzene	ND	5.0	1.2							
1,2,4-Trichlorobenzene	ND	5.0	1.1							
1,2,4-Trimethylbenzene	ND	5.0	1.5							
1,2-Dibromo-3-chloropropane	ND	10	1.6							
1,2-Dibromoethane	ND	5.0	3.2							
1,2-Dichlorobenzene	ND	5.0	1.1							
1,2-Dichloroethane	ND	5.0	1.2							
1,2-Dichloropropane	ND	5.0	1.8							
1,3,5-Trimethylbenzene	ND	5.0	1.7							
1,3-Dichlorobenzene	ND	5.0	1.3							
1,3-Dichloropropane	ND	5.0	1.1							
1,4-Dichlorobenzene	ND	5.0	1.2							
2,2-Dichloropropane	ND	5.0	1.2							
2-Chlorotoluene	ND	5.0	1.6							
4-Chlorotoluene	ND	5.0	1.5							
4-Isopropyltoluene	ND	5.0	2.3							
Benzene	ND	5.0	0.64							
Bromobenzene	ND	5.0	1.1							
Bromochloromethane	ND	5.0	0.64							
Bromodichloromethane	ND	5.0	1.2							
Bromoform	ND	5.0	0.80							
Bromomethane	ND	5.0	2.5							
Carbon disulfide	ND	5.0	3.5							
Carbon tetrachloride	ND	5.0	1.2							
Chlorobenzene	ND	5.0	1.0							
Chloroethane	ND	5.0	1.1							
Chloroform	ND	5.0	0.82							
Chloromethane	ND	5.0	1.4							
cis-1,2-Dichloroethene	ND	5.0	0.67							
cis-1,3-Dichloropropene	ND	5.0	1.9							
Di-isopropyl ether	ND	5.0	0.55							
Dibromochloromethane	ND	5.0	1.0							
Dibromomethane	ND	5.0	1.6							

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
Blank (B7J0791-BLK1) - Continued					Prepared: 10/26/2017 Analyzed: 10/26/2017					
Dichlorodifluoromethane	ND	5.0	2.2							
Ethyl Acetate	ND	50	8.1							
Ethyl Ether	ND	50	6.1							
Ethyl tert-butyl ether	ND	5.0	0.67							
Ethylbenzene	ND	5.0	0.91							
Freon-113	ND	5.0	2.8							
Hexachlorobutadiene	ND	5.0	2.5							
Isopropylbenzene	ND	5.0	1.8							
m,p-Xylene	ND	10	1.5							
Methylene chloride	ND	5.0	2.3							
MTBE	ND	5.0	0.63							
n-Butylbenzene	ND	5.0	2.4							
n-Propylbenzene	ND	5.0	2.2							
Naphthalene	ND	5.0	0.97							
o-Xylene	ND	5.0	0.87							
sec-Butylbenzene	ND	5.0	2.3							
Styrene	ND	5.0	1.5							
tert-Amyl methyl ether	ND	5.0	0.59							
tert-Butanol	ND	100	19							
tert-Butylbenzene	ND	5.0	2.0							
Tetrachloroethene	ND	5.0	1.6							
Toluene	ND	5.0	0.94							
trans-1,2-Dichloroethene	ND	5.0	0.59							
trans-1,3-Dichloropropene	ND	5.0	2.1							
Trichloroethene	ND	5.0	3.1							
Trichlorofluoromethane	ND	5.0	1.4							
Vinyl acetate	ND	50	9.8							
Vinyl chloride	ND	5.0	1.7							
Surrogate: 1,2-Dichloroethane-d4	*44.11*			*50.0000*		*88.2*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*51.26*			*50.0000*		*103*	*68 - 131*			
Surrogate: Dibromofluoromethan	*44.50*			*50.0000*		*89.0*	*49 - 134*			
Surrogate: Toluene-d8	*53.12*			*50.0000*		*106*	*75 - 132*			
LCS (B7J0791-BS1)					Prepared: 10/26/2017 Analyzed: 10/26/2017					
1,1,1,2-Tetrachloroethane	46.2700	5.0	0.96	50.0000		92.5	80 - 117			
1,1,1-Trichloroethane	46.2800	5.0	1.1	50.0000		92.6	70 - 122			
1,1,2,2-Tetrachloroethane	47.7800	5.0	0.62	50.0000		95.6	69 - 115			
1,1,2-Trichloroethane	47.8100	5.0	1.6	50.0000		95.6	74 - 120			
1,1-Dichloroethane	46.5900	5.0	0.81	50.0000		93.2	72 - 118			
1,1-Dichloroethene	47.1800	5.0	2.6	50.0000		94.4	61 - 124			
1,1-Dichloropropene	49.3200	5.0	2.3	50.0000		98.6	74 - 128			

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618.005
Report To : Brynn McCulloch
Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
LCS (B7J0791-BS1) - Continued					Prepared: 10/26/2017 Analyzed: 10/26/2017					
1,2,3-Trichloropropane	44.8500	5.0	0.54	50.0000		89.7	67 - 116			
1,2,3-Trichlorobenzene	46.5600	5.0	1.2	50.0000		93.1	86 - 127			
1,2,4-Trichlorobenzene	48.8200	5.0	1.1	50.0000		97.6	88 - 137			
1,2,4-Trimethylbenzene	49.2800	5.0	1.5	50.0000		98.6	78 - 125			
1,2-Dibromo-3-chloropropane	49.8700	10	1.6	50.0000		99.7	70 - 134			
1,2-Dibromoethane	50.4200	5.0	3.2	50.0000		101	73 - 127			
1,2-Dichlorobenzene	48.3700	5.0	1.1	50.0000		96.7	85 - 116			
1,2-Dichloroethane	49.1400	5.0	1.2	50.0000		98.3	65 - 120			
1,2-Dichloropropane	49.3600	5.0	1.8	50.0000		98.7	81 - 114			
1,3,5-Trimethylbenzene	49.7900	5.0	1.7	50.0000		99.6	76 - 125			
1,3-Dichlorobenzene	47.3600	5.0	1.3	50.0000		94.7	83 - 117			
1,3-Dichloropropane	47.8100	5.0	1.1	50.0000		95.6	79 - 119			
1,4-Dichlorobenzene	48.3900	5.0	1.2	50.0000		96.8	84 - 115			
2,2-Dichloropropane	46.6600	5.0	1.2	50.0000		93.3	72 - 121			
2-Chlorotoluene	47.7000	5.0	1.6	50.0000		95.4	76 - 120			
4-Chlorotoluene	48.8500	5.0	1.5	50.0000		97.7	77 - 122			
4-Isopropyltoluene	51.0500	5.0	2.3	50.0000		102	77 - 131			
Benzene	97.7300	5.0	0.64	100.000		97.7	78 - 115			
Bromobenzene	46.0900	5.0	1.1	50.0000		92.2	79 - 113			
Bromochloromethane	44.8100	5.0	0.64	50.0000		89.6	66 - 123			
Bromodichloromethane	47.7100	5.0	1.2	50.0000		95.4	79 - 112			
Bromoform	45.7700	5.0	0.80	50.0000		91.5	67 - 125			
Bromomethane	67.6100	5.0	2.5	50.0000		135	49 - 150			
Carbon disulfide	52.3000	5.0	3.5	50.0000		105	61 - 146			
Carbon tetrachloride	48.2900	5.0	1.2	50.0000		96.6	65 - 133			
Chlorobenzene	47.3100	5.0	1.0	50.0000		94.6	82 - 113			
Chloroethane	54.1500	5.0	1.1	50.0000		108	46 - 146			
Chloroform	45.0400	5.0	0.82	50.0000		90.1	73 - 116			
Chloromethane	51.6100	5.0	1.4	50.0000		103	46 - 158			
cis-1,2-Dichloroethene	46.4300	5.0	0.67	50.0000		92.9	72 - 121			
cis-1,3-Dichloropropene	48.8800	5.0	1.9	50.0000		97.8	79 - 123			
Di-isopropyl ether	46.3600	5.0	0.55	50.0000		92.7	67 - 125			
Dibromochloromethane	45.9800	5.0	1.0	50.0000		92.0	79 - 116			
Dibromomethane	46.9700	5.0	1.6	50.0000		93.9	72 - 117			
Dichlorodifluoromethane	51.2400	5.0	2.2	50.0000		102	38 - 168			
Ethyl Acetate	518.680	50	8.1	500.000		104	55 - 144			
Ethyl Ether	454.710	50	6.1	500.000		90.9	52 - 133			
Ethyl tert-butyl ether	47.0200	5.0	0.67	50.0000		94.0	68 - 126			
Ethylbenzene	97.4800	5.0	0.91	100.000		97.5	79 - 116			
Freon-113	51.0600	5.0	2.8	50.0000		102	66 - 134			
Hexachlorobutadiene	49.8900	5.0	2.5	50.0000		99.8	84 - 133			
Isopropylbenzene	48.5000	5.0	1.8	50.0000		97.0	67 - 134			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
LCS (B7J0791-BS1) - Continued					Prepared: 10/26/2017 Analyzed: 10/26/2017					
m,p-Xylene	100.910	10	1.5	100.000		101	78 - 126			
Methylene chloride	56.2200	5.0	2.3	50.0000		112	31 - 148			
MTBE	45.0500	5.0	0.63	50.0000		90.1	59 - 131			
n-Butylbenzene	51.8400	5.0	2.4	50.0000		104	75 - 141			
n-Propylbenzene	48.8500	5.0	2.2	50.0000		97.7	73 - 127			
Naphthalene	47.0200	5.0	0.97	50.0000		94.0	78 - 129			
o-Xylene	93.1300	5.0	0.87	100.000		93.1	81 - 113			
sec-Butylbenzene	49.4300	5.0	2.3	50.0000		98.9	73 - 129			
Styrene	50.3300	5.0	1.5	50.0000		101	88 - 118			
tert-Amyl methyl ether	44.7800	5.0	0.59	50.0000		89.6	62 - 122			
tert-Butanol	179.230	100	19	250.000		71.7	36 - 142			
tert-Butylbenzene	48.5900	5.0	2.0	50.0000		97.2	74 - 126			
Tetrachloroethene	47.8000	5.0	1.6	50.0000		95.6	74 - 127			
Toluene	99.9100	5.0	0.94	100.000		99.9	79 - 119			
trans-1,2-Dichloroethene	45.0600	5.0	0.59	50.0000		90.1	61 - 128			
trans-1,3-Dichloropropene	50.9500	5.0	2.1	50.0000		102	75 - 116			
Trichloroethene	48.1800	5.0	3.1	50.0000		96.4	76 - 123			
Trichlorofluoromethane	48.4500	5.0	1.4	50.0000		96.9	58 - 134			
Vinyl acetate	509.770	50	9.8	500.000		102	63 - 143			
Vinyl chloride	52.9700	5.0	1.7	50.0000		106	51 - 145			
Surrogate: 1,2-Dichloroethane-d4	*51.99*			*50.0000*		*104*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*50.93*			*50.0000*		*102*	*68 - 131*			
Surrogate: Dibromofluoromethan	*48.42*			*50.0000*		*96.8*	*49 - 134*			
Surrogate: Toluene-d8	*54.85*			*50.0000*		*110*	*75 - 132*			
Matrix Spike (B7J0791-MS1)			**Source: 1703807-01**		Prepared: 10/26/2017 Analyzed: 10/26/2017					
1,1,1,2-Tetrachloroethane	43.6600	5.0	0.96	50.0000	ND	87.3	27 - 130			
1,1,1-Trichloroethane	44.9500	5.0	1.1	50.0000	ND	89.9	32 - 135			
1,1,2,2-Tetrachloroethane	46.0600	5.0	0.62	50.0000	ND	92.1	17 - 135			
1,1,2-Trichloroethane	44.9300	5.0	1.6	50.0000	ND	89.9	31 - 129			
1,1-Dichloroethane	44.0100	5.0	0.81	50.0000	ND	88.0	37 - 130			
1,1-Dichloroethene	47.1500	5.0	2.6	50.0000	ND	94.3	41 - 125			
1,1-Dichloropropene	48.6400	5.0	2.3	50.0000	ND	97.3	33 - 138			
1,2,3-Trichloropropane	44.3300	5.0	0.54	50.0000	ND	88.7	20 - 137			
1,2,3-Trichlorobenzene	41.5100	5.0	1.2	50.0000	ND	83.0	0 - 147			
1,2,4-Trichlorobenzene	44.0400	5.0	1.1	50.0000	ND	88.1	0 - 156			
1,2,4-Trimethylbenzene	47.2300	5.0	1.5	50.0000	ND	94.5	10 - 139			
1,2-Dibromo-3-chloropropane	46.3300	10	1.6	50.0000	ND	92.7	17 - 145			
1,2-Dibromoethane	48.5400	5.0	3.2	50.0000	ND	97.1	25 - 136			
1,2-Dichlorobenzene	45.3600	5.0	1.1	50.0000	ND	90.7	8 - 134			
1,2-Dichloroethane	46.3600	5.0	1.2	50.0000	ND	92.7	31 - 123			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
Matrix Spike (B7J0791-MS1) - Continued			**Source: 1703807-01**		Prepared: 10/26/2017 Analyzed: 10/26/2017					
1,2-Dichloropropane	45.4000	5.0	1.8	50.0000	ND	90.8	38 - 123			
1,3,5-Trimethylbenzene	47.7500	5.0	1.7	50.0000	ND	95.5	10 - 139			
1,3-Dichlorobenzene	45.6100	5.0	1.3	50.0000	ND	91.2	8 - 134			
1,3-Dichloropropane	45.0100	5.0	1.1	50.0000	ND	90.0	34 - 130			
1,4-Dichlorobenzene	44.7000	5.0	1.2	50.0000	ND	89.4	10 - 134			
2,2-Dichloropropane	45.9600	5.0	1.2	50.0000	ND	91.9	36 - 133			
2-Chlorotoluene	46.0600	5.0	1.6	50.0000	ND	92.1	15 - 133			
4-Chlorotoluene	47.2900	5.0	1.5	50.0000	ND	94.6	13 - 135			
4-Isopropyltoluene	48.2000	5.0	2.3	50.0000	ND	96.4	2 - 146			
Benzene	91.6800	5.0	0.64	100.000	ND	91.7	40 - 123			
Bromobenzene	44.4100	5.0	1.1	50.0000	ND	88.8	18 - 132			
Bromochloromethane	43.3600	5.0	0.64	50.0000	ND	86.7	32 - 130			
Bromodichloromethane	44.3900	5.0	1.2	50.0000	ND	88.8	33 - 122			
Bromoform	43.9800	5.0	0.80	50.0000	ND	88.0	20 - 134			
Bromomethane	61.3600	5.0	2.5	50.0000	ND	123	35 - 140			
Carbon disulfide	51.2400	5.0	3.5	50.0000	ND	102	32 - 143			
Carbon tetrachloride	46.4400	5.0	1.2	50.0000	ND	92.9	23 - 144			
Chlorobenzene	44.9900	5.0	1.0	50.0000	ND	90.0	24 - 128			
Chloroethane	50.0100	5.0	1.1	50.0000	ND	100	35 - 135			
Chloroform	43.5100	5.0	0.82	50.0000	ND	87.0	36 - 126			
Chloromethane	49.6000	5.0	1.4	50.0000	ND	99.2	36 - 146			
cis-1,2-Dichloroethene	44.3600	5.0	0.67	50.0000	ND	88.7	31 - 136			
cis-1,3-Dichloropropene	45.9200	5.0	1.9	50.0000	ND	91.8	28 - 130			
Di-isopropyl ether	45.4500	5.0	0.55	50.0000	ND	90.9	32 - 133			
Dibromochloromethane	43.4600	5.0	1.0	50.0000	ND	86.9	30 - 129			
Dibromomethane	43.4700	5.0	1.6	50.0000	ND	86.9	28 - 126			
Dichlorodifluoromethane	51.6300	5.0	2.2	50.0000	ND	103	23 - 162			
Ethyl Acetate	468.760	50	8.1	500.000	ND	93.8	0 - 156			
Ethyl Ether	434.390	50	6.1	500.000	ND	86.9	33 - 128			
Ethyl tert-butyl ether	45.1600	5.0	0.67	50.0000	ND	90.3	33 - 138			
Ethylbenzene	92.3500	5.0	0.91	100.000	ND	92.4	22 - 132			
Freon-113	48.9100	5.0	2.8	50.0000	ND	97.8	31 - 140			
Hexachlorobutadiene	42.6400	5.0	2.5	50.0000	ND	85.3	0 - 150			
Isopropylbenzene	46.8600	5.0	1.8	50.0000	ND	93.7	15 - 144			
m,p-Xylene	96.3900	10	1.5	100.000	ND	96.4	19 - 138			
Methylene chloride	57.9700	5.0	2.3	50.0000	ND	116	9 - 145			
MTBE	42.3000	5.0	0.63	50.0000	ND	84.6	31 - 136			
n-Butylbenzene	48.8600	5.0	2.4	50.0000	ND	97.7	0 - 153			
n-Propylbenzene	47.2900	5.0	2.2	50.0000	ND	94.6	12 - 141			
Naphthalene	42.8200	5.0	0.97	50.0000	ND	85.6	0 - 145			
o-Xylene	88.2800	5.0	0.87	100.000	ND	88.3	20 - 129			
sec-Butylbenzene	47.3100	5.0	2.3	50.0000	ND	94.6	4 - 143			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
Matrix Spike (B7J0791-MS1) - Continued			**Source: 1703807-01**			Prepared: 10/26/2017 Analyzed: 10/26/2017				
Styrene	47.8800	5.0	1.5	50.0000	ND	95.8	19 - 136			
tert-Amyl methyl ether	43.1500	5.0	0.59	50.0000	ND	86.3	30 - 128			
tert-Butanol	187.070	100	19	250.000	ND	74.8	22 - 146			
tert-Butylbenzene	46.3700	5.0	2.0	50.0000	ND	92.7	9 - 140			
Tetrachloroethene	46.1200	5.0	1.6	50.0000	ND	92.2	18 - 143			
Toluene	94.5800	5.0	0.94	100.000	ND	94.6	30 - 132			
trans-1,2-Dichloroethene	43.6300	5.0	0.59	50.0000	ND	87.3	32 - 134			
trans-1,3-Dichloropropene	47.4900	5.0	2.1	50.0000	ND	95.0	23 - 127			
Trichloroethene	45.6600	5.0	3.1	50.0000	ND	91.3	17 - 158			
Trichlorofluoromethane	46.6800	5.0	1.4	50.0000	ND	93.4	36 - 135			
Vinyl acetate	396.020	50	9.8	500.000	ND	79.2	0 - 154			
Vinyl chloride	52.3800	5.0	1.7	50.0000	ND	105	38 - 140			
Surrogate: 1,2-Dichloroethane-d4	*51.81*			*50.0000*		*104*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*49.85*			*50.0000*		*99.7*	*68 - 131*			
Surrogate: Dibromofluoromethan	*48.20*			*50.0000*		*96.4*	*49 - 134*			
Surrogate: Toluene-d8	*52.03*			*50.0000*		*104*	*75 - 132*			
Matrix Spike Dup (B7J0791-MSD1)			**Source: 1703807-01**			Prepared: 10/26/2017 Analyzed: 10/26/2017				
1,1,1,2-Tetrachloroethane	43.8800	5.0	0.96	50.0000	ND	87.8	27 - 130	0.503	20	
1,1,1-Trichloroethane	44.5500	5.0	1.1	50.0000	ND	89.1	32 - 135	0.894	20	
1,1,2,2-Tetrachloroethane	44.4300	5.0	0.62	50.0000	ND	88.9	17 - 135	3.60	20	
1,1,2-Trichloroethane	44.8600	5.0	1.6	50.0000	ND	89.7	31 - 129	0.156	20	
1,1-Dichloroethane	43.9000	5.0	0.81	50.0000	ND	87.8	37 - 130	0.250	20	
1,1-Dichloroethene	45.3000	5.0	2.6	50.0000	ND	90.6	41 - 125	4.00	20	
1,1-Dichloropropene	47.4600	5.0	2.3	50.0000	ND	94.9	33 - 138	2.46	20	
1,2,3-Trichloropropane	42.2900	5.0	0.54	50.0000	ND	84.6	20 - 137	4.71	20	
1,2,3-Trichlorobenzene	38.3500	5.0	1.2	50.0000	ND	76.7	0 - 147	7.91	20	
1,2,4-Trichlorobenzene	41.0900	5.0	1.1	50.0000	ND	82.2	0 - 156	6.93	20	
1,2,4-Trimethylbenzene	45.9300	5.0	1.5	50.0000	ND	91.9	10 - 139	2.79	20	
1,2-Dibromo-3-chloropropane	48.9400	10	1.6	50.0000	ND	97.9	17 - 145	5.48	20	
1,2-Dibromoethane	45.1500	5.0	3.2	50.0000	ND	90.3	25 - 136	7.24	20	
1,2-Dichlorobenzene	43.7800	5.0	1.1	50.0000	ND	87.6	8 - 134	3.54	20	
1,2-Dichloroethane	45.3500	5.0	1.2	50.0000	ND	90.7	31 - 123	2.20	20	
1,2-Dichloropropane	45.3000	5.0	1.8	50.0000	ND	90.6	38 - 123	0.221	20	
1,3,5-Trimethylbenzene	45.9500	5.0	1.7	50.0000	ND	91.9	10 - 139	3.84	20	
1,3-Dichlorobenzene	43.8400	5.0	1.3	50.0000	ND	87.7	8 - 134	3.96	20	
1,3-Dichloropropane	44.8600	5.0	1.1	50.0000	ND	89.7	34 - 130	0.334	20	
1,4-Dichlorobenzene	44.3000	5.0	1.2	50.0000	ND	88.6	10 - 134	0.899	20	
2,2-Dichloropropane	45.5400	5.0	1.2	50.0000	ND	91.1	36 - 133	0.918	20	
2-Chlorotoluene	44.4500	5.0	1.6	50.0000	ND	88.9	15 - 133	3.56	20	
4-Chlorotoluene	45.7800	5.0	1.5	50.0000	ND	91.6	13 - 135	3.24	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
Matrix Spike Dup (B7J0791-MSD1) - Continued			**Source: 1703807-01**		Prepared: 10/26/2017 Analyzed: 10/26/2017					
4-Isopropyltoluene	46.4500	5.0	2.3	50.0000	ND	92.9	2 - 146	3.70	20	
Benzene	90.3300	5.0	0.64	100.000	ND	90.3	40 - 123	1.48	20	
Bromobenzene	43.1000	5.0	1.1	50.0000	ND	86.2	18 - 132	2.99	20	
Bromochloromethane	41.6700	5.0	0.64	50.0000	ND	83.3	32 - 130	3.98	20	
Bromodichloromethane	44.5600	5.0	1.2	50.0000	ND	89.1	33 - 122	0.382	20	
Bromoform	42.8100	5.0	0.80	50.0000	ND	85.6	20 - 134	2.70	20	
Bromomethane	59.7800	5.0	2.5	50.0000	ND	120	35 - 140	2.61	20	
Carbon disulfide	48.5900	5.0	3.5	50.0000	ND	97.2	32 - 143	5.31	20	
Carbon tetrachloride	46.1000	5.0	1.2	50.0000	ND	92.2	23 - 144	0.735	20	
Chlorobenzene	44.3800	5.0	1.0	50.0000	ND	88.8	24 - 128	1.37	20	
Chloroethane	50.3700	5.0	1.1	50.0000	ND	101	35 - 135	0.717	20	
Chloroform	42.8000	5.0	0.82	50.0000	ND	85.6	36 - 126	1.65	20	
Chloromethane	48.7200	5.0	1.4	50.0000	ND	97.4	36 - 146	1.79	20	
cis-1,2-Dichloroethene	43.5300	5.0	0.67	50.0000	ND	87.1	31 - 136	1.89	20	
cis-1,3-Dichloropropene	44.8800	5.0	1.9	50.0000	ND	89.8	28 - 130	2.29	20	
Di-isopropyl ether	44.5100	5.0	0.55	50.0000	ND	89.0	32 - 133	2.09	20	
Dibromochloromethane	43.2100	5.0	1.0	50.0000	ND	86.4	30 - 129	0.577	20	
Dibromomethane	43.4400	5.0	1.6	50.0000	ND	86.9	28 - 126	0.0690	20	
Dichlorodifluoromethane	50.6200	5.0	2.2	50.0000	ND	101	23 - 162	1.98	20	
Ethyl Acetate	411.500	50	8.1	500.000	ND	82.3	0 - 156	13.0	20	
Ethyl Ether	426.920	50	6.1	500.000	ND	85.4	33 - 128	1.73	20	
Ethyl tert-butyl ether	44.7600	5.0	0.67	50.0000	ND	89.5	33 - 138	0.890	20	
Ethylbenzene	91.0200	5.0	0.91	100.000	ND	91.0	22 - 132	1.45	20	
Freon-113	46.2000	5.0	2.8	50.0000	ND	92.4	31 - 140	5.70	20	
Hexachlorobutadiene	40.0000	5.0	2.5	50.0000	ND	80.0	0 - 150	6.39	20	
Isopropylbenzene	46.0300	5.0	1.8	50.0000	ND	92.1	15 - 144	1.79	20	
m,p-Xylene	95.0000	10	1.5	100.000	ND	95.0	19 - 138	1.45	20	
Methylene chloride	51.6100	5.0	2.3	50.0000	ND	103	9 - 145	11.6	20	
MTBE	42.2300	5.0	0.63	50.0000	ND	84.5	31 - 136	0.166	20	
n-Butylbenzene	46.1800	5.0	2.4	50.0000	ND	92.4	0 - 153	5.64	20	
n-Propylbenzene	45.7800	5.0	2.2	50.0000	ND	91.6	12 - 141	3.24	20	
Naphthalene	41.3800	5.0	0.97	50.0000	ND	82.8	0 - 145	3.42	20	
o-Xylene	87.1900	5.0	0.87	100.000	ND	87.2	20 - 129	1.24	20	
sec-Butylbenzene	45.5500	5.0	2.3	50.0000	ND	91.1	4 - 143	3.79	20	
Styrene	46.4500	5.0	1.5	50.0000	ND	92.9	19 - 136	3.03	20	
tert-Amyl methyl ether	42.3600	5.0	0.59	50.0000	ND	84.7	30 - 128	1.85	20	
tert-Butanol	170.160	100	19	250.000	ND	68.1	22 - 146	9.47	20	
tert-Butylbenzene	45.1300	5.0	2.0	50.0000	ND	90.3	9 - 140	2.71	20	
Tetrachloroethene	44.8700	5.0	1.6	50.0000	ND	89.7	18 - 143	2.75	20	
Toluene	93.3000	5.0	0.94	100.000	ND	93.3	30 - 132	1.36	20	
trans-1,2-Dichloroethene	42.7000	5.0	0.59	50.0000	ND	85.4	32 - 134	2.15	20	
trans-1,3-Dichloropropene	47.2700	5.0	2.1	50.0000	ND	94.5	23 - 127	0.464	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0791 - MSVOA_S (continued)										
Matrix Spike Dup (B7J0791-MSD1) - Continued			**Source: 1703807-01**		Prepared: 10/26/2017 Analyzed: 10/26/2017					
Trichloroethene	44.1500	5.0	3.1	50.0000	ND	88.3	17 - 158	3.36	20	
Trichlorofluoromethane	47.2400	5.0	1.4	50.0000	ND	94.5	36 - 135	1.19	20	
Vinyl acetate	270.060	50	9.8	500.000	ND	54.0	0 - 154	37.8	20	R
Vinyl chloride	51.4300	5.0	1.7	50.0000	ND	103	38 - 140	1.83	20	
Surrogate: 1,2-Dichloroethane-d4	*52.11*			*50.0000*		*104*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*48.53*			*50.0000*		*97.1*	*68 - 131*			
Surrogate: Dibromofluoromethan	*46.15*			*50.0000*		*92.3*	*49 - 134*			
Surrogate: Toluene-d8	*50.44*			*50.0000*		*101*	*75 - 132*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0413 - MSSEMI_W										
Blank (B7J0413-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	ND	0.20	0.02							
Acenaphthene	ND	0.20	0.02							
Acenaphthylene	ND	0.20	0.02							
Anthracene	ND	0.20	0.01							
Benzo(a)anthracene	ND	0.20	0.01							
Benzo(a)pyrene	ND	0.20	0.01							
Benzo(b)fluoranthene	ND	0.20	0.06							
Benzo(g,h,i)perylene	ND	0.20	0.02							
Benzo(k)fluoranthene	ND	0.20	0.02							
Chrysene	ND	0.20	0.02							
Dibenz(a,h)anthracene	ND	0.20	0.02							
Fluoranthene	ND	0.20	0.02							
Fluorene	ND	0.20	0.02							
Indeno(1,2,3-cd)pyrene	ND	0.20	0.02							
Naphthalene	ND	0.20	0.02							
Phenanthrene	ND	0.20	0.02							
Pyrene	ND	0.20	0.02							
Surrogate: 1,2-Dichlorobenzene-d	*0.7723*			*1.00000*		*77.2*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8111*			*1.00000*		*81.1*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.9341*			*1.00000*		*93.4*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*1.165*			*1.00000*		*117*	*32 - 119*			
LCS (B7J0413-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	0.594950	0.20	0.02	1.00000		59.5	38 - 137			
Acenaphthene	0.670340	0.20	0.02	1.00000		67.0	38 - 103			
Acenaphthylene	0.682710	0.20	0.02	1.00000		68.3	41 - 102			
Anthracene	0.707100	0.20	0.01	1.00000		70.7	37 - 118			
Benzo(a)anthracene	0.778780	0.20	0.01	1.00000		77.9	42 - 118			
Benzo(a)pyrene	0.712580	0.20	0.01	1.00000		71.3	17 - 148			
Benzo(b)fluoranthene	0.800210	0.20	0.06	1.00000		80.0	33 - 126			
Benzo(g,h,i)perylene	0.716580	0.20	0.02	1.00000		71.7	33 - 123			
Benzo(k)fluoranthene	0.803040	0.20	0.02	1.00000		80.3	20 - 131			
Chrysene	0.747150	0.20	0.02	1.00000		74.7	44 - 127			
Dibenz(a,h)anthracene	0.796090	0.20	0.02	1.00000		79.6	31 - 122			
Fluoranthene	0.761460	0.20	0.02	1.00000		76.1	48 - 113			
Fluorene	0.740860	0.20	0.02	1.00000		74.1	46 - 100			
Indeno(1,2,3-cd)pyrene	0.750140	0.20	0.02	1.00000		75.0	35 - 123			
Naphthalene	0.706850	0.20	0.02	1.00000		70.7	35 - 115			
Phenanthrene	0.708600	0.20	0.02	1.00000		70.9	43 - 112			
Pyrene	0.762180	0.20	0.02	1.00000		76.2	47 - 116			
Surrogate: 1,2-Dichlorobenzene-d	*0.7505*			*1.00000*		*75.1*	*32 - 99*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0413 - MSSEMI_W (continued)										
LCS (B7J0413-BS1) - Continued						Prepared: 10/16/2017 Analyzed: 10/16/2017				
Surrogate: 2-Fluorobiphenyl	*0.8615*			*1.00000*		*86.2*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.8931*			*1.00000*		*89.3*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*0.9966*			*1.00000*		*99.7*	*32 - 119*			
LCS Dup (B7J0413-BSD1)						Prepared: 10/16/2017 Analyzed: 10/16/2017				
2-Methylnaphthalene	0.588280	0.20	0.02	1.00000		58.8	38 - 137	1.13	20	
Acenaphthene	0.688400	0.20	0.02	1.00000		68.8	38 - 103	2.66	20	
Acenaphthylene	0.696510	0.20	0.02	1.00000		69.7	41 - 102	2.00	20	
Anthracene	0.698560	0.20	0.01	1.00000		69.9	37 - 118	1.22	20	
Benzo(a)anthracene	0.791900	0.20	0.01	1.00000		79.2	42 - 118	1.67	20	
Benzo(a)pyrene	0.696140	0.20	0.01	1.00000		69.6	17 - 148	2.33	20	
Benzo(b)fluoranthene	0.811500	0.20	0.06	1.00000		81.2	33 - 126	1.40	20	
Benzo(g,h,i)perylene	0.721590	0.20	0.02	1.00000		72.2	33 - 123	0.697	20	
Benzo(k)fluoranthene	0.794240	0.20	0.02	1.00000		79.4	20 - 131	1.10	20	
Chrysene	0.745200	0.20	0.02	1.00000		74.5	44 - 127	0.261	20	
Dibenz(a,h)anthracene	0.792430	0.20	0.02	1.00000		79.2	31 - 122	0.461	20	
Fluoranthene	0.772070	0.20	0.02	1.00000		77.2	48 - 113	1.38	20	
Fluorene	0.737630	0.20	0.02	1.00000		73.8	46 - 100	0.437	20	
Indeno(1,2,3-cd)pyrene	0.762320	0.20	0.02	1.00000		76.2	35 - 123	1.61	20	
Naphthalene	0.704320	0.20	0.02	1.00000		70.4	35 - 115	0.359	20	
Phenanthrene	0.702930	0.20	0.02	1.00000		70.3	43 - 112	0.803	20	
Pyrene	0.772110	0.20	0.02	1.00000		77.2	47 - 116	1.29	20	
Surrogate: 1,2-Dichlorobenzene-d	*0.7333*			*1.00000*		*73.3*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8521*			*1.00000*		*85.2*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.8699*			*1.00000*		*87.0*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*0.9920*			*1.00000*		*99.2*	*32 - 119*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0757 - MSSEMI_S										
Blank (B7J0757-BLK1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
2-Methylnaphthalene	ND	5.0	0.60							
Acenaphthene	ND	5.0	0.41							
Acenaphthylene	ND	5.0	0.41							
Anthracene	ND	5.0	0.56							
Benzo(a)anthracene	ND	5.0	0.56							
Benzo(a)pyrene	ND	5.0	0.69							
Benzo(b)fluoranthene	ND	5.0	2.2							
Benzo(g,h,i)perylene	ND	5.0	0.80							
Benzo(k)fluoranthene	ND	5.0	0.70							
Chrysene	ND	5.0	0.61							
Dibenz(a,h)anthracene	ND	5.0	0.88							
Fluoranthene	ND	5.0	0.45							
Fluorene	ND	5.0	0.35							
Indeno(1,2,3-cd)pyrene	ND	5.0	0.82							
Naphthalene	ND	5.0	0.56							
Phenanthrene	ND	5.0	0.34							
Pyrene	ND	5.0	0.51							
Surrogate: 1,2-Dichlorobenzene-d	*21.72*			*33.3333*		*65.2*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*26.50*			*33.3333*		*79.5*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*17.05*			*33.3333*		*51.1*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*31.30*			*33.3333*		*93.9*	*39 - 123*			
LCS (B7J0757-BS1)					Prepared: 10/25/2017 Analyzed: 10/25/2017					
2-Methylnaphthalene	15.4713	5.0	0.60	33.3333		46.4	23 - 127			
Acenaphthene	17.9283	5.0	0.41	33.3333		53.8	35 - 91			
Acenaphthylene	18.3447	5.0	0.41	33.3333		55.0	35 - 92			
Anthracene	19.9567	5.0	0.56	33.3333		59.9	43 - 109			
Benzo(a)anthracene	24.4347	5.0	0.56	33.3333		73.3	46 - 121			
Benzo(a)pyrene	21.8650	5.0	0.69	33.3333		65.6	49 - 126			
Benzo(b)fluoranthene	28.0460	5.0	2.2	33.3333		84.1	34 - 137			
Benzo(g,h,i)perylene	28.6290	5.0	0.80	33.3333		85.9	40 - 124			
Benzo(k)fluoranthene	23.0450	5.0	0.70	33.3333		69.1	21 - 132			
Chrysene	21.9727	5.0	0.61	33.3333		65.9	51 - 124			
Dibenz(a,h)anthracene	30.3893	5.0	0.88	33.3333		91.2	38 - 123			
Fluoranthene	23.2743	5.0	0.45	33.3333		69.8	47 - 105			
Fluorene	20.2763	5.0	0.35	33.3333		60.8	34 - 95			
Indeno(1,2,3-cd)pyrene	28.1337	5.0	0.82	33.3333		84.4	45 - 124			
Naphthalene	21.1413	5.0	0.56	33.3333		63.4	26 - 110			
Phenanthrene	20.3483	5.0	0.34	33.3333		61.0	39 - 108			
Pyrene	22.9497	5.0	0.51	33.3333		68.8	47 - 107			
Surrogate: 1,2-Dichlorobenzene-d	*21.74*			*33.3333*		*65.2*	*29 - 109*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0757 - MSSEMI_S (continued)										
LCS (B7J0757-BS1) - Continued						Prepared: 10/25/2017 Analyzed: 10/25/2017				
Surrogate: 2-Fluorobiphenyl	*25.54*			*33.3333*		*76.6*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*17.26*			*33.3333*		*51.8*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*30.92*			*33.3333*		*92.8*	*39 - 123*			
Matrix Spike (B7J0757-MS1)			**Source: 1703641-33**			Prepared: 10/25/2017 Analyzed: 10/25/2017				
2-Methylnaphthalene	16.0677	5.0	0.60	33.3333	ND	48.2	30 - 141			
Acenaphthene	18.3313	5.0	0.41	33.3333	ND	55.0	9 - 155			
Acenaphthylene	19.1713	5.0	0.41	33.3333	ND	57.5	43 - 110			
Anthracene	19.6413	5.0	0.56	33.3333	ND	58.9	33 - 146			
Benzo(a)anthracene	24.1603	5.0	0.56	33.3333	0.886000	69.8	49 - 130			
Benzo(a)pyrene	22.4533	5.0	0.69	33.3333	0.972000	64.4	36 - 134			
Benzo(b)fluoranthene	28.1877	5.0	2.2	33.3333	ND	84.6	26 - 148			
Benzo(g,h,i)perylene	27.3003	5.0	0.80	33.3333	1.07733	78.7	16 - 156			
Benzo(k)fluoranthene	21.5640	5.0	0.70	33.3333	ND	64.7	29 - 132			
Chrysene	21.7687	5.0	0.61	33.3333	0.950333	62.5	0 - 184			
Dibenz(a,h)anthracene	26.4073	5.0	0.88	33.3333	ND	79.2	29 - 149			
Fluoranthene	24.6230	5.0	0.45	33.3333	1.39000	69.7	14 - 162			
Fluorene	20.6440	5.0	0.35	33.3333	ND	61.9	48 - 111			
Indeno(1,2,3-cd)pyrene	26.3657	5.0	0.82	33.3333	ND	79.1	37 - 135			
Naphthalene	21.3907	5.0	0.56	33.3333	ND	64.2	34 - 126			
Phenanthrene	21.0370	5.0	0.34	33.3333	0.683333	61.1	19 - 155			
Pyrene	24.2550	5.0	0.51	33.3333	1.37100	68.7	13 - 162			
Surrogate: 1,2-Dichlorobenzene-d	*20.75*			*33.3333*		*62.3*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*26.44*			*33.3333*		*79.3*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*17.07*			*33.3333*		*51.2*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*26.58*			*33.3333*		*79.7*	*39 - 123*			
Matrix Spike Dup (B7J0757-MSD1)			**Source: 1703641-33**			Prepared: 10/25/2017 Analyzed: 10/25/2017				
2-Methylnaphthalene	14.5860	5.0	0.60	33.3333	ND	43.8	30 - 141	9.67	20	
Acenaphthene	17.5750	5.0	0.41	33.3333	ND	52.7	9 - 155	4.21	20	
Acenaphthylene	18.6233	5.0	0.41	33.3333	ND	55.9	43 - 110	2.90	20	
Anthracene	18.6273	5.0	0.56	33.3333	ND	55.9	33 - 146	5.30	20	
Benzo(a)anthracene	22.8487	5.0	0.56	33.3333	0.886000	65.9	49 - 130	5.58	20	
Benzo(a)pyrene	20.7357	5.0	0.69	33.3333	0.972000	59.3	36 - 134	7.95	20	
Benzo(b)fluoranthene	24.9090	5.0	2.2	33.3333	ND	74.7	26 - 148	12.3	20	
Benzo(g,h,i)perylene	25.5220	5.0	0.80	33.3333	1.07733	73.3	16 - 156	6.73	20	
Benzo(k)fluoranthene	21.3153	5.0	0.70	33.3333	ND	63.9	29 - 132	1.16	20	
Chrysene	20.3623	5.0	0.61	33.3333	0.950333	58.2	0 - 184	6.68	20	
Dibenz(a,h)anthracene	25.4717	5.0	0.88	33.3333	ND	76.4	29 - 149	3.61	20	
Fluoranthene	23.2487	5.0	0.45	33.3333	1.39000	65.6	14 - 162	5.74	20	
Fluorene	19.7670	5.0	0.35	33.3333	ND	59.3	48 - 111	4.34	20	
Indeno(1,2,3-cd)pyrene	25.2027	5.0	0.82	33.3333	ND	75.6	37 - 135	4.51	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0757 - MSSEMI_S (continued)										
Matrix Spike Dup (B7J0757-MSD1) - Continued			**Source: 1703641-33**		Prepared: 10/25/2017 Analyzed: 10/25/2017					
Naphthalene	19.5670	5.0	0.56	33.3333	ND	58.7	34 - 126	8.91	20	
Phenanthrene	19.8897	5.0	0.34	33.3333	0.683333	57.6	19 - 155	5.61	20	
Pyrene	22.3383	5.0	0.51	33.3333	1.37100	62.9	13 - 162	8.23	20	
Surrogate: 1,2-Dichlorobenzene-d	*18.94*			*33.3333*		*56.8*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*25.06*			*33.3333*		*75.2*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*16.15*			*33.3333*		*48.5*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*25.38*			*33.3333*		*76.1*	*39 - 123*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0764 - MSSEMI_S										
Blank (B7J0764-BLK1)					Prepared: 10/25/2017 Analyzed: 10/27/2017					
2-Methylnaphthalene	ND	5.0	0.60							
Acenaphthene	ND	5.0	0.41							
Acenaphthylene	ND	5.0	0.41							
Anthracene	ND	5.0	0.56							
Benzo(a)anthracene	ND	5.0	0.56							
Benzo(a)pyrene	ND	5.0	0.69							
Benzo(b)fluoranthene	ND	5.0	2.2							
Benzo(g,h,i)perylene	ND	5.0	0.80							
Benzo(k)fluoranthene	ND	5.0	0.70							
Chrysene	ND	5.0	0.61							
Dibenz(a,h)anthracene	ND	5.0	0.88							
Fluoranthene	ND	5.0	0.45							
Fluorene	ND	5.0	0.35							
Indeno(1,2,3-cd)pyrene	ND	5.0	0.82							
Naphthalene	ND	5.0	0.56							
Phenanthrene	ND	5.0	0.34							
Pyrene	ND	5.0	0.51							
Surrogate: 1,2-Dichlorobenzene-d	*19.60*			*33.3333*		*58.8*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*24.66*			*33.3333*		*74.0*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*16.98*			*33.3333*		*50.9*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*31.42*			*33.3333*		*94.3*	*39 - 123*			
LCS (B7J0764-BS1)					Prepared: 10/25/2017 Analyzed: 10/27/2017					
2-Methylnaphthalene	15.0823	5.0	0.60	33.3333		45.2	23 - 127			
Acenaphthene	18.0693	5.0	0.41	33.3333		54.2	35 - 91			
Acenaphthylene	18.6617	5.0	0.41	33.3333		56.0	35 - 92			
Anthracene	20.9190	5.0	0.56	33.3333		62.8	43 - 109			
Benzo(a)anthracene	27.2840	5.0	0.56	33.3333		81.9	46 - 121			
Benzo(a)pyrene	23.5467	5.0	0.69	33.3333		70.6	49 - 126			
Benzo(b)fluoranthene	29.1363	5.0	2.2	33.3333		87.4	34 - 137			
Benzo(g,h,i)perylene	27.5213	5.0	0.80	33.3333		82.6	40 - 124			
Benzo(k)fluoranthene	26.2540	5.0	0.70	33.3333		78.8	21 - 132			
Chrysene	23.6643	5.0	0.61	33.3333		71.0	51 - 124			
Dibenz(a,h)anthracene	31.0690	5.0	0.88	33.3333		93.2	38 - 123			
Fluoranthene	26.6863	5.0	0.45	33.3333		80.1	47 - 105			
Fluorene	21.3673	5.0	0.35	33.3333		64.1	34 - 95			
Indeno(1,2,3-cd)pyrene	28.5763	5.0	0.82	33.3333		85.7	45 - 124			
Naphthalene	20.6280	5.0	0.56	33.3333		61.9	26 - 110			
Phenanthrene	20.7853	5.0	0.34	33.3333		62.4	39 - 108			
Pyrene	26.7290	5.0	0.51	33.3333		80.2	47 - 107			
Surrogate: 1,2-Dichlorobenzene-d	*21.02*			*33.3333*		*63.1*	*29 - 109*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0764 - MSSEMI_S (continued)										
LCS (B7J0764-BS1) - Continued						Prepared: 10/25/2017 Analyzed: 10/27/2017				
Surrogate: 2-Fluorobiphenyl	*27.09*			*33.3333*		*81.3*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*19.42*			*33.3333*		*58.3*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*33.78*			*33.3333*		*101*	*39 - 123*			
Matrix Spike (B7J0764-MS1)			**Source: 1703653-05**			Prepared: 10/25/2017 Analyzed: 10/27/2017				
2-Methylnaphthalene	18.5430	5.0	0.60	33.3333	ND	55.6	30 - 141			
Acenaphthene	22.2650	5.0	0.41	33.3333	ND	66.8	9 - 155			
Acenaphthylene	23.3520	5.0	0.41	33.3333	ND	70.1	43 - 110			
Anthracene	22.5330	5.0	0.56	33.3333	ND	67.6	33 - 146			
Benzo(a)anthracene	26.1233	5.0	0.56	33.3333	ND	78.4	49 - 130			
Benzo(a)pyrene	21.7163	5.0	0.69	33.3333	ND	65.1	36 - 134			
Benzo(b)fluoranthene	26.9497	5.0	2.2	33.3333	ND	80.8	26 - 148			
Benzo(g,h,i)perylene	27.4387	5.0	0.80	33.3333	ND	82.3	16 - 156			
Benzo(k)fluoranthene	24.8680	5.0	0.70	33.3333	ND	74.6	29 - 132			
Chrysene	22.6383	5.0	0.61	33.3333	ND	67.9	0 - 184			
Dibenz(a,h)anthracene	30.5330	5.0	0.88	33.3333	ND	91.6	29 - 149			
Fluoranthene	25.7453	5.0	0.45	33.3333	ND	77.2	14 - 162			
Fluorene	26.1010	5.0	0.35	33.3333	ND	78.3	48 - 111			
Indeno(1,2,3-cd)pyrene	28.4403	5.0	0.82	33.3333	ND	85.3	37 - 135			
Naphthalene	25.1890	5.0	0.56	33.3333	ND	75.6	34 - 126			
Phenanthrene	23.4663	5.0	0.34	33.3333	ND	70.4	19 - 155			
Pyrene	25.7883	5.0	0.51	33.3333	ND	77.4	13 - 162			
Surrogate: 1,2-Dichlorobenzene-d	*24.36*			*33.3333*		*73.1*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*33.10*			*33.3333*		*99.3*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*23.15*			*33.3333*		*69.5*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*31.93*			*33.3333*		*95.8*	*39 - 123*			
Matrix Spike Dup (B7J0764-MSD1)			**Source: 1703653-05**			Prepared: 10/25/2017 Analyzed: 10/27/2017				
2-Methylnaphthalene	19.4837	5.0	0.60	33.3333	ND	58.5	30 - 141	4.95	20	
Acenaphthene	23.8603	5.0	0.41	33.3333	ND	71.6	9 - 155	6.92	20	
Acenaphthylene	24.6297	5.0	0.41	33.3333	ND	73.9	43 - 110	5.33	20	
Anthracene	23.0803	5.0	0.56	33.3333	ND	69.2	33 - 146	2.40	20	
Benzo(a)anthracene	27.2810	5.0	0.56	33.3333	ND	81.8	49 - 130	4.34	20	
Benzo(a)pyrene	22.3620	5.0	0.69	33.3333	ND	67.1	36 - 134	2.93	20	
Benzo(b)fluoranthene	28.8073	5.0	2.2	33.3333	ND	86.4	26 - 148	6.66	20	
Benzo(g,h,i)perylene	27.7343	5.0	0.80	33.3333	ND	83.2	16 - 156	1.07	20	
Benzo(k)fluoranthene	26.8593	5.0	0.70	33.3333	ND	80.6	29 - 132	7.70	20	
Chrysene	23.4133	5.0	0.61	33.3333	ND	70.2	0 - 184	3.37	20	
Dibenz(a,h)anthracene	31.4890	5.0	0.88	33.3333	ND	94.5	29 - 149	3.08	20	
Fluoranthene	27.5037	5.0	0.45	33.3333	ND	82.5	14 - 162	6.60	20	
Fluorene	27.6163	5.0	0.35	33.3333	ND	82.8	48 - 111	5.64	20	
Indeno(1,2,3-cd)pyrene	28.8430	5.0	0.82	33.3333	ND	86.5	37 - 135	1.41	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0764 - MSSEMI_S (continued)										
Matrix Spike Dup (B7J0764-MSD1) - Continued			**Source: 1703653-05**		Prepared: 10/25/2017 Analyzed: 10/27/2017					
Naphthalene	26.1093	5.0	0.56	33.3333	ND	78.3	34 - 126	3.59	20	
Phenanthrene	24.4000	5.0	0.34	33.3333	ND	73.2	19 - 155	3.90	20	
Pyrene	26.8027	5.0	0.51	33.3333	ND	80.4	13 - 162	3.86	20	
Surrogate: 1,2-Dichlorobenzene-d	*24.79*			*33.3333*		*74.4*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*33.94*			*33.3333*		*102*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*23.95*			*33.3333*		*71.8*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*33.84*			*33.3333*		*102*	*39 - 123*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618.005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/02/2017

Notes and Definitions

S7	Surrogate recovery was outside of laboratory acceptance limit. Chromatogram shows high concentration of heavy hydrocarbons.
S4	Surrogate was diluted out.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 6

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☑	6. PRESERVED	☑	☐
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☑	5.9, 6.0, 6.8		

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: 92614
Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company: SAME
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct Payable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: Hold All 5035 Kits for 8260 VOCs at a later date

Encircle or Write Requested Analysis

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO) / HOLD	8015(DRO) / TPHD	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15
1	1703653-01	LB7-0.5	10/12/17	726		X	X				X	
2	-02	LB7-2.5		728								
3	-03	LB7-5.0		730								
4	-04	LB11-0.5		750								
5	-05	LB11-2.5		752								
6	-06	LB11-5.0		754								
7	-07	LB16-0.5		810								
8	-08	LB16-2.5		812								
9	-09	LB16-5.0		814								
10	-10	LB22-0.5		826								

Encircle Sample Matrix: (SOIL) SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # (5, 4); Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

REMARKS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontracting lab - ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformated report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name

Ken C. Hall — Signature

Relinquished by: (Signature and Printed Name) Ken C. Hall	Date: 10/12/17	Time: 1500	Received by: (Signature and Printed Name) Rosina	Date: 10/12/17	Time: 1508
Relinquished by: (Signature and Printed Name) Rosina	Date: 10/12/17	Time: 1541	Received by: (Signature and Printed Name) MRZ	Date: 10/12/17	Time: 1541
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 6

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☐
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☑	5.9 6.0 5.8		

CUSTOMER

Company: Leighton Consulting Inc. Address: 17781 Cowan Tel: 949-753-9836
City: Irvine State: CA Zip: 92614 Fax:

SEND REPORT TO: Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company: SAME
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO Attn: Acct. Payable Email:
Company: SAME
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191 - 193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time
1	17036531-11	LB22 - 2.5	10/12/17	828
2	-12	LB22 - 5.0		830
3	-13	LB27 - 0.5		856
4	-14	LB27 - 2.5		858
5	-15	LB27 - 5.0		900
6	-16	LB30 - 0.5		930
7	-17	LB30 - 2.5		932
8	-18	LB30 - 5.0		934
9	-19	LB32 - 0.5		950
10	-20	LB32 - 2.5		952

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015 (GRO) TPHg/BTEX; 8015 (DRO) TPHd; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # — Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister — Material: 1=Glass; 2=Plastic; 3=Metal — Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

REMARKS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hull — Submitter Print Name
Ken C. Hull — Signature

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Ken C. Hull	10/12/17	1500	Fedex	10/12/17	1504
Fedex	10/12/17	1541	MTR	10/12/17	1541

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 6

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport: ☐ Client ☑ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Conditions Upon Receipt					
Condition	Y	N	Condition	Y	N
1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☐
3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☐	6.9 6.0 5.8		

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip:
Tel: 949-753-9336 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company: SAME
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company: SAME
Address:
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015 (GRO) TPHg/A	8015 (DRO) TPHd	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container #	Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (AcI2; 6=NaOH; 7=NA2S2O3	REMARKS
1	1709653-21	LB22-2.5	10/12/17	~~828~~ 952 ~~835~~ 955 KH		X	X				X		X					5	4				
2	-22	LB22-5.0		955																			
3	-23	LB32-0.5		950																			
4	-24	LB32-2.5		952																			
5	-25	LB32-5.0		955																			
6	-26	LB33-0.5		1006																			
7	-27	LB33-2.5		1008																			
8	-28	LB33-5.0		1010																			
9	-29	LB31-0.5		1038																			
10	-30	LB31-2.5		1040																			

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

SUBMITTAL TERMS & CONDITIONS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Ken C. Hall — Signature

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
Ken C. Hall	10/12/17	1500	FEDEX	10/12/17	1503
FEDEX	10/12/17	1541	MTR	10/12/17	1541

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 6

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☐
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☑	5.9 6.0 5.8		

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip:
Tel: 949-753-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company: SAME
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company: SAME
Address:
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPH g/o; 8015(DRO) TPH o; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	8260	8015(GRO)	8015(DRO)	8270	8081	8082	6010/7000	TO-15	SOIL/SED/SLUDGE	SOLIDS/WIPE/FILTER	WATER-DRINKING/GROUND	WATER-STORM/WASTE	AQUEOUS/LAYERED-OIL	TAT	#	REMARKS
1	1703653-31	LB31-5.0	10/12/17	1042		X	X				X		X					5	4	
2	-32	LB29-0.5		1120																
3	-33	LB29-2.5		1122																
4	-34	LB29-5.0		1124																
5	-35	LB28-0.5		1146																
6	-36	LB28-2.5		1148																
7	-37	LB28-5.0		1150																
8	-38	LB26-0.5		1202																
9	-39	LB26-2.5		1204																
10	-40	LB26-5.0		1206																

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 200% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Kevin R. Hall — Signature

SUBCONTRACT LAB

Relinquished by: (Signature and Printed Name) Kevin R. Hall	Date: 10/12/17	Time: 1500	Received by: (Signature and Printed Name) Brown	Date: 10/12/17	Time: 1528
Relinquished by: (Signature and Printed Name) Brown	Date: 10/12/17	Time: 1541	Received by: (Signature and Printed Name) MPK	Date: 10/12/17	Time: 1541
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 5 of 6

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☐
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐		5.9	6.0 5.8

CUSTOMER

Company: Leighton Consulting Inc.
Address: 17781 Cowan
City: Irvine State: CA Zip: Tel: 949-753-9836 Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: Bmcculloch@leightongroup.com
Company:
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. DAyable Email:
Company:
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: POLA Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO) TPHg/h; 8015(DRO) TPHo; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15

Encircle Sample Matrix: (SOIL) / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	REMARKS
1	1709653-41	LB21-0.5	10/12/17	1222	
2	-42	LB21-2.5		1224	
3	-43	LB21-5.0		1226	
4	-44	LB15-0.5		1240	
5	-45	LB15-2.5		1242	
6	-46	LB15-5.0		1244	
7	-47	LB10-0.5		1256	
8	-48	LB10-2.5		1258	
9	-49	LB10-5.0		1300	
10	-50	LB6-0.5		1315	

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for fi ve (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-fi ve (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall
Submitter Print Name

Signature

Relinquished by: (Signature and Printed Name) Kim C. Hall	Date: 10/12/17	Time: 1560	Received by: (Signature and Printed Name) FEDEX	Date: 10/12/17	Time: 1508
Relinquished by: (Signature and Printed Name) FEDEX	Date: 10/12/17	Time: 1541	Received by: (Signature and Printed Name) UPS	Date: 10/12/17	Time: 1541
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

SWMS 100150

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 6 of 6

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☐
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐	5.9 6.0 5.4		

CUSTOMER

Company: Leighton Consulting Inc
Address: 17781 Cowan
City: Irvine State: CA Zip: Tel: 949-253-9836 Fax:

SEND REPORT TO:
Attn: Email:
Company: SAME
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: SAME
Address:
City: State: Zip:

PROJECT SAMPLES

Project Name: POLA Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits for soil

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015 (GRO) TPH g/d	8015 (DRO) TPH o	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	8270SIM PAHs	SOIL SEDIMENT / SLUDGE	SOLIDS / WIPE/ FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container #	Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2SO3	REMARKS
1	1703653-51	LB6-2.5	10/12/17	1317		X	X				X			X					5	4				
2	-52	LB6-5.0	↓	1319		X	X				X			X					5	4				
3																								
4	1703653-53	LB6-GW	10/12/17	1322	X	X	X				X		X			X			5	9				
5	-54	LB27-GW		902	X	X	X				X		X			X			5	9				
6	-55	LB31-GW		1044	X	X	X				X		X			X			5	9				
7																								
8																								
9																								
10																								

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

KH

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for fi ve (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-fi ve (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
_____ — Signature

Relinquished by: (Signature and Printed Name) Ken C. Hall	Date: 10/12/17	Time: 1500	Received by: (Signature and Printed Name) FEDEX	Date: 10/12/17	Time: 1508
Relinquished by: (Signature and Printed Name) FEDEX	Date: 10/12/17	Time: 1541	Received by: (Signature and Printed Name) MK	Date: 10/12/17	Time: 1541
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Dominic Mata

From: Brynn McCulloch [bmcculloch@leightongroup.com]
Sent: Monday, October 23, 2017 9:27 PM
To: Dominic Mata
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Hi Dominic,

For the groundwater 8260, I'm fine with waiting as long as hold times are met.

For the soil samples, we need the following additional analyses for the samples listed below. If we need to sub out the soil samples for 8260 to meet hold times, please do.

VOCs (8260B) and PAHs (8270SIM)
LB2-0.5, LB2-2.5
LB4-0.5, LB4-2.5
LB5-0.5, LB5-2.5
LB9-0.5, LB9-2.5
LB13-0.5, LB13-2.5
LB17-0.5, LB17-2.5
LB28-5.0

PCBs (8082)
LB2-0.5
LB4-0.5
LB5-0.5
LB9-0.5
LB13-0.5
LB17-0.5
LB28-5.0

Dioxins/Furans
LB17-0.5

Please run the above analyses on normal turnaround time.

The list below is the potential samples requiring STLC and TCLP, I will confirm tomorrow if we need to proceed with these tests, but I wanted to give you a heads up in case we have limited sample recovery.

STLCs
LB2-0.5 – Lead and Copper
LB4-0.5 – Lead
LB4-3.5 – Copper
LB5-2.5 – Lead
LB11-0.5 – Lead, Copper, and Mercury
LB17-0.5 – Lead
LB27-0.5 – Lead
LB28-0.5 – Lead
LB28-2.5 – Lead
LB30-2.5 – Lead
LB31-0.5 – Lead

Dominic Mata

From: Brynn McCulloch [bmcculloch@leightongroup.com]
Sent: Tuesday, October 24, 2017 6:16 PM
To: Dominic Mata
Subject: RE: Partial Results - POLA Berth 191-193, 11618.005 (ATL# 1703653)

Dominic,

We need the following additional analyses for the samples listed below.

VOCs (8260B) and PAHs (8270SIM)
LB10-0.5, LB10-2.5
LB11-0.5, LB11-2.5
LB16-2.5, LB16-5.0
LB28-0.5, LB28-2.5, LB28-5.0
LB33-2.5, LB33-5.0

PCBs (8082)
LB10-0.5
LB11-0.5
LB16-2.5
LB28-5.0
LB33-2.5

Thank you!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Tuesday, October 24, 2017 4:58 PM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: Partial Results - POLA Berth 191-193, 11618.005 (ATL# 1703653)

Hi Brynn,

Dominic Mata

From: Brynn McCulloch [bmcculloch@leightongroup.com]
Sent: Tuesday, October 24, 2017 4:50 PM
To: Dominic Mata
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Hi Dominic,

Please run the STLC and TCLP tests as shown below.

Thank you!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Tuesday, October 24, 2017 10:48 AM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Good morning Brynn,

I received your request for additional analyses below. There are no delays with soils so they will not need to be subbed out. Also, we will make sure the groundwater sample gets ran before the hold time is up. It has 14 days from the sampled date giving us until Friday but we plan to run before that. If I can further assist, please let me know.

Thanks,
Dominic

From: Brynn McCulloch [mailto:bmcculloch@leightongroup.com]
Sent: Monday, October 23, 2017 9:27 PM
To: Dominic Mata
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Hi Dominic,

For the groundwater 8260, I'm fine with waiting as long as hold times are met.

For the soil samples, we need the following additional analyses for the samples listed below. If we need to sub out the soil samples for 8260 to meet hold times, please do.

VOCs (8260B) and PAHs (8270SIM)
LB2-0.5, LB2-2.5
LB4-0.5, LB4-2.5
LB5-0.5, LB5-2.5
LB9-0.5, LB9-2.5
LB13-0.5, LB13-2.5
LB17-0.5, LB17-2.5
LB28-5.0

PCBs (8082)
LB2-0.5
LB4-0.5
LB5-0.5
LB9-0.5
LB13-0.5
LB17-0.5
LB28-5.0

Dioxins/Furans
LB17-0.5

Please run the above analyses on normal turnaround time.

The list below is the potential samples requiring STLC and TCLP, I will confirm tomorrow if we need to proceed with these tests, but I wanted to give you a heads up in case we have limited sample recovery.

STLCs
LB2-0.5 – Lead and Copper
LB4-0.5 – Lead
LB4-3.5 – Copper
LB5-2.5 – Lead
LB11-0.5 – Lead, Copper, and Mercury
LB17-0.5 – Lead
LB27-0.5 – Lead
LB28-0.5 – Lead
LB28-2.5 – Lead
LB30-2.5 – Lead
LB31-0.5 – Lead
LB33-2.5 – Lead

TCLPs
LB2-0.5 – Lead
LB4-0.5 – Lead
LB11-0.5 – Lead and Mercury
LB27-0.5 – Lead
LB30-2.5 – Lead

LB31-0.5 – Lead
LB33-2.5 – Lead

Thank you!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Monday, October 23, 2017 4:16 PM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Good afternoon Brynn,

Here's an update for your two work orders due today:

- DRO in 1703653 will be done tomorrow
- 8260 water sample - our instrument has been down for several days and is now running but due to the back log, samples with hold times expiring are being prioritized. Would you like to have this sample sub contracted out or keep it in house and looking to have it run Wed (10/25) or Thurs (10/26)? Also, I can provided an updated partial report that includes the DRO for this work order.

Thanks,
Dominic

From: Brynn McCulloch [mailto:bmcculloch@leightongroup.com]
Sent: Monday, October 23, 2017 11:47 AM
To: Dominic Mata
Cc: customer.relations@atlglobal.com
Subject: RE: Results - POLA Berth 191-193, 11618.005 (ATL# 1703641)

Any partial results would be helpful, thank you!

Brynn McCulloch, PG 8798

Dominic Mata

From: Brynn McCulloch [bmcculloch@leightongroup.com]
Sent: Tuesday, October 31, 2017 3:18 PM
To: Dominic Mata
Cc: customer.relations@atlglobal.com
Subject: RE: Partial Results - POLA Berth 191-193, 11618.005 (ATL# 1703653)

Thank you, Dominic.

Can you please run LB11-0.5 for the Copper TCLP?

Thanks again!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Tuesday, October 31, 2017 2:52 PM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: Partial Results - POLA Berth 191-193, 11618.005 (ATL# 1703653)

Hi Brynn,

Please find your partial 3 results that include the added 8260, PAHs, STLCs and TCLPs for the above project attached. The final report is now pending the additional analyses of 8082 and one STLC result being re-extracted (1703653-13). If I can further assist, please let me know.

Thanks,

Dominic Mata | Project Coordinator
ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Avenue, Signal Hill CA 90755
O: 562.989.4045 ext. 238 | http://www.atlglobal.com

November 03, 2017

Brynn McCulloch
Leighton Consulting, Inc.
17781 Cowan Street
Irvine, CA 92614
Tel: (949) 394-2306
Fax:(949) 250-1114

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1703672

Client Reference : POLA Berth 191-193, 11618-005

Enclosed are the results for sample(s) received on October 13, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB35-0.5	1703672-01	Soil	10/13/17 8:37	10/13/17 11:46
LB35-2.5	1703672-02	Soil	10/13/17 8:39	10/13/17 11:46
LB35-5.0	1703672-03	Soil	10/13/17 8:41	10/13/17 11:46
LB34-0.5	1703672-04	Soil	10/13/17 9:17	10/13/17 11:46
LB34-2.5	1703672-05	Soil	10/13/17 9:20	10/13/17 11:46
LB34-5.0	1703672-06	Soil	10/13/17 9:22	10/13/17 11:46
LB34-GW	1703672-07	Groundwater	10/13/17 9:25	10/13/17 11:46

CASE NARRATIVE

The ground water sample for VOCs (EPA 8260) analysis was subcontracted to AETL with ELAP Cert.# 1541.

EPA 8260 analyses was performed using 5035 preservation requirements. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-0.5

Lab ID: 1703672-01

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Arsenic	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Barium	**71**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Beryllium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Cadmium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Chromium	**6.7**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Cobalt	**4.6**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Copper	**8.1**	2.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Lead	**4.1**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Molybdenum	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Nickel	**15**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Selenium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Silver	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Thallium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Vanadium	**24**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	
Zinc	**30**	1.0	1	B7J0521	10/18/2017	10/19/17 11:28	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0523	10/18/2017	10/19/17 16:13	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 11:58	
Surrogate: 4-Bromofluorobenzene	*57.7 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 11:58*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2400**	200	100	B7J0583	10/19/2017	10/19/17 22:00	
ORO	**7800**	200	100	B7J0583	10/19/2017	10/19/17 22:00	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-0.5

Lab ID: 1703672-01

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0583	10/19/2017	*10/19/17 22:00*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1221	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1232	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1242	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1248	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1254	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1260	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1262	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Aroclor 1268	ND	160	10	B7J0837	10/27/2017	11/01/17 17:31	D1
Surrogate: Decachlorobiphenyl	*45.2 %*	*18 - 136*		B7J0837	10/27/2017	*11/01/17 17:31*	
Surrogate: Tetrachloro-m-xylene	*42.6 %*	*30 - 130*		B7J0837	10/27/2017	*11/01/17 17:31*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,1,1-Trichloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,1,2,2-Tetrachloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,1,2-Trichloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,1-Dichloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,1-Dichloroethene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,1-Dichloropropene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2,3-Trichloropropane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2,3-Trichlorobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2,4-Trichlorobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2,4-Trimethylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2-Dibromo-3-chloropropane	ND	13	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2-Dibromoethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2-Dichlorobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,2-Dichloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-0.5

Lab ID: 1703672-01

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,3,5-Trimethylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,3-Dichlorobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,3-Dichloropropane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
1,4-Dichlorobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
2,2-Dichloropropane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
2-Chlorotoluene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
4-Chlorotoluene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
4-Isopropyltoluene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Benzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Bromobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Bromochloromethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Bromodichloromethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Bromoform	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Bromomethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Carbon disulfide	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Carbon tetrachloride	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Chlorobenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Chloroethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Chloroform	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Chloromethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
cis-1,2-Dichloroethene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
cis-1,3-Dichloropropene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Di-isopropyl ether	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Dibromochloromethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Dibromomethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Dichlorodifluoromethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Ethyl Acetate	ND	63	1	B7J0504	10/18/2017	10/18/17 12:09	
Ethyl Ether	ND	63	1	B7J0504	10/18/2017	10/18/17 12:09	
Ethyl tert-butyl ether	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Ethylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Freon-113	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Hexachlorobutadiene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Isopropylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
m,p-Xylene	ND	13	1	B7J0504	10/18/2017	10/18/17 12:09	
Methylene chloride	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
MTBE	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-0.5

Lab ID: 1703672-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
n-Propylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Naphthalene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
o-Xylene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
sec-Butylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Styrene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
tert-Amyl methyl ether	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
tert-Butanol	ND	130	1	B7J0504	10/18/2017	10/18/17 12:09	
tert-Butylbenzene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Tetrachloroethene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Toluene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
trans-1,2-Dichloroethene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
trans-1,3-Dichloropropene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Trichloroethene	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Trichlorofluoromethane	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Vinyl acetate	ND	63	1	B7J0504	10/18/2017	10/18/17 12:09	
Vinyl chloride	ND	6.3	1	B7J0504	10/18/2017	10/18/17 12:09	
Surrogate: 1,2-Dichloroethane-d4	*94.0 %*	*32 - 140*		B7J0504	10/18/2017	*10/18/17 12:09*	
Surrogate: 4-Bromofluorobenzene	*86.4 %*	*68 - 131*		B7J0504	10/18/2017	*10/18/17 12:09*	
Surrogate: Dibromofluoromethane	*100 %*	*49 - 134*		B7J0504	10/18/2017	*10/18/17 12:09*	
Surrogate: Toluene-d8	*104 %*	*75 - 132*		B7J0504	10/18/2017	*10/18/17 12:09*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Acenaphthene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Acenaphthylene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Anthracene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Benzo(a)anthracene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Benzo(a)pyrene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Benzo(b)fluoranthene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Benzo(g,h,i)perylene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Benzo(k)fluoranthene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Chrysene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Dibenz(a,h)anthracene	ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-0.5

Lab ID: 1703672-01

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Fluorene		ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Indeno(1,2,3-cd)pyrene		ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Naphthalene		ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Phenanthrene		ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Pyrene		ND	2500	200	B7J0832	10/27/2017	11/02/17 13:42	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0832	10/27/2017	*11/02/17 13:42*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0832	10/27/2017	*11/02/17 13:42*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0832	10/27/2017	*11/02/17 13:42*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0832	10/27/2017	*11/02/17 13:42*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-2.5

Lab ID: 1703672-02

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Arsenic	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Barium	**67**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Beryllium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Cadmium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Chromium	**6.1**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Cobalt	**3.7**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Copper	**5.3**	2.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Lead	**1.1**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Molybdenum	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Nickel	**13**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Selenium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Silver	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Thallium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Vanadium	**19**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	
Zinc	**74**	1.0	1	B7J0521	10/18/2017	10/19/17 11:30	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0523	10/18/2017	10/19/17 16:15	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 12:16	
Surrogate: 4-Bromofluorobenzene	*86.6 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 12:16*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**1800**	200	100	B7J0583	10/19/2017	10/19/17 22:17	
ORO	**7400**	200	100	B7J0583	10/19/2017	10/19/17 22:17	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-2.5

Lab ID: 1703672-02

Diesel Range Organics by EPA 8015B — **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0583	10/19/2017	*10/19/17 22:17*	S4

Volatile Organic Compounds by EPA 5035/EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,1,1-Trichloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,1,2,2-Tetrachloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,1,2-Trichloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,1-Dichloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,1-Dichloroethene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,1-Dichloropropene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2,3-Trichloropropane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2,3-Trichlorobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2,4-Trichlorobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2,4-Trimethylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2-Dibromo-3-chloropropane	ND	13	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2-Dibromoethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2-Dichlorobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2-Dichloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,2-Dichloropropane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,3,5-Trimethylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,3-Dichlorobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,3-Dichloropropane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
1,4-Dichlorobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
2,2-Dichloropropane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
2-Chlorotoluene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
4-Chlorotoluene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
4-Isopropyltoluene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Benzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Bromobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Bromochloromethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Bromodichloromethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Bromoform	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Bromomethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Carbon disulfide	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-2.5

Lab ID: 1703672-02

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Chlorobenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Chloroethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Chloroform	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Chloromethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
cis-1,2-Dichloroethene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
cis-1,3-Dichloropropene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Di-isopropyl ether	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Dibromochloromethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Dibromomethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Dichlorodifluoromethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Ethyl Acetate	ND	64	1	B7J0504	10/18/2017	10/18/17 12:27	
Ethyl Ether	ND	64	1	B7J0504	10/18/2017	10/18/17 12:27	
Ethyl tert-butyl ether	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Ethylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Freon-113	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Hexachlorobutadiene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Isopropylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
m,p-Xylene	ND	13	1	B7J0504	10/18/2017	10/18/17 12:27	
Methylene chloride	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
MTBE	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
n-Butylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
n-Propylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Naphthalene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
o-Xylene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
sec-Butylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Styrene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
tert-Amyl methyl ether	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
tert-Butanol	ND	130	1	B7J0504	10/18/2017	10/18/17 12:27	
tert-Butylbenzene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Tetrachloroethene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Toluene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
trans-1,2-Dichloroethene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
trans-1,3-Dichloropropene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Trichloroethene	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Trichlorofluoromethane	ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Vinyl acetate	ND	64	1	B7J0504	10/18/2017	10/18/17 12:27	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-2.5
Lab ID: 1703672-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	6.4	1	B7J0504	10/18/2017	10/18/17 12:27	
Surrogate: 1,2-Dichloroethane-d4	*93.1 %*		*32 - 140*		B7J0504	10/18/2017	*10/18/17 12:27*	
Surrogate: 4-Bromofluorobenzene	*85.3 %*		*68 - 131*		B7J0504	10/18/2017	*10/18/17 12:27*	
Surrogate: Dibromofluoromethane	*99.6 %*		*49 - 134*		B7J0504	10/18/2017	*10/18/17 12:27*	
Surrogate: Toluene-d8	*104 %*		*75 - 132*		B7J0504	10/18/2017	*10/18/17 12:27*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Acenaphthene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Acenaphthylene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Anthracene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Benzo(a)anthracene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Benzo(a)pyrene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Benzo(b)fluoranthene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Benzo(g,h,i)perylene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Benzo(k)fluoranthene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Chrysene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Dibenz(a,h)anthracene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Fluoranthene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Fluorene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Indeno(1,2,3-cd)pyrene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Naphthalene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Phenanthrene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Pyrene		ND	5000	500	B7J0832	10/27/2017	11/01/17 22:23	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0832	10/27/2017	*11/01/17 22:23*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0832	10/27/2017	*11/01/17 22:23*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0832	10/27/2017	*11/01/17 22:23*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0832	10/27/2017	*11/01/17 22:23*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-5.0

Lab ID: 1703672-03

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Arsenic	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Barium	**39**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Beryllium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Cadmium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Chromium	**6.7**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Cobalt	**3.2**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Copper	**5.1**	2.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Lead	**8.5**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Molybdenum	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Nickel	**12**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Selenium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Silver	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Thallium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Vanadium	**17**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	
Zinc	**29**	1.0	1	B7J0521	10/18/2017	10/19/17 11:31	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0523	10/18/2017	10/19/17 16:17	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 12:35	
Surrogate: 4-Bromofluorobenzene	*91.8 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 12:35*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6300**	200	100	B7J0583	10/19/2017	10/19/17 22:35	
ORO	**17000**	200	100	B7J0583	10/19/2017	10/19/17 22:35	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-5.0

Lab ID: 1703672-03

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0583	10/19/2017	*10/19/17 22:35*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1221	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1232	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1242	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1248	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1254	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1260	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1262	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Aroclor 1268	ND	32	2	B7J0837	10/27/2017	11/01/17 17:49	D1
Surrogate: Decachlorobiphenyl	*21.1 %*	*18 - 136*		B7J0837	10/27/2017	*11/01/17 17:49*	
Surrogate: Tetrachloro-m-xylene	*58.3 %*	*30 - 130*		B7J0837	10/27/2017	*11/01/17 17:49*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,1,1-Trichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,1,2,2-Tetrachloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,1,2-Trichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,1-Dichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,1-Dichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,1-Dichloropropene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2,3-Trichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2,3-Trichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2,4-Trichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2,4-Trimethylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2-Dibromo-3-chloropropane	ND	11	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2-Dibromoethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2-Dichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,2-Dichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-5.0

Lab ID: 1703672-03

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,3,5-Trimethylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,3-Dichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,3-Dichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
1,4-Dichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
2,2-Dichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
2-Chlorotoluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
4-Chlorotoluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
4-Isopropyltoluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Benzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Bromobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Bromochloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Bromodichloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Bromoform	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Bromomethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Carbon disulfide	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Carbon tetrachloride	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Chlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Chloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Chloroform	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Chloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
cis-1,2-Dichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
cis-1,3-Dichloropropene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Di-isopropyl ether	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Dibromochloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Dibromomethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Dichlorodifluoromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Ethyl Acetate	ND	55	1	B7J0504	10/18/2017	10/18/17 12:46	
Ethyl Ether	ND	55	1	B7J0504	10/18/2017	10/18/17 12:46	
Ethyl tert-butyl ether	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Ethylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Freon-113	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Hexachlorobutadiene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Isopropylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
m,p-Xylene	ND	11	1	B7J0504	10/18/2017	10/18/17 12:46	
Methylene chloride	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
MTBE	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-5.0

Lab ID: 1703672-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
n-Propylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Naphthalene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
o-Xylene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
sec-Butylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Styrene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
tert-Amyl methyl ether	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
tert-Butanol	ND	110	1	B7J0504	10/18/2017	10/18/17 12:46	
tert-Butylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Tetrachloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Toluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
trans-1,2-Dichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
trans-1,3-Dichloropropene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Trichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Trichlorofluoromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Vinyl acetate	ND	55	1	B7J0504	10/18/2017	10/18/17 12:46	
Vinyl chloride	ND	5.5	1	B7J0504	10/18/2017	10/18/17 12:46	
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*32 - 140*		B7J0504	10/18/2017	*10/18/17 12:46*	
Surrogate: 4-Bromofluorobenzene	*86.6 %*	*68 - 131*		B7J0504	10/18/2017	*10/18/17 12:46*	
Surrogate: Dibromofluoromethane	*107 %*	*49 - 134*		B7J0504	10/18/2017	*10/18/17 12:46*	
Surrogate: Toluene-d8	*108 %*	*75 - 132*		B7J0504	10/18/2017	*10/18/17 12:46*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Acenaphthene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Acenaphthylene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Anthracene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Benzo(a)anthracene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Benzo(a)pyrene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Benzo(b)fluoranthene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Benzo(g,h,i)perylene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Benzo(k)fluoranthene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Chrysene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Dibenz(a,h)anthracene	ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB35-5.0

Lab ID: 1703672-03

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Fluorene		ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Indeno(1,2,3-cd)pyrene		ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Naphthalene		ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Phenanthrene		ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Pyrene		ND	6200	500	B7J0832	10/27/2017	11/01/17 22:50	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0832	10/27/2017	*11/01/17 22:50*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0832	10/27/2017	*11/01/17 22:50*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0832	10/27/2017	*11/01/17 22:50*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0832	10/27/2017	*11/01/17 22:50*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-0.5

Lab ID: 1703672-04

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Arsenic	**3.1**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Barium	**100**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Beryllium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Cadmium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Chromium	**20**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Cobalt	**5.1**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Copper	**23**	2.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Lead	**25**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Molybdenum	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Nickel	**12**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Selenium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Silver	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Thallium	ND	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Vanadium	**20**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	
Zinc	**79**	1.0	1	B7J0521	10/18/2017	10/19/17 11:32	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0523	10/18/2017	10/19/17 16:19	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 12:53	
Surrogate: 4-Bromofluorobenzene	*105 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 12:53*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**1100**	100	100	B7J0583	10/19/2017	10/19/17 22:52	
ORO	**4000**	100	100	B7J0583	10/19/2017	10/19/17 22:52	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-0.5

Lab ID: 1703672-04

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*0%*	*38 - 145*		B7J0583	10/19/2017	*10/19/17 22:52*	S4

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1221	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1232	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1242	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1248	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1254	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1260	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1262	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Aroclor 1268	ND	16	1	B7J0837	10/27/2017	11/01/17 18:07	
Surrogate: Decachlorobiphenyl	*17.7 %*	*18 - 136*		B7J0837	10/27/2017	*11/01/17 18:07*	S10
Surrogate: Tetrachloro-m-xylene	*44.3 %*	*30 - 130*		B7J0837	10/27/2017	*11/01/17 18:07*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,1,1-Trichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,1,2,2-Tetrachloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,1,2-Trichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,1-Dichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,1-Dichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,1-Dichloropropene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2,3-Trichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2,3-Trichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2,4-Trichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2,4-Trimethylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2-Dibromo-3-chloropropane	ND	11	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2-Dibromoethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2-Dichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,2-Dichloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-0.5

Lab ID: 1703672-04

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2-Dichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,3,5-Trimethylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,3-Dichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,3-Dichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
1,4-Dichlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
2,2-Dichloropropane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
2-Chlorotoluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
4-Chlorotoluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
4-Isopropyltoluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Benzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Bromobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Bromochloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Bromodichloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Bromoform	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Bromomethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Carbon disulfide	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Carbon tetrachloride	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Chlorobenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Chloroethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Chloroform	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Chloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
cis-1,2-Dichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
cis-1,3-Dichloropropene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Di-isopropyl ether	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Dibromochloromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Dibromomethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Dichlorodifluoromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Ethyl Acetate	ND	55	1	B7J0504	10/18/2017	10/18/17 13:05	
Ethyl Ether	ND	55	1	B7J0504	10/18/2017	10/18/17 13:05	
Ethyl tert-butyl ether	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Ethylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Freon-113	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Hexachlorobutadiene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Isopropylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
m,p-Xylene	ND	11	1	B7J0504	10/18/2017	10/18/17 13:05	
Methylene chloride	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
MTBE	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-0.5

Lab ID: 1703672-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
n-Propylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Naphthalene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
o-Xylene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
sec-Butylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Styrene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
tert-Amyl methyl ether	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
tert-Butanol	ND	110	1	B7J0504	10/18/2017	10/18/17 13:05	
tert-Butylbenzene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Tetrachloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Toluene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
trans-1,2-Dichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
trans-1,3-Dichloropropene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Trichloroethene	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Trichlorofluoromethane	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Vinyl acetate	ND	55	1	B7J0504	10/18/2017	10/18/17 13:05	
Vinyl chloride	ND	5.5	1	B7J0504	10/18/2017	10/18/17 13:05	
Surrogate: 1,2-Dichloroethane-d4	*95.0 %*	*32 - 140*		B7J0504	10/18/2017	*10/18/17 13:05*	
Surrogate: 4-Bromofluorobenzene	*86.4 %*	*68 - 131*		B7J0504	10/18/2017	*10/18/17 13:05*	
Surrogate: Dibromofluoromethane	*105 %*	*49 - 134*		B7J0504	10/18/2017	*10/18/17 13:05*	
Surrogate: Toluene-d8	*103 %*	*75 - 132*		B7J0504	10/18/2017	*10/18/17 13:05*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Acenaphthene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Acenaphthylene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Anthracene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Benzo(a)anthracene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Benzo(a)pyrene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Benzo(b)fluoranthene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Benzo(g,h,i)perylene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Benzo(k)fluoranthene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Chrysene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Dibenz(a,h)anthracene	ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-0.5

Lab ID: 1703672-04

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Fluorene		ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Indeno(1,2,3-cd)pyrene		ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Naphthalene		ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Phenanthrene		ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Pyrene		ND	2500	500	B7J0832	10/27/2017	11/01/17 23:18	D1
Surrogate: 1,2-Dichlorobenzene-d4	*0%*		*29 - 109*		B7J0832	10/27/2017	*11/01/17 23:18*	S4
Surrogate: 2-Fluorobiphenyl	*0%*		*39 - 108*		B7J0832	10/27/2017	*11/01/17 23:18*	S4
Surrogate: Nitrobenzene-d5	*0%*		*0 - 146*		B7J0832	10/27/2017	*11/01/17 23:18*	
Surrogate: 4-Terphenyl-d14	*0%*		*39 - 123*		B7J0832	10/27/2017	*11/01/17 23:18*	S4

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-2.5
Lab ID: 1703672-05

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Arsenic	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Barium	**99**	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Beryllium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Cadmium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Chromium	**7.5**	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Cobalt	**3.7**	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Copper	**7.6**	2.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Lead	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Molybdenum	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Nickel	**5.8**	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Selenium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Silver	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Thallium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Vanadium	**15**	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	
Zinc	**26**	1.0	1	B7J0522	10/18/2017	10/19/17 11:36	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0524	10/18/2017	10/19/17 16:25	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 13:12	
Surrogate: 4-Bromofluorobenzene	*113 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 13:12*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**30**	1.0	1	B7J0583	10/19/2017	10/19/17 19:58	
ORO	**59**	1.0	1	B7J0583	10/19/2017	10/19/17 19:58	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-2.5

Lab ID: 1703672-05

Diesel Range Organics by EPA 8015B — **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*106 %*	*38 - 145*		B7J0583	10/19/2017	*10/19/17 19:58*	

Volatile Organic Compounds by EPA 5035/EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,1,1-Trichloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,1,2,2-Tetrachloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,1,2-Trichloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,1-Dichloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,1-Dichloroethene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,1-Dichloropropene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2,3-Trichloropropane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2,3-Trichlorobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2,4-Trichlorobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2,4-Trimethylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2-Dibromo-3-chloropropane	ND	14	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2-Dibromoethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2-Dichlorobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2-Dichloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,2-Dichloropropane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,3,5-Trimethylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,3-Dichlorobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,3-Dichloropropane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
1,4-Dichlorobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
2,2-Dichloropropane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
2-Chlorotoluene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
4-Chlorotoluene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
4-Isopropyltoluene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Benzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Bromobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Bromochloromethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Bromodichloromethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Bromoform	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Bromomethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Carbon disulfide	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-2.5

Lab ID: 1703672-05

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Chlorobenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Chloroethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Chloroform	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Chloromethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
cis-1,2-Dichloroethene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
cis-1,3-Dichloropropene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Di-isopropyl ether	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Dibromochloromethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Dibromomethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Dichlorodifluoromethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Ethyl Acetate	ND	68	1	B7J0504	10/18/2017	10/18/17 13:23	
Ethyl Ether	ND	68	1	B7J0504	10/18/2017	10/18/17 13:23	
Ethyl tert-butyl ether	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Ethylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Freon-113	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Hexachlorobutadiene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Isopropylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
m,p-Xylene	ND	14	1	B7J0504	10/18/2017	10/18/17 13:23	
Methylene chloride	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
MTBE	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
n-Butylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
n-Propylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Naphthalene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
o-Xylene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
sec-Butylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Styrene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
tert-Amyl methyl ether	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
tert-Butanol	ND	140	1	B7J0504	10/18/2017	10/18/17 13:23	
tert-Butylbenzene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Tetrachloroethene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Toluene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
trans-1,2-Dichloroethene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
trans-1,3-Dichloropropene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Trichloroethene	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Trichlorofluoromethane	ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Vinyl acetate	ND	68	1	B7J0504	10/18/2017	10/18/17 13:23	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-2.5

Lab ID: 1703672-05

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	6.8	1	B7J0504	10/18/2017	10/18/17 13:23	
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*32 - 140*		B7J0504	10/18/2017	*10/18/17 13:23*	
Surrogate: 4-Bromofluorobenzene	*89.2 %*		*68 - 131*		B7J0504	10/18/2017	*10/18/17 13:23*	
Surrogate: Dibromofluoromethane	*103 %*		*49 - 134*		B7J0504	10/18/2017	*10/18/17 13:23*	
Surrogate: Toluene-d8	*104 %*		*75 - 132*		B7J0504	10/18/2017	*10/18/17 13:23*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Acenaphthene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Acenaphthylene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Anthracene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Benzo(a)anthracene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Benzo(a)pyrene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Benzo(b)fluoranthene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Benzo(g,h,i)perylene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Benzo(k)fluoranthene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Chrysene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Dibenz(a,h)anthracene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Fluoranthene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Fluorene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Naphthalene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Phenanthrene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Pyrene		ND	5.0	1	B7J0832	10/27/2017	11/01/17 21:29	
Surrogate: 1,2-Dichlorobenzene-d4	*51.2 %*		*29 - 109*		B7J0832	10/27/2017	*11/01/17 21:29*	
Surrogate: 2-Fluorobiphenyl	*84.0 %*		*39 - 108*		B7J0832	10/27/2017	*11/01/17 21:29*	
Surrogate: Nitrobenzene-d5	*70.9 %*		*0 - 146*		B7J0832	10/27/2017	*11/01/17 21:29*	
Surrogate: 4-Terphenyl-d14	*71.8 %*		*39 - 123*		B7J0832	10/27/2017	*11/01/17 21:29*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-5.0

Lab ID: 1703672-06

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Arsenic	**1.7**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Barium	**52**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Beryllium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Cadmium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Chromium	**8.7**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Cobalt	**5.2**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Copper	**6.8**	2.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Lead	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Molybdenum	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Nickel	**7.0**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Selenium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Silver	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Thallium	ND	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Vanadium	**15**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	
Zinc	**27**	1.0	1	B7J0522	10/18/2017	10/19/17 11:42	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B7J0524	10/18/2017	10/19/17 16:36	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7J0362	10/16/2017	10/16/17 14:44	
Surrogate: 4-Bromofluorobenzene	*114 %*	*50 - 138*		B7J0362	10/16/2017	*10/16/17 14:44*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**5.0**	1.0	1	B7J0583	10/19/2017	10/19/17 20:15	
ORO	**7.1**	1.0	1	B7J0583	10/19/2017	10/19/17 20:15	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-5.0

Lab ID: 1703672-06

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: p-Terphenyl	*101 %*	*38 - 145*		B7J0583	10/19/2017	*10/19/17 20:15*	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,1,1-Trichloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,1,2,2-Tetrachloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,1,2-Trichloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,1-Dichloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,1-Dichloroethene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,1-Dichloropropene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2,3-Trichloropropane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2,3-Trichlorobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2,4-Trichlorobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2,4-Trimethylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2-Dibromo-3-chloropropane	ND	12	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2-Dibromoethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2-Dichlorobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2-Dichloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,2-Dichloropropane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,3,5-Trimethylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,3-Dichlorobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,3-Dichloropropane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
1,4-Dichlorobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
2,2-Dichloropropane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
2-Chlorotoluene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
4-Chlorotoluene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
4-Isopropyltoluene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Benzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Bromobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Bromochloromethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Bromodichloromethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Bromoform	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Bromomethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Carbon disulfide	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-5.0

Lab ID: 1703672-06

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon tetrachloride	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Chlorobenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Chloroethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Chloroform	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Chloromethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
cis-1,2-Dichloroethene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
cis-1,3-Dichloropropene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Di-isopropyl ether	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Dibromochloromethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Dibromomethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Dichlorodifluoromethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Ethyl Acetate	ND	61	1	B7J0504	10/18/2017	10/18/17 13:42	
Ethyl Ether	ND	61	1	B7J0504	10/18/2017	10/18/17 13:42	
Ethyl tert-butyl ether	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Ethylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Freon-113	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Hexachlorobutadiene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Isopropylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
m,p-Xylene	ND	12	1	B7J0504	10/18/2017	10/18/17 13:42	
Methylene chloride	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
MTBE	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
n-Butylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
n-Propylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Naphthalene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
o-Xylene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
sec-Butylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Styrene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
tert-Amyl methyl ether	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
tert-Butanol	ND	120	1	B7J0504	10/18/2017	10/18/17 13:42	
tert-Butylbenzene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Tetrachloroethene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Toluene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
trans-1,2-Dichloroethene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
trans-1,3-Dichloropropene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Trichloroethene	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Trichlorofluoromethane	ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Vinyl acetate	ND	61	1	B7J0504	10/18/2017	10/18/17 13:42	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-5.0

Lab ID: 1703672-06

Volatile Organic Compounds by EPA 5035/EPA 8260B **Analyst: AG**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride		ND	6.1	1	B7J0504	10/18/2017	10/18/17 13:42	
Surrogate: 1,2-Dichloroethane-d4	*95.4 %*		*32 - 140*		B7J0504	10/18/2017	*10/18/17 13:42*	
Surrogate: 4-Bromofluorobenzene	*85.3 %*		*68 - 131*		B7J0504	10/18/2017	*10/18/17 13:42*	
Surrogate: Dibromofluoromethane	*103 %*		*49 - 134*		B7J0504	10/18/2017	*10/18/17 13:42*	
Surrogate: Toluene-d8	*106 %*		*75 - 132*		B7J0504	10/18/2017	*10/18/17 13:42*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-GW
Lab ID: 1703672-07

Title 22 Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:34	
Arsenic	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:34	
Barium	**0.13**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Beryllium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Cadmium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Chromium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Cobalt	**0.0034**	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Copper	ND	0.0090	1	B7J0455	10/17/2017	10/17/17 17:34	
Lead	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:34	
Molybdenum	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:34	
Nickel	ND	0.0050	1	B7J0455	10/17/2017	10/17/17 17:34	
Selenium	ND	0.010	1	B7J0455	10/17/2017	10/17/17 17:34	
Silver	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Thallium	ND	0.015	1	B7J0455	10/17/2017	10/17/17 17:34	
Vanadium	ND	0.0030	1	B7J0455	10/17/2017	10/17/17 17:34	
Zinc	ND	0.025	1	B7J0455	10/17/2017	10/17/17 17:34	

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B7J0458	10/17/2017	10/18/17 17:28	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7J0434	10/17/2017	10/17/17 09:53	
Surrogate: 4-Bromofluorobenzene	*106 %*	*70 - 130*		B7J0434	10/17/2017	*10/17/17 09:53*	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.15**	0.05	1	B7J0462	10/17/2017	10/17/17 22:44	
ORO	**0.10**	0.05	1	B7J0462	10/17/2017	10/17/17 22:44	
Surrogate: p-Terphenyl	*135 %*	*20 - 150*		B7J0462	10/17/2017	*10/17/17 22:44*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Client Sample ID LB34-GW
Lab ID: 1703672-07

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Acenaphthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Acenaphthylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Benzo(a)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Benzo(a)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Benzo(b)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Benzo(g,h,i)perylene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Benzo(k)fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Chrysene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Dibenz(a,h)anthracene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Fluoranthene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Fluorene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Naphthalene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Phenanthrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Pyrene	ND	0.20	1	B7J0413	10/16/2017	10/16/17 16:57	
Surrogate: 1,2-Dichlorobenzene-d4	*61.7 %*	*32 - 99*		B7J0413	10/16/2017	*10/16/17 16:57*	
Surrogate: 2-Fluorobiphenyl	*65.2 %*	*29 - 105*		B7J0413	10/16/2017	*10/16/17 16:57*	
Surrogate: Nitrobenzene-d5	*76.3 %*	*17 - 123*		B7J0413	10/16/2017	*10/16/17 16:57*	
Surrogate: 4-Terphenyl-d14	*84.0 %*	*32 - 119*		B7J0413	10/16/2017	*10/16/17 16:57*	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0455 - EPA 3010A_W										
Blank (B7J0455-BLK1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	ND	0.010	0.0088							
Arsenic	ND	0.010	0.0078							
Barium	ND	0.0030	0.0026							
Beryllium	ND	0.0030	0.0016							
Cadmium	ND	0.0030	0.0024							
Chromium	ND	0.0030	0.0020							
Cobalt	ND	0.0030	0.0016							
Copper	ND	0.0090	0.0038							
Lead	ND	0.0050	0.0047							
Molybdenum	ND	0.0050	0.0030							
Nickel	ND	0.0050	0.0046							
Selenium	ND	0.010	0.0093							
Silver	ND	0.0030	0.0024							
Thallium	ND	0.015	0.0085							
Vanadium	ND	0.0030	0.0022							
Zinc	ND	0.025	0.0057							
LCS (B7J0455-BS1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	0.929102	0.010	0.0088	1.00000		92.9	80 - 120			
Arsenic	0.941062	0.010	0.0078	1.00000		94.1	80 - 120			
Barium	0.969431	0.0030	0.0026	1.00000		96.9	80 - 120			
Beryllium	0.952237	0.0030	0.0016	1.00000		95.2	80 - 120			
Cadmium	0.923200	0.0030	0.0024	1.00000		92.3	80 - 120			
Chromium	0.964497	0.0030	0.0020	1.00000		96.4	80 - 120			
Cobalt	0.960800	0.0030	0.0016	1.00000		96.1	80 - 120			
Copper	0.947343	0.0090	0.0038	1.00000		94.7	80 - 120			
Lead	0.953769	0.0050	0.0047	1.00000		95.4	80 - 120			
Molybdenum	0.936200	0.0050	0.0030	1.00000		93.6	80 - 120			
Nickel	0.929993	0.0050	0.0046	1.00000		93.0	80 - 120			
Selenium	0.907008	0.010	0.0093	1.00000		90.7	80 - 120			
Silver	1.18499	0.0030	0.0024	1.00000		118	80 - 120			
Thallium	0.946903	0.015	0.0085	1.00000		94.7	80 - 120			
Vanadium	0.953132	0.0030	0.0022	1.00000		95.3	80 - 120			
Zinc	0.930909	0.025	0.0057	1.00000		93.1	80 - 120			
Matrix Spike (B7J0455-MS1)			**Source: 1703640-01**			Prepared: 10/17/2017 Analyzed: 10/17/2017				
Antimony	2.45296	0.010	0.0088	2.50000	ND	98.1	60 - 130			
Arsenic	2.51904	0.010	0.0078	2.50000	ND	101	69 - 123			
Barium	2.59554	0.0030	0.0026	2.50000	0.106382	99.6	67 - 129			
Beryllium	2.52702	0.0030	0.0016	2.50000	ND	101	74 - 120			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0455 - EPA 3010A_W (continued)										
Matrix Spike (B7J0455-MS1) - Continued			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Cadmium	2.37069	0.0030	0.0024	2.50000	ND	94.8	69 - 116			
Chromium	2.49293	0.0030	0.0020	2.50000	0.014934	99.1	74 - 120			
Cobalt	2.43594	0.0030	0.0016	2.50000	0.002840	97.3	70 - 116			
Copper	2.53772	0.0090	0.0038	2.50000	0.01129	101	76 - 123			
Lead	2.42425	0.0050	0.0047	2.50000	ND	97.0	69 - 117			
Molybdenum	2.53677	0.0050	0.0030	2.50000	0.026825	100	68 - 120			
Nickel	2.38734	0.0050	0.0046	2.50000	0.011243	95.0	70 - 115			
Selenium	2.39006	0.010	0.0093	2.50000	ND	95.6	66 - 120			
Silver	2.66866	0.0030	0.0024	2.50000	ND	107	73 - 123			
Thallium	2.34797	0.015	0.0085	2.50000	ND	93.9	57 - 124			
Vanadium	2.52252	0.0030	0.0022	2.50000	0.010942	100	72 - 123			
Zinc	2.38635	0.025	0.0057	2.50000	0.023691	94.5	73 - 111			
Matrix Spike Dup (B7J0455-MSD1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/17/2017					
Antimony	2.42439	0.010	0.0088	2.50000	ND	97.0	60 - 130	1.17	20	
Arsenic	2.47205	0.010	0.0078	2.50000	ND	98.9	69 - 123	1.88	20	
Barium	2.56504	0.0030	0.0026	2.50000	0.106382	98.3	67 - 129	1.18	20	
Beryllium	2.49000	0.0030	0.0016	2.50000	ND	99.6	74 - 120	1.48	20	
Cadmium	2.33304	0.0030	0.0024	2.50000	ND	93.3	69 - 116	1.60	20	
Chromium	2.44862	0.0030	0.0020	2.50000	0.014934	97.3	74 - 120	1.79	20	
Cobalt	2.39427	0.0030	0.0016	2.50000	0.002840	95.7	70 - 116	1.73	20	
Copper	2.50095	0.0090	0.0038	2.50000	0.01129	99.6	76 - 123	1.46	20	
Lead	2.39216	0.0050	0.0047	2.50000	ND	95.7	69 - 117	1.33	20	
Molybdenum	2.50298	0.0050	0.0030	2.50000	0.026825	99.0	68 - 120	1.34	20	
Nickel	2.35861	0.0050	0.0046	2.50000	0.011243	93.9	70 - 115	1.21	20	
Selenium	2.34170	0.010	0.0093	2.50000	ND	93.7	66 - 120	2.04	20	
Silver	2.62202	0.0030	0.0024	2.50000	ND	105	73 - 123	1.76	20	
Thallium	2.34150	0.015	0.0085	2.50000	ND	93.7	57 - 124	0.276	20	
Vanadium	2.48646	0.0030	0.0022	2.50000	0.010942	99.0	72 - 123	1.44	20	
Zinc	2.35433	0.025	0.0057	2.50000	0.023691	93.2	73 - 111	1.35	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0521 - EPA 3050B_S										
Blank (B7J0521-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0521-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	44.6737	2.0	0.51	50.0000		89.3	80 - 120			
Arsenic	44.3583	1.0	0.12	50.0000		88.7	80 - 120			
Barium	48.5528	1.0	0.12	50.0000		97.1	80 - 120			
Beryllium	45.5802	1.0	0.03	50.0000		91.2	80 - 120			
Cadmium	44.3475	1.0	0.14	50.0000		88.7	80 - 120			
Chromium	48.0257	1.0	0.26	50.0000		96.1	80 - 120			
Cobalt	47.3349	1.0	0.07	50.0000		94.7	80 - 120			
Copper	46.9373	2.0	0.19	50.0000		93.9	80 - 120			
Lead	45.6487	1.0	0.18	50.0000		91.3	80 - 120			
Molybdenum	46.5031	1.0	0.12	50.0000		93.0	80 - 120			
Nickel	45.5362	1.0	0.18	50.0000		91.1	80 - 120			
Selenium	42.9147	1.0	0.40	50.0000		85.8	80 - 120			
Silver	48.5406	1.0	0.12	50.0000		97.1	80 - 120			
Thallium	46.3220	1.0	0.38	50.0000		92.6	80 - 120			
Vanadium	47.2496	1.0	0.06	50.0000		94.5	80 - 120			
Zinc	45.4536	1.0	0.15	50.0000		90.9	80 - 120			
Matrix Spike (B7J0521-MS1)				**Source: 1703659-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	78.2194	2.0	0.51	125.000	ND	62.6	33 - 98			
Arsenic	96.0602	1.0	0.12	125.000	2.18176	75.1	48 - 101			
Barium	197.620	1.0	0.12	125.000	109.426	70.6	25 - 131			
Beryllium	94.5627	1.0	0.03	125.000	ND	75.7	56 - 97			
Cadmium	88.8968	1.0	0.14	125.000	0.462093	70.7	53 - 94			
Chromium	111.714	1.0	0.26	125.000	18.0048	75.0	45 - 113			

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618-005
Report To : Brynn McCulloch
Reported : 11/03/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0521 - EPA 3050B_S (continued)										
Matrix Spike (B7J0521-MS1) - Continued			**Source: 1703659-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Cobalt	100.921	1.0	0.07	125.000	7.86130	74.4	51 - 97			
Copper	120.351	2.0	0.19	125.000	21.5846	79.0	51 - 113			
Lead	144.756	1.0	0.18	125.000	64.7775	64.0	33 - 127			
Molybdenum	95.7408	1.0	0.12	125.000	ND	76.6	54 - 97			
Nickel	104.175	1.0	0.18	125.000	14.6893	71.6	46 - 102			
Selenium	91.4219	1.0	0.40	125.000	ND	73.1	52 - 93			
Silver	104.123	1.0	0.12	125.000	ND	83.3	58 - 98			
Thallium	84.5474	1.0	0.38	125.000	ND	67.6	46 - 93			
Vanadium	121.406	1.0	0.06	125.000	26.4725	75.9	55 - 104			
Zinc	264.053	1.0	0.15	125.000	184.021	64.0	26 - 118			
Matrix Spike Dup (B7J0521-MSD1)			**Source: 1703659-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Antimony	87.6342	2.0	0.51	125.000	ND	70.1	33 - 98	11.4	20	
Arsenic	106.725	1.0	0.12	125.000	2.18176	83.6	48 - 101	10.5	20	
Barium	217.283	1.0	0.12	125.000	109.426	86.3	25 - 131	9.48	20	
Beryllium	105.696	1.0	0.03	125.000	ND	84.6	56 - 97	11.1	20	
Cadmium	97.8498	1.0	0.14	125.000	0.462093	77.9	53 - 94	9.59	20	
Chromium	123.744	1.0	0.26	125.000	18.0048	84.6	45 - 113	10.2	20	
Cobalt	110.999	1.0	0.07	125.000	7.86130	82.5	51 - 97	9.51	20	
Copper	134.808	2.0	0.19	125.000	21.5846	90.6	51 - 113	11.3	20	
Lead	162.258	1.0	0.18	125.000	64.7775	78.0	33 - 127	11.4	20	
Molybdenum	106.092	1.0	0.12	125.000	ND	84.9	54 - 97	10.3	20	
Nickel	114.800	1.0	0.18	125.000	14.6893	80.1	46 - 102	9.70	20	
Selenium	101.405	1.0	0.40	125.000	ND	81.1	52 - 93	10.4	20	
Silver	115.307	1.0	0.12	125.000	ND	92.2	58 - 98	10.2	20	
Thallium	94.6868	1.0	0.38	125.000	ND	75.7	46 - 93	11.3	20	
Vanadium	133.700	1.0	0.06	125.000	26.4725	85.8	55 - 104	9.64	20	
Zinc	291.180	1.0	0.15	125.000	184.021	85.7	26 - 118	9.77	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0522 - EPA 3050B_S										
Blank (B7J0522-BLK1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	ND	1.0	0.03							
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	ND	1.0	0.07							
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	ND	1.0	0.12							
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	ND	1.0	0.06							
Zinc	ND	1.0	0.15							
LCS (B7J0522-BS1)						Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	44.0054	2.0	0.51	50.0000		88.0	80 - 120			
Arsenic	43.7278	1.0	0.12	50.0000		87.5	80 - 120			
Barium	47.6076	1.0	0.12	50.0000		95.2	80 - 120			
Beryllium	44.0730	1.0	0.03	50.0000		88.1	80 - 120			
Cadmium	43.4271	1.0	0.14	50.0000		86.9	80 - 120			
Chromium	47.0347	1.0	0.26	50.0000		94.1	80 - 120			
Cobalt	46.2982	1.0	0.07	50.0000		92.6	80 - 120			
Copper	45.7400	2.0	0.19	50.0000		91.5	80 - 120			
Lead	44.7014	1.0	0.18	50.0000		89.4	80 - 120			
Molybdenum	45.8167	1.0	0.12	50.0000		91.6	80 - 120			
Nickel	44.5192	1.0	0.18	50.0000		89.0	80 - 120			
Selenium	42.3748	1.0	0.40	50.0000		84.7	80 - 120			
Silver	46.9070	1.0	0.12	50.0000		93.8	80 - 120			
Thallium	44.5632	1.0	0.38	50.0000		89.1	80 - 120			
Vanadium	46.2541	1.0	0.06	50.0000		92.5	80 - 120			
Zinc	44.4701	1.0	0.15	50.0000		88.9	80 - 120			
Matrix Spike (B7J0522-MS1)				**Source: 1703672-05**		Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	55.3796	2.0	0.51	125.000	ND	44.3	33 - 98			
Arsenic	77.4801	1.0	0.12	125.000	0.237066	61.8	48 - 101			
Barium	156.386	1.0	0.12	125.000	98.8874	46.0	25 - 131			
Beryllium	76.9417	1.0	0.03	125.000	ND	61.6	56 - 97			
Cadmium	69.6659	1.0	0.14	125.000	ND	55.7	53 - 94			
Chromium	79.7975	1.0	0.26	125.000	7.45795	57.9	45 - 113			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0522 - EPA 3050B_S (continued)										
Matrix Spike (B7J0522-MS1) - Continued			**Source: 1703672-05**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
Cobalt	75.9180	1.0	0.07	125.000	3.69589	57.8	51 - 97			
Copper	84.9218	2.0	0.19	125.000	7.57142	61.9	51 - 113			
Lead	71.4824	1.0	0.18	125.000	ND	57.2	33 - 127			
Molybdenum	75.1120	1.0	0.12	125.000	ND	60.1	54 - 97			
Nickel	75.5334	1.0	0.18	125.000	5.76752	55.8	46 - 102			
Selenium	74.6554	1.0	0.40	125.000	ND	59.7	52 - 93			
Silver	86.2298	1.0	0.12	125.000	ND	69.0	58 - 98			
Thallium	67.5519	1.0	0.38	125.000	ND	54.0	46 - 93			
Vanadium	88.0594	1.0	0.06	125.000	15.4392	58.1	55 - 104			
Zinc	85.3713	1.0	0.15	125.000	25.5268	47.9	26 - 118			
Matrix Spike Dup (B7J0522-MSD1)			**Source: 1703672-05**			Prepared: 10/18/2017 Analyzed: 10/19/2017				
Antimony	59.4024	2.0	0.51	125.000	ND	47.5	33 - 98	7.01	20	
Arsenic	82.6520	1.0	0.12	125.000	0.237066	65.9	48 - 101	6.46	20	
Barium	164.454	1.0	0.12	125.000	98.8874	52.5	25 - 131	5.03	20	
Beryllium	83.0842	1.0	0.03	125.000	ND	66.5	56 - 97	7.68	20	
Cadmium	74.1982	1.0	0.14	125.000	ND	59.4	53 - 94	6.30	20	
Chromium	84.5824	1.0	0.26	125.000	7.45795	61.7	45 - 113	5.82	20	
Cobalt	80.6244	1.0	0.07	125.000	3.69589	61.5	51 - 97	6.01	20	
Copper	89.4858	2.0	0.19	125.000	7.57142	65.5	51 - 113	5.23	20	
Lead	75.3280	1.0	0.18	125.000	ND	60.3	33 - 127	5.24	20	
Molybdenum	79.0384	1.0	0.12	125.000	ND	63.2	54 - 97	5.09	20	
Nickel	79.8602	1.0	0.18	125.000	5.76752	59.3	46 - 102	5.57	20	
Selenium	79.5914	1.0	0.40	125.000	ND	63.7	52 - 93	6.40	20	
Silver	91.4008	1.0	0.12	125.000	ND	73.1	58 - 98	5.82	20	
Thallium	71.8481	1.0	0.38	125.000	ND	57.5	46 - 93	6.16	20	
Vanadium	93.7148	1.0	0.06	125.000	15.4392	62.6	55 - 104	6.22	20	
Zinc	93.1380	1.0	0.15	125.000	25.5268	54.1	26 - 118	8.70	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0458 - EPA 245.1/7470_W										
Blank (B7J0458-BLK1)					Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	ND	0.20	0.05							
LCS (B7J0458-BS1)					Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	9.54958	0.20	0.05	10.0000		95.5	80 - 120			
Matrix Spike (B7J0458-MS1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	9.82494	0.20	0.05	10.0000	0.066603	97.6	70 - 130			
Matrix Spike Dup (B7J0458-MSD1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	10.2498	0.20	0.05	10.0000	0.066603	102	70 - 130	4.23	20	
Post Spike (B7J0458-PS1)			**Source: 1703640-01**		Prepared: 10/17/2017 Analyzed: 10/18/2017					
Mercury	4.94797			5.00000	0.066603	97.6	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0523 - EPA 7471_S										
Blank (B7J0523-BLK1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0523-BS1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.748114	0.10	0.005	0.833333		89.8	80 - 120			
Matrix Spike (B7J0523-MS1)			**Source: 1703659-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.889239	0.10	0.005	0.833333	0.069618	98.4	70 - 130			
Matrix Spike Dup (B7J0523-MSD1)			**Source: 1703659-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.851838	0.10	0.005	0.833333	0.069618	93.9	70 - 130	4.30	20	
Post Spike (B7J0523-PS1)			**Source: 1703659-01**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	6.2191E-3			5.00000E-3	8.354E-4	108	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0524 - EPA 7471_S										
Blank (B7J0524-BLK1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	ND	0.10	0.005							
LCS (B7J0524-BS1)					Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.767508	0.10	0.005	0.833333		92.1	80 - 120			
Matrix Spike (B7J0524-MS1)			**Source: 1703672-05**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.829618	0.10	0.005	0.833333	0.014933	97.8	70 - 130			
Matrix Spike Dup (B7J0524-MSD1)			**Source: 1703672-05**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.755244	0.10	0.005	0.833333	0.014933	88.8	70 - 130	9.39	20	
Post Spike (B7J0524-PS1)			**Source: 1703672-05**		Prepared: 10/18/2017 Analyzed: 10/19/2017					
Mercury	0.005499			5.00000E-3	0.000179	106	85 - 115			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0362 - GCVOA_S										
Blank (B7J0362-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2112*			*0.400000*		*52.8*	*50 - 138*			
LCS (B7J0362-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	4.55900	1.0	0.20	5.00000		91.2	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2227*			*0.400000*		*55.7*	*50 - 138*			
Duplicate (B7J0362-DUP1)			**Source: 1703671-02**		Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	ND	1.0	0.20		ND			NR	20	
Surrogate: 4-Bromofluorobenzene	*0.2124*			*0.400000*		*53.1*	*50 - 138*			
Matrix Spike (B7J0362-MS1)			**Source: 1703671-02**		Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	3.95500	1.0	0.20	5.00000	ND	79.1	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2115*			*0.400000*		*52.9*	*50 - 138*			
Matrix Spike Dup (B7J0362-MSD1)			**Source: 1703671-02**		Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Organics	3.51900	1.0	0.20	5.00000	ND	70.4	17 - 141	11.7	20	
Surrogate: 4-Bromofluorobenzene	*0.2040*			*0.400000*		*51.0*	*50 - 138*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0434 - GCVOA_W										
Blank (B7J0434-BLK1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Gasoline Range Organics	ND	0.05	0.05							
Surrogate: 4-Bromofluorobenzene	*0.1009*			*0.100000*		*101*	*70 - 130*			
LCS (B7J0434-BS1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Gasoline Range Organics	0.736000	0.05	0.05	1.00000		73.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1016*			*0.100000*		*102*	*70 - 130*			
LCS Dup (B7J0434-BSD1)					Prepared: 10/17/2017 Analyzed: 10/17/2017					
Gasoline Range Organics	0.848000	0.05	0.05	1.00000		84.8	70 - 130	14.1	20	
Surrogate: 4-Bromofluorobenzene	*0.1029*			*0.100000*		*103*	*70 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0462 - GCSEMI_DRO_W										
Blank (B7J0462-BLK1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
DRO	ND	0.05	0.05							
ORO	ND	0.05	0.05							
Surrogate: p-Terphenyl	*0.1126*			*8.00000E-2*		*141*	*20 - 150*			
LCS (B7J0462-BS1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
DRO	0.939440	0.05	0.05	1.00000		93.9	42 - 142			
Surrogate: p-Terphenyl	*0.1084*			*8.00000E-2*		*135*	*20 - 150*			
LCS Dup (B7J0462-BSD1)						Prepared: 10/17/2017 Analyzed: 10/17/2017				
DRO	0.977190	0.05	0.05	1.00000		97.7	42 - 142	3.94	20	
Surrogate: p-Terphenyl	*0.1115*			*8.00000E-2*		*139*	*20 - 150*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0583 - GCSEMI_DRO_LL_S										
Blank (B7J0583-BLK1)					Prepared: 10/19/2017 Analyzed: 10/19/2017					
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Surrogate: p-Terphenyl	*4.185*			*5.33333*		*78.5*	*38 - 145*			
LCS (B7J0583-BS1)					Prepared: 10/19/2017 Analyzed: 10/19/2017					
DRO	39.9217	1.0	1.0	33.3333		120	33 - 143			
Surrogate: p-Terphenyl	*4.230*			*5.33333*		*79.3*	*38 - 145*			
Duplicate (B7J0583-DUP1)			**Source: 1703671-21**		Prepared: 10/19/2017 Analyzed: 10/19/2017					
DRO	14.0893	1.0	1.0		14.3507			1.84	20	
Surrogate: p-Terphenyl	*3.229*			*2.66667*		*121*	*38 - 145*			
Duplicate (B7J0583-DUP2)			**Source: 1703681-11**		Prepared: 10/19/2017 Analyzed: 10/21/2017					
DRO	12.1503	1.0	1.0		16.8737			32.5	20	R
Surrogate: p-Terphenyl	*2.276*			*2.66667*		*85.3*	*38 - 145*			
Matrix Spike (B7J0583-MS1)			**Source: 1703671-21**		Prepared: 10/19/2017 Analyzed: 10/19/2017					
DRO	43.2807	1.0	1.0	33.3333	14.3507	86.8	20 - 159			
Surrogate: p-Terphenyl	*4.216*			*5.33333*		*79.1*	*38 - 145*			
Matrix Spike (B7J0583-MS2)			**Source: 1703681-11**		Prepared: 10/19/2017 Analyzed: 10/21/2017					
DRO	40.2700	1.0	1.0	33.3333	16.8737	70.2	20 - 159			
Surrogate: p-Terphenyl	*2.984*			*2.66667*		*112*	*38 - 145*			
Matrix Spike Dup (B7J0583-MSD1)			**Source: 1703671-21**		Prepared: 10/19/2017 Analyzed: 10/19/2017					
DRO	37.6890	1.0	1.0	33.3333	14.3507	70.0	20 - 159	13.8	20	
Surrogate: p-Terphenyl	*3.140*			*2.66667*		*118*	*38 - 145*			
Matrix Spike Dup (B7J0583-MSD2)			**Source: 1703681-11**		Prepared: 10/19/2017 Analyzed: 10/21/2017					
DRO	32.2900	1.0	1.0	33.3333	16.8737	46.2	20 - 159	22.0	20	R
Surrogate: p-Terphenyl	*2.036*			*2.66667*		*76.3*	*38 - 145*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0837 - GCSEMI_PCB/PEST_S										
Blank (B7J0837-BLK1)						Prepared: 10/27/2017 Analyzed: 11/1/2017				
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*15.29*			*16.6667*		*91.8*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.55*			*16.6667*		*93.3*	*30 - 130*			
LCS (B7J0837-BS1)						Prepared: 10/27/2017 Analyzed: 11/1/2017				
Aroclor 1016	166.246	16	4.6	166.667		99.7	73 - 111			
Aroclor 1260	161.782	16	4.6	166.667		97.1	75 - 125			
Surrogate: Decachlorobiphenyl	*14.96*			*16.6667*		*89.7*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.02*			*16.6667*		*84.1*	*30 - 130*			
Matrix Spike (B7J0837-MS1)			**Source: 1703672-04**			Prepared: 10/27/2017 Analyzed: 11/1/2017				
Aroclor 1016	90.9625	16	4.6	166.667	ND	54.6	36 - 127			
Aroclor 1260	175.296	16	4.6	166.667	ND	105	31 - 142			
Surrogate: Decachlorobiphenyl	*5.477*			*16.6667*		*32.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*7.501*			*16.6667*		*45.0*	*30 - 130*			
Matrix Spike Dup (B7J0837-MSD1)			**Source: 1703672-04**			Prepared: 10/27/2017 Analyzed: 11/1/2017				
Aroclor 1016	86.3872	16	4.6	166.667	ND	51.8	36 - 127	5.16	20	
Aroclor 1260	182.705	16	4.6	166.667	ND	110	31 - 142	4.14	20	
Surrogate: Decachlorobiphenyl	*5.843*			*16.6667*		*35.1*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*8.482*			*16.6667*		*50.9*	*30 - 130*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S										
Blank (B7J0504-BLK1)					Prepared: 10/18/2017 Analyzed: 10/18/2017					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							
1,1,1-Trichloroethane	ND	5.0	1.1							
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							
1,1,2-Trichloroethane	ND	5.0	1.6							
1,1-Dichloroethane	ND	5.0	0.81							
1,1-Dichloroethene	ND	5.0	2.6							
1,1-Dichloropropene	ND	5.0	2.3							
1,2,3-Trichloropropane	ND	5.0	0.54							
1,2,3-Trichlorobenzene	ND	5.0	1.2							
1,2,4-Trichlorobenzene	ND	5.0	1.1							
1,2,4-Trimethylbenzene	ND	5.0	1.5							
1,2-Dibromo-3-chloropropane	ND	10	1.6							
1,2-Dibromoethane	ND	5.0	3.2							
1,2-Dichlorobenzene	ND	5.0	1.1							
1,2-Dichloroethane	ND	5.0	1.2							
1,2-Dichloropropane	ND	5.0	1.8							
1,3,5-Trimethylbenzene	ND	5.0	1.7							
1,3-Dichlorobenzene	ND	5.0	1.3							
1,3-Dichloropropane	ND	5.0	1.1							
1,4-Dichlorobenzene	ND	5.0	1.2							
2,2-Dichloropropane	ND	5.0	1.2							
2-Chlorotoluene	ND	5.0	1.6							
4-Chlorotoluene	ND	5.0	1.5							
4-Isopropyltoluene	ND	5.0	2.3							
Benzene	ND	5.0	0.64							
Bromobenzene	ND	5.0	1.1							
Bromochloromethane	ND	5.0	0.64							
Bromodichloromethane	ND	5.0	1.2							
Bromoform	ND	5.0	0.80							
Bromomethane	ND	5.0	2.5							
Carbon disulfide	ND	5.0	3.5							
Carbon tetrachloride	ND	5.0	1.2							
Chlorobenzene	ND	5.0	1.0							
Chloroethane	ND	5.0	1.1							
Chloroform	ND	5.0	0.82							
Chloromethane	ND	5.0	1.4							
cis-1,2-Dichloroethene	ND	5.0	0.67							
cis-1,3-Dichloropropene	ND	5.0	1.9							
Di-isopropyl ether	ND	5.0	0.55							
Dibromochloromethane	ND	5.0	1.0							
Dibromomethane	ND	5.0	1.6							

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
Blank (B7J0504-BLK1) - Continued					Prepared: 10/18/2017 Analyzed: 10/18/2017					
Dichlorodifluoromethane	ND	5.0	2.2							
Ethyl Acetate	ND	50	8.1							
Ethyl Ether	ND	50	6.1							
Ethyl tert-butyl ether	ND	5.0	0.67							
Ethylbenzene	ND	5.0	0.91							
Freon-113	ND	5.0	2.8							
Hexachlorobutadiene	ND	5.0	2.5							
Isopropylbenzene	ND	5.0	1.8							
m,p-Xylene	ND	10	1.5							
Methylene chloride	ND	5.0	2.3							
MTBE	ND	5.0	0.63							
n-Butylbenzene	ND	5.0	2.4							
n-Propylbenzene	ND	5.0	2.2							
Naphthalene	ND	5.0	0.97							
o-Xylene	ND	5.0	0.87							
sec-Butylbenzene	ND	5.0	2.3							
Styrene	ND	5.0	1.5							
tert-Amyl methyl ether	ND	5.0	0.59							
tert-Butanol	ND	100	19							
tert-Butylbenzene	ND	5.0	2.0							
Tetrachloroethene	ND	5.0	1.6							
Toluene	ND	5.0	0.94							
trans-1,2-Dichloroethene	ND	5.0	0.59							
trans-1,3-Dichloropropene	ND	5.0	2.1							
Trichloroethene	ND	5.0	3.1							
Trichlorofluoromethane	ND	5.0	1.4							
Vinyl acetate	ND	50	9.8							
Vinyl chloride	ND	5.0	1.7							
Surrogate: 1,2-Dichloroethane-d4	*43.50*			*50.0000*		*87.0*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*44.33*			*50.0000*		*88.7*	*68 - 131*			
Surrogate: Dibromofluoromethan	*50.60*			*50.0000*		*101*	*49 - 134*			
Surrogate: Toluene-d8	*53.33*			*50.0000*		*107*	*75 - 132*			
LCS (B7J0504-BS1)					Prepared: 10/18/2017 Analyzed: 10/18/2017					
1,1,1,2-Tetrachloroethane	48.3000	5.0	0.96	50.0000		96.6	80 - 117			
1,1,1-Trichloroethane	48.4900	5.0	1.1	50.0000		97.0	70 - 122			
1,1,2,2-Tetrachloroethane	47.6400	5.0	0.62	50.0000		95.3	69 - 115			
1,1,2-Trichloroethane	49.7900	5.0	1.6	50.0000		99.6	74 - 120			
1,1-Dichloroethane	49.5500	5.0	0.81	50.0000		99.1	72 - 118			
1,1-Dichloroethene	45.4500	5.0	2.6	50.0000		90.9	61 - 124			
1,1-Dichloropropene	50.4300	5.0	2.3	50.0000		101	74 - 128			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
LCS (B7J0504-BS1) - Continued					Prepared: 10/18/2017 Analyzed: 10/18/2017					
1,2,3-Trichloropropane	51.9700	5.0	0.54	50.0000		104	67 - 116			
1,2,3-Trichlorobenzene	49.9800	5.0	1.2	50.0000		100	86 - 127			
1,2,4-Trichlorobenzene	54.2800	5.0	1.1	50.0000		109	88 - 137			
1,2,4-Trimethylbenzene	52.0700	5.0	1.5	50.0000		104	78 - 125			
1,2-Dibromo-3-chloropropane	50.0200	10	1.6	50.0000		100	70 - 134			
1,2-Dibromoethane	51.2300	5.0	3.2	50.0000		102	73 - 127			
1,2-Dichlorobenzene	50.4100	5.0	1.1	50.0000		101	85 - 116			
1,2-Dichloroethane	50.3400	5.0	1.2	50.0000		101	65 - 120			
1,2-Dichloropropane	50.6000	5.0	1.8	50.0000		101	81 - 114			
1,3,5-Trimethylbenzene	51.3200	5.0	1.7	50.0000		103	76 - 125			
1,3-Dichlorobenzene	51.6800	5.0	1.3	50.0000		103	83 - 117			
1,3-Dichloropropane	50.3500	5.0	1.1	50.0000		101	79 - 119			
1,4-Dichlorobenzene	50.1700	5.0	1.2	50.0000		100	84 - 115			
2,2-Dichloropropane	50.8200	5.0	1.2	50.0000		102	72 - 121			
2-Chlorotoluene	50.4000	5.0	1.6	50.0000		101	76 - 120			
4-Chlorotoluene	52.3600	5.0	1.5	50.0000		105	77 - 122			
4-Isopropyltoluene	53.0300	5.0	2.3	50.0000		106	77 - 131			
Benzene	101.730	5.0	0.64	100.000		102	78 - 115			
Bromobenzene	48.9100	5.0	1.1	50.0000		97.8	79 - 113			
Bromochloromethane	50.5500	5.0	0.64	50.0000		101	66 - 123			
Bromodichloromethane	48.7800	5.0	1.2	50.0000		97.6	79 - 112			
Bromoform	48.1400	5.0	0.80	50.0000		96.3	67 - 125			
Bromomethane	54.9500	5.0	2.5	50.0000		110	49 - 150			
Carbon disulfide	49.4000	5.0	3.5	50.0000		98.8	61 - 146			
Carbon tetrachloride	49.0100	5.0	1.2	50.0000		98.0	65 - 133			
Chlorobenzene	49.3400	5.0	1.0	50.0000		98.7	82 - 113			
Chloroethane	52.8400	5.0	1.1	50.0000		106	46 - 146			
Chloroform	49.4800	5.0	0.82	50.0000		99.0	73 - 116			
Chloromethane	53.2500	5.0	1.4	50.0000		106	46 - 158			
cis-1,2-Dichloroethene	49.4400	5.0	0.67	50.0000		98.9	72 - 121			
cis-1,3-Dichloropropene	51.2000	5.0	1.9	50.0000		102	79 - 123			
Di-isopropyl ether	50.3800	5.0	0.55	50.0000		101	67 - 125			
Dibromochloromethane	48.0400	5.0	1.0	50.0000		96.1	79 - 116			
Dibromomethane	54.3700	5.0	1.6	50.0000		109	72 - 117			
Dichlorodifluoromethane	54.2100	5.0	2.2	50.0000		108	38 - 168			
Ethyl Acetate	538.700	50	8.1	500.000		108	55 - 144			
Ethyl Ether	580.530	50	6.1	500.000		116	52 - 133			
Ethyl tert-butyl ether	51.3300	5.0	0.67	50.0000		103	68 - 126			
Ethylbenzene	100.980	5.0	0.91	100.000		101	79 - 116			
Freon-113	50.3400	5.0	2.8	50.0000		101	66 - 134			
Hexachlorobutadiene	53.0900	5.0	2.5	50.0000		106	84 - 133			
Isopropylbenzene	50.8300	5.0	1.8	50.0000		102	67 - 134			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
LCS (B7J0504-BS1) - Continued					Prepared: 10/18/2017 Analyzed: 10/18/2017					
m,p-Xylene	105.660	10	1.5	100.000		106	78 - 126			
Methylene chloride	41.7900	5.0	2.3	50.0000		83.6	31 - 148			
MTBE	50.3900	5.0	0.63	50.0000		101	59 - 131			
n-Butylbenzene	55.7000	5.0	2.4	50.0000		111	75 - 141			
n-Propylbenzene	52.0700	5.0	2.2	50.0000		104	73 - 127			
Naphthalene	48.4100	5.0	0.97	50.0000		96.8	78 - 129			
o-Xylene	100.060	5.0	0.87	100.000		100	81 - 113			
sec-Butylbenzene	52.2600	5.0	2.3	50.0000		105	73 - 129			
Styrene	53.6100	5.0	1.5	50.0000		107	88 - 118			
tert-Amyl methyl ether	49.7500	5.0	0.59	50.0000		99.5	62 - 122			
tert-Butanol	229.040	100	19	250.000		91.6	36 - 142			
tert-Butylbenzene	50.9300	5.0	2.0	50.0000		102	74 - 126			
Tetrachloroethene	50.1200	5.0	1.6	50.0000		100	74 - 127			
Toluene	102.850	5.0	0.94	100.000		103	79 - 119			
trans-1,2-Dichloroethene	51.4700	5.0	0.59	50.0000		103	61 - 128			
trans-1,3-Dichloropropene	51.8200	5.0	2.1	50.0000		104	75 - 116			
Trichloroethene	49.5300	5.0	3.1	50.0000		99.1	76 - 123			
Trichlorofluoromethane	50.2500	5.0	1.4	50.0000		100	58 - 134			
Vinyl acetate	551.500	50	9.8	500.000		110	63 - 143			
Vinyl chloride	54.1900	5.0	1.7	50.0000		108	51 - 145			
Surrogate: 1,2-Dichloroethane-d4	*50.41*			*50.0000*		*101*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*51.59*			*50.0000*		*103*	*68 - 131*			
Surrogate: Dibromofluoromethan	*48.92*			*50.0000*		*97.8*	*49 - 134*			
Surrogate: Toluene-d8	*51.17*			*50.0000*		*102*	*75 - 132*			
Matrix Spike (B7J0504-MS1)			**Source: 1703697-01**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
1,1,1,2-Tetrachloroethane	45.5600	5.0	0.96	50.0000	ND	91.1	27 - 130			
1,1,1-Trichloroethane	48.9000	5.0	1.1	50.0000	ND	97.8	32 - 135			
1,1,2,2-Tetrachloroethane	45.5300	5.0	0.62	50.0000	ND	91.1	17 - 135			
1,1,2-Trichloroethane	46.2000	5.0	1.6	50.0000	ND	92.4	31 - 129			
1,1-Dichloroethane	47.3200	5.0	0.81	50.0000	ND	94.6	37 - 130			
1,1-Dichloroethene	47.6600	5.0	2.6	50.0000	ND	95.3	41 - 125			
1,1-Dichloropropene	50.3700	5.0	2.3	50.0000	ND	101	33 - 138			
1,2,3-Trichloropropane	48.1900	5.0	0.54	50.0000	ND	96.4	20 - 137			
1,2,3-Trichlorobenzene	44.4500	5.0	1.2	50.0000	ND	88.9	0 - 147			
1,2,4-Trichlorobenzene	49.1900	5.0	1.1	50.0000	ND	98.4	0 - 156			
1,2,4-Trimethylbenzene	49.0500	5.0	1.5	50.0000	ND	98.1	10 - 139			
1,2-Dibromo-3-chloropropane	48.1000	10	1.6	50.0000	ND	96.2	17 - 145			
1,2-Dibromoethane	49.4200	5.0	3.2	50.0000	ND	98.8	25 - 136			
1,2-Dichlorobenzene	46.1600	5.0	1.1	50.0000	ND	92.3	8 - 134			
1,2-Dichloroethane	46.9600	5.0	1.2	50.0000	ND	93.9	31 - 123			

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
Matrix Spike (B7J0504-MS1) - Continued			**Source: 1703697-01**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
1,2-Dichloropropane	47.6900	5.0	1.8	50.0000	ND	95.4	38 - 123			
1,3,5-Trimethylbenzene	49.0400	5.0	1.7	50.0000	ND	98.1	10 - 139			
1,3-Dichlorobenzene	47.0700	5.0	1.3	50.0000	ND	94.1	8 - 134			
1,3-Dichloropropane	48.3700	5.0	1.1	50.0000	ND	96.7	34 - 130			
1,4-Dichlorobenzene	46.3200	5.0	1.2	50.0000	ND	92.6	10 - 134			
2,2-Dichloropropane	51.3400	5.0	1.2	50.0000	ND	103	36 - 133			
2-Chlorotoluene	47.7000	5.0	1.6	50.0000	ND	95.4	15 - 133			
4-Chlorotoluene	48.7400	5.0	1.5	50.0000	ND	97.5	13 - 135			
4-Isopropyltoluene	51.8800	5.0	2.3	50.0000	ND	104	2 - 146			
Benzene	96.4900	5.0	0.64	100.000	ND	96.5	40 - 123			
Bromobenzene	46.1400	5.0	1.1	50.0000	ND	92.3	18 - 132			
Bromochloromethane	47.2200	5.0	0.64	50.0000	ND	94.4	32 - 130			
Bromodichloromethane	45.7700	5.0	1.2	50.0000	ND	91.5	33 - 122			
Bromoform	46.0900	5.0	0.80	50.0000	ND	92.2	20 - 134			
Bromomethane	50.7400	5.0	2.5	50.0000	ND	101	35 - 140			
Carbon disulfide	51.5500	5.0	3.5	50.0000	ND	103	32 - 143			
Carbon tetrachloride	49.8900	5.0	1.2	50.0000	ND	99.8	23 - 144			
Chlorobenzene	46.9600	5.0	1.0	50.0000	ND	93.9	24 - 128			
Chloroethane	52.1600	5.0	1.1	50.0000	ND	104	35 - 135			
Chloroform	46.9300	5.0	0.82	50.0000	ND	93.9	36 - 126			
Chloromethane	50.2000	5.0	1.4	50.0000	ND	100	36 - 146			
cis-1,2-Dichloroethene	46.6200	5.0	0.67	50.0000	ND	93.2	31 - 136			
cis-1,3-Dichloropropene	49.9700	5.0	1.9	50.0000	ND	99.9	28 - 130			
Di-isopropyl ether	47.6000	5.0	0.55	50.0000	ND	95.2	32 - 133			
Dibromochloromethane	45.3000	5.0	1.0	50.0000	ND	90.6	30 - 129			
Dibromomethane	50.9800	5.0	1.6	50.0000	ND	102	28 - 126			
Dichlorodifluoromethane	57.9400	5.0	2.2	50.0000	ND	116	23 - 162			
Ethyl Acetate	487.540	50	8.1	500.000	ND	97.5	0 - 156			
Ethyl Ether	521.840	50	6.1	500.000	ND	104	33 - 128			
Ethyl tert-butyl ether	49.5100	5.0	0.67	50.0000	ND	99.0	33 - 138			
Ethylbenzene	97.8100	5.0	0.91	100.000	ND	97.8	22 - 132			
Freon-113	52.8300	5.0	2.8	50.0000	ND	106	31 - 140			
Hexachlorobutadiene	46.6100	5.0	2.5	50.0000	ND	93.2	0 - 150			
Isopropylbenzene	49.5500	5.0	1.8	50.0000	ND	99.1	15 - 144			
m,p-Xylene	104.120	10	1.5	100.000	ND	104	19 - 138			
Methylene chloride	41.3000	5.0	2.3	50.0000	ND	82.6	9 - 145			
MTBE	48.1400	5.0	0.63	50.0000	ND	96.3	31 - 136			
n-Butylbenzene	52.7700	5.0	2.4	50.0000	ND	106	0 - 153			
n-Propylbenzene	50.2700	5.0	2.2	50.0000	ND	101	12 - 141			
Naphthalene	45.5900	5.0	0.97	50.0000	ND	91.2	0 - 145			
o-Xylene	94.2600	5.0	0.87	100.000	ND	94.3	20 - 129			
sec-Butylbenzene	50.9400	5.0	2.3	50.0000	ND	102	4 - 143			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
Matrix Spike (B7J0504-MS1) - Continued			**Source: 1703697-01**			Prepared: 10/18/2017 Analyzed: 10/18/2017				
Styrene	50.7700	5.0	1.5	50.0000	ND	102	19 - 136			
tert-Amyl methyl ether	46.7500	5.0	0.59	50.0000	ND	93.5	30 - 128			
tert-Butanol	232.050	100	19	250.000	ND	92.8	22 - 146			
tert-Butylbenzene	50.2800	5.0	2.0	50.0000	ND	101	9 - 140			
Tetrachloroethene	50.6600	5.0	1.6	50.0000	ND	101	18 - 143			
Toluene	97.2000	5.0	0.94	100.000	ND	97.2	30 - 132			
trans-1,2-Dichloroethene	50.4100	5.0	0.59	50.0000	ND	101	32 - 134			
trans-1,3-Dichloropropene	46.1500	5.0	2.1	50.0000	ND	92.3	23 - 127			
Trichloroethene	49.2200	5.0	3.1	50.0000	ND	98.4	17 - 158			
Trichlorofluoromethane	52.2000	5.0	1.4	50.0000	ND	104	36 - 135			
Vinyl acetate	227.320	50	9.8	500.000	ND	45.5	0 - 154			
Vinyl chloride	56.0900	5.0	1.7	50.0000	ND	112	38 - 140			
Surrogate: 1,2-Dichloroethane-d4	*50.88*			*50.0000*		*102*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*49.78*			*50.0000*		*99.6*	*68 - 131*			
Surrogate: Dibromofluoromethan	*50.44*			*50.0000*		*101*	*49 - 134*			
Surrogate: Toluene-d8	*50.74*			*50.0000*		*101*	*75 - 132*			
Matrix Spike Dup (B7J0504-MSD1)			**Source: 1703697-01**			Prepared: 10/18/2017 Analyzed: 10/18/2017				
1,1,1,2-Tetrachloroethane	42.4600	5.0	0.96	50.0000	ND	84.9	27 - 130	7.04	20	
1,1,1-Trichloroethane	44.8800	5.0	1.1	50.0000	ND	89.8	32 - 135	8.57	20	
1,1,2,2-Tetrachloroethane	42.0600	5.0	0.62	50.0000	ND	84.1	17 - 135	7.92	20	
1,1,2-Trichloroethane	46.5200	5.0	1.6	50.0000	ND	93.0	31 - 129	0.690	20	
1,1-Dichloroethane	43.5300	5.0	0.81	50.0000	ND	87.1	37 - 130	8.34	20	
1,1-Dichloroethene	43.0900	5.0	2.6	50.0000	ND	86.2	41 - 125	10.1	20	
1,1-Dichloropropene	47.2000	5.0	2.3	50.0000	ND	94.4	33 - 138	6.50	20	
1,2,3-Trichloropropane	45.8800	5.0	0.54	50.0000	ND	91.8	20 - 137	4.91	20	
1,2,3-Trichlorobenzene	39.0400	5.0	1.2	50.0000	ND	78.1	0 - 147	13.0	20	
1,2,4-Trichlorobenzene	43.0000	5.0	1.1	50.0000	ND	86.0	0 - 156	13.4	20	
1,2,4-Trimethylbenzene	43.2400	5.0	1.5	50.0000	ND	86.5	10 - 139	12.6	20	
1,2-Dibromo-3-chloropropane	45.6100	10	1.6	50.0000	ND	91.2	17 - 145	5.31	20	
1,2-Dibromoethane	43.6800	5.0	3.2	50.0000	ND	87.4	25 - 136	12.3	20	
1,2-Dichlorobenzene	40.9100	5.0	1.1	50.0000	ND	81.8	8 - 134	12.1	20	
1,2-Dichloroethane	44.8300	5.0	1.2	50.0000	ND	89.7	31 - 123	4.64	20	
1,2-Dichloropropane	44.3700	5.0	1.8	50.0000	ND	88.7	38 - 123	7.21	20	
1,3,5-Trimethylbenzene	43.1600	5.0	1.7	50.0000	ND	86.3	10 - 139	12.8	20	
1,3-Dichlorobenzene	41.8200	5.0	1.3	50.0000	ND	83.6	8 - 134	11.8	20	
1,3-Dichloropropane	45.8200	5.0	1.1	50.0000	ND	91.6	34 - 130	5.41	20	
1,4-Dichlorobenzene	41.5300	5.0	1.2	50.0000	ND	83.1	10 - 134	10.9	20	
2,2-Dichloropropane	45.3700	5.0	1.2	50.0000	ND	90.7	36 - 133	12.3	20	
2-Chlorotoluene	41.7300	5.0	1.6	50.0000	ND	83.5	15 - 133	13.4	20	
4-Chlorotoluene	43.2100	5.0	1.5	50.0000	ND	86.4	13 - 135	12.0	20	

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618-005
Report To : Brynn McCulloch
Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
Matrix Spike Dup (B7J0504-MSD1) - Continued			**Source: 1703697-01**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
4-Isopropyltoluene	44.9000	5.0	2.3	50.0000	ND	89.8	2 - 146	14.4	20	
Benzene	89.9800	5.0	0.64	100.000	ND	90.0	40 - 123	6.98	20	
Bromobenzene	41.5800	5.0	1.1	50.0000	ND	83.2	18 - 132	10.4	20	
Bromochloromethane	43.9600	5.0	0.64	50.0000	ND	87.9	32 - 130	7.15	20	
Bromodichloromethane	42.5500	5.0	1.2	50.0000	ND	85.1	33 - 122	7.29	20	
Bromoform	44.1900	5.0	0.80	50.0000	ND	88.4	20 - 134	4.21	20	
Bromomethane	45.4000	5.0	2.5	50.0000	ND	90.8	35 - 140	11.1	20	
Carbon disulfide	46.6500	5.0	3.5	50.0000	ND	93.3	32 - 143	9.98	20	
Carbon tetrachloride	45.4500	5.0	1.2	50.0000	ND	90.9	23 - 144	9.31	20	
Chlorobenzene	42.7100	5.0	1.0	50.0000	ND	85.4	24 - 128	9.48	20	
Chloroethane	46.9000	5.0	1.1	50.0000	ND	93.8	35 - 135	10.6	20	
Chloroform	43.3400	5.0	0.82	50.0000	ND	86.7	36 - 126	7.95	20	
Chloromethane	46.8800	5.0	1.4	50.0000	ND	93.8	36 - 146	6.84	20	
cis-1,2-Dichloroethene	42.4800	5.0	0.67	50.0000	ND	85.0	31 - 136	9.29	20	
cis-1,3-Dichloropropene	44.1800	5.0	1.9	50.0000	ND	88.4	28 - 130	12.3	20	
Di-isopropyl ether	44.6400	5.0	0.55	50.0000	ND	89.3	32 - 133	6.42	20	
Dibromochloromethane	43.6500	5.0	1.0	50.0000	ND	87.3	30 - 129	3.71	20	
Dibromomethane	46.3800	5.0	1.6	50.0000	ND	92.8	28 - 126	9.45	20	
Dichlorodifluoromethane	50.7300	5.0	2.2	50.0000	ND	101	23 - 162	13.3	20	
Ethyl Acetate	343.100	50	8.1	500.000	ND	68.6	0 - 156	34.8	20	R
Ethyl Ether	498.370	50	6.1	500.000	ND	99.7	33 - 128	4.60	20	
Ethyl tert-butyl ether	45.9600	5.0	0.67	50.0000	ND	91.9	33 - 138	7.44	20	
Ethylbenzene	89.8800	5.0	0.91	100.000	ND	89.9	22 - 132	8.45	20	
Freon-113	48.9100	5.0	2.8	50.0000	ND	97.8	31 - 140	7.71	20	
Hexachlorobutadiene	40.4400	5.0	2.5	50.0000	ND	80.9	0 - 150	14.2	20	
Isopropylbenzene	43.3500	5.0	1.8	50.0000	ND	86.7	15 - 144	13.3	20	
m,p-Xylene	92.1400	10	1.5	100.000	ND	92.1	19 - 138	12.2	20	
Methylene chloride	44.6900	5.0	2.3	50.0000	ND	89.4	9 - 145	7.88	20	
MTBE	45.4900	5.0	0.63	50.0000	ND	91.0	31 - 136	5.66	20	
n-Butylbenzene	45.9900	5.0	2.4	50.0000	ND	92.0	0 - 153	13.7	20	
n-Propylbenzene	44.0100	5.0	2.2	50.0000	ND	88.0	12 - 141	13.3	20	
Naphthalene	41.6700	5.0	0.97	50.0000	ND	83.3	0 - 145	8.98	20	
o-Xylene	87.2800	5.0	0.87	100.000	ND	87.3	20 - 129	7.69	20	
sec-Butylbenzene	44.0300	5.0	2.3	50.0000	ND	88.1	4 - 143	14.6	20	
Styrene	46.1800	5.0	1.5	50.0000	ND	92.4	19 - 136	9.47	20	
tert-Amyl methyl ether	43.7600	5.0	0.59	50.0000	ND	87.5	30 - 128	6.61	20	
tert-Butanol	215.700	100	19	250.000	ND	86.3	22 - 146	7.30	20	
tert-Butylbenzene	43.3300	5.0	2.0	50.0000	ND	86.7	9 - 140	14.8	20	
Tetrachloroethene	45.8200	5.0	1.6	50.0000	ND	91.6	18 - 143	10.0	20	
Toluene	91.8400	5.0	0.94	100.000	ND	91.8	30 - 132	5.67	20	
trans-1,2-Dichloroethene	45.5100	5.0	0.59	50.0000	ND	91.0	32 - 134	10.2	20	
trans-1,3-Dichloropropene	44.8100	5.0	2.1	50.0000	ND	89.6	23 - 127	2.95	20	

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0504 - MSVOA_S (continued)										
Matrix Spike Dup (B7J0504-MSD1) - Continued			**Source: 1703697-01**		Prepared: 10/18/2017 Analyzed: 10/18/2017					
Trichloroethene	46.6200	5.0	3.1	50.0000	ND	93.2	17 - 158	5.43	20	
Trichlorofluoromethane	47.3700	5.0	1.4	50.0000	ND	94.7	36 - 135	9.70	20	
Vinyl acetate	26.0100	50	9.8	500.000	ND	5.20	0 - 154	159	20	R
Vinyl chloride	49.5700	5.0	1.7	50.0000	ND	99.1	38 - 140	12.3	20	
Surrogate: 1,2-Dichloroethane-d4	*48.12*			*50.0000*		*96.2*	*32 - 140*			
Surrogate: 4-Bromofluorobenzene	*50.74*			*50.0000*		*101*	*68 - 131*			
Surrogate: Dibromofluoromethan	*50.20*			*50.0000*		*100*	*49 - 134*			
Surrogate: Toluene-d8	*51.62*			*50.0000*		*103*	*75 - 132*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0413 - MSSEMI_W										
Blank (B7J0413-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	ND	0.20	0.02							
Acenaphthene	ND	0.20	0.02							
Acenaphthylene	ND	0.20	0.02							
Anthracene	ND	0.20	0.01							
Benzo(a)anthracene	ND	0.20	0.01							
Benzo(a)pyrene	ND	0.20	0.01							
Benzo(b)fluoranthene	ND	0.20	0.06							
Benzo(g,h,i)perylene	ND	0.20	0.02							
Benzo(k)fluoranthene	ND	0.20	0.02							
Chrysene	ND	0.20	0.02							
Dibenz(a,h)anthracene	ND	0.20	0.02							
Fluoranthene	ND	0.20	0.02							
Fluorene	ND	0.20	0.02							
Indeno(1,2,3-cd)pyrene	ND	0.20	0.02							
Naphthalene	ND	0.20	0.02							
Phenanthrene	ND	0.20	0.02							
Pyrene	ND	0.20	0.02							
Surrogate: 1,2-Dichlorobenzene-d	*0.7723*			*1.00000*		*77.2*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8111*			*1.00000*		*81.1*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.9341*			*1.00000*		*93.4*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*1.165*			*1.00000*		*117*	*32 - 119*			
LCS (B7J0413-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	0.594950	0.20	0.02	1.00000		59.5	38 - 137			
Acenaphthene	0.670340	0.20	0.02	1.00000		67.0	38 - 103			
Acenaphthylene	0.682710	0.20	0.02	1.00000		68.3	41 - 102			
Anthracene	0.707100	0.20	0.01	1.00000		70.7	37 - 118			
Benzo(a)anthracene	0.778780	0.20	0.01	1.00000		77.9	42 - 118			
Benzo(a)pyrene	0.712580	0.20	0.01	1.00000		71.3	17 - 148			
Benzo(b)fluoranthene	0.800210	0.20	0.06	1.00000		80.0	33 - 126			
Benzo(g,h,i)perylene	0.716580	0.20	0.02	1.00000		71.7	33 - 123			
Benzo(k)fluoranthene	0.803040	0.20	0.02	1.00000		80.3	20 - 131			
Chrysene	0.747150	0.20	0.02	1.00000		74.7	44 - 127			
Dibenz(a,h)anthracene	0.796090	0.20	0.02	1.00000		79.6	31 - 122			
Fluoranthene	0.761460	0.20	0.02	1.00000		76.1	48 - 113			
Fluorene	0.740860	0.20	0.02	1.00000		74.1	46 - 100			
Indeno(1,2,3-cd)pyrene	0.750140	0.20	0.02	1.00000		75.0	35 - 123			
Naphthalene	0.706850	0.20	0.02	1.00000		70.7	35 - 115			
Phenanthrene	0.708600	0.20	0.02	1.00000		70.9	43 - 112			
Pyrene	0.762180	0.20	0.02	1.00000		76.2	47 - 116			
Surrogate: 1,2-Dichlorobenzene-d	*0.7505*			*1.00000*		*75.1*	*32 - 99*			

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618-005
Report To : Brynn McCulloch
Reported : 11/03/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0413 - MSSEMI_W (continued)										
LCS (B7J0413-BS1) - Continued					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Surrogate: 2-Fluorobiphenyl	*0.8615*			*1.00000*		*86.2*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.8931*			*1.00000*		*89.3*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*0.9966*			*1.00000*		*99.7*	*32 - 119*			
LCS Dup (B7J0413-BSD1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
2-Methylnaphthalene	0.588280	0.20	0.02	1.00000		58.8	38 - 137	1.13	20	
Acenaphthene	0.688400	0.20	0.02	1.00000		68.8	38 - 103	2.66	20	
Acenaphthylene	0.696510	0.20	0.02	1.00000		69.7	41 - 102	2.00	20	
Anthracene	0.698560	0.20	0.01	1.00000		69.9	37 - 118	1.22	20	
Benzo(a)anthracene	0.791900	0.20	0.01	1.00000		79.2	42 - 118	1.67	20	
Benzo(a)pyrene	0.696140	0.20	0.01	1.00000		69.6	17 - 148	2.33	20	
Benzo(b)fluoranthene	0.811500	0.20	0.06	1.00000		81.2	33 - 126	1.40	20	
Benzo(g,h,i)perylene	0.721590	0.20	0.02	1.00000		72.2	33 - 123	0.697	20	
Benzo(k)fluoranthene	0.794240	0.20	0.02	1.00000		79.4	20 - 131	1.10	20	
Chrysene	0.745200	0.20	0.02	1.00000		74.5	44 - 127	0.261	20	
Dibenz(a,h)anthracene	0.792430	0.20	0.02	1.00000		79.2	31 - 122	0.461	20	
Fluoranthene	0.772070	0.20	0.02	1.00000		77.2	48 - 113	1.38	20	
Fluorene	0.737630	0.20	0.02	1.00000		73.8	46 - 100	0.437	20	
Indeno(1,2,3-cd)pyrene	0.762320	0.20	0.02	1.00000		76.2	35 - 123	1.61	20	
Naphthalene	0.704320	0.20	0.02	1.00000		70.4	35 - 115	0.359	20	
Phenanthrene	0.702930	0.20	0.02	1.00000		70.3	43 - 112	0.803	20	
Pyrene	0.772110	0.20	0.02	1.00000		77.2	47 - 116	1.29	20	
Surrogate: 1,2-Dichlorobenzene-d	*0.7333*			*1.00000*		*73.3*	*32 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8521*			*1.00000*		*85.2*	*29 - 105*			
Surrogate: Nitrobenzene-d5	*0.8699*			*1.00000*		*87.0*	*17 - 123*			
Surrogate: 4-Terphenyl-d14	*0.9920*			*1.00000*		*99.2*	*32 - 119*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0832 - MSSEMI_S										
Blank (B7J0832-BLK1)					Prepared: 10/27/2017 Analyzed: 11/1/2017					
2-Methylnaphthalene	ND	5.0	0.60							
Acenaphthene	ND	5.0	0.41							
Acenaphthylene	ND	5.0	0.41							
Anthracene	ND	5.0	0.56							
Benzo(a)anthracene	ND	5.0	0.56							
Benzo(a)pyrene	ND	5.0	0.69							
Benzo(b)fluoranthene	ND	5.0	2.2							
Benzo(g,h,i)perylene	ND	5.0	0.80							
Benzo(k)fluoranthene	ND	5.0	0.70							
Chrysene	ND	5.0	0.61							
Dibenz(a,h)anthracene	ND	5.0	0.88							
Fluoranthene	ND	5.0	0.45							
Fluorene	ND	5.0	0.35							
Indeno(1,2,3-cd)pyrene	ND	5.0	0.82							
Naphthalene	ND	5.0	0.56							
Phenanthrene	ND	5.0	0.34							
Pyrene	ND	5.0	0.51							
Surrogate: 1,2-Dichlorobenzene-d	*25.98*			*33.3333*		*77.9*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*36.07*			*33.3333*		*108*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*32.13*			*33.3333*		*96.4*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*34.65*			*33.3333*		*104*	*39 - 123*			
LCS (B7J0832-BS1)					Prepared: 10/27/2017 Analyzed: 11/1/2017					
2-Methylnaphthalene	17.2447	5.0	0.60	33.3333		51.7	23 - 127			
Acenaphthene	19.8777	5.0	0.41	33.3333		59.6	35 - 91			
Acenaphthylene	21.5087	5.0	0.41	33.3333		64.5	35 - 92			
Anthracene	21.6807	5.0	0.56	33.3333		65.0	43 - 109			
Benzo(a)anthracene	25.2047	5.0	0.56	33.3333		75.6	46 - 121			
Benzo(a)pyrene	21.1923	5.0	0.69	33.3333		63.6	49 - 126			
Benzo(b)fluoranthene	24.9193	5.0	2.2	33.3333		74.8	34 - 137			
Benzo(g,h,i)perylene	23.6823	5.0	0.80	33.3333		71.0	40 - 124			
Benzo(k)fluoranthene	22.3137	5.0	0.70	33.3333		66.9	21 - 132			
Chrysene	21.0117	5.0	0.61	33.3333		63.0	51 - 124			
Dibenz(a,h)anthracene	28.6913	5.0	0.88	33.3333		86.1	38 - 123			
Fluoranthene	25.5123	5.0	0.45	33.3333		76.5	47 - 105			
Fluorene	24.3607	5.0	0.35	33.3333		73.1	34 - 95			
Indeno(1,2,3-cd)pyrene	26.3273	5.0	0.82	33.3333		79.0	45 - 124			
Naphthalene	23.5117	5.0	0.56	33.3333		70.5	26 - 110			
Phenanthrene	19.8617	5.0	0.34	33.3333		59.6	39 - 108			
Pyrene	24.4370	5.0	0.51	33.3333		73.3	47 - 107			
Surrogate: 1,2-Dichlorobenzene-d	*22.13*			*33.3333*		*66.4*	*29 - 109*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0832 - MSSEMI_S (continued)										
LCS (B7J0832-BS1) - Continued						Prepared: 10/27/2017 Analyzed: 11/1/2017				
Surrogate: 2-Fluorobiphenyl	*31.93*			*33.3333*		*95.8*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*28.51*			*33.3333*		*85.5*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*32.91*			*33.3333*		*98.7*	*39 - 123*			
Matrix Spike (B7J0832-MS1)			**Source: 1703672-05**			Prepared: 10/27/2017 Analyzed: 11/2/2017				
2-Methylnaphthalene	16.5523	5.0	0.60	33.3333	ND	49.7	30 - 141			
Acenaphthene	20.9210	5.0	0.41	33.3333	ND	62.8	9 - 155			
Acenaphthylene	22.2030	5.0	0.41	33.3333	ND	66.6	43 - 110			
Anthracene	23.0497	5.0	0.56	33.3333	ND	69.1	33 - 146			
Benzo(a)anthracene	25.3087	5.0	0.56	33.3333	ND	75.9	49 - 130			
Benzo(a)pyrene	22.0197	5.0	0.69	33.3333	ND	66.1	36 - 134			
Benzo(b)fluoranthene	25.1730	5.0	2.2	33.3333	ND	75.5	26 - 148			
Benzo(g,h,i)perylene	29.1263	5.0	0.80	33.3333	ND	87.4	16 - 156			
Benzo(k)fluoranthene	21.4240	5.0	0.70	33.3333	ND	64.3	29 - 132			
Chrysene	25.6437	5.0	0.61	33.3333	1.90833	71.2	0 - 184			
Dibenz(a,h)anthracene	32.4570	5.0	0.88	33.3333	ND	97.4	29 - 149			
Fluoranthene	34.0057	5.0	0.45	33.3333	1.98000	96.1	14 - 162			
Fluorene	24.8377	5.0	0.35	33.3333	ND	74.5	48 - 111			
Indeno(1,2,3-cd)pyrene	30.0247	5.0	0.82	33.3333	ND	90.1	37 - 135			
Naphthalene	23.0713	5.0	0.56	33.3333	ND	69.2	34 - 126			
Phenanthrene	25.6283	5.0	0.34	33.3333	1.80833	71.5	19 - 155			
Pyrene	31.1040	5.0	0.51	33.3333	0.977333	90.4	13 - 162			
Surrogate: 1,2-Dichlorobenzene-d	*18.07*			*33.3333*		*54.2*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*33.02*			*33.3333*		*99.1*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*25.91*			*33.3333*		*77.7*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*27.60*			*33.3333*		*82.8*	*39 - 123*			
Matrix Spike Dup (B7J0832-MSD1)			**Source: 1703672-05**			Prepared: 10/27/2017 Analyzed: 11/1/2017				
2-Methylnaphthalene	13.0847	5.0	0.60	33.3333	ND	39.3	30 - 141	23.4	20	R
Acenaphthene	15.5903	5.0	0.41	33.3333	ND	46.8	9 - 155	29.2	20	R
Acenaphthylene	17.0913	5.0	0.41	33.3333	ND	51.3	43 - 110	26.0	20	R
Anthracene	16.6153	5.0	0.56	33.3333	ND	49.8	33 - 146	32.4	20	R
Benzo(a)anthracene	18.9587	5.0	0.56	33.3333	ND	56.9	49 - 130	28.7	20	R
Benzo(a)pyrene	16.6467	5.0	0.69	33.3333	ND	49.9	36 - 134	27.8	20	R
Benzo(b)fluoranthene	19.3633	5.0	2.2	33.3333	ND	58.1	26 - 148	26.1	20	R
Benzo(g,h,i)perylene	18.0467	5.0	0.80	33.3333	ND	54.1	16 - 156	47.0	20	R
Benzo(k)fluoranthene	15.7207	5.0	0.70	33.3333	ND	47.2	29 - 132	30.7	20	R
Chrysene	17.4407	5.0	0.61	33.3333	1.90833	46.6	0 - 184	38.1	20	R
Dibenz(a,h)anthracene	20.7883	5.0	0.88	33.3333	ND	62.4	29 - 149	43.8	20	R
Fluoranthene	21.3343	5.0	0.45	33.3333	1.98000	58.1	14 - 162	45.8	20	R
Fluorene	18.9797	5.0	0.35	33.3333	ND	56.9	48 - 111	26.7	20	R
Indeno(1,2,3-cd)pyrene	19.5260	5.0	0.82	33.3333	ND	58.6	37 - 135	42.4	20	R

Leighton Consulting, Inc.
17781 Cowan Street
Irvine , CA 92614

Project Number : POLA Berth 191-193, 11618-005
Report To : Brynn McCulloch
Reported : 11/03/2017

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7J0832 - MSSEMI_S (continued)										
Matrix Spike Dup (B7J0832-MSD1) - Continued			**Source: 1703672-05**		Prepared: 10/27/2017 Analyzed: 11/1/2017					
Naphthalene	18.2003	5.0	0.56	33.3333	ND	54.6	34 - 126	23.6	20	R
Phenanthrene	17.8243	5.0	0.34	33.3333	1.80833	48.0	19 - 155	35.9	20	R
Pyrene	20.7030	5.0	0.51	33.3333	0.977333	59.2	13 - 162	40.2	20	R
Surrogate: 1,2-Dichlorobenzene-d	*18.70*			*33.3333*		*56.1*	*29 - 109*			
Surrogate: 2-Fluorobiphenyl	*26.72*			*33.3333*		*80.2*	*39 - 108*			
Surrogate: Nitrobenzene-d5	*22.92*			*33.3333*		*68.8*	*0 - 146*			
Surrogate: 4-Terphenyl-d14	*22.32*			*33.3333*		*66.9*	*39 - 123*			

Certificate of Analysis

Leighton Consulting, Inc.	Project Number : POLA Berth 191-193, 11618-005
17781 Cowan Street	Report To : Brynn McCulloch
Irvine , CA 92614	Reported : 11/03/2017

Notes and Definitions

S4	Surrogate was diluted out.
S10	Surrogate recovery was outside of laboratory acceptance limit due to possible matrix interference.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
E3	Internal standard recoveries did not meet method acceptance due to matrix interference. Result value is estimated.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attention: Rachelle Arada

Number of Pages	**6**
Date Received	**10/25/2017**
Date Reported	**10/27/2017**

Job Number	Order Date	Client
89990	10/25/2017	ATL

Project ID: 1703672
Project Name: PO# SC12141

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories **3275 Walnut Avenue** **Signal Hill, CA 90755-5225**	**Project ID: 1703672** **Date Received 10/25/2017** **Date Reported 10/27/2017**

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
89990	10/25/2017	ATL

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 10/25/2017.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
89990.01	1703672-07	10/13/2017	Aqueous	3

Method ^ Submethod	Req Date	Priority	TAT	Units
8260B	10/27/2017	3	Rush	ug/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Dire

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: **2**

Project ID: 1703672
Project Name: PO# SC12141

AETL Job Number	Submitted	Client
89990	10/25/2017	ATL

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1026177A1

Our Lab I.D.			Method Blank	**89990.01**			
Client Sample I.D.				1703672-07			
Date Sampled				**10/13/2017**			
Date Prepared			**10/25/2017**	**10/25/2017**			
Preparation Method			**5030B**	**5030B**			
Date Analyzed			**10/25/2017**	**10/25/2017**			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Acetone	**10**	**10**	**ND**	**ND**			
Benzene	**0.5**	**1.0**	**ND**	**ND**			
Bromobenzene (Phenyl bromide)	**0.5**	**1.0**	**ND**	**ND**			
Bromochloromethane	**0.5**	**1.0**	**ND**	**ND**			
Bromodichloromethane	**0.5**	**1.0**	**ND**	**ND**			
Bromoform (Tribromomethane)	**2.5**	**5.0**	**ND**	**ND**			
Bromomethane (Methyl bromide)	**1.5**	**3.0**	**ND**	**ND**			
2-Butanone (MEK)	**5.0**	**5.0**	**ND**	**ND**			
n-Butylbenzene	**0.5**	**1.0**	**ND**	**ND**			
sec-Butylbenzene	**0.5**	**1.0**	**ND**	**ND**			
tert-Butylbenzene	**0.5**	**1.0**	**ND**	**ND**			
Carbon Disulfide	**0.5**	**1.0**	**ND**	**ND**			
Carbon tetrachloride	**0.5**	**1.0**	**ND**	**ND**			
Chlorobenzene	**0.5**	**1.0**	**ND**	**ND**			
Chloroethane	**1.5**	**3.0**	**ND**	**ND**			
2-Chloroethyl vinyl ether	**2.5**	**5.0**	**ND**	**ND**			
Chloroform (Trichloromethane)	**0.5**	**1.0**	**ND**	**ND**			
Chloromethane (Methyl chloride)	**1.5**	**3.0**	**ND**	**ND**			
2-Chlorotoluene	**0.5**	**1.0**	**ND**	**ND**			
4-Chlorotoluene	**0.5**	**1.0**	**ND**	**ND**			
1,2-Dibromo-3-chloropropane (DBCP)	**2.5**	**5.0**	**ND**	**ND**			
Dibromochloromethane	**0.5**	**1.0**	**ND**	**ND**			
1,2-Dibromoethane (EDB)	**0.5**	**1.0**	**ND**	**ND**			
Dibromomethane	**0.5**	**1.0**	**ND**	**ND**			
1,2-Dichlorobenzene	**0.5**	**1.0**	**ND**	**ND**			
1,3-Dichlorobenzene	**0.5**	**1.0**	**ND**	**ND**			
1,4-Dichlorobenzene	**0.5**	**1.0**	**ND**	**ND**			
Dichlorodifluoromethane	**1.5**	**3.0**	**ND**	**ND**			

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Project ID: 1703672
Project Name: PO# SC12141

AETL Job Number	Submitted	Client
89990	10/25/2017	ATL

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1026177A1

Our Lab I.D.			Method Blank	89990.01			
Client Sample I.D.				1703672-07			
Date Sampled				10/13/2017			
Date Prepared			10/25/2017	10/25/2017			
Preparation Method			5030B	5030B			
Date Analyzed			10/25/2017	10/25/2017			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,1-Dichloroethane	0.5	1.0	ND	ND			
1,2-Dichloroethane (EDC)	0.5	1.0	ND	ND			
1,1-Dichloroethene	0.5	1.0	ND	ND			
cis-1,2-Dichloroethene	0.5	1.0	ND	ND			
trans-1,2-Dichloroethene	0.5	1.0	ND	ND			
1,2-Dichloropropane	0.5	1.0	ND	ND			
1,3-Dichloropropane	0.5	1.0	ND	ND			
2,2-Dichloropropane	0.5	1.0	ND	ND			
1,1-Dichloropropene	0.5	1.0	ND	ND			
cis-1,3-Dichloropropene	0.5	1.0	ND	ND			
trans-1,3-Dichloropropene	0.5	1.0	ND	ND			
Ethylbenzene	0.5	1.0	ND	ND			
Hexachlorobutadiene	1.5	3.0	ND	ND			
2-Hexanone	2.5	5.0	ND	ND			
Iodomethane	0.5	1.0	ND	ND			
Isopropylbenzene	0.5	1.0	ND	ND			
p-Isopropyltoluene	0.5	1.0	ND	ND			
4-Methyl-2-pentanone (MIBK)	2.5	5.0	ND	ND			
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND			
Methylene chloride (DCM)	2.0	4.0	ND	ND			
Naphthalene	0.5	1.0	ND	ND			
n-Propylbenzene	0.5	1.0	ND	ND			
Styrene	0.5	1.0	ND	ND			
1,1,1,2-Tetrachloroethane	0.5	1.0	ND	ND			
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND			
Tetrachloroethene	0.5	1.0	ND	ND			
Toluene (Methyl benzene)	0.5	1.0	ND	ND			
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND			
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND			
1,1,1-Trichloroethane	0.5	1.0	ND	ND			
1,1,2-Trichloroethane	0.5	1.0	ND	ND			
Trichloroethene	0.5	1.0	ND	ND			
Trichlorofluoromethane	0.5	1.0	ND	ND			
1,2,3-Trichloropropane	0.5	1.0	ND	ND			

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Project ID: 1703672
Project Name: PO# SC12141

AETL Job Number	Submitted	Client
89990	10/25/2017	ATL

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1026177A1

Our Lab I.D.			Method Blank	**89990.01**			
Client Sample I.D.				1703672-07			
Date Sampled				**10/13/2017**			
Date Prepared			**10/25/2017**	**10/25/2017**			
Preparation Method			**5030B**	**5030B**			
Date Analyzed			**10/25/2017**	**10/25/2017**			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Trichlorotrifluoroethane (Freon-113)	**0.5**	**1.0**	**ND**	**ND**			
1,2,4-Trimethylbenzene	**0.5**	**1.0**	**ND**	**ND**			
1,3,5-Trimethylbenzene	**0.5**	**1.0**	**ND**	**ND**			
Vinyl Acetate	**0.5**	**5.0**	**ND**	**ND**			
Vinyl chloride (Chloroethene)	**0.5**	**3.0**	**ND**	**ND**			
o-Xylene	**0.5**	**1.0**	**ND**	**ND**			
m,p-Xylenes	**1.0**	**2.0**	**ND**	**ND**			
Our Lab I.D.			Method Blank	**89990.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	**75-125**		**93.1**	**94.1**			
Dibromofluoromethane	**75-125**		**100**	**98.1**			
Toluene-d8	**75-125**		**99.9**	**97.1**			

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

QUALITY CONTROL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: **5**

Project ID: 1703672
Project Name: PO# SC12141

AETL Job Number	Submitted	Client
89990	10/25/2017	ATL

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1026177A1; Dup or Spiked Sample: B1026177A1; LCS: Clean Water; QC Prepared: 10/25/2017;MS Analyzed: 10/25/2017; LCS Analyzed: 10/26/2017; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Benzene	0.00	50.0	45.4	90.7	50.0	44.7	89.3	1.6	75-125	<20
Carbon tetrachloride	0.00	50.0	48.7	97.3	50.0	47.6	95.2	2.2	75-125	<20
Chlorobenzene	0.00	50.0	52.0	104	50.0	51.0	102	1.9	75-125	<20
Chloroform (Trichloromethane)	0.00	50.0	47.4	94.7	50.0	45.9	91.8	3.1	75-125	<20
1,2-Dichlorobenzene	0.00	50.0	49.0	97.9	50.0	49.8	99.6	1.7	75-125	<20
1,1-Dichloroethane	0.00	50.0	45.7	91.4	50.0	44.6	89.2	2.4	75-125	<20
1,1-Dichloroethene	0.00	50.0	45.1	90.1	50.0	44.1	88.2	2.1	75-125	<20
cis-1,2-Dichloroethene	0.00	50.0	44.2	88.4	50.0	43.2	86.4	2.3	75-125	<20
Ethylbenzene	0.00	50.0	53.0	106	50.0	52.0	104	1.9	75-125	<20
Methyl-tert-butyl ether (MTBE)	0.00	50.0	45.1	90.1	50.0	45.6	91.2	1.2	75-125	<20
n-Propylbenzene	0.00	50.0	52.0	104	50.0	51.0	102	1.9	75-125	<20
Toluene (Methyl benzene)	0.00	50.0	51.0	102	50.0	50.5	101	<1	75-125	<20
1,1,1-Trichloroethane	0.00	50.0	47.2	94.4	50.0	46.1	92.1	2.5	75-125	<20
1,1,2-Trichloroethane	0.00	50.0	49.3	98.5	50.0	48.3	96.6	1.9	75-125	<20
Trichloroethene	0.00	50.0	48.5	97.0	50.0	57.0	114	16.1	75-125	<20
1,2,4-Trimethylbenzene	0.00	50.0	52.5	105	50.0	51.5	103	1.9	75-125	<20
1,3,5-Trimethylbenzene	0.00	50.0	52.0	104	50.0	52.0	104	<1	75-125	<20
o-Xylene	0.00	50.0	50.5	101	50.0	50.0	100	<1	75-125	<20
m,p-Xylenes	0.00	100	102	102	100	98.4	98.4	3.6	75-125	<20
Surrogates										
Bromofluorobenzene	0.00	50.0	47.1	94.2	50.0	46.4	92.7	1.6	75-125	<20
Dibromofluoromethane	0.00	50.0	47.8	95.5	50.0	43.8	87.6	8.6	75-125	<20
Toluene-d8	0.00	50.0	49.5	99.0	50.0	48.0	96.0	3.1	75-125	<20

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

QUALITY CONTROL RESULTS

Project ID: 1703672
Project Name: PO# SC12141

AETL Job Number	Submitted	Client
89990	10/25/2017	ATL

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1026177A1; Dup or Spiked Sample: B1026177A1; LCS: Clean Water; QC Prepared: 10/25/2017;MS Analyzed: 10/25/2017; LCS Analyzed: 10/26/2017; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.0	46.8	93.6	50.0	46.1	92.1	1.6	75-125	<20	
Carbon tetrachloride	50.0	50.0	100	50.0	49.0	97.9	2.1	75-125	<20	
Chlorobenzene	50.0	52.0	104	50.0	51.5	103	<1	75-125	<20	
Chloroform (Trichloromethane)	50.0	48.4	96.7	50.0	47.7	95.4	1.4	75-125	<20	
1,2-Dichlorobenzene	50.0	49.7	99.3	50.0	49.7	99.3	<1	75-125	<20	
1,1-Dichloroethane	50.0	46.6	93.1	50.0	46.3	92.5	<1	75-125	<20	
1,1-Dichloroethene	50.0	47.4	94.8	50.0	46.3	92.6	2.3	75-125	<20	
cis-1,2-Dichloroethene	50.0	47.0	94.0	50.0	47.1	94.1	<1	75-125	<20	
Ethylbenzene	50.0	53.5	107	50.0	52.0	104	2.8	75-125	<20	
Methyl-tert-butyl ether (MTBE)	50.0	48.4	96.8	50.0	47.9	95.7	1.1	75-125	<20	
n-Propylbenzene	50.0	55.0	110	50.0	52.5	105	4.7	75-125	<20	
Toluene (Methyl benzene)	50.0	51.0	102	50.0	51.0	102	<1	75-125	<20	
1,1,1-Trichloroethane	50.0	47.7	95.4	50.0	47.5	94.9	<1	75-125	<20	
1,1,2-Trichloroethane	50.0	51.0	102	50.0	51.0	102	<1	75-125	<20	
Trichloroethene	50.0	47.6	95.1	50.0	47.9	95.7	<1	75-125	<20	
1,2,4-Trimethylbenzene	50.0	55.0	110	50.0	52.5	105	4.7	75-125	<20	
1,3,5-Trimethylbenzene	50.0	54.5	109	50.0	52.0	104	4.7	75-125	<20	
o-Xylene	50.0	52.0	104	50.0	50.5	101	2.9	75-125	<20	
m,p-Xylenes	100	104	104	100	101	101	2.9	75-125	<20	
Surrogates										
Bromofluorobenzene	50.0	49.0	97.9	50.0	47.4	94.7	3.3	75-125	<20	
Dibromofluoromethane	50.0	49.2	98.3	50.0	47.6	95.2	3.2	75-125	<20	
Toluene-d8	50.0	49.8	99.5	50.0	50.0	99.9	<1	75-125	<20	

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

ADVANCED TECHNOLOGY LABORATORIES

89990

SUBCONTRACT ORDER

Work Order: 1703672

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: KCH

RECEIVING LABORATORY:

AETL
2834 North Naomi Street
Burbank, CA 91504
Phone :(818) 845-8200
Fax: (818) 845-8840
PO#: SC12141-RUSH TAT (2P)

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1703672-07 / LB34-GW		**Groundwater**	**10/13/17 09:25**	89990.01
8260_SUB	**10/27/17 17:00**	10/27/17 09:25		
[Volatile Organic Compounds]				
3xVoa Vial - HCl				

Released By	10/25/17 1339 Date	Received By	10/25/17 1339 Date
Released By	10/25/17 1650 Date	Received By	10/25/17 1650 Date

Page 1 of 1

American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

COOLER RECEIPT FORM

Client Name: ATL

Project Name:

AETL Job Number: 89999 & 89991

Date Received: 10/25/17 Received by: Jean Laerde

Carrier: ☒ AETL Courier ☐ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☒ Cooler (1) ☐ Other (Specify):

Inside temperature of shipping container No 1: 2.7°C, No 2: _____, No 3: _____

Type of sample containers: ☒ VOA, ☐ Glass bottles, ☐ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☐ Others (Specify): _____

How are samples preserved: ☐ None, ☐ Ice , ☒ Blue Ice, ☐ Dry Ice
_ None, _ HNO_3, _ NaOH, _ ZnOAc, X HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	✓		
2. Are the Sample labels legible?	✓		
3. Do samples match the COC?	✓		
4. Are the required analyses clear?	✓		
5. Is there enough samples for required analysis?	✓		
6. Are samples sealed with evidence tape?	NA		
7. Are sample containers in good condition?	✓		
8. Are samples preserved?	✓		
9. Are samples preserved properly for the intended analysis?	✓		
10. Are the VOAs free of headspace?	✓		
11. Are the jars free of headspace?	NA		

Explain all "No" answers for above questions:

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 1

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	5.5	
☐ Other:	4. SEALED	☐	☑			

CUSTOMER

Company: Leighton Consulting Inc. Address: 17781 Cowan Tel: 949-253-9836
City: Irvine State: CA Zip: Fax:

SEND REPORT TO:
Attn: Brynn McCulloch Email: BMcCulloch@leightongroup.com
Company: SAME
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Acct. Payable Email:
Company: SAME
Address:
City: State: Zip:

PROJECT SAMPLES

Project Name: Pola Berth 191-193
Project No.: 11618.005
Sampler: KCH
Quote No:
PO #:
Special Instructions/Comments: 5035 Kits are for 8260 ONLY

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015 ~~(GRO)~~ TPHg/o; 8015 ~~(DRO)~~ TPHo; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; 8270 SIM PAH

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container: TAT; # ; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	8260	8015 GRO	8015 DRO	8270	8081	8082	6010	TO-15	8270 SIM PAH	SOIL	WIPE	DRINKING	STORM	AQUEOUS	TAT	#	REMARKS
1	1703672-01	LB35-0.5	10/13/17	837	X	X					X			X					5	4	
2	-02	LB35-2.5		839																	
3	-03	LB35-5.0		841																	
4	-04	LB34-0.5		917																	
5	-05	LB34-2.5		920																	
6	-06	LB34-5.0		922																	
7																					
8	-07	LB34-GW	10/13/17	925	X	X					X		X			X			5	9	
9																					
10																					

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab ··· ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for fi ve (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-fi ve (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

K. Hall — Submitter Print Name
Kevin C. Hall — Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Kevin C. Hall	10/13/17	1146	[illegible]	10/13/17	1146
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Dominic Mata

From: Brynn McCulloch [bmcculloch@leightongroup.com]
Sent: Thursday, October 26, 2017 5:22 PM
To: Dominic Mata
Subject: RE: Partial Results - POLA Berth 191-193, 11618.005 (ATL# 1703672)

Dominic,

We need the following additional analyses for the samples listed below.

VOCs (8260B) and PAHs (8270SIM)
LB34-0.5, LB34-2.5
LB35-0.5, LB35-2.5, LB35-5.0

PCBs (8082)
LB34-0.5
LB35-0.5
LB35-5.0

Thank you!

Brynn McCulloch, PG 8798
Associate Geologist
17781 Cowan
Irvine, Ca 92614
Cell – 949.394.2306
Office – 949.681.4287
Fax – 949.250.1114

Leighton
Solutions You Can Build On

The information accompanying this email transmission may contain confidential or legally privileged information that is intended only for the use of the individual or entity named in this message. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or reliance upon the contents of this email is strictly prohibited. If you receive this email in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments

Please don't print this e-mail unless you really need to.

From: Dominic Mata [mailto:dominic@atlglobal.com]
Sent: Wednesday, October 25, 2017 4:27 PM
To: Brynn McCulloch
Cc: customer.relations@atlglobal.com
Subject: Partial Results - POLA Berth 191-193, 11618.005 (ATL# 1703672)

Hi Brynn,

Please find your partial 2 DRO/ORO results for the above project attached. The final report is now pending the 8260 water which has been sub contracted. If I can further assist, please let me know.

Thanks,

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	10/17/2017
Client Address:	17781 Cowan Irvine, CA 92614	**JEL Ref. No.:** **Client Ref. No.:**	E-0786 11618.005
Attn:	Brynn McCulloch	**Date Sampled:** **Date Received:**	10/17/2017 10/17/2017
Project Name:	Berth 191-193	**Date Analyzed:**	10/17/2017
Project Address:	Yacht Street & Canal Street Wilmington, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sampling – Soil Gas samples were collected in glass gas-tight syringes equipped with Teflon plungers.

A tracer gas mixture of n-pentane, n-hexane, and n-heptane was placed at the tubing-surface interface before sampling. These compounds were analyzed during the 8260B analytical run to determine if there were surface leaks into the subsurface due to improper installation of the probe. No n-pentane, n-hexane, or n-heptane was found in any of the samples reported herein.

The sampling rate was approximately 200 cc/min, except when noted differently on the chain of custody record, using a glass gas-tight syringe. Purging was completed using a pump set at approximately 200 cc/min, except when noted differently on the chain of custody record. A default of 3 purge volumes was used as recommended by July 2015 DTSC/RWQCB guidance documents.

Prior to purging and sampling of soil gas at each point, a shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then taken.

No flow conditions occur when a sampling rate greater than 10 mL/min cannot be maintained without applying a vacuum greater than 100 inches of water to the sampling train. The sampling train is left at a vacuum for no less than three minutes. If the vacuum does not subside appreciably after three minutes, the sample location is determined to be a no flow sample.

Analytical – Soil Gas samples were analyzed using EPA Method 8260 that includes extra compounds required by DTSC/RWQCB (such as Freon 113). Instrument Continuing Calibration Verification, QC Reference Standards, Instrument Blanks and Sampling Blanks were analyzed every 12 hours as prescribed by the method. In addition, a Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were analyzed with each batch of Soil Gas samples. A duplicate/replicate sample was analyzed each day of the sampling activity. All samples were injected into the GC/MS system within 30 minutes of sampling.

Approval:

Carolyn Carroll
Stationary Lab Manager

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	10/17/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	E-0786
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	10/17/2017
		Date Received:	10/17/2017
Project:	Berth 191-193	**Date Analyzed:**	10/17/2017
Project Address:	Yacht Street & Canal Street	**Physical State:**	Soil Gas
	Wilmington, CA		

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB1-4**	**LB6-4**	**LB13-4**	**LB23-4**	**LB23-4 REP**		
Jones ID:	**E-0786-01**	**E-0786-02**	**E-0786-03**	**E-0786-04**	**E-0786-05**	**Practical Quantitation Limit**	**Units**
Analytes:							
Benzene	**0.024**	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	**0.167**	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	**0.027**	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	**0.024**	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	**30.6**	**2.15**	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	**3.56**	**0.445**	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
2,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB1-4**	**LB6-4**	**LB13-4**	**LB23-4**	**LB23-4 REP**		
Jones ID:	**E-0786-01**	**E-0786-02**	**E-0786-03**	**E-0786-04**	**E-0786-05**	**Practical Quantitation Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.040	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethene	**148***	ND	**0.305**	ND	ND	0.008	µg/L
Toluene	**0.055**	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.040	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethene	**23.2***	ND	**0.026**	ND	ND	0.008	µg/L
Trichlorofluoromethane	**0.016**	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	**0.008**	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	**3.20**	ND	ND	ND	0.008	µg/L
m,p-Xylene	ND	ND	ND	ND	ND	0.008	µg/L
o-Xylene	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-Butylalcohol	ND	ND	ND	ND	ND	0.400	µg/L
TIC:							
n-Pentane	ND	ND	ND	ND	ND	0.400	µg/L
n-Hexane	ND	ND	ND	ND	ND	0.400	µg/L
n-Heptane	ND	ND	ND	ND	ND	0.400	µg/L
Dilution Factor	1/25*	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	122%	99%	121%	97%	96%	60 - 140	
Toluene-d_8	95%	99%	96%	94%	95%	60 - 140	
4-Bromofluorobenzene	108%	98%	99%	98%	93%	60 - 140	
	E1-101717-E-0786	E2-101717-E-0786	E1-101717-E-0786	E2-101717-E-0786	E2-101717-E-0786		

ND= Not Detected

* = Dilutions for these compound(s); first number for all others

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	10/17/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	E-0786
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	10/17/2017
		Date Received:	10/17/2017
Project:	Berth 191-193	**Date Analyzed:**	10/17/2017
Project Address:	Yacht Street & Canal Street	**Physical State:**	Soil Gas
	Wilmington, CA		

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB31-4**	**LB25-4**	**LB27-4**	**LB34-4**		
Jones ID:	**E-0786-06**	**E-0786-07**	**E-0786-08**	**E-0786-09**	**Practical Quantitation Limit**	**Units**
Analytes:						
Benzene	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	**0.011**	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	0.008	µg/L
2,2-Dichloropropane	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB31-4**	**LB25-4**	**LB27-4**	**LB34-4**		
Jones ID:	**E-0786-06**	**E-0786-07**	**E-0786-08**	**E-0786-09**	**Practical Quantitation Limit**	**Units**
Analytes:						
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	**0.030**	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	0.040	µg/L
n-Propylbenzene	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethene	ND	**0.262**	**0.102**	**0.274**	0.008	µg/L
Toluene	ND	ND	**0.066**	**0.038**	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	0.040	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	0.008	µg/L
Trichloroethene	ND	**0.021**	**0.029**	**0.029**	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	**0.038**	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	0.008	µg/L
m,p-Xylene	ND	ND	**0.136**	**0.016**	0.008	µg/L
o-Xylene	ND	ND	**0.038**	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	0.040	µg/L
tert-Butylalcohol	ND	ND	ND	ND	0.400	µg/L
TIC:						
n-Pentane	ND	ND	ND	ND	0.400	µg/L
n-Hexane	ND	ND	ND	ND	0.400	µg/L
n-Heptane	ND	ND	ND	ND	0.400	µg/L
Dilution Factor	1	1	1	1		
Surrogate Recoveries:					**QC Limits**	
Dibromofluoromethane	107%	117%	116%	90%	60 - 140	
Toluene-d_8	94%	97%	97%	94%	60 - 140	
4-Bromofluorobenzene	92%	103%	99%	97%	60 - 140	
	E2-101717-E-0786	E1-101717-E-0786	E1-101717-E-0786	E2-101717-E-0786		

ND= Not Detected

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	10/17/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	E-0786
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	10/17/2017
		Date Received:	10/17/2017
Project:	Berth 191-193	**Date Analyzed:**	10/17/2017
Project Address:	Yacht Street & Canal Street	**Physical State:**	Soil Gas
	Wilmington, CA		

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	METHOD BLANK	SAMPLING BLANK	METHOD BLANK	SAMPLING BLANK		
Jones ID:	101717-E1MB1	101717-E1SB1	101717-E2MB1	101717-E2SB1	**Practical Quantitation Limit**	**Units**
Analytes:						
Benzene	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	0.008	µg/L
2,2-Dichloropropane	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	METHOD BLANK	SAMPLING BLANK	METHOD BLANK	SAMPLING BLANK		
Jones ID:	**101717-E1MB1**	**101717-E1SB1**	**101717-E2MB1**	**101717-E2SB1**	**Practical Quantitation Limit**	**Units**
Analytes:						
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	0.040	µg/L
n-Propylbenzene	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethene	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	0.040	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	0.008	µg/L
Trichloroethene	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	0.008	µg/L
m,p-Xylene	ND	ND	ND	ND	0.008	µg/L
o-Xylene	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	0.040	µg/L
tert-Butylalcohol	ND	ND	ND	ND	0.400	µg/L
TIC:						
n-Pentane	ND	ND	ND	ND	0.400	µg/L
n-Hexane	ND	ND	ND	ND	0.400	µg/L
n-Heptane	ND	ND	ND	ND	0.400	µg/L
Dilution Factor	1	1	1	1		
Surrogate Recoveries:					**QC Limits**	
Dibromofluoromethane	119%	121%	132%	97%	60 - 140	
Toluene-d_8	88%	92%	96%	104%	60 - 140	
4-Bromofluorobenzene	92%	103%	84%	100%	60 - 140	
	E1-101717-E-0786	E1-101717-E-0786	E2-101717-E-0786	E2-101717-E-0786		

ND= Not Detected

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	10/17/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	E-0786
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	10/17/2017
		Date Received:	10/17/2017
Project:	Berth 191-193	**Date Analyzed:**	10/17/2017
Project Address:	Yacht Street & Canal Street	**Physical State:**	Soil Gas
	Wilmington, CA		

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Batch ID: E1-101717-E-0786

Jones ID:	**101717-E1LCS1**	**101717-E1LCSD1**			**101717-E1CCV1**	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl chloride	92%	90%	2.1%	70 - 130	87%	80 - 120
1,1-Dichloroethene	115%	102%	12.0%	70 - 130	99%	80 - 120
Cis-1,2-Dichloroethene	130%	116%	11.1%	70 - 130	109%	80 - 120
1,1,1-Trichloroethane	117%	106%	9.4%	70 - 130	102%	80 - 120
Benzene	125%	109%	13.4%	70 - 130	106%	80 - 120
Trichloroethene	122%	105%	14.6%	70 - 130	108%	80 - 120
Toluene	129%	121%	6.0%	70 - 130	110%	80 - 120
Tetrachloroethene	123%	118%	4.5%	70 - 130	107%	80 - 120
Chlorobenzene	129%	120%	7.8%	70 - 130	112%	80 - 120
Ethylbenzene	126%	116%	8.5%	70 - 130	105%	80 - 120
1,2,4 Trimethylbenzene	130%	117%	11.3%	70 - 130	104%	80 - 120
Surrogate Recovery:						
Dibromofluoromethane	116%	114%		60 - 140	110%	60 - 140
Toluene-d_8	97%	97%		60 - 140	94%	60 - 140
4-Bromofluorobenzene	98%	100%		60 - 140	103%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	10/17/2017
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	E-0786 11618.005
Attn:	Brynn McCulloch	**Date Sampled:** **Date Received:**	10/17/2017 10/17/2017
Project:	Berth 191-193	**Date Analyzed:**	10/17/2017
Project Address:	Yacht Street & Canal Street Wilmington, CA	**Physical State:**	Soil Gas

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Batch ID: E2-101717-E-0786

Jones ID:	**101717-E2LCS1**	**101717-E2LCSD1**			**101717-E2CCV1**	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl chloride	85%	92%	8.0%	70 - 130	88%	80 - 120
1,1-Dichloroethene	87%	89%	2.8%	70 - 130	112%	80 - 120
Cis-1,2-Dichloroethene	103%	110%	6.2%	70 - 130	126%	80 - 120
1,1,1-Trichloroethane	93%	99%	5.7%	70 - 130	94%	80 - 120
Benzene	85%	91%	7.1%	70 - 130	102%	80 - 120
Trichloroethene	82%	86%	5.0%	70 - 130	102%	80 - 120
Toluene	82%	87%	5.8%	70 - 130	106%	80 - 120
Tetrachloroethene	84%	83%	1.8%	70 - 130	104%	80 - 120
Chlorobenzene	83%	86%	3.6%	70 - 130	98%	80 - 120
Ethylbenzene	89%	85%	4.7%	70 - 130	98%	80 - 120
1,2,4 Trimethylbenzene	82%	74%	9.3%	70 - 130	94%	80 - 120
Surrogate Recovery:						
Dibromofluoromethane	113%	114%		60 - 140	92%	60 - 140
Toluene-d_8	96%	95%		60 - 140	96%	60 - 140
4-Bromofluorobenzene	98%	96%		60 - 140	97%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
Fax (714) 449-9685
www.jonesenv.com

Soil-Gas Chain-of-Custody Record

Client: LEIGHTON ASSOCIATES, INC
Project Name: BERTH 1191-193
Project Address: BERTH 193
WILMINGTON, CA
Email:
Phone: 949-681-4287
Report To: BRYNN MCCULLOCH
Sampler: JSB

Date: 10/17/2017
Client Project #: 11618.005.

Purge Number: □ 1P ☒ 3P □ 7P □ 10P
Shut-In Test: (Y) / N

Report Options: EDD ____ EDF* - 10% Surcharge____ *Global ID _____

Turn Around Requested: □ Immediate Attention □ Rush 24 Hours □ Rush 48 Hours □ Rush 72 Hours □ Normal ☒ Mobile Lab

Tracer: ☒ n-pentane ☒ n-hexane ☒ n-heptane □ Helium □ 1,1-DFA □ _____

Reporting Limits Requested: □ Commercial ☒ Residential
Units: ug/L

LAB USE ONLY
Jones Project # E-0786

Page 1 of 1
Sample Container: GLASS GAS-TIGHT SYRINGE
If different than above, see Notes.

Sample ID	Purge Number	Purge Volume (mL)	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample ID	Purge Rate (mL/min)	Pump Used	Magnehelic	Sample Matrix: Soil Gas (SG), Air (A), Material (M)	Analysis Requested: EPA 8260B					Magnehelic Vacuum (in/H_2O)	Number of Containers	Notes & Special Instructions
LB1-4	3	1290	10/17/17	8:04	8:11	E-0786-01	200	JOSH2	M100.102	SG	X					98	2	VERY LOW FLOW, LOTS OF WATER IN PROBE(>50mL)
LB6-4	3	1290	10/17/17	8:07	8:13	E-0786-02	200	STEVE2	M100.120	SG	X					82	2	WATER IN PROBE (~40mL)
LB13-4	3	1290	10/17/17	8:32	8:43	E-0786-03	200	JOSH2	M100.102	SG	X					12	2	
LB23-4	3	1290	10/17/17	8:36	8:45	E-0786-04	200	STEVE2	M100.120	SG	X					16	2	
LB1-4 DIL	-	-	10/17/17	8:50	9:00	-	-	-	M100.102	SG	X					98	1	VERY LOW FLOW, STILL LOTS OF WATER IN PROBE(>50mL), SEEMS TO REGENERATE
LB23-4 REP	3	1290	10/17/17	8:53	9:02	E-0786-05	200	JOSH2	M100.102	SG	X					16	2	
LB31-4	3	1290	10/17/17	9:20	9:27	E-0786-06	200	STEVE2	M100.120	SG	X					8	2	
LB25-4	3	1290	10/17/17	9:22	9:32	E-0786-07	200	JOSH2	M100.102	SG	X					10	2	
LB27-4	3	1290	10/17/17	9:38	9:44	E-0786-08	200	STEVE2	M100.120	SG	X					8	2	
LB34-4	3	1290	10/17/17	10:20	10:45	E-0786-09	200	JOSH2	M100.102	SG	X					10	2	

Relinquished By (Signature) Kevin C. Hall	Printed Name Kevin Hall	Received By (Signature)	Printed Name JOSH BASS	19	Total Number of Containers
Company LCI	Date 10/17/17 Time 1113	Company Jones Environmental	Date 10/17/17 Time 1117		
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name	Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.	
Company	Date Time	Company	Date Time		

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/18/2017
Client Address:	17781 Cowan Irvine, CA 92614	**JEL Ref. No.:**	F-0087
		Client Ref. No.:	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	12/18/2017
		Date Received:	12/18/2017
Project Name:	390-400 Yacht St.	**Date Analyzed:**	12/18/2017
Project Address:	Wilmington, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sampling – Soil Gas samples were collected in glass gas-tight syringes equipped with Teflon plungers.

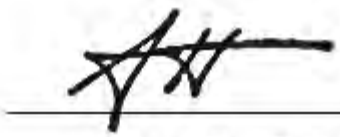
A tracer gas mixture of n-pentane, n-hexane, and n-heptane was placed at the tubing-surface interface before sampling. These compounds were analyzed during the 8260B analytical run to determine if there were surface leaks into the subsurface due to improper installation of the probe. No n-pentane, n-hexane, or n-heptane was found in any of the samples reported herein.

The sampling rate was approximately 200 cc/min, except when noted differently on the chain of custody record, using a glass gas-tight syringe. Purging was completed using a pump set at approximately 200 cc/min, except when noted differently on the chain of custody record. A default of 3 purge volumes was used as recommended by July 2015 DTSC/RWQCB guidance documents.

Prior to purging and sampling of soil gas at each point, a shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then taken.

No flow conditions occur when a sampling rate greater than 10 mL/min cannot be maintained without applying a vacuum greater than 100 inches of water to the sampling train. The sampling train is left at a vacuum for no less than three minutes. If the vacuum does not subside appreciably after three minutes, the sample location is determined to be a no flow sample.

Analytical – Soil Gas samples were analyzed using EPA Method 8260 that includes extra compounds required by DTSC/RWQCB (such as Freon 113). Instrument Continuing Calibration Verification, QC Reference Standards, Instrument Blanks and Sampling Blanks were analyzed every 12 hours as prescribed by the method. In addition, a Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were analyzed with each batch of Soil Gas samples. A duplicate/replicate sample was analyzed each day of the sampling activity. All samples were injected into the GC/MS system within 30 minutes of sampling.

Approval: 

Angela Haar, Ph. D.
Mobile Lab Manager

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/18/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	F-0087
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	12/18/2017
		Date Received:	12/18/2017
Project:	390-400 Yacht St	**Date Analyzed:**	12/18/2017
Project Address:	Wilmington, CA	**Physical State:**	Soil Gas

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB43-4'**	**LB38-3'**	**LB36-4'**	**LB39-4'**	**LB40-4'**		
Jones ID:	**F-0087-01**	**F-0087-02**	**F-0087-03**	**F-0087-04**	**F-0087-05**	**Practical Quantitation Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	**0.009**	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	**0.013**	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	**0.014**	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	**0.013**	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	**0.026**	ND	0.008	µg/L
2-Chlorotoluene	**0.009**	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	**0.010**	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	**0.011**	**0.011**	**0.010**	**0.010**	**0.009**	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	**0.056**	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	**70.1***	**0.218**	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	**2.67**	**0.012**	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
2,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB43-4'**	**LB38-3'**	**LB36-4'**	**LB39-4'**	**LB40-4'**		
Jones ID:	**F-0087-01**	**F-0087-02**	**F-0087-03**	**F-0087-04**	**F-0087-05**	**Practical Quantitation Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	**0.012**	ND	**0.019**	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	**0.012**	ND	**0.011**	ND	ND	0.008	µg/L
4-Isopropyltoluene	**0.026**	**0.106**	**0.771**	**0.023**	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.040	µg/L
n-Propylbenzene	**0.014**	ND	**0.012**	ND	ND	0.008	µg/L
Styrene	ND	ND	**0.009**	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	**0.011**	ND	ND	0.008	µg/L
Tetrachloroethene	**0.011**	ND	**0.141**	**8.75**	**0.243**	0.008	µg/L
Toluene	**0.021**	**0.016**	**0.081**	**0.011**	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	**0.118**	ND	**0.304**	**0.015**	**0.012**	0.008	µg/L
Trichloroethene	ND	ND	ND	**18.4**	**0.146**	0.008	µg/L
Trichlorofluoromethane	**0.009**	**3.71**	**3.59**	ND	**0.010**	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	**0.021**	**0.036**	**0.234**	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	**0.013**	ND	**0.010**	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	**0.014**	ND	0.008	µg/L
m,p-Xylene	**0.021**	ND	**0.046**	ND	ND	0.008	µg/L
o-Xylene	**0.011**	ND	**0.019**	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-Butylalcohol	ND	ND	ND	ND	ND	0.400	µg/L
TIC:							
n-Pentane	ND	ND	ND	ND	ND	0.400	µg/L
n-Hexane	ND	ND	ND	ND	ND	0.400	µg/L
n-Heptane	ND	ND	ND	ND	ND	0.400	µg/L
Dilution Factor	1	1	1	1/25*	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	102%	102%	103%	104%	101%	60 - 140	
Toluene-d_8	98%	98%	97%	95%	98%	60 - 140	
4-Bromofluorobenzene	97%	95%	101%	99%	96%	60 - 140	
	F1-121817-F-0087	F1-121817-F-0087	F1-121817-F-0087	F1-121817-F-0087	F1-121817-F-0087		

ND= Not Detected

* = Dilutions for these compound(s); first number for all others

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/18/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	F-0087
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	12/18/2017
		Date Received:	12/18/2017
Project:	Berth 191-193	**Date Analyzed:**	12/18/2017
Project Address:	Wilmington, CA	**Physical State:**	Soil Gas

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**LB42-4'**	**LB42-4' REP**	**LB49-4'**		
Jones ID:	**F-0087-06**	**F-0087-07**	**F-0087-08**	**Practical Quantitation Limit**	**Units**
Analytes:					
Benzene	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	**0.110**	**0.133**	**0.100**	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	0.008	µg/L
2,2-Dichloropropane	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	LB42-4'	LB42-4' REP	LB49-4'		
Jones ID:	**F-0087-06**	**F-0087-07**	**F-0087-08**	**Practical Quantitation Limit**	**Units**
Analytes:					
cis-1,3-Dichloropropene	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	**0.206**	**0.206**	**0.014**	0.008	µg/L
Methylene chloride	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	0.040	µg/L
n-Propylbenzene	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.008	µg/L
Tetrachloroethene	**0.066**	**0.075**	**0.090**	0.008	µg/L
Toluene	**0.010**	**0.012**	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	0.040	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	0.030	µg/L
1,1,1-Trichloroethane	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	0.008	µg/L
Trichloroethene	**0.014**	**0.030**	**0.064**	0.008	µg/L
Trichlorofluoromethane	**0.052**	**0.054**	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	**0.066**	**0.070**	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	**0.021**	0.008	µg/L
m,p-Xylene	ND	ND	ND	0.008	µg/L
o-Xylene	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	0.040	µg/L
tert-Butylalcohol	ND	ND	ND	0.400	µg/L
TIC:					
n-Pentane	ND	ND	ND	0.400	µg/L
n-Hexane	ND	ND	ND	0.400	µg/L
n-Heptane	ND	ND	ND	0.400	µg/L
Dilution Factor	1	1	1		
Surrogate Recoveries:				**QC Limits**	
Dibromofluoromethane	101%	100%	101%	60 - 140	
Toluene-d_8	95%	98%	94%	60 - 140	
4-Bromofluorobenzene	100%	96%	97%	60 - 140	
	F1-121817-F-0087	F1-121817-F-0087	F1-121817-F-0087		

ND= Not Detected

* = Dilutions for these compound(s); first number for all others

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/18/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	F-0087
	Irvine, CA 92614	**Client Ref. No.:**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	12/18/2017
		Date Received:	12/18/2017
Project:	Berth 191-193	**Date Analyzed:**	12/18/2017
Project Address:	Wilmington, CA	**Physical State:**	Soil Gas

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	**METHOD BLANK**	**SAMPLING BLANK**		
Jones ID:	**121817-F1MB1**	**121817-F1SB1**	**Practical Quantitation Limit**	**Units**
Analytes:				
Benzene	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	0.008	µg/L
Bromoform	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	0.008	µg/L
Chloroform	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	0.008	µg/L
2,2-Dichloropropane	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Sample ID:	METHOD BLANK	SAMPLING BLANK		
Jones ID:	**121817-F1MB1**	**121817-F1SB1**	**Practical Quantitation Limit**	**Units**
Analytes:				
cis-1,3-Dichloropropene	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	0.008	µg/L
Freon 113	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	0.008	µg/L
Naphthalene	ND	ND	0.040	µg/L
n-Propylbenzene	ND	ND	0.008	µg/L
Styrene	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	0.008	µg/L
Tetrachloroethene	ND	ND	0.008	µg/L
Toluene	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	0.040	µg/L
1,2,4-Trichlorobenzene	ND	ND	0.030	µg/L
1,1,1-Trichloroethane	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	0.008	µg/L
Trichloroethene	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	0.008	µg/L
m,p-Xylene	ND	ND	0.008	µg/L
o-Xylene	ND	ND	0.008	µg/L
MTBE	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	0.040	µg/L
tert-Butylalcohol	ND	ND	0.400	µg/L
TIC:				
n-Pentane	ND	ND	0.400	µg/L
n-Hexane	ND	ND	0.400	µg/L
n-Heptane	ND	ND	0.400	µg/L
Dilution Factor	1	1		
Surrogate Recoveries:			**QC Limits**	
Dibromofluoromethane	104%	106%	60 - 140	
Toluene-d_8	94%	95%	60 - 140	
4-Bromofluorobenzene	98%	98%	60 - 140	
	F1-121817-F-0087	F1-121817-F-0087		

ND= Not Detected

* = Dilutions for these compound(s); first number for all others

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/18/2017
Client Address:	17781 Cowan	**Jones Ref. No.:**	F-0087
	Irvine, CA 92614	**11618.005**	11618.005
Attn:	Brynn McCulloch	**Date Sampled:**	12/18/2017
		Date Received:	12/18/2017
Project:	Berth 191-193	**Date Analyzed:**	12/18/2017
Project Address:	Wilmington, CA	**Physical State:**	Soil Gas

EPA 8260B – Volatile Organics by GC/MS + Oxygenates

Batch ID: F1-121817-F-0087

Jones ID:	**121817-F1LCS1**	**121817-F1LCSD1**			**121817-F1CCV1**	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl chloride	37.9%	34.3%	9.8%	70 - 130	113.4%	80 - 120
1,1-Dichloroethene	95%	106%	11.0%	70 - 130	108%	80 - 120
Cis-1,2-Dichloroethene	103%	95%	8.7%	70 - 130	107%	80 - 120
1,1,1-Trichloroethane	111%	103%	7.9%	70 - 130	115%	80 - 120
Benzene	95%	89%	7.3%	70 - 130	99%	80 - 120
Trichloroethene	113%	106%	5.9%	70 - 130	119%	80 - 120
Toluene	95%	90%	6.0%	70 - 130	93%	80 - 120
Tetrachloroethene	111%	106%	5.3%	70 - 130	109%	80 - 120
Chlorobenzene	93%	88%	6.0%	70 - 130	92%	80 - 120
Ethylbenzene	94%	87%	7.3%	70 - 130	92%	80 - 120
1,2,4 Trimethylbenzene	90%	83%	7.9%	70 - 130	82%	80 - 120
Surrogate Recovery:						
Dibromofluoromethane	107%	103%		60 - 140	107%	60 - 140
Toluene-d_8	94%	96%		60 - 140	95%	60 - 140
4-Bromofluorobenzene	98%	100%		60 - 140	96%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.

11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
Fax (714) 449-9685
www.jonesenv.com

Soil-Gas Chain-of-Custody Record

Client
LEIGHTON CONSULTING

Project Name
390-400 YACHT ST

Project Address
390-400 YACHT ST

WILMINGTON, CA

Email

Phone

Report To
BRYNN MCCULLOCH

Sampler
JSB

Date
12/18/2017

Client Project #
11618. 005

Purge Number:
□ 1P ☒ 3P □ 7P □ 10P

Shut-In Test: Y / N

Report Options
EDD ____
EDF* - 10% Surcharge____
*Global ID _____

LAB USE ONLY
Jones Project #
F-0087

Page 1 of 2

Sample Container:
GLASS GAS-TIGHT SYRINGE
If different than above, see Notes.

Turn Around Requested
□ Immediate Attention
□ Rush 24 Hours
□ Rush 48 Hours
□ Rush 72 Hours
□ Normal
☒ Mobile Lab

Tracer
☒ n-pentane
☒ n-hexane
☒ n-heptane
□ Helium
□ 1,1-DFA
□ _____

Reporting Limits Requested
□ Commercial ☒ Residential

Units ug/L

Analysis Requested

Sample ID	Purge Number	Purge Volume (mL)	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample ID	Purge Rate (mL/min)	Pump Used	Magnehelic	Sample Matrix: Soil Gas (SG), Air (A), Material (M)	EPA 8260B				Magnehelic Vacuum (In/H_2O)	Number of Containers	Notes & Special Instructions
LB43-4'	3	1610	12/18/17	7:14	7:19	F-0087-01	200	JOSH1	118001	SG	X				10	2	
LB38-3'	3	1590	12/18/17	7:30	7:35	F-0087-02	200	JOSH1	118001	SG	X				4	2	
LB38-3' REP	3	1590	12/18/17	7:52	7:55	-	200	JOSH1	118001	SG	X				4	2	REP FAILED, TRYING ANOTHER
LB36-4'	3	1610	12/18/17	8:06	8:12	F-0087-03	200	JOSH1	118001	SG	X				66	2	LOW FLOW
LB39-4'	3	1610	12/18/17	8:25	8:31	F-0087-04	200	JOSH1	118001	SG	X				10	2	
LB40-4'	3	1610	12/18/17	8:50	8:53	F-0087-05	200	JOSH1	118001	SG	X				16	2	
LB39-4' DIL	-	-	12/18/17	9:04	9:09	-	-	-	118001	SG	X				10	2	
LB42-4'	3	1610	12/18/17	9:22	9:27	F-0087-06	200	JOSH1	118001	SG	X				144	2	
LB42-4' REP	3	1610	12/18/17	9:40	9:47	F-0087-07	200	JOSH1	118001	SG	X				14	2	
LB49-4'	3	1610	12/18/17	10:00	10:03	F-0087-08	200	JOSH1	118001	SG	X				90	2	VERY LOW FLOW

Relinquished By (Signature)	Printed Name	Received By (Signature)	Printed Name JOSH BASS
Company	Date / Time	Company JONES ENVIRONMENTAL	Date / Time 12-18-17 11:00
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name
Company	Date / Time	Company	Date / Time

20 Total Number of Containers

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
Fax (714) 449-9685
www.jonesenv.com

Soil-Gas Chain-of-Custody Record

Client: LEIGHTON CONSULTING
Project Name: 390-400 YACHT ST
Project Address: 390-400 YACHT ST, WILMINGTON, CA
Email:
Phone:
Report To: BRYNN MCCULLOCH
Sampler: JSB

Date: 12/18/2017
Client Project #: 11618. 005

Purge Number: □ 1P ☒ 3P □ 7P □ 10P
Shut-In Test: (Y) / N

Report Options: EDD ____ EDF* - 10% Surcharge____ *Global ID _____

Turn Around Requested:
- □ Immediate Attention
- □ Rush 24 Hours
- □ Rush 48 Hours
- □ Rush 72 Hours
- □ Normal
- ☒ Mobile Lab

Tracer:
- ☒ n-pentane
- ☒ n-hexane
- ☒ n-heptane
- □ Helium
- □ 1,1-DFA
- □ _____

Reporting Limits Requested: □ Commercial ☒ Residential
Units: ug/L

LAB USE ONLY
Jones Project #: F-0087
Page 2 of 2
Sample Container: GLASS GAS-TIGHT SYRINGE
If different than above, see Notes.

Analysis Requested

Sample ID	Purge Number	Purge Volume (mL)	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample ID	Purge Rate (mL/min)	Pump Used	Magnehelic	Sample Matrix: Soil Gas (SG), Air (A), Material (M)	EPA 8260B				Magnehelic Vacuum (in/H_2O)	Number of Containers	Notes & Special Instructions
LB37-4'	-	-	12/18/17	8:20	-	F-0087-09	-	-	118001	SG	X				>100	0	NO FLOW, WATER IN PROBE
LB41-4'	-	-	12/18/17	9:02	-	F-0087-10	-	-	118001	SG	X				>100	0	NO FLOW, WATER IN PROBE
LB44-4'	-	-	12/18/17	9:50	-	F-0087-11	-	-	118001	SG	X				>100	0	NO FLOW, WATER IN PROBE
LB48-4'	-	-	12/18/17	9:54	-	F-0087-12	-	-	118001	SG	X				>100	0	NO FLOW, WATER IN PROBE

10 of 10

Relinquished By (Signature): _____ **Printed Name:** _____
Company: _____ **Date:** _____ **Time:** _____

Received By (Signature): _____ **Printed Name:** JOSH BAS
Company: Jones Environmental **Date:** 12-18-17 **Time:** 11:00

Relinquished By (Signature): _____ **Printed Name:** _____
Company: _____ **Date:** _____ **Time:** _____

Received By Laboratory (Signature): _____ **Printed Name:** _____
Company: _____ **Date:** _____ **Time:** _____

Total Number of Containers

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been requested, and the information provided herein is correct and accurate.

APPENDIX B

2018 Human Health Risk Assessment

Leighton

ENVIRO-TOX
services, inc.

Human Health Risk Assessment
Berths 191 – 193
Wilmington, California

Prepared for

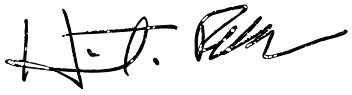
Leighton Consulting, Inc.
17781 Cowan
Irvine, California 92614-6009

Prepared by:

Enviro-Tox Services, Inc.
20 Corporate Park, Suite 220
Irvine, California 92606

June 18, 2018

This Report has been prepared for the exclusive use of City of Los Angeles, Harbor Department as it pertains to Berths 191 – 193 at the Port of Los Angeles in Wilmington, California. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other scientists, geologists and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice presented in this report.



Heriberto Robles, Ph.D., D.A.B.T.
Board Certified Toxicologist
Enviro-Tox Services, Inc.

June 18, 2018

CONTENTS

1.0 Introduction....1

2.0 Site Characterization....3

2.1 Background....3
2.2 Site Assessment....3

3.0 Selection of Chemicals of Potential Concern....6

3.1 Selection of Chemicals of Potential Concern for Soil Matrix....7
3.2 Selection of Chemicals of Potential Concern in Soil Gas....7
3.3 Selection of Chemicals of Potential Concern in Groundwater....8

4.0 Exposure Assessment....9

4.1 Conceptual Site Model....9
4.2 Potential Receptors....10

5.0 Toxicity Assessment....12

5.1 Toxicity Values for Non-Carcinogens....12
5.2 Toxicity Values for Carcinogens....12

6.0 Fate and Transport Modeling....14

6.1 Chemical Emissions to Indoor Air....14

7.0 Risk Characterization....17

7.1 Risk Characterization For Soil And Dust Exposure....17
7.2 Vapor Intrusion Health Risks and Hazards....18

8.0 Conclusions and Recommendations....21

9.0 Uncertainty Analysis....24

10.0 References....25

TABLES

Table 1 Summary of Soil Metal Analytical Results

Table 2 Summary of Total Petroleum Hydrocarbon in Soil Analytical Results

Table 3 Summary of Volatile Organic Compound in Soil Analytical Results

Table 4 Summary of Semivolatile Organic Compounds in Soil Analytical Results

Table 5 Summary of Polychlorinated Biphenyls in Soil Analytical Results

Table 6 Summary of Volatile Organic Compounds in Soil Gas Analytical Results

Table 7 Summary of Volatile Organic Compounds in Groundwater Analytical Results

Table 8 Summary of Semivolatile Organic Compounds in Groundwater Analytical Results

Table 9 Exposure Parameters for Onsite Receptors

Table 10 Toxicity Criteria for Chemicals of Potential Concern

Table 11 Estimated Incremental Cancer Risks and Hazard Quotients per Unit Concentration for VOCs Detected in Soil Gas

Table 12 Estimated Incremental Cancer Risks and Hazard Quotients per Unit Concentration for VOCs Detected in Groundwater

Table 13 Estimated Cancer Risks per Sampling Location for VOCs Detected in Soil Gas

Table 14 Estimated Cancer Risks per Sampling Location for VOCs Detected in Groundwater

Table 15 Estimated Hazard Quotients per Sampling Location for VOCs Detected in Soil Gas

Table 16 Estimated Hazard Quotients per Sampling Location for VOCs Detected in Groundwater

Table 17 Virtual Remediation of Diesel Range Organics in Soil

ILLUSTRATIONS

Figure 1 – Sampling Location Map (provided by Leighton Consulting, Inc.)

Figure 2 – Conceptual Site Model

APPENDICES

Appendix A – Johnson and Ettinger Modeling Spreadsheets

.

1.0 Introduction

At the request of Leighton Consulting, Inc. (Leighton), Enviro-Tox Services, Inc. (Enviro-Tox) conducted a Human Health Risk Assessment (HHRA) for the City of Los Angeles, Harbor Department (Harbor Department) Berths 191-193 in Wilmington, California (the Site). The objective of the risk assessment was to determine whether metals, petroleum hydrocarbons, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs) detected in soil, soil gas and groundwater represent a health threat to human health.

In an effort to assess environmental conditions at the Site, Leighton conducted an environmental investigation at the site. During the investigation, soil, soil gas and groundwater samples were collected from borings drilled at the Site. Soil samples were taken at various depths down to a maximum depth of about five feet below ground surface (bgs). The purpose of the sampling was to assess the vertical and lateral extent of chemical-impacted soil, soil gas and groundwater and to establish a baseline for the future Site occupants. Results of environmental investigations are summarized in Leighton's (2018) report. Results indicate that soils at the Site are impacted by total petroleum hydrocarbons (TPH) as well as by traces of a few metals and VOCs. In addition, the environmental investigation revealed the presence of VOCs at relatively high concentrations in a few soil gas and groundwater monitoring sampling locations (Leighton, 2018).

The HHRA was performed in conformance with the following guidance from the U.S. Environmental Protection Agency (USEPA) and the California Department of Toxic Substances Control (DTSC):

- California Department of Toxic Substances Control. 2015. *Preliminary Endangerment Assessment Guidance Manual.*
- California Department of Toxic Substances Control. 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air.*
- U.S. Environmental Protection Agency. 1989. *Risk Assessment Guidance for Superfund: Volume l - Human Health Evaluation Manual.*

- U.S. Environmental Protection Agency. 2002. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites.*
- U.S. Environmental Protection Agency. 2018. *Regional Screening Levels.*

As required by the USEPA and DTSC, this HHRA quantitatively evaluates the potential health impacts associated with human exposure to chemicals detected in soil, soil gas and groundwater at the Site. Site characterization data collected during the most recent Site investigation was compiled into a database and analyzed to establish representative chemical concentrations. Then, where appropriate, environmental fate and transport models were used to estimate the concentrations of the chemicals to which human receptors might be exposed.

Conservative methods, models, and assumptions have been utilized to prepare this HHRA in accordance with the guidelines of the USEPA and DTSC. In addition, the risk assessment incorporates, to the extent possible, recent improvements and refinements in the practice of risk assessment. Current regulatory guidance requires risk assessments to be conservative in nature and to overestimate potential health risks. Therefore, actual risks associated with conditions evaluated in this risk assessment are likely to be lower than those described herein.

2.0 Site Characterization

A brief summary of the Site history and previous investigation activities is presented below. Details on Site investigation activities are presented in Leighton Consulting's concurrent *Baseline Environmental Site Characterization Report.*

2.1 Background

The Site encompasses roughly 6.8 acres and is located east of Canal Street and south of Yacht Street in Wilmington, California. Historically, the Site was associated with the Former Wilmington Liquid Bulk Terminals, Inc., a yacht club, docks for boats, and a marine gas and oil station.

2.2 Site Assessment

Leighton Consulting, Inc. (Leighton) completed a Baseline Environmental Site Characterization Report for the Site in April 2018. Site characterization activities including grab groundwater, soil, and vapor sampling. The results of the assessment are summarized below.

Soil

Diesel range petroleum hydrocarbons (DRO) were detected above the Environmental Protection Agency (EPA) Region IX Regional Screening Level (RSL) for industrial soil in 14 of the 104 soil samples analyzed during the investigation. While there was no discernable trend in DRO impacted soil, DRO was found primarily within the surficial soil in the northern portion of the Site and in deeper soil (5 feet bgs) in the southern portion of the Site (Leighton, 2018).

Copper and lead exceeded the soluble threshold limit concentration (STLC) waste extraction test (WET) limits in of 5.0 milligrams per liter (mg/L) in soil samples collected from borings LB5, LB11, LB17, LB31, and LB33 (Figure 1). Soil in the vicinity of these borings may be classified as non-RCRA hazardous waste (California hazardous) if removed from the Site. The copper and lead-impacted soil appears to be limited to the upper 3 feet bgs (Leighton, 2018).

GRO, ORO, VOCs, PAHs, PCBs, and dioxin/furans were not detected in the soil samples analyzed during the investigation at concentrations exceeding their respective industrial screening levels (Leighton, 2018).

Soil gas

Four VOCs – cis-1,2-dichloroethene, PCE, TCE, and vinyl chloride – were detected in soil gas at concentrations above their respective adjusted Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) Note Numbers 3 and 5 for soil gas in an industrial setting in three borings (LB1, LB6, and LB39). Elevated concentrations of the same VOCs were detected in groundwater samples collected at these three locations and it is likely that the impacted soil gas is a result of off-gassing of the contaminated groundwater (Leighton, 2018).

Groundwater

Total petroleum hydrocarbons (TPH) were detected in a majority of the groundwater samples analyzed during this investigation. One groundwater sample, LB1, had a concentration of gasoline range petroleum hydrocarbons (GRO) and DRO exceeding the Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board. Based on the site-wide TPH impacts to groundwater, it is likely that the Site is located within a regional plume of TPH-impacted groundwater (Leighton, 2018).

Elevated levels of copper, nickel, and zinc were detected in groundwater samples collected from borings LB1, LB6, LB25, and LB27 at concentrations exceeding the ESLs. Since the groundwater beneath the Site is non-beneficial for municipal use and direct contact with groundwater beneath the Site is unlikely, it was determined that these elevated concentrations of metals in groundwater should not pose a risk to future commercial/industrial occupants of the Site (Leighton, 2018).

Two VOCs – PCE and TCE – were detected in groundwater at concentrations above their respective ESL screening criteria from three borings (LB1, LB37, and LB39). The elevated concentrations of VOCs in groundwater were limited to the northern portion of the Site. The

primary VOC contaminants of concern in groundwater are PCE and TCE; however, other chlorinated VOCs such as cis- and trans-1,2-dichloroethene, 1,2-dichloroethane, 1,1-dichloroethee, and vinyl chloride were detected along with fuel constituents such as benzene and MTBE (Leighton, 2018).

PAHs were not detected in the groundwater samples analyzed during this investigation (Leighton, 2018).

3.0 Selection of Chemicals of Potential Concern

All chemicals detected at the Site by Leighton (2018) were included in a formal selection of chemicals of potential concern (COPC). Copies of Leighton Consulting, Inc. soil, soil gas and groundwater data tables for the Site are included in Appendix A.

As described in current USEPA and DTSC risk assessment guidance, the purpose of selecting COPCs is to focus the assessment on those chemicals that could reasonably be expected to pose a significant health risk. COPCs were selected so that the most prevalent, and potentially toxic, compounds detected at the Site (i.e., those chemicals that represent the greatest potential threat to human health) were quantitatively evaluated in the health risk evaluation.

Current risk assessment guidance (DTSC 2018) state that chemicals deemed to pose no significant health risk can be eliminated from consideration in a risk assessment. Specifically, chemicals detected at a site can be eliminated from consideration if their maximum detected concentrations are at or below concentrations known to regulatory agencies to pose no significant risk.

For this evaluation, all chemicals detected in soil, soil gas and groundwater were screened by comparing their maximum detected concentrations to screening levels published by the USEPA and the DTSC. The screening levels selected for this evaluation were:

1. The DTSC-modified Screening Levels (DTSC-LSs) for industrial land use published in the DTSC's (2018) HHRA Note No. 3; and,

2. The USEPA's Regional Screening Levels for industrial sites (RSL-ind).

It should be noted all screening levels used here are considered to be conservative. Under most circumstances, the presence of a chemical in environmental media at concentrations below their corresponding screening level can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment. In general, California regulatory agencies do not require additional evaluation at sites where a chemical is present at concentrations below their corresponding, media-specific screening levels. In fact, regulatory agencies like to compare

maximum detected concentrations to screening levels at commercial/industrial sites with limited impacts, where the preparation of a more formal environmental assessment may not be warranted or feasible due to time and cost constraints.

3.1 Selection of Chemicals of Potential Concern for Soil Matrix

In a conventional risk assessment, metal elements detected in soil at concentrations deemed to be within natural, background concentrations are excluded from the risk evaluation (USEPA 1989 and DTSC 2015). In this HHRA the only metal that was excluded from evaluation was arsenic. According to DTSC (2009) risk assessment guidance, arsenic in soil should not be included in risk evaluations when arsenic is found to be within natural, background concentrations. The background arsenic concentration at the Site is unknown. However, it is well accepted that soils in Southern California are naturally rich in arsenic and that the upper background concentration is about 12 milligrams per kilogram (mg/kg; https://dtsc.ca.gov/upload/Background-Arsenic.pdf. The maximum detected soil arsenic concentration at the site was 12 mg/kg (Table 1). Therefore, arsenic in soil at the Site is considered to be well within background levels and was not included in this HHRA. Other than arsenic, all metals reportedly detected in soil were included in the risk evaluation.

Organic and inorganic chemicals detected in soil at the Site are summarized in Tables 1 through 5. In each table, maximum detected concentrations are presented along with their corresponding screening levels. As can be seen in the tables, the only chemical whose maximum detected concentration exceeded its corresponding screening level was TPH as Diesel Range Organics (DRO; Table 2). Therefore, other than DRO, all metals, TPH fractions, PCBs, SVOCs and VOCs detected in soils are deemed to pose no significant risk or hazard to onsite workers and were not considered to be COPCs in this HHRA.

3.2 Selection of Chemicals of Potential Concern in Soil Gas

VOCs detected in soil gas at the Site are summarized in Table 6. Maximum detected concentrations and their corresponding screening levels are also summarized in Table 6. The only chemicals detected in soil gas at concentrations that exceeded their corresponding screening

levels were cis-1,2-dichloroethylene, tetrachloroethylene (PCE), trichloroethylene (TCE), and vinyl chloride. Therefore, only cis-1,2-dichloroethylene, PCE, TCE and vinyl chloride were retained as soil gas COPCs. Potential health risks and hazards posed by the four VOCs retained as COPCs were evaluated in this HHRA.

3.3 Selection of Chemicals of Potential Concern in Groundwater

A few metals and TPH were detected in groundwater. Since local groundwater is not a source of drinking water, potential health risks and hazards posed by metals and TPH were not evaluated in this HHRA. Only volatile chemicals that could volatilize from groundwater and eventually impact indoor air were evaluated here.

VOCs detected in groundwater are summarized in Table 7. Maximum detected concentrations and their corresponding screening levels are also summarized in Table 7. The only chemicals detected in groundwater at concentrations that exceeded their corresponding screening levels were:

- 1,1-Dichlroethylene,
- 1,2-Dichloroethane,
- cis-1,2-Dichlroethylene,
- Methyl tert-butyl ether (MTBE)
- PCE,
- trans-1,2-Dichloroethylene,
- TCE, and
- Vinyl chloride

Therefore, the eight VOCs listed above were retained as COPCs in groundwater. Potential health risks and hazards posed by the eight VOCs retained as COPCs for groundwater were evaluated in this HHRA.

4.0 Exposure Assessment

California health and environmental protection agencies require the remediation of chemical spills and leaks if the release represents a threat to human health and the environment. Similarly, cleanup of an accidental release has to be conducted to the extent that the threat posed by the release is reduced to acceptable levels. The purpose of this HHRA was to determine if COPCs detected in soil, soil gas and groundwater at the Site represents a threat to onsite workers.

4.1 Conceptual Site Model

A Conceptual Site Model (CSM) shows all potentially complete exposure pathways for a given environmental source. The CSM identifies potential chemical sources, release mechanisms, transport media, routes of chemical migration through the environment, exposure media, and potential receptors. The CSM for the Site under current land use conditions is presented in Figure 2. The following paragraphs define the exposure pathways evaluated in this HHRA and present the rationale for their inclusion or elimination from consideration.

The Site is located in an industrial zone within the Port of Los Angeles, Wilmington, California. Therefore, the Site is likely to continue to operate as an industrial facility.

Most of the Site is likely to be covered by buildings, parking lots, roads, machinery, and landscaped areas. Under these conditions, workers at the Site do not come in contact with surface soils. However, in an effort to assess potential health risks posed by soil exposure, it was assumed that onsite workers could be exposed to surface soils while working at the Site. In addition to onsite workers, utility maintenance workers might come in contact with soil during trenching or utility maintenance work. Therefore, the dermal and ingestion pathways are considered to be complete for maintenance workers as well as for onsite industrial workers (Figure 2).

Groundwater under the Site is known to be impacted by metals, TPH and VOCs (Leighton; 2018). It is safe to assume that onsite workers receive their drinking water from municipal sources and do not depend on onsite groundwater wells for their drinking water. Therefore, direct contact with groundwater exposure pathway is not considered to be a complete exposure pathway. However, VOCs may volatilize and flow from groundwater to soil gas and then into indoor air (Figure 2). This HHRA evaluated the potential risks and hazards posed by VOCs detected in groundwater by modeling the migration and vapor intrusion of VOCs detected in both, soil gas and groundwater.

Since VOCs were detected in groundwater and soil gas samples collected at the Site, this HHRA assumed that a potential source of VOCs exists under the Site. It was also assumed that this potential VOC source would be active for the next 25 years and that VOC vapors may migrate up to the surface and enter a building through cracks in its foundation. Thus, the volatilization and vapor intrusion into onsite buildings is considered to be a potential exposure pathway and is evaluated in this HHRA.

4.2 Potential Receptors

As stated earlier, the Site is located within an industrial zone within the city of Wilmington, California. Therefore, onsite receptors are expected to be only workers employed at an industrial establishment at the Site. It is highly unlikely that the Site will be redeveloped in the future to accommodate a residential development. Therefore, the potential receptors evaluated included:

- Onsite industrial workers, and
- Onsite construction/maintenance workers.

Exposure parameters used to define the onsite industrial and maintenance workers are presented in Table 9.

Although offsite residential and/or industrial receptors may also be exposed to Site chemicals, their exposure should be substantially less than that estimated for onsite receptors because of

wind dispersion and dilution. Therefore, only exposures to onsite receptors were quantitatively evaluated in this HHRA.

5.0 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure to a COPC and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – non-carcinogens and carcinogens. Toxicity values/exposure criteria are generally developed based on the threshold approach for non-carcinogenic effects and the non-threshold approach for carcinogenic effects. Toxicity values may be based on epidemiological studies, short-term human studies, and sub-chronic or chronic animal data.

5.1 Toxicity Values for Non-Carcinogens

For the purpose of assessing risks associated with non-carcinogenic effects, the USEPA has adopted a science policy position that protective mechanisms such as repair, detoxification, and compensation must be overcome before an adverse health effect is manifested. Therefore, there is a range of exposures, from zero to some finite value (a threshold), that can be tolerated by the organism without appreciable risk of adverse effects occurring.

Non-carcinogenic effects were evaluated using reference doses (RfDs) developed by the USEPA. The RfD is a health-based criterion based on the assumption that thresholds exist for non-carcinogenic toxic effects (e.g., liver or kidney damage). In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime of exposure (USEPA, 1989). RfDs are expressed as acceptable daily doses in milligrams of compound per kilogram of body weight per day (mg/kg-day). Table 10 presents the RfDs used in this assessment.

5.2 Toxicity Values for Carcinogens

Certain chemicals are regulated as carcinogens based on the likelihood that exposure could cause cancer in humans. Numerical estimates of cancer potency for these chemicals are presented as

cancer slope factors (CSFs). The CSF defines the cancer risk due to constant lifetime exposure to one unit of a carcinogen (in units of risk per mg/kg-day). CSFs are derived by calculating the 95% UCL on the slope of the linearized portion of the dose-response curve using the multistage cancer model on study data. Use of the 95% UCL of the slope means that there is only a 5% chance that the probability of a response could be greater than the estimated value for the experimental data used. This is a conservative approach and may overestimate the actual risk, given that the actual risk is expected to be between zero and the calculated value. Carcinogenic slope factors assume no threshold for effect; therefore, if there are in fact thresholds for carcinogenicity, the true risks could be zero at sufficiently low doses. Table 10 presents the CSFs used in this assessment.

6.0 Fate and Transport Modeling

Chemical, physical, and biological processes can affect the fate and transport of chemicals in water, soil, and air. VOCs tend to volatilize rapidly from subsurface soil and groundwater because of the relatively high vapor pressure of these compounds. Subsequent to volatilization, these compounds can affect ambient air where human receptors can be exposed through the inhalation pathway. The magnitude of potential vapor emissions is estimated in the following sections.

6.1 Chemical Emissions to Indoor Air

It is known that chemicals may migrate through environmental media from their source to some point where human receptors may be exposed. Therefore, it was necessary to determine if the VOCs detected in soil gas – given their residual concentrations, locations, soil physical characteristics, weather conditions, etc. – could potentially migrate up to the surface (where human receptors may be exposed).

Screening-level models were used to predict indoor air concentrations that may result from the chemical vapors potentially released from groundwater and soil gas under the Site. The estimated vapor flux and indoor air concentrations were then used to estimate potential health risks that may result from onsite exposures. For purposes of this evaluation, it was assumed that the land use would be commercial/industrial into the foreseeable future.

The potential migration of VOC vapors into indoor air was estimated using the Johnson and Ettinger (J&E) model (1991), modified to incorporate DTSC toxicity values (GW-SCREEN, DTSC version 3.0 last modified December 2014 and SG-SCREEN, DTSC Version 2.0-last modified December 2014). Copies of the J&E models used in the evaluation are included in Appendix A. The estimated VOC flux and ambient concentrations were then used to estimate potential health risks and hazards that may result from site exposure to estimated VOC concentrations in indoor air. The J&E model is based on the following assumptions:

- Chemical-containing groundwater occur at a defined and constant depth of 5 feet bgs.
- Chemical-containing soil gas occur at a defined and constant depth of 4 feet bgs.
- The gas-phase chemical migrates vertically through soil pore space up to the ground surface by steady-state diffusion.
- The soil between the chemical sources and the ground surface is assumed to be homogeneous.
- Vapor diffusion is described by a single chemical-specific effective diffusion coefficient.
- No retardation of the soil gas occurs as the chemical migrates from soil gas sources up to the ground surface.
- Vapor migrates through cracks in the building foundation and mixes instantaneously with indoor air resulting in an ambient indoor air concentration.

The method assumes that the source chemical concentrations do not decrease over time (i.e.; no mass depletion) and the depth to the top of the chemical sources remain constant, which results in an overestimate of long-term exposure effects.

The J&E models were run using default soil physical parameters as recommended by the DTSC (2011). Soils at the Site have been described as sandy silty soils. Default soil physical parameters for sandy loam were obtained from the J&E VLOOKUP table.

The J&E model assumes that the concentrations in indoor air are proportional to the flux throughout the soil column, and that a gas infiltrating into the building through the foundation floor is uniformly and instantaneously mixed within the air space above the lowest occupied floor of the building. Because this model ignores a number of possible attenuating factors, it is likely that it over-predicts the chemical flux to indoor air. However, because of its simplicity, this approach provides a simple method to estimate the likely maximum rate at which chemicals

would be transported to the surface soils and into a building. Copies of the J&E models used are included in Appendix A.

The indoor air chemical concentrations estimated to result from the volatilization of VOCs could be considered to represent a "worst-case" estimate. In the calculations it was assumed that single chemical compounds are volatilizing, traveling alone through the vadose zone and escaping to ambient air. In reality, all chemicals detected at the Site are competing with each other for available soil-pore space. It is well known that chemical volatilization and migration is limited by the vapor saturation in the vadose zone.

Given the variable chemical composition and concentrations found in all groundwater and soil gas sampling points, VOC data was not pooled and averaged to obtain a "site wide" VOC exposure point concentration. Instead, it was assumed that VOC vapors could migrate vertically and impact indoor air directly above the area where those VOCs were detected. For this evaluation, potential vapor emissions and associated health risks and hazards were estimated separately for each groundwater and soil gas sampling point.

The point of departure for chemical volatilization modeling was the groundwater and soil gas data collected at the Site (Tables 6 and 7). Groundwater and soil gas data represent volatile chemicals that have the potential to migrate from the subsurface up to the ambient air.

7.0 Risk Characterization

The risk characterization section provides a quantitative estimation of the health risks associated with chemical exposure. The risk characterization used the toxicity information from Section 5.0; the exposure factors estimated in Section 4.0; and the estimated chemical exposure point concentrations to evaluate both non-carcinogenic and carcinogenic health effects. Non-carcinogenic health effects were characterized with respect to established regulatory criteria and carcinogenic health risks were characterized with respect to acceptable cancer risks.

Health risk estimates presented in this section have been developed for onsite workers. The health risks were estimated assuming:

1. ***Exposure to Chemical-Affected Soil and Dust***. It was assumed that the upper 5 feet of chemical-affected soil would be exposed to the surface. Under these conditions, it was assumed that onsite receptors have direct contact with soil and dust through the ingestion, dermal contact, and inhalation pathways; and

2. ***Exposure to Chemical-Affected Indoor Air***. It was assumed that the Site will operate as an industrial facility into the foreseeable future. Under these conditions, VOCs detected in groundwater and soil gas were assumed to enter an onsite building through cracks in its foundation. Onsite receptors could then be exposed to VOCs while indoors.

7.1 Risk Characterization for Soil and Dust Exposure

Current risk assessment guidance (DTSC 2016 and 2018) state that chemicals deemed to pose no significant health risk can be eliminated from consideration in a risk assessment. Specifically, chemicals detected at a Site can be eliminated from consideration if their maximum detected concentrations are at or below concentrations known to regulatory agencies to pose no significant risk.

For this evaluation, metals, TPH fractions, PCBs, SVOCs and VOC compounds detected in soil matrix were evaluated by comparing the data to soil screening levels developed by the USEPA and the DTSC.

Maximum detected soil chemical concentrations are presented in Tables 1 through 5. The same tables present their corresponding screening levels. The only chemical whose maximum detected concentration exceeded its corresponding screening level was TPH as DRO (Table 2). It should be noted this HHRA assumes onsite workers are exposed to DRO-impacted soil through ingestion, dermal contact and inhalation of particles. In reality, DRO is not volatile so DRO in soil would not pose a health threat if such soils are inaccessible to onsite receptors. Inaccessible soil are soils covered by buildings, paved roads, paved parking lots, buildings, landscaped areas or covered by at least four feet of soil.

7.2 Vapor Intrusion Health Risks and Hazards

Vapor intrusion risk characterization involves estimating the magnitude of the potential adverse health effects that could occur as a result of chronic, long-term exposure to chemicals identified in groundwater and soil gas at the Site. Summaries of the VOCs detected in soil gas and groundwater at the Site are presented in Tables 6 and 7, respectively.

The J&E model contains a module for estimating potential doses as well as cancer risks and health hazards associated with a given dose. For this assessment, the J&E model was used to estimate the potential health risks and hazards associated with indoor VOC exposures. For each chemical detected, a soil gas or groundwater chemical concentration of one microgram per liter (1 ug/L) was used as the subsurface soil gas or groundwater chemical concentration. The estimated "cancer risk per unit concentration" factors were used to estimate potential cancer risks associated with chemicals detected in either soil gas or groundwater at the Site. "Hazard quotients per unit concentration" factors were also estimated for each VOC detected in either soil gas or groundwater samples. These "hazard quotients per unit concentration" factors were used to estimate hazard quotients associated with each VOC detected in either groundwater or soil gas at the Site. Estimated cancer risks (and hazard quotients) per unit factors for VOCs detected in soil gas are presented in Table 11. Estimated cancer risks (and hazard quotients) per

unit factors for VOCs detected in groundwater are presented in Table 12. Supporting calculations are presented in Appendix A.

Point-by-point cancer risk evaluations for all sampling points were obtained by multiplying the cancer unit risk factors by its corresponding soil gas or groundwater chemical concentration to obtain the cancer risk for each chemical and sampling point. Point-by-point estimated cancer risks for VOCs detected in soil gas are summarized in Table 13. Point-by-point estimated cancer risks for VOCs detected in groundwater are summarized in Table 14.

The estimated cancer risks were compared to the risk level considered acceptable by federal and state regulatory agencies. The U.S. Environmental Protection Agency has established acceptable incremental cancer risk levels to be within the risk range of 1 in 10,000 (1.0E-04) and 1.0E-06; risks greater than 1.0E-04 are generally considered unacceptable. Thus, although agencies will exercise caution in determining whether risks within the range of 1.0E-04 and 1.0E-06 require additional investigation or some form of risk management, there is a general precedent that predicted cancer risks below 1E-05 are considered acceptable for worker exposure scenarios.

The health risk evaluation presented in this HHRA evaluated the potential health risks posed by the presence of VOCs detected in either soil gas or groundwater under the Site. The assessment included the evaluation of potential health risks to onsite workers. In this evaluation it was assumed that onsite workers are exposed for up to 25 years to chemical vapors that may enter onsite buildings. Although it is extremely unlikely that significant amounts of vapors are intruding into the buildings, a conservative fate and transport model was used to simulate potential concentrations that may result from chemical volatilization. The modeling parameters and assumptions used in this assessment were conservative in order not to underestimate potential risks.

According to the results of the HHRA, exposure to VOCs detected in soil gas sampling location LB1-4 had an estimated incremental cancer risk of 4E-05 (Table 13). Estimated cancer risks for all other soil gas sampling locations were equal to or below 1E-05 (Table 13).

Also, according to the vapor intrusion model for chemicals detected in groundwater, exposure to VOCs detected in groundwater at sampling points LB1-GW, LB6-GW, LB37-GW, LB39-GW,

LB40-GW, LB41-GW, LB48-GW, and LB49-GW could pose a potential cancer risks higher than 1E-05 (Table 14). More than 99 percent of the estimated cancer risks in the samples was contributed by PCE, TCE and vinyl chloride.

For each sampling point, chemical and source evaluated, the hazard quotient per sample was obtained by multiplying the hazard quotient per unit concentration by the chemical concentration detected in the sample to obtain the hazard quotient for each chemical and sampling point. Estimated "point-by-point" hazard quotients for VOCs detected in soil gas are summarized in Table 15. Estimated "point-by-point" hazard quotients for VOCs detected in groundwater are summarized in Table 16.

The estimated hazard quotients were compared to an acceptable hazard level. Implicit in the calculation is the assumption of a threshold level of exposure below which no adverse effects are expected to occur. For example, hazard quotients equal to or less than 1.0 indicate that no adverse health effects are expected to occur from exposure to chemicals at the Site.

According to the results of the HHRA, exposure to VOCs detected in soil gas sampling locations LB1-4 and LB39-4 had estimated hazard quotients of about 2 (Table 15). Estimated hazard quotients for all other soil gas sampling locations were all equal to or below 1 (Table 15).

Also, according to the vapor intrusion model for chemicals detected in groundwater, exposure to VOCs detected in groundwater at sampling points LB1-GW, LB37-GW, LB39-GW, and LB41-GW could result in hazard quotients higher than 1 (Table 16).

8.0 Conclusions and Recommendations

The HHRA presented in this report evaluated the potential health risks posed by the presence of metals, TPH fractions, PCBs, SVOCs and VOCs in soil, soil gas and groundwater at the Site. In this assessment it was assumed that onsite workers might come in contact with chemical-impacted soils through the ingestion, dermal contact and inhalation of vapors and dust. The HHRA was conducted in accordance with established DTSC (2015) and USEPA (1989) risk assessment guidance. Based on the assessment of all potentially complete exposure pathways, potential health risks were evaluated due to the presence of anthropogenic chemicals detected in soil (upper 5 feet), groundwater and soil gas at the Site.

The evaluation included the assessment of potential health risks under the following two distinct exposure scenarios.

1. ***Exposure to Chemical-Affected Soil and Dust.*** It was assumed that chemically affected soil is found within the upper 5 feet of soils and those chemical-impacted soils are accessible to onsite workers. Under these conditions, it was assumed that onsite workers have direct contact with soil and dust through the ingestion, dermal contact and inhalation pathway.

2. ***Exposure to Chemical-Affected Indoor Air.*** It was assumed that indoor workers such as office and shop workers spend most of their time indoors. It was also assumed that VOCs detected in soil gas or groundwater may enter an onsite building through cracks in its foundation and indoor workers are exposed to VOCs while indoors.

For this assessment, conservative fate and transport models were used to simulate potential chemical exposures, chemical volatilization and vapor intrusion. Results of the fate and transport modeling were used to estimate potential chemical doses that may be received by onsite workers while at the Site. In all cases, modeling parameters and assumptions used in this assessment were conservative in order not to underestimate potential health risks.

It should be noted that the HHRA was based on site-specific data as well as conservative (health-protective) assumptions, estimates, models and parameters. Therefore, the results are not absolute estimates of health risks at the Site but are health protective estimates.

Based on the exposure scenarios and fate and transport modeling described above, the following conclusions can be drawn from the evaluation.

- According to the results of the HHRA, exposure to VOCs detected in soil gas sampling location LB1-4 had an estimated incremental cancer risk of 4E-05 (Table 13). Estimated cancer risks for all other soil gas sampling locations were equal to or below 1E-05 (Table 13). Also, according to the vapor intrusion model for chemicals detected in groundwater, exposure to VOCs detected in groundwater at sampling points LB1-GW, LB6-GW, LB37-GW, LB39-GW, LB40-GW, LB41-GW, LB48-GW, and LB49-GW could pose a potential cancer risks higher than 1E-05 (Table 14). More than 99 percent of the estimated cancer risks in the samples was contributed by PCE, TCE, and vinyl chloride.

- As for non-cancer hazard quotients, soil gas sampling locations LB1-4 and LB39-4 had estimated hazard quotients of about 2 (Table 15). Estimated hazard quotients for all other soil gas sampling locations were within acceptable levels (Table 15). Also, according to the vapor intrusion model for chemicals detected in groundwater, exposure to VOCs detected in groundwater at sampling points LB1-GW, LB37-GW, LB39-GW, and LB41-GW could result in hazard quotients higher than 1 (Table 16).

- Based on the results of this HHRA, it seems prudent to recommend that some form of vapor mitigation measures (such as an impermeable membrane and passive venting system) be implemented at and around the soil gas and groundwater sampling locations mentioned above. For the rest of the Site, the results of the modeling indicate that there is no significant health risk associated with vapor intrusion into future onsite buildings as normally constructed (i.e., without special mitigation measures or engineering controls).

- Results of the HHRA indicate that DRO detected in soil at the Site could exceed levels considered acceptable to California health and environmental protection agencies. In light of these results, a virtual remediation was conducted by gradually removing from the assessment maximum detected soil DRO concentrations. The virtual remediation was conducted until the estimated 95-percent upper confidence limit (95UCL) soil DRO concentration was below its soil screening level of 400 mg/Kg (Table 17). According to

the HHRA, when the DRO samples LB28-5.0 and LB35-5.0 were removed from the evaluation, the estimated DRO 95UCL concentration remaining in soil at the Site is 353.50 mg/kg (Table 17). The estimated residual DRO concentration is below its established soil screening level (USEPA 2017) and therefore within levels considered acceptable to California health and environmental protection agencies. It should be noted that as long as soil samples LB28 and LB35 remain covered by at least four feet of soil, paving or buildings, DRO in those samples would not pose a health threat to onsite receptors. Thus, it is recommended that soil samples LB28 and LB35 not be disturbed during redevelopment of the site. In the event that redevelopment activities require soil excavation, the excavation and removal of samples LB28 and LB35 should be considered.

All conclusions and recommendations presented in this report are based on reported chemical concentrations and the current land use of the Site. In this risk assessment, all fate-and-transport models, parameters, toxicity data and assumptions were used in accordance with federal and state regulatory guidelines. These guidelines are meant to protect the public and tend to overestimate potential health risks. As such, this risk assessment provides an estimate of the upper boundary of potential health risks, rather than an accurate representation of true health risks posed by the Site. In reality, the actual health risks could be as low as zero.

9.0 Uncertainty Analysis

This risk assessment was based on Site-specific data, laboratory analytical results, and assumed values and conditions. Site-specific data and laboratory results were validated and are supported by quality control and quality assurance documentation. Although professional judgment was used in the selection of each exposure assumption, some argument can be made regarding the validity of each assumption. The purpose of this section is to provide information concerning the validity of each assumption (including the effect of each assumption on the overall risk), the major data gaps, and the effect of these data gaps on the accuracy or reasonableness of the risk assessment.

It is important to fully specify the assumptions and uncertainties inherent in the risk assessment for two reasons: (1) to place the risk estimates in proper perspective, and (2) to identify key Site-related variables and assumptions that contributed most to the conclusions reached in the risk assessment. The focus of this section is also to highlight parameters and Site conditions that contributed most to the predicted risks and that can be further studied with a limited investment of resources. Another use of the uncertainty analysis can be to identify areas where a moderate amount of additional data collection might significantly improve the prediction ability of the risk assessment process.

There is always some doubt as to how well an exposure model or its mathematical expression approximates true relationships between environmental media and Site-specific conditions. Ideally, one would like to use a fully validated model that accounts for all the known factors involved. At present, however, only simple, partially validated models are available and commonly used.

10.0 References

American Society for Testing Materials (ASTM). 1995 . Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites. E:1739-95. West Conshohocken, PA.

California Department of Toxic Substances Control (DTSC). 2008. Determination of a Southern California Regional Background Arsenic Concentration in Soil. https://dtsc.ca.gov/upload/Background-Arsenic.pdf

California Department of Toxic Substances Control. 2018. Office of Environmental Health Hazard Assessment. Criteria for Carcinogens. On-line database: http://www.oehha.ca.gov/risk/chemicalDB/index.asp.

Johnson, P.C. and R.A. Ettinger. 1991. Heuristic Model for Predicting the Intrusion Rate of Contaminant Vapors into Buildings. Environmental Science and Technology 25:1445-1452.

Leighton Consulting, Inc. 2018. Baseline Environmental Site Characterization Report Port of Los Angeles Berths 191 through 193, Wilmington, California. April 13

U.S. Environmental Protection Agency. 1988. Superfund Exposure Assessment Manual. Office of Remedial Response, Washington, D.C.

U.S. Environmental Protection Agency. 1989. Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response, Washington, D.C.

U.S. Environmental Protection Agency. 2003. User's Guide for the Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings. Office of Emergency and Remedial Response, Toxics Integration Branch (5202G), Washington, DC.

U.S. Environmental Protection Agency. 2017. Regional Screening Levels (RSLs). Online database. January.

TABLES

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury
USEPA RSL Industrial Soil			mg/kg	470	12.0	220,000	2,300	980	1,800,000	350	47,000	800	46
LB1-0.5	0.5	10/11/17	mg/kg	ND	**2.6**	**50**	ND	ND	**9.2**	**5.1**	**29**	**22**	**0.17**
LB1-2.5	2.5	10/11/17	mg/kg	ND	**1.7**	**28**	ND	ND	**6.3**	**2.9**	**2.9**	ND	**0.17**
LB1-5.0	5	10/11/17	mg/kg	ND	**2**	**26**	ND	ND	**6.7**	**3.5**	**3.8**	ND	ND
LB2-0.5	0.5	10/11/17	mg/kg	ND	**4**	**93**	ND	ND	**29**	**7.2**	**670**	**110**	**0.28**
LB2-2.5	2.5	10/11/17	mg/kg	ND	**1.7**	**50**	ND	ND	**7.9**	**4**	**5.2**	**5.8**	**0.16**
LB2-5.0	5	10/11/17	mg/kg	ND	**3.5**	**25**	ND	**1.2**	**7.5**	**4.8**	**4.2**	**1.7**	**0.11**
LB3-0.5	0.5	10/11/17	mg/kg	ND	**2.2**	**53**	ND	ND	**10**	**4**	**8.8**	**29**	**0.25**
LB3-2.5	2.5	10/11/17	mg/kg	ND	**2**	**29**	ND	ND	**6.1**	**3.6**	**3.5**	ND	**0.15**
LB3-5.0	5	10/11/17	mg/kg	ND	**1.4**	**33**	ND	ND	**6.6**	**3.6**	**3.1**	ND	**0.12**
LB4-0.5	0.5	10/11/17	mg/kg	**5.1**	**2.3**	**96**	ND	ND	**16**	**3.9**	**58**	**130**	**0.72**
LB4-2.5	2.5	10/11/17	mg/kg	ND	**2.3**	**51**	ND	ND	**7.4**	**3**	**11**	**20**	**0.34**
LB4-3.5	3.5	10/11/17	mg/kg	ND	**8**	**94**	ND	ND	**8.5**	**4.5**	**590**	**5**	**0.13**
LB5-0.5	0.5	10/11/17	mg/kg	ND	**2.8**	**73**	ND	ND	**13**	**5.7**	**22**	**14**	ND
LB5-2.5	2.5	10/11/17	mg/kg	**2.5**	**5.5**	**89**	ND	ND	**12**	**5.1**	**51**	**99**	**1.4**
LB5-5.0	5	10/11/17	mg/kg	ND	**1.6**	**47**	ND	ND	**9.5**	**5.3**	**6.3**	ND	**0.18**
LB6-0.5	0.5	10/12/17	mg/kg	ND	ND	**12**	ND	ND	**2.9**	**1.2**	**2.4**	**7.3**	**0.16**
LB6-2.5	2.5	10/12/17	mg/kg	ND	ND	**9.8**	ND	ND	**2.1**	**1.2**	ND	ND	**0.16**
LB6-5.0	5	10/12/17	mg/kg	ND	ND	**9.1**	ND	ND	**1.7**	ND	ND	ND	**0.2**
LB7-0.5	0.5	10/12/17	mg/kg	ND	ND	**110**	ND	ND	**12**	**11**	**27**	**16**	ND
LB7-2.5	2.5	10/12/17	mg/kg	ND	**1.5**	**52**	ND	ND	**9.3**	**4.5**	**50**	**49**	**0.25**
LB7-5.0	5	10/12/17	mg/kg	ND	ND	**29**	ND	ND	**6.6**	**3.5**	**4.1**	**1**	ND
LB8-0.5	0.5	10/11/17	mg/kg	ND	**5**	**100**	ND	ND	**17**	**6.1**	**42**	**29**	**0.21**
LB8-2.5	2.5	10/11/17	mg/kg	ND	**2.9**	**34**	ND	ND	**6.9**	**3.4**	**3.5**	**1.4**	ND
LB8-5.0	5	10/11/17	mg/kg	ND	**2.9**	**26**	ND	ND	**6.8**	**3.1**	**3.1**	**2**	ND
LB9-0.5	0.5	10/11/17	mg/kg	ND	**2.7**	**90**	ND	ND	**13**	**6.2**	**19**	**13**	**0.12**
LB9-2.5	2.5	10/11/17	mg/kg	ND	**3.2**	**55**	ND	ND	**11**	**5.9**	**14**	**13**	**0.27**
LB9-5.0	5	10/11/17	mg/kg	ND	**2**	**21**	ND	ND	**5.8**	**3.1**	**2.6**	ND	**0.12**
LB10-0.5	0.5	10/12/17	mg/kg	ND	ND	**21**	ND	ND	**3.1**	**1.6**	**5.7**	**5**	**0.21**
LB10-2.5	2.5	10/12/17	mg/kg	ND	ND	**21**	ND	ND	**3.8**	**2.2**	**2.3**	ND	**0.51**
LB10-5.0	5	10/12/17	mg/kg	ND	ND	**11**	ND	ND	**2.4**	**1.3**	ND	ND	**0.24**
LB11-0.5	0.5	10/12/17	mg/kg	ND	**12**	**61**	ND	ND	**25**	**5.1**	**890**	**150**	**2.2**
LB11-2.5	2.5	10/12/17	mg/kg	ND	**5**	**79**	ND	ND	**14**	**9**	**16**	**3.9**	ND
LB11-5.0	5	10/12/17	mg/kg	ND	**2.9**	**110**	ND	ND	**19**	**9.3**	**19**	**3.9**	ND

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury
USEPA RSL Industrial Soil			mg/kg	470	12.0	220,000	2,300	980	1,800,000	350	47,000	800	46
LB12-0.5	0.5	10/11/17	mg/kg	ND	**5.4**	**140**	ND	ND	**18**	**6.3**	**52**	**38**	**0.34**
LB12-2.5	2.5	10/11/17	mg/kg	ND	**3.4**	**30**	ND	ND	**7.9**	**2.6**	ND	**1.2**	ND
LB12-5.0	5	10/11/17	mg/kg	ND	**3.7**	**46**	ND	ND	**8.5**	**4.6**	**4.7**	**1.6**	**0.17**
LB13-0.5	0.5	10/11/17	mg/kg	ND	**4.8**	**100**	ND	ND	**15**	**5.5**	**34**	**42**	**0.62**
LB13-2.5	2.5	10/11/17	mg/kg	ND	**3.7**	**47**	ND	ND	**9.3**	**4.9**	**6.3**	**6.3**	ND
LB13-5.0	5	10/11/17	mg/kg	ND	**2.8**	**25**	ND	ND	**6.7**	**3.1**	**2**	**1.2**	ND
LB14-0.5	0.5	10/11/17	mg/kg	ND	**3.6**	**84**	ND	ND	**24**	**6.7**	**33**	**28**	**0.28**
LB14-2.5	2.5	10/11/17	mg/kg	ND	ND	**97**	ND	ND	**8.5**	**4.2**	**9.3**	ND	**0.15**
LB14-5.0	5	10/11/17	mg/kg	ND	**1.5**	**57**	ND	ND	**11**	**6.2**	**7.8**	ND	**0.21**
LB15-0.5	0.5	10/12/17	mg/kg	ND	ND	**78**	ND	ND	**7.8**	**3.9**	**9.2**	**4.5**	ND
LB15-2.5	2.5	10/12/17	mg/kg	ND	ND	**15**	ND	ND	**2.9**	**1.8**	**2.1**	ND	**0.22**
LB15-5.0	5	10/12/17	mg/kg	ND	ND	**8.3**	ND	ND	**1.7**	ND	ND	ND	**0.17**
LB16-0.5	0.5	10/12/17	mg/kg	ND	**2.2**	**74**	ND	ND	**6.7**	**6**	**27**	**5**	ND
LB16-2.5	2.5	10/12/17	mg/kg	ND	**2.5**	**78**	ND	ND	**10**	**5.6**	**19**	**33**	ND
LB16-5.0	5	10/12/17	mg/kg	ND	**2.4**	**65**	ND	ND	**7.3**	**3.7**	**12**	**4.9**	ND
LB17-0.5	0.5	10/11/17	mg/kg	ND	**1.4**	**75**	ND	ND	**14**	**4**	**16**	**51**	**0.73**
LB17-2.5	2.5	10/11/17	mg/kg	ND	**1.3**	**46**	ND	ND	**9.1**	**4.9**	**6**	ND	ND
LB17-5.0	5	10/11/17	mg/kg	ND	**1**	**51**	ND	ND	**8.5**	**5.1**	**5.3**	ND	**0.1**
LB18-0.5	0.5	10/11/17	mg/kg	ND	**2.5**	**99**	ND	ND	**35**	**7.3**	**100**	**33**	**0.23**
LB18-2.5	2.5	10/11/17	mg/kg	ND	**2.1**	**28**	ND	ND	**7**	**3.3**	**3.1**	ND	ND
LB18-5.0	5	10/11/17	mg/kg	ND	**2.2**	**35**	ND	ND	**7.5**	**4.3**	**3.9**	ND	ND
LB19-0.5	0.5	10/11/17	mg/kg	ND	**3.1**	**37**	ND	ND	**7.5**	**3.7**	**3.6**	**1.6**	ND
LB19-2.5	2.5	10/11/17	mg/kg	ND	**3.4**	**20**	ND	ND	**6**	**2.9**	ND	**1.4**	ND
LB19-5.0	5	10/11/17	mg/kg	ND	**3**	**33**	ND	ND	**6.6**	**3.8**	**3.2**	**1.1**	ND
LB20-0.5	0.5	10/11/17	mg/kg	ND	**3.7**	**52**	ND	ND	**15**	**6.1**	**39**	**35**	**0.22**
LB20-2.5	2.5	10/11/17	mg/kg	ND	**3.3**	**30**	ND	ND	**6.6**	**3.4**	**3**	**1.8**	ND
LB20-5.0	5	10/11/17	mg/kg	ND	**2.9**	**36**	ND	ND	**7.1**	**3.7**	**3.1**	**2.3**	ND
LB21-0.5	0.5	10/12/17	mg/kg	ND	**1.3**	**20**	ND	ND	**5.6**	**2.8**	**3.1**	ND	ND
LB21-2.5	2.5	10/12/17	mg/kg	ND	**2.1**	**38**	ND	ND	**8.1**	**4.4**	**4.8**	ND	ND
LB21-5.0	5	10/12/17	mg/kg	ND	**2.4**	**65**	ND	ND	**11**	**6.5**	**8.3**	ND	ND
LB22-0.5	0.5	10/12/17	mg/kg	ND	**2.3**	**50**	ND	ND	**11**	**5.3**	**9.8**	**5.5**	ND
LB22-2.5	2.5	10/12/17	mg/kg	ND	ND	**69**	ND	ND	**15**	**7.1**	**12**	**1.3**	**0.17**
LB22-5.0	5	10/12/17	mg/kg	ND	**1.7**	**19**	ND	ND	**4.1**	**2.1**	**2.5**	ND	ND

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury
USEPA RSL Industrial Soil			mg/kg	470	12.0	220,000	2,300	980	1,800,000	350	47,000	800	46
LB23-0.5	0.5	10/11/17	mg/kg	ND	ND	**24**	ND	ND	**6**	**2.4**	**2.8**	ND	ND
LB23-2.5	2.5	10/11/17	mg/kg	ND	**1.1**	**36**	ND	ND	**8.4**	**4.2**	**5.9**	ND	**0.1**
LB23-5.0	5	10/11/17	mg/kg	ND	**1.7**	**28**	ND	ND	**5.8**	**2.9**	**2.6**	ND	ND
LB24-0.5	0.5	10/11/17	mg/kg	ND	**4.5**	**59**	ND	ND	**12**	**6.7**	**9.7**	**2.9**	ND
LB24-2.5	2.5	10/11/17	mg/kg	ND	**3.3**	**36**	ND	ND	**7.2**	**3.7**	**3.3**	**1.5**	ND
LB24-5.0	5	10/11/17	mg/kg	ND	**4.4**	**23**	ND	ND	**5.8**	**2.9**	ND	**1.2**	ND
LB25-0.5	0.5	10/11/17	mg/kg	ND	**2.8**	**18**	ND	ND	**5.8**	**2.6**	**2.4**	**1.9**	ND
LB25-2.5	2.5	10/11/17	mg/kg	ND	**3.4**	**48**	ND	ND	**8.6**	**5**	**4.7**	**1.8**	ND
LB25-5.0	5	10/11/17	mg/kg	ND	**2.4**	**24**	ND	ND	**5.6**	**2.6**	ND	**1.1**	ND
LB26-0.5	0.5	12-Oct-17	mg/kg	ND	**2.2**	**13**	ND	ND	**4.2**	**2.1**	**2.4**	**1.1**	ND
LB26-2.5	2.5	12-Oct-17	mg/kg	ND	**2**	**23**	ND	ND	**5.5**	**2.6**	**2.7**	ND	ND
LB26-5.0	5	12-Oct-17	mg/kg	ND	**1.6**	**62**	ND	ND	**9.8**	**5.8**	**7**	ND	ND
LB27-0.5	0.5	12-Oct-17	mg/kg	ND	**4**	**98**	ND	ND	**18**	**8.7**	**28**	**130**	ND
LB27-2.5	2.5	12-Oct-17	mg/kg	ND	**2.1**	**43**	ND	ND	**9.4**	**5.5**	**6.5**	ND	ND
LB27-5.0	5	12-Oct-17	mg/kg	ND	**1.1**	**16**	ND	ND	**3.8**	**1.8**	ND	ND	ND
LB28-0.5	0.5	12-Oct-17	mg/kg	ND	**4.2**	**45**	ND	ND	**8.3**	**4.1**	**17**	**85**	ND
LB28-2.5	2.5	12-Oct-17	mg/kg	ND	**5**	**63**	ND	ND	**13**	**5.3**	**27**	**53**	ND
LB28-5.0	5	12-Oct-17	mg/kg	ND	**2.5**	**81**	ND	ND	**19**	**4.1**	**9.2**	**4**	ND
LB29-0.5	0.5	12-Oct-17	mg/kg	ND	**2.4**	**17**	ND	ND	**4.1**	**2.2**	**10**	**10**	ND
LB29-2.5	2.5	12-Oct-17	mg/kg	ND	**2.1**	**18**	ND	ND	**5.1**	**2.3**	**2.1**	ND	ND
LB29-5.0	5	12-Oct-17	mg/kg	ND	**1.4**	**35**	ND	ND	**7**	**3.8**	**4.4**	ND	ND
LB30-0.5	0.5	12-Oct-17	mg/kg	ND	**1.6**	**48**	ND	ND	**10**	**4.6**	**8.3**	**5**	ND
LB30-2.5	2.5	12-Oct-17	mg/kg	ND	**1.6**	**82**	ND	ND	**16**	**5.4**	**91**	**180**	**0.25**
LB30-5.0	5	12-Oct-17	mg/kg	ND	ND	**44**	ND	ND	**10**	**7**	**8.1**	**3**	ND
LB31-0.5	0.5	12-Oct-17	mg/kg	ND	**4.3**	**63**	ND	ND	**12**	**5.2**	**110**	**110**	**0.89**
LB31-2.5	2.5	12-Oct-17	mg/kg	ND	ND	**13**	ND	ND	**3.6**	**1.8**	**2.2**	ND	ND
LB31-5.0	5	12-Oct-17	mg/kg	ND	**1.6**	**53**	ND	ND	**9.6**	**5.8**	**6.8**	ND	ND
LB32-0.5	0.5	12-Oct-17	mg/kg	ND	**3.7**	**60**	ND	ND	**13**	**6.1**	**29**	**7.5**	ND
LB32-2.5	2.5	12-Oct-17	mg/kg	ND	**1.6**	**28**	ND	ND	**5.9**	**3**	**3.3**	ND	ND
LB32-5.0	5	12-Oct-17	mg/kg	ND	**1.7**	**63**	ND	ND	**11**	**6.6**	**9.7**	ND	ND
LB33-0.5	0.5	12-Oct-17	mg/kg	ND	**1.7**	**44**	ND	ND	**13**	**6.2**	**6.1**	**1.5**	ND
LB33-2.5	2.5	12-Oct-17	mg/kg	ND	**6.9**	**73**	ND	ND	**14**	**9**	**230**	**110**	**0.23**
LB33-5.0	5	12-Oct-17	mg/kg	ND	**2**	**55**	ND	ND	**9.7**	**6.1**	**7.9**	ND	ND

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury
USEPA RSL Industrial Soil			mg/kg	470	12.0	220,000	2,300	980	1,800,000	350	47,000	800	46
LB34-0.5	0.5	13-Oct-17	mg/kg	ND	**3.1**	**100**	ND	ND	**20**	**5.1**	**23**	**25**	ND
LB34-2.5	2.5	13-Oct-17	mg/kg	ND	ND	**99**	ND	ND	**7.5**	**3.7**	**7.6**	ND	ND
LB34-5.0	5	13-Oct-17	mg/kg	ND	**1.7**	**52**	ND	ND	**8.7**	**5.2**	**6.8**	ND	ND
LB35-0.5	0.5	13-Oct-17	mg/kg	ND	ND	**71**	ND	ND	**6.7**	**4.6**	**8.1**	**4.1**	ND
LB35-2.5	2.5	13-Oct-17	mg/kg	ND	ND	**67**	ND	ND	**6.1**	**3.7**	**5.3**	**1.1**	ND
LB35-5.0	5	13-Oct-17	mg/kg	ND	ND	**39**	ND	ND	**6.7**	**3.2**	**5.1**	**8.5**	ND

Minimum SL	470	12	220,000	2,300	980	1,800,000	350	47,000	800	46
Max. Conc.	5.1	12	140	0	1.2	35	11	890	180	2.2
Is Max > SL ?	No	No	No	No	No	No	No	No	No	No

Notes:
bgs = below ground
surface
ND<0.44 = Not detected above the laboratory reporting limit.
RSL = USEPA Regional Screening Level, industrial (November 2017)
mg/kg = milligrams per kilogram

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	5,800	22,000	5,800	5,800	12	5,800	350,000
LB1-0.5	0.5	10/11/17	mg/kg	ND	**11**	ND	ND	ND	**23**	**40**
LB1-2.5	2.5	10/11/17	mg/kg	ND	**4**	ND	ND	ND	**13**	**14**
LB1-5.0	5	10/11/17	mg/kg	ND	**4.3**	ND	ND	ND	**15**	**16**
LB2-0.5	0.5	10/11/17	mg/kg	**1.9**	**22**	ND	ND	ND	**30**	**120**
LB2-2.5	2.5	10/11/17	mg/kg	ND	**5.6**	ND	ND	ND	**15**	**32**
LB2-5.0	5	10/11/17	mg/kg	ND	**5.6**	ND	ND	ND	**15**	**17**
LB3-0.5	0.5	10/11/17	mg/kg	ND	**7.9**	ND	ND	ND	**20**	**65**
LB3-2.5	2.5	10/11/17	mg/kg	ND	**4.6**	ND	ND	ND	**12**	**18**
LB3-5.0	5	10/11/17	mg/kg	ND	**4.8**	ND	ND	ND	**12**	**18**
LB4-0.5	0.5	10/11/17	mg/kg	ND	**11**	ND	ND	ND	**18**	**160**
LB4-2.5	2.5	10/11/17	mg/kg	ND	**6.2**	ND	ND	ND	**13**	**43**
LB4-3.5	3.5	10/11/17	mg/kg	ND	**8**	ND	ND	ND	**23**	**43**
LB5-0.5	0.5	10/11/17	mg/kg	ND	**12**	ND	ND	ND	**23**	**51**
LB5-2.5	2.5	10/11/17	mg/kg	ND	**12**	ND	ND	ND	**23**	**160**
LB5-5.0	5	10/11/17	mg/kg	ND	**7.2**	ND	ND	ND	**17**	**25**
LB6-0.5	0.5	10/12/17	mg/kg	ND	**2.1**	ND	ND	ND	**4.9**	**16**
LB6-2.5	2.5	10/12/17	mg/kg	ND	**1.6**	ND	ND	ND	**3.7**	**6.7**
LB6-5.0	5	10/12/17	mg/kg	ND	**1.2**	ND	ND	ND	**3**	**5.3**
LB7-0.5	0.5	10/12/17	mg/kg	ND	**12**	ND	ND	ND	**36**	**71**
LB7-2.5	2.5	10/12/17	mg/kg	ND	**14**	ND	**1.5**	ND	**16**	**89**
LB7-5.0	5	10/12/17	mg/kg	ND	**5**	ND	ND	ND	**13**	**19**
LB8-0.5	0.5	10/11/17	mg/kg	ND	**15**	ND	ND	ND	**27**	**170**
LB8-2.5	2.5	10/11/17	mg/kg	ND	**4.6**	ND	ND	ND	**15**	**18**
LB8-5.0	5	10/11/17	mg/kg	ND	**3.9**	ND	ND	ND	**19**	**15**
LB9-0.5	0.5	10/11/17	mg/kg	ND	**12**	ND	ND	ND	**27**	**44**
LB9-2.5	2.5	10/11/17	mg/kg	ND	**9.7**	ND	ND	ND	**22**	**46**
LB9-5.0	5	10/11/17	mg/kg	ND	**3.8**	ND	ND	ND	**13**	**14**
LB10-0.5	0.5	10/12/17	mg/kg	ND	**4.7**	ND	ND	ND	**6.3**	**18**
LB10-2.5	2.5	10/12/17	mg/kg	ND	**3**	ND	ND	ND	**6.5**	**11**
LB10-5.0	5	10/12/17	mg/kg	ND	**1.6**	ND	ND	ND	**3.8**	**6.4**
LB11-0.5	0.5	10/12/17	mg/kg	ND	**11**	ND	ND	ND	**17**	**780**
LB11-2.5	2.5	10/12/17	mg/kg	ND	**13**	ND	ND	ND	**32**	**38**
LB11-5.0	5	10/12/17	mg/kg	ND	**14**	ND	ND	ND	**33**	**46**

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	5,800	22,000	5,800	5,800	12	5,800	350,000
LB12-0.5	0.5	10/11/17	mg/kg	ND	**16**	ND	ND	ND	**28**	**200**
LB12-2.5	2.5	10/11/17	mg/kg	ND	**3.1**	ND	ND	ND	**28**	**13**
LB12-5.0	5	10/11/17	mg/kg	ND	**6**	ND	ND	ND	**19**	**23**
LB13-0.5	0.5	10/11/17	mg/kg	ND	**13**	ND	ND	ND	**27**	**210**
LB13-2.5	2.5	10/11/17	mg/kg	ND	**7.4**	ND	ND	ND	**22**	**31**
LB13-5.0	5	10/11/17	mg/kg	ND	**4**	ND	ND	ND	**17**	**15**
LB14-0.5	0.5	10/11/17	mg/kg	ND	**16**	ND	ND	ND	**27**	**86**
LB14-2.5	2.5	10/11/17	mg/kg	ND	**5.6**	ND	ND	ND	**18**	**26**
LB14-5.0	5	10/11/17	mg/kg	ND	**8.3**	ND	ND	ND	**21**	**30**
LB15-0.5	0.5	10/12/17	mg/kg	ND	**6.4**	ND	ND	ND	**15**	**31**
LB15-2.5	2.5	10/12/17	mg/kg	ND	**2.3**	ND	ND	ND	**5.6**	**8.7**
LB15-5.0	5	10/12/17	mg/kg	ND	**1.2**	ND	ND	ND	**2.8**	**4.6**
LB16-0.5	0.5	10/12/17	mg/kg	ND	**7.1**	ND	ND	ND	**17**	**180**
LB16-2.5	2.5	10/12/17	mg/kg	ND	**11**	ND	ND	ND	**18**	**160**
LB16-5.0	5	10/12/17	mg/kg	ND	**6.5**	ND	ND	ND	**14**	**39**
LB17-0.5	0.5	10/11/17	mg/kg	ND	**10**	ND	ND	ND	**22**	**250**
LB17-2.5	2.5	10/11/17	mg/kg	ND	**6.7**	ND	ND	ND	**20**	**24**
LB17-5.0	5	10/11/17	mg/kg	ND	**6.6**	ND	ND	ND	**16**	**24**
LB18-0.5	0.5	10/11/17	mg/kg	**3.5**	**32**	ND	ND	ND	**23**	**150**
LB18-2.5	2.5	10/11/17	mg/kg	ND	**4.5**	ND	ND	ND	**16**	**16**
LB18-5.0	5	10/11/17	mg/kg	ND	**5.3**	ND	ND	ND	**17**	**18**
LB19-0.5	0.5	10/11/17	mg/kg	ND	**4.9**	ND	ND	ND	**19**	**21**
LB19-2.5	2.5	10/11/17	mg/kg	ND	**3.3**	ND	ND	ND	**17**	**14**
LB19-5.0	5	10/11/17	mg/kg	ND	**4.9**	ND	ND	ND	**14**	**19**
LB20-0.5	0.5	10/11/17	mg/kg	ND	**21**	ND	ND	ND	**32**	**110**
LB20-2.5	2.5	10/11/17	mg/kg	ND	**4.5**	ND	ND	ND	**13**	**17**
LB20-5.0	5	10/11/17	mg/kg	ND	**4.8**	ND	ND	ND	**15**	**18**
LB21-0.5	0.5	10/12/17	mg/kg	ND	**3.8**	ND	ND	ND	**12**	**14**
LB21-2.5	2.5	10/12/17	mg/kg	ND	**6.2**	ND	ND	ND	**14**	**22**
LB21-5.0	5	10/12/17	mg/kg	ND	**8.9**	ND	ND	ND	**19**	**33**
LB22-0.5	0.5	10/12/17	mg/kg	ND	**8.7**	ND	ND	ND	**19**	**97**
LB22-2.5	2.5	10/12/17	mg/kg	ND	**11**	ND	ND	ND	**23**	**40**
LB22-5.0	5	10/12/17	mg/kg	ND	**2.9**	ND	ND	ND	**7.2**	**10**

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	5,800	22,000	5,800	5,800	12	5,800	350,000
LB23-0.5	0.5	10/11/17	mg/kg	ND	**3**	ND	ND	ND	**14**	**11**
LB23-2.5	2.5	10/11/17	mg/kg	ND	**5.7**	ND	ND	ND	**15**	**20**
LB23-5.0	5	10/11/17	mg/kg	ND	**4**	ND	ND	ND	**10**	**15**
LB24-0.5	0.5	10/11/17	mg/kg	ND	**9.4**	ND	ND	ND	**28**	**35**
LB24-2.5	2.5	10/11/17	mg/kg	ND	**5.2**	ND	ND	ND	**14**	**19**
LB24-5.0	5	10/11/17	mg/kg	ND	**3.6**	ND	ND	ND	**15**	**14**
LB25-0.5	0.5	10/11/17	mg/kg	ND	**3.2**	ND	ND	ND	**17**	**12**
LB25-2.5	2.5	10/11/17	mg/kg	ND	**6.5**	ND	ND	ND	**18**	**25**
LB25-5.0	5	10/11/17	mg/kg	ND	**3.5**	ND	ND	ND	**12**	**14**
LB26-0.5	0.5	12-Oct-17	mg/kg	ND	**2.7**	ND	ND	ND	**8**	**11**
LB26-2.5	2.5	12-Oct-17	mg/kg	ND	**3.8**	ND	ND	ND	**8.8**	**14**
LB26-5.0	5	12-Oct-17	mg/kg	ND	**7.7**	ND	ND	ND	**18**	**30**
LB27-0.5	0.5	12-Oct-17	mg/kg	ND	**15**	ND	ND	ND	**32**	**120**
LB27-2.5	2.5	12-Oct-17	mg/kg	ND	**7.1**	ND	ND	ND	**16**	**26**
LB27-5.0	5	12-Oct-17	mg/kg	ND	**2.4**	ND	ND	ND	**6.7**	**9.5**
LB28-0.5	0.5	12-Oct-17	mg/kg	ND	**12**	ND	ND	ND	**16**	**190**
LB28-2.5	2.5	12-Oct-17	mg/kg	ND	**13**	ND	ND	ND	**20**	**120**
LB28-5.0	5	12-Oct-17	mg/kg	ND	**11**	ND	ND	ND	**18**	**50**
LB29-0.5	0.5	12-Oct-17	mg/kg	ND	**4**	ND	ND	ND	**9.7**	**43**
LB29-2.5	2.5	12-Oct-17	mg/kg	ND	**3**	ND	ND	ND	**9.9**	**11**
LB29-5.0	5	12-Oct-17	mg/kg	ND	**5.3**	ND	ND	ND	**12**	**19**
LB30-0.5	0.5	12-Oct-17	mg/kg	ND	**6.5**	ND	ND	ND	**18**	**26**
LB30-2.5	2.5	12-Oct-17	mg/kg	ND	**24**	ND	ND	ND	**38**	**130**
LB30-5.0	5	12-Oct-17	mg/kg	ND	**7.4**	ND	ND	ND	**18**	**29**
LB31-0.5	0.5	12-Oct-17	mg/kg	ND	**9.7**	ND	ND	ND	**21**	**140**
LB31-2.5	2.5	12-Oct-17	mg/kg	ND	**2.2**	ND	ND	ND	**6.8**	**8.3**
LB31-5.0	5	12-Oct-17	mg/kg	ND	**7.8**	ND	ND	ND	**17**	**29**
LB32-0.5	0.5	12-Oct-17	mg/kg	ND	**11**	ND	ND	ND	**22**	**48**
LB32-2.5	2.5	12-Oct-17	mg/kg	ND	**4.4**	ND	ND	ND	**10**	**19**
LB32-5.0	5	12-Oct-17	mg/kg	ND	**9.1**	ND	ND	ND	**20**	**32**
LB33-0.5	0.5	12-Oct-17	mg/kg	ND	**9.3**	ND	ND	ND	**22**	**34**
LB33-2.5	2.5	12-Oct-17	mg/kg	ND	**20**	ND	ND	ND	**22**	**790**
LB33-5.0	5	12-Oct-17	mg/kg	ND	**8**	ND	ND	ND	**19**	**29**

Table 1
Summary of Soil Metal Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
USEPA RSL Industrial Soil			mg/kg	5,800	22,000	5,800	5,800	12	5,800	350,000
LB34-0.5	0.5	13-Oct-17	mg/kg	ND	**12**	ND	ND	ND	**20**	**79**
LB34-2.5	2.5	13-Oct-17	mg/kg	ND	**5.8**	ND	ND	ND	**15**	**26**
LB34-5.0	5	13-Oct-17	mg/kg	ND	**7**	ND	ND	ND	**15**	**27**
LB35-0.5	0.5	13-Oct-17	mg/kg	ND	**15**	ND	ND	ND	**24**	**30**
LB35-2.5	2.5	13-Oct-17	mg/kg	ND	**13**	ND	ND	ND	**19**	**74**
LB35-5.0	5	13-Oct-17	mg/kg	ND	**12**	ND	ND	ND	**17**	**29**
Minimum SL				5,800	22,000	5,800	5,800	12	5,800	350,000
Max. Conc.				3.5	32	0	1.5	0	38	790
Is Max > SL ?				No	No	No	No	No	No	No

Notes:
bgs = below ground
surface
ND<0.44 = Not detected above the laboratory reporting limit.
RSL = USEPA Regional Screening Level, industrial (November 2017)
mg/kg = milligrams per kilogram

Table 2
Summary of Total Petroleum Hydrocarbon in Soil Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--
LB1-0.5	0.5	10/11/17	mg/kg	ND<0.20	**200**	**460**	**660**
LB1-2.5	2.5	10/11/17	mg/kg	ND<0.20	**8.4**	**7.1**	**15.5**
LB1-5.0	5	10/11/17	mg/kg	ND<0.20	**5.0**	**4.4**	**9.4**
LB2-0.5	0.5	10/11/17	mg/kg	ND<0.20	**720**	**1,700**	**2,420**
LB2-2.5	2.5	10/11/17	mg/kg	ND<0.20	**8.7**	**13**	**21.7**
LB2-5.0	5	10/11/17	mg/kg	ND<0.20	**8.1**	**8.3**	**16.4**
LB3-0.5	0.5	10/11/17	mg/kg	ND<0.20	**20**	**41**	**61**
LB3-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.1**	**5.4**	**11.5**
LB3-5.0	5	10/11/17	mg/kg	ND<0.20	**10**	**9.1**	**19.1**
LB4-0.5	0.5	10/11/17	mg/kg	ND<0.20	**640**	**1,900**	**2,540**
LB4-2.5	2.5	10/11/17	mg/kg	ND<0.20	**22**	**52**	**74**
LB4-3.5	3.5	10/11/17	mg/kg	ND<0.20	**70**	**140**	**210**
LB5-0.5	0.5	10/11/17	mg/kg	ND<0.21	**470**	**1,500**	**1,970**
LB5-2.5	2.5	10/11/17	mg/kg	ND<0.18	**20**	**46**	**66**
LB5-5.0	5	10/11/17	mg/kg	ND<0.21	**19**	**15**	**34**
LB6-0.5	0.5	10/12/17	mg/kg	ND<0.20	**7.1**	**16**	**23.1**
LB6-2.5	2.5	10/12/17	mg/kg	ND<0.20	**6.8**	**5.1**	**11.9**
LB6-5.0	5	10/12/17	mg/kg	ND<0.20	**1.2**	**1.6**	**2.8**
LB7-0.5	0.5	10/12/17	mg/kg	ND<0.20	**270**	**630**	**900**
LB7-2.5	2.5	10/12/17	mg/kg	ND<0.20	**92**	**130**	**222**
LB7-5.0	5	10/12/17	mg/kg	ND<0.20	**10**	**11**	**21**
LB8-0.5	0.5	10/11/17	mg/kg	ND<0.20	**180**	**580**	**760**
LB8-2.5	2.5	10/11/17	mg/kg	ND<0.20	**4.8**	**5.0**	**9.8**
LB8-5.0	5	10/11/17	mg/kg	ND<0.20	**3.7**	**3.7**	**7.4**
LB9-0.5	0.5	10/11/17	mg/kg	ND<0.22	**690**	**2,500**	**3,190**
LB9-2.5	2.5	10/11/17	mg/kg	ND<0.19	**75**	**160**	**235**
LB9-5.0	5	10/11/17	mg/kg	ND<0.17	**8.9**	**5.7**	**14.6**
LB10-0.5	0.5	10/12/17	mg/kg	ND<0.20	**840**	**3,800**	**4,640**
LB10-2.5	2.5	10/12/17	mg/kg	ND<0.20	**5.2**	**7.3**	**12.5**
LB10-5.0	5	10/12/17	mg/kg	ND<0.20	**1.3**	**1.5**	**2.8**
LB11-0.5	0.5	10/12/17	mg/kg	ND<0.20	**310**	**730**	**1,040**
LB11-2.5	2.5	10/12/17	mg/kg	ND<0.20	**8.6**	**7.9**	**16.5**
LB11-5.0	5	10/12/17	mg/kg	ND<0.20	**12**	**9.3**	**21.3**
LB12-0.5	0.5	10/11/17	mg/kg	ND<0.20	**180**	**420**	**600**
LB12-2.5	2.5	10/11/17	mg/kg	ND<0.20	**5.7**	**5.7**	**11.4**

Table 2
Summary of Total Petroleum Hydrocarbon in Soil Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--
LB12-5.0	5	10/11/17	mg/kg	ND<0.20	**6.4**	**6.6**	**13**
LB13-0.5	0.5	10/11/17	mg/kg	ND<0.20	**350**	**1,200**	**1,550**
LB13-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.9**	**8.4**	**15.3**
LB13-5.0	5	10/11/17	mg/kg	ND<0.20	**6.7**	**6.7**	**13.4**
LB14-0.5	0.5	10/11/17	mg/kg	ND<0.20	**160**	**440**	**600**
LB14-2.5	2.5	10/11/17	mg/kg	ND<0.24	**9.2**	**15**	**24.2**
LB14-5.0	5	10/11/17	mg/kg	ND<0.20	**3.6**	**3.1**	**6.7**
LB15-0.5	0.5	10/12/17	mg/kg	ND<0.20	**20**	**35**	**55**
LB15-2.5	2.5	10/12/17	mg/kg	ND<0.20	**4.0**	**4.6**	**8.6**
LB15-5.0	5	10/12/17	mg/kg	ND<0.20	**2.9**	**2.5**	**5.4**
LB16-0.5	0.5	10/12/17	mg/kg	ND<0.20	**7.7**	**10**	**17.7**
LB16-2.5	2.5	10/12/17	mg/kg	ND<0.20	**390**	**1,100**	**1,490**
LB16-5.0	5	10/12/17	mg/kg	ND<0.20	**63**	**130**	**193**
LB17-0.5	0.5	10/11/17	mg/kg	ND<0.20	**1,400**	**3,400**	**4,800**
LB17-2.5	2.5	10/11/17	mg/kg	ND<0.20	**11**	**9.6**	**20.6**
LB17-5.0	5	10/11/17	mg/kg	ND<0.20	**6.7**	**6.2**	**12.9**
LB18-0.5	0.5	10/11/17	mg/kg	ND<0.20	**110**	**280**	**390**
LB18-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.1**	**5.9**	**12**
LB18-5.0	5	10/11/17	mg/kg	ND<0.20	**11**	**9.8**	**20.8**
LB19-0.5	0.5	10/11/17	mg/kg	ND<0.20	**8.8**	**7.9**	**16.7**
LB19-2.5	2.5	10/11/17	mg/kg	ND<0.20	**3.3**	**3.7**	**7.0**
LB19-5.0	5	10/11/17	mg/kg	ND<0.20	**3.9**	**4.0**	**7.9**
LB20-0.5	0.5	10/11/17	mg/kg	ND<0.20	**14**	**26**	**40**
LB20-2.5	2.5	10/11/17	mg/kg	ND<0.20	**3.2**	**3.7**	**6.9**
LB20-5.0	5	10/11/17	mg/kg	ND<0.20	**4.2**	**3.1**	**7.3**
LB21-0.5	0.5	10/12/17	mg/kg	ND<0.20	**9.1**	**9.9**	**19**
LB21-2.5	2.5	10/12/17	mg/kg	ND<0.20	**20**	**17**	**37**
LB21-5.0	5	10/12/17	mg/kg	ND<0.20	**7.2**	**8.5**	**15.7**
LB22-0.5	0.5	10/12/17	mg/kg	ND<0.20	**11**	**21**	**32**
LB22-2.5	2.5	10/12/17	mg/kg	ND<0.20	**8.6**	**10**	**18.6**
LB22-5.0	5	10/12/17	mg/kg	ND<0.20	**9.6**	**9.2**	**18.8**
LB23-0.5	0.5	10/11/17	mg/kg	ND<0.20	**14**	**12**	**26**
LB23-2.5	2.5	10/11/17	mg/kg	ND<0.20	**6.3**	**7.1**	**13.4**
LB23-5.0	5	10/11/17	mg/kg	ND<0.20	**8.7**	**7.6**	**16.3**
LB24-0.5	0.5	10/11/17	mg/kg	ND<0.20	**5.1**	**6.2**	**11.3**

Table 2
Summary of Total Petroleum Hydrocarbon in Soil Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--
LB24-2.5	2.5	10/11/17	mg/kg	ND<0.20	**5.6**	**5.6**	**11.2**
LB24-5.0	5	10/11/17	mg/kg	ND<0.20	**4.3**	**4.7**	**9.0**
LB25-0.5	0.5	10/11/17	mg/kg	ND<0.20	**2.6**	**2.2**	**4.8**
LB25-2.5	2.5	10/11/17	mg/kg	ND<0.20	**2.1**	**1.9**	**4.0**
LB25-5.0	5	10/11/17	mg/kg	ND<0.20	**2.4**	**2.6**	**5.0**
LB26-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**11**	**14**	**25**
LB26-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**12**	**12**	**24**
LB26-5.0	5	12-Oct-17	mg/kg	ND<0.20	**20**	**18**	**38**
LB27-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**41**	**80**	**121**
LB27-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**9.5**	**11**	**20.5**
LB27-5.0	5	12-Oct-17	mg/kg	ND<0.20	**8.1**	**8.4**	**16.5**
LB28-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**530**	**930**	**1,460**
LB28-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**480**	**1,000**	**1,480**
LB28-5.0	5	12-Oct-17	mg/kg	**400**	**11,000**	**5,600**	**16,600**
LB29-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**54**	**100**	**154**
LB29-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**8.8**	**8.8**	**17.6**
LB29-5.0	5	12-Oct-17	mg/kg	ND<0.20	**5.4**	**5.6**	**11**
LB30-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**32**	**36**	**68**
LB30-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**220**	**450**	**670**
LB30-5.0	5	12-Oct-17	mg/kg	ND<0.20	**9.2**	**13**	**22.2**
LB31-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**230**	**490**	**720**
LB31-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**5.7**	**6.0**	**11.7**
LB31-5.0	5	12-Oct-17	mg/kg	ND<0.20	**9.3**	**9.4**	**18.7**
LB32-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**170**	**360**	**530**
LB32-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**6.8**	**9.5**	**16.3**
LB32-5.0	5	12-Oct-17	mg/kg	ND<0.20	**13**	**12**	**25**
LB33-0.5	0.5	12-Oct-17	mg/kg	ND<0.20	**78**	**160**	**238**
LB33-2.5	2.5	12-Oct-17	mg/kg	ND<0.20	**2,500**	**6,800**	**9,300**
LB33-5.0	5	12-Oct-17	mg/kg	ND<0.20	**9.0**	**8.1**	**17.1**
LB34-0.5	0.5	13-Oct-17	mg/kg	ND<0.20	**1,100**	**4,000**	**5,100**
LB34-2.5	2.5	13-Oct-17	mg/kg	ND<0.20	**30**	**59**	**89**
LB34-5.0	5	13-Oct-17	mg/kg	ND<0.20	**5.0**	**7.1**	**12.1**
LB35-0.5	0.5	13-Oct-17	mg/kg	ND<0.20	**2,400**	**7,800**	**10,200**
LB35-2.5	2.5	13-Oct-17	mg/kg	ND<0.20	**1,800**	**7,400**	**9,200**
LB35-5.0	5	13-Oct-17	mg/kg	ND<0.20	**6,300**	**17,000**	**23,300**

Table 2
Summary of Total Petroleum Hydrocarbon in Soil Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	GRO	DRO	ORO	Total TPH
USEPA RSL Industrial Soil			mg/kg	420	440	33,000	--

Notes:
bgs = below ground surface
mg/kg = milligrams per kilogram
RSL = USEPA Regional Screening Level, industrial (November 2017). Most conservative value between aromatic/aliphatic
ND<0.20 = Not detected above the reporting detection limit.
GRO = Gasoline Range Petroleum Hydrocarbons
DRO = Diesel Range Petroleum Hydrocarbons
ORO = Oil Range Petroleum Hydrocarbons

Table 3
Summary of Volatile Organic Compound Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Carbon Disulfide	Tetrachloroethene
USEPA RSL Industrial Soil			ug/kg	3,500,000	100,000
LB2-0.5	0.5	10/11/17	ug/kg	**5.3**	ND<1.5
LB2-2.5	2.5	10/11/17	ug/kg	**7.4 H7**	ND<1.4 H7
LB4-0.5	0.5	10/11/17	ug/kg	ND<3.5	**27**
LB4-2.5	2.5	10/11/17	ug/kg	ND<3.3	ND<1.5
LB5-0.5	0.5	10/11/17	ug/kg	ND<3.2	ND<1.4
LB5-2.5	2.5	10/11/17	ug/kg	ND<3.7	ND<1.7
LB9-0.5	0.5	10/11/17	ug/kg	ND<3.3	ND<1.5
LB9-2.5	2.5	10/11/17	ug/kg	ND<3.7	ND<1.7
LB10-0.5	0.5	10/12/17	ug/kg	ND<3.4	ND<1.5
LB10-2.5	2.5	10/12/17	ug/kg	**13**	ND<1.4
LB11-0.5	0.5	10/12/17	ug/kg	ND<3.4	ND<1.5
LB11-2.5	2.5	10/12/17	ug/kg	ND<3.4	ND<1.5
LB13-0.5	0.5	10/11/17	ug/kg	ND<3.3	ND<1.5
LB13-2.5	2.5	10/11/17	ug/kg	ND<3.8	ND<1.7
LB16-2.5	2.5	10/12/17	ug/kg	ND<3.4	ND<1.5
LB16-5.0	5	10/12/17	ug/kg	ND<3.3	ND<1.5
LB17-0.5	0.5	10/11/17	ug/kg	**12**	ND<1.6
LB17-2.5	2.5	10/11/17	ug/kg	ND<3.9	ND<1.7
LB28-0.5	0.5	10/12/17	ug/kg	ND<3.7	ND<1.7
LB28-2.5	2.5	10/12/17	ug/kg	ND<3.5	ND<1.5
LB28-5.0	5	10/12/17	ug/kg	ND<3.9	ND<1.7
LB33-2.5	2.5	10/12/17	ug/kg	ND<3.3	ND<1.5
LB33-5.0	5	10/12/17	ug/kg	ND<3.7	ND<1.6
LB34-0.5	0.5	10/13/17	ug/kg	ND<3.9	ND<1.7
LB34-2.5	2.5	10/13/17	ug/kg	ND<4.8	ND<2.1
LB34-5.0	5	10/13/17	ug/kg	ND<4.3	ND<1.9
LB35-0.5	0.5	10/13/17	ug/kg	ND<4.5	ND<2.0
LB35-2.5	2.5	10/13/17	ug/kg	ND<4.5	ND<2.0
LB35-5.0	5	10/13/17	ug/kg	ND<3.9	ND<1.7

Notes:
bgs = below ground surface
ug/kg = micrograms per kilogram
ND<0.88 = Not detected above the laboratory reporting limit
RSL = USEPA Regional Screening Level, industrial (November 2017)

Table 4
Summary of Semivolatile Organic Compounds Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	2-Methylnaphthalene	Benzo(b)fluoranthene	Fluoranthene	Pyrene
USEPA RSL Industrial Soil			ug/kg	3,000,000	21,000	30,000,000	23,000,000
LB2-2.5	2.5	11-Oct-17	ug/kg	ND	**10**	**12**	**11**
LB28-5.0	5	12-Oct-17	ug/kg	**7800**	ND	ND	ND

Notes:
bgs = below ground surface
ug/kg = micrograms per kilogram
ND<0.88 = Not detected above the laboratory reporting limit
RSL = USEPA Regional Screening Level, industrial (June, 2017)

Table 5
Summary of Polychlorinated Biphenyls in Soil Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
USEPA RSL Industrial Soil			ug/kg	27,000	830	720	950	950	970	990	--	--
LB2-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB4-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	**79**	ND	ND
LB5-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB9-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB10-0.5	0.5	10/12/17	ug/kg	ND	ND	ND	ND	ND	ND	**19**	ND	ND
LB11-0.5	0.5	10/12/17	ug/kg	ND	ND	ND	ND	ND	**870**	ND	ND	ND
LB13-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	**21**	ND	ND
LB16-2.5	2.5	10/12/17	ug/kg	ND	ND	ND	ND	ND	**110**	ND	ND	ND
LB17-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	**32**	ND	ND
LB19-0.5	0.5	10/11/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB28-5.0	5	10/12/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB33-2.5	2.5	10/12/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB34-0.5	0.5	10/13/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB35-0.5	0.5	10/13/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB35-5.0	5	10/13/17	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
LB45-0.5	0.5	12/13/17	ug/kg	16	16	16	16	16	16	**68**	16	16
LB46-0.5	0.5	12/13/17	ug/kg	16	16	16	16	16	16	16	16	16
LB47-0.5	0.5	12/13/17	ug/kg	16	16	16	16	16	16	**180**	16	16

Notes:

bgs = below ground surface

ug/kg = micrograms per kilogram

ND = Not detected above the reporting limit.

RSL = USEPA Regional Screening Level, industrial (November 2017)

Table 6
Summary of Volatile Organic Compounds in Soil Gas Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	Benzene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	2-Chlorotoluene	4-Chlorotoluene	Dichlorodifluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
Region IX RSL industrial*				3.2	520	520	520	520	1.06	2200	2200	880	1760	--	--
HERO Note 3 industrial*				0.84	--	--	--	--	--	--	--	--	620	70	700
HERO Note 5 industrial*				--	--	--	--	--	--	--	--	--	--	--	--
LB1-4	10/17/17	4.0	ug/L	**0.024**	<0.008	<0.008	<0.008	<0.008	**0.167**	<0.008	<0.008	**0.027**	**0.024**	**30.6**	**3.56**
LB6-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**2.15**	**0.445**
LB13-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB23-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB23-4 REP	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB25-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB27-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.011**	<0.008
LB31-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB34-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB36-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.010**	<0.008	<0.008	<0.008
LB38-3'	12/18/17	3.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.011**	<0.008	<0.008	<0.008
LB39-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	**0.026**	<0.008	<0.008	**0.010**	**0.056**	**70.1**	**2.67**
LB40-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.009**	<0.008	**0.218**	**0.012**
LB42-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.110**	<0.008
LB42-4' REP	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.133**	<0.008
LB43-4'	12/18/17	4.0	ug/L	<0.008	**0.009**	**0.013**	**0.014**	**0.013**	<0.008	**0.009**	**0.010**	**0.011**	<0.008	<0.008	<0.008
LB49-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.100**	<0.008

Table 6
Summary of Volatile Organic Compounds in Soil Gas Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	Benzene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	2-Chlorotoluene	4-Chlorotoluene	Dichlorodifluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
Screening Criteria															
EPA Region IX RSL industrial*				3.2	520	--	--	--	1.06	--	--	880	1,760	--	--
DTSC HERO Note 3 industrial*				0.84	--	--	--	--	--	--	--	--	620	70	700
DTSC HERO Note 5 residential*									--					--	--
DTSC HERO Note 5 industrial*				--	--	--	--	--	--	--	--	--	--	--	--
EPA Region 9 RSL residential*									0.12					--	--
EPA Region 9 RSL industrial*				3.2					1.06			880	1760	--	--
Minimum Screening Level (SL)				0.8	520.0	520.0	520.0	520.0	1.1	2200.0	2200.0	880.0	620.0	70.0	700.0
Maximum Detected Conc.				0.024	0.009	0.013	0.014	0.013	0.167	0.009	0.01	0.027	0.056	70.1	3.56
Does Max Exceed SLs?				No	No	No	No	No	No	No	No	No	No	Yes	No

Surrogates:
Isopropylbenzene for 4-Isopropyltoluene
Bromobenzene for butylbenzenes
1,4-Dichlorobenzen for Dichlorotoulenes

*= Screening levels are adjusted using a 0.0005 attenuation factor for future commerical/industrial use are from Table 2 of the 2011 Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)
ug/L = micrograms per liter
bgs = below ground surface

Table 6
Summary of Volatile Organic Compounds in Soil Gas Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	Ethylbenzene	Isopropylbenzene	4-Isopropyltoluene	n-Propylbenzene	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,4-Trimethylbenzene
Region IX RSL industrial*				9.8	3600	3600	8800	8800	0.42	94	44000	1.54	6	--	520
HERO Note 3 industrial*				--	--	--	--	7800	--	4	2600	--	--	10800	--
HERO Note 5 industrial*				--	--	--	--	--	--	--	--	--	16	--	--
LB1-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**148**	**0.055**	<0.008	**23.2**	**0.016**	**0.008**
LB6-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB13-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.035**	<0.008	<0.008	**0.026**	<0.008	<0.008
LB23-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB23-4 REP	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB25-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.262**	<0.008	<0.008	**0.021**	<0.008	<0.008
LB27-4	10/17/17	4.0	ug/L	**0.030**	<0.008	<0.008	<0.008	<0.008	<0.008	**0.102**	**0.066**	<0.008	**0.029**	<0.008	**0.038**
LB31-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
LB34-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.274**	**0.038**	<0.008	**0.029**	<0.008	<0.008
LB36-4'	12/18/17	4.0	ug/L	**0.019**	**0.011**	**0.771**	**0.012**	**0.009**	**0.011**	**0.141**	**0.081**	**0.304**	<0.008	**3.59**	**0.234**
LB38-3'	12/18/17	3.0	ug/L	<0.008	<0.008	**0.106**	<0.008	<0.008	<0.008	<0.008	**0.016**	<0.008	<0.008	**3.71**	**0.036**
LB39-4'	12/18/17	4.0	ug/L	<0.008	<0.008	**0.023**	<0.008	<0.008	<0.008	**8.75**	**0.011**	**0.015**	**18.4**	<0.008	<0.008
LB40-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.243**	<0.008	**0.012**	**0.146**	**0.010**	<0.008
LB42-4'	12/18/17	4.0	ug/L	<0.008	<0.008	**0.206**	<0.008	<0.008	<0.008	**0.066**	**0.010**	<0.008	**0.014**	**0.052**	**0.066**
LB42-4' REP	12/18/17	4.0	ug/L	<0.008	<0.008	**0.206**	<0.008	<0.008	<0.008	**0.075**	**0.012**	<0.008	**0.030**	**0.054**	**0.070**
LB43-4'	12/18/17	4.0	ug/L	**0.012**	**0.012**	**0.026**	**0.014**	<0.008	<0.008	**0.011**	**0.021**	**0.118**	<0.008	**0.009**	**0.021**
LB49-4'	12/18/17	4.0	ug/L	<0.008	<0.008	**0.014**	<0.008	<0.008	<0.008	**0.090**	<0.008	<0.008	**0.064**	<0.008	<0.008

Table 6
Summary of Volatile Organic Compounds in Soil Gas Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	Ethylbenzene	Isopropylbenzene	4-Isopropyltoluene	n-Propylbenzene	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,4-Trimethylbenzene
Screening Criteria															
EPA Region IX RSL industrial*				9.8	3,600	--	8,800	8,800	0.42	94	44,000	1.54	6	--	520
DTSC HERO Note 3 industrial*				--	--	--	--	7,800	--	4.0	2,600	--	--	10,800	--
DTSC HERO Note 5 residential*										--	--		2.0	--	--
DTSC HERO Note 5 industrial*				--	--	--	--	--	--	--	--	--	16	--	--
EPA Region 9 RSL residential*										11	5,200		0.48	--	63
EPA Region 9 RSL industrial*				9.8						94	44,000		6.0	--	520
Minimum Screening Level (SL)				9.8	3600.0	3600.0	8800.0	7800.0	0.4	4.0	2600.0	1.5	2.0	10800.0	520.0
Maximum Detected Conc.				0.03	0.012	0.771	0.014	0.009	0.011	148	0.081	0.304	23.2	3.71	0.234
Does Max Exceed SLs?				No	No	No	No	No	No	Yes	No	No	Yes	No	No

Surrogates:
Isopropylbenzene for 4-Isopropyltoluene
Bromobenzene for butylbenzenes
1,4-Dichlorobenzen for Dichlorotoulenes

*= Screening levels are adjusted using a 0.0005
2011 Final Guidance for the Evaluation and M
ug/L = micrograms per liter
bgs = below ground surface

Table 6
Summary of Volatile Organic Compounds in Soil Gas Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	1,3,5-Trimethylbenzene	Vinyl Chloride	m,p-Xylene	o-Xylene
Region IX RSL industrial*				520	5.6	880	880
HERO Note 3 industrial*				--	0.32	--	--
HERO Note 5 industrial*				--	--	--	--
LB1-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB6-4	10/17/17	4.0	ug/L	<0.008	**3.20**	<0.008	<0.008
LB13-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB23-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB23-4 REP	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB25-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB27-4	10/17/17	4.0	ug/L	<0.008	<0.008	**0.136**	**0.038**
LB31-4	10/17/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB34-4	10/17/17	4.0	ug/L	<0.008	<0.008	**0.016**	<0.008
LB36-4'	12/18/17	4.0	ug/L	**0.010**	<0.008	**0.046**	**0.019**
LB38-3'	12/18/17	3.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB39-4'	12/18/17	4.0	ug/L	<0.008	**0.014**	<0.008	<0.008
LB40-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB42-4'	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB42-4' REP	12/18/17	4.0	ug/L	<0.008	<0.008	<0.008	<0.008
LB43-4'	12/18/17	4.0	ug/L	**0.013**	<0.008	**0.021**	**0.011**
LB49-4'	12/18/17	4.0	ug/L	<0.008	**0.021**	<0.008	<0.008

Table 6
Summary of Volatile Organic Compounds in Soil Gas Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Depth (feet bgs)	Units	1,3,5-Trimethylbenzene	Vinyl Chloride	m,p-Xylene	o-Xylene
Screening Criteria							
EPA Region IX RSL industrial*				520	5.6	880	880
DTSC HERO Note 3 industrial*				--	0.32	--	--
DTSC HERO Note 5 residential*						--	--
DTSC HERO Note 5 industrial*				--	--	--	--
EPA Region 9 RSL residential*						100	100
EPA Region 9 RSL industrial*					5.6	880	880
Minimum Screening Level (SL)				520.0	0.3	880.0	880.0
Maximum Detected Conc.				0.013	3.2	0.136	0.038
Does Max Exceed SLs?				No	Yes	No	No

Surrogates:
Isopropylbenzene for 4-Isopropyltoluene
Bromobenzene for butylbenzenes
1,4-Dichlorobenzen for Dichlorotoulenes

*= Screening levels are adjusted using a 0.0005
2011 Final Guidance for the Evaluation and M
ug/L = micrograms per liter
bgs = below ground surface

Table 7
Summary of Volatile Organic Compounds in Groundwater Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Units	1,1-Dichloroethene	1,2-Dichloroethane	Benzene	Bromodichloromethane	Bromoform	Carbon disulfide	cis-1,2-Dichloroethene	Dibromochloromethane	MTBE	Tetrachloroethene
California MCLs		ug/L	6.0	0.5	1.0	80	80	--	6.0	80	13.0	5.0
LB1-GW	10/11/17	ug/L	ND<14	ND<20	ND<10	ND<16	ND<7.0	ND<11	**3300**	ND<5.3	ND<4.6	**19,000**
LB6-GW	10/12/17	ug/L	ND<0.28	ND<0.39	**0.81**	ND<0.32	ND<0.14	ND<0.21	**78**	ND<0.11	**19**	ND<0.18
LB13-GW	10/11/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	0.61	ND<0.11	ND<0.09	**2**
LB23-GW	10/11/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	ND<0.39	ND<0.11	ND<0.09	**1.3**
LB25-GW	10/11/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	**1.5**	ND<0.11	ND<0.09	**6.2**
LB27-GW	10/12/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	ND<0.39	ND<0.11	ND<0.09	ND<0.18
LB31-GW	10/12/17	ug/L	ND<0.28	ND<0.39	ND<0.21	ND<0.32	ND<0.14	ND<0.21	ND<0.39	ND<0.11	ND<0.09	ND<0.18
LB34-GW	10/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
LB36-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**7.6**	ND<0.5	**1.3**	**2.6**
LB37-GW	12/13/17	ug/L	**7.2**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**2,400**	ND<0.5	ND<0.5	**440**
LB38-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	**0.70**	**4.2**	ND<0.5	**24**	**2.7**	ND<0.5	ND<0.5
LB39-GW	12/13/17	ug/L	**9.6**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**4,900**	ND<0.5	**1.2**	**380**
LB40-GW	12/13/17	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	**3.5**	**380**	<1.0	**2.0**	**12**
LB41-GW	12/13/17	ug/L	**13**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**8,500**	ND<0.5	ND<0.5	**40**
LB42-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**4.7**	ND<0.5
LB43-GW	12/13/17	ug/L	ND<0.5	**1.1**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**5.9**	ND<0.5	**15**	ND<0.5
LB44-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**17**	ND<0.5	**6.3**	ND<0.5
LB48-GW	12/13/17	ug/L	**2.8**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**1,100**	ND<0.5	ND<0.5	**7.6**
LB49-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**180**	ND<0.5	**6.8**	**0.52**
Min Screening Criteria			6.0	0.5	1.0	80.0	80.0	0.0	6.0	80.0	13.0	5.0
Max. Conc.			13	1.1	0.81	0.7	4.2	3.5	8500	2.7	19	19000
			Yes	Yes	No	No	No	Yes	Yes	No	Yes	Yes

Notes:
ug/L = micrograms per liter
ND<0.13 = Not detected above laboratory reporting limit

Table 7
Summary of Volatile Organic Compounds in Groundwater Analytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Units	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
California MCLs		ug/L	10.0	5.0	0.5
LB1-GW	10/11/17	ug/L	**210**	**7,900**	ND<13
LB6-GW	10/12/17	ug/L	**33**	ND<0.15	**43**
LB13-GW	10/11/17	ug/L	ND<0.15	**1.6**	ND<0.25
LB23-GW	10/11/17	ug/L	ND<0.15	**0.78**	ND<0.25
LB25-GW	10/11/17	ug/L	ND<0.15	**3.5**	ND<0.25
LB27-GW	10/12/17	ug/L	ND<0.15	ND<0.15	ND<0.25
LB31-GW	10/12/17	ug/L	ND<0.15	ND<0.15	ND<0.25
LB34-GW	10/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5
LB36-GW	12/13/17	ug/L	**0.50**	**3.8**	**0.73**
LB37-GW	12/13/17	ug/L	**230**	**870**	**4.0**
LB38-GW	12/13/17	ug/L	**0.78**	ND<0.5	**2.7**
LB39-GW	12/13/17	ug/L	**220**	**890**	**7.7**
LB40-GW	12/13/17	ug/L	**19**	**21**	**11**
LB41-GW	12/13/17	ug/L	**290**	**110**	**57**
LB42-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5
LB43-GW	12/13/17	ug/L	ND<0.5	ND<0.5	**2.4**
LB44-GW	12/13/17	ug/L	ND<0.5	ND<0.5	ND<0.5
LB48-GW	12/13/17	ug/L	**38**	**10**	**8.3**
LB49-GW	12/13/17	ug/L	**35**	**1.8**	**57**
Min Screening Criteria			10.0	5.0	0.5
Max. Conc.			290	7900	57
			Yes	Yes	Yes

Notes:
ug/L = micrograms per liter
ND<0.13 = Not detected above laboratory reporting limi

Table 8
Summary of Semivolatile Organic Compounds in Groundwater Aalytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Units	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene
California MCLs		ug/L	--	--	--	--	--	0.2	--	--	--	--	--
LB1-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB6-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB13-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB23-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB25-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB27-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB31-GW	10/13/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB34-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.06	ND<0.02	ND<0.02	ND<0.02	ND<0.02

Notes:
ug/L = micrograms per liter
MCLs = Maximum Contaminant Level (Sept. 2016)
ND<0.13 = Not detected above laboratory reporting limit
-- = not applicable

Table 8
Summary of Semivolatile Organic Compounds in Groundwater Aalytical Results
Berth 191 - 193
Port of Los Angeles
Wilmington, California

Sample ID	Date	Units	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
California MCLs		ug/L	--	--	--	--	--	--
LB1-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB6-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB13-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB23-GW	10/11/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB25-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB27-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB31-GW	10/13/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
LB34-GW	10/12/17	ug/L	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02

Notes:
ug/L = micrograms per liter
MCLs = Maximum Contaminant Level (Sept. 2016)
ND<0.13 = Not detected above laboratory reporting limit
-- = not applicable

Table 9
Exposure Parameters for Onsite Receptors
Berths 191 - 193
Port of Los Angeles, California
Wilmington, California

Exposure/Site Specific Parameters	Units	Exposure Parameters		
		Indoor Worker	Maintenance Worker	Source
Chemical Concentration in Air (CA)		--	--	chemical-specific
Exposure Frequency (EF)	days/year	250	250	DTSC 2004
Exposure Duration (ED)	years	25	25	DTSC 2004
Exposure Time (ET)	hr/day	8	8	Default
Averaging Time for Noncarcinogens (AT_n)	hours	219,000	219,000	USEPA 2009
Averaging Time for Carcinogens (AT_c)	hours	613,200	613,200	USEPA 2009

Table 10
Toxicity Criteria of Chemicals of Potential Concern
Berths 191 - 193
Port of Los Angeles
Wilmington, California

Chemical	Chronic Inhalation Reference Concentration (RfC) (mg/m^3)		Inhalation Unit Risk ($(ug/m^3)^{-1}$)	
VOCs				
1,1-Dichloroethylene	7.0E-02	c	0.0E+00	c
1,2-Dichloroethane	7.0E-03	c	2.6E-05	c
1,2-Dichloroethylene (cis)	8.0E-03	c	0.0E+00	c
1,2-Dichloroethylene (trans)	8.0E-02	c	0.0E+00	c
MTBE	3.0E+00	c	2.6E-07	c
Tetrachloroethylene	4.0E-02	c	6.1E-06	c
Trichloroethylene	2.0E-03	c	4.1E-06	c
Vinyl chloride	1.0E-01	c	7.8E-05	c

Notes:
mg/m^3 = Milligrams per cubic meter
NA = Not applicable or not available
ug/m^3 = Micrograms per cubic meter
Sources:
c = Human Health Risk Assessment (HHRA) Note Number: 3. DTSC-modified Screening Levels (DTSC-SLs), January 2018. Or the Cal-EPA (2018) OEHHA, Toxicity Criteria Database www.oehha.ca.gov/risk/chemicalDB/index.asp

e = USEPA, 2017: Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. November. www.epa.gov/region09/superfund/prg

Table 11
Estimated Incremental Cancer Risks and Hazard Quotients per Unit Concentration
VOCs Detected in Soil Gas
Berths 191 - 193
Port of Los Angeles
Wilmington, California

Chemical of Potential Concern (COPC)	CAS Number	Exposure to Indoor Air			
		Soil-Gas Concentration (µg/L)	Indoor Chemical Air Concentration (ug/m^3)	Cancer Risk per Unit Concentration Factor (Risk / ug/L)	Hazard Quotient per Unit Concentration Factor (HI / ug/L)
1,1-Dichloroethylene	75354	1	6.08E-01	NA	2.0E-03
1,2-Dichloroethane	107062	1	6.06E-01	1.3E-06	2.0E-02
1,2-Dichloroethylene (cis)	156592	1	6.16E-01	NA	1.8E-02
1,2-Dichloroethylene (trans)	156605	1	6.13E-01	NA	1.7E-03
MTBE	1634044	1	5.66E-01	1.2E-08	4.3E-05
Tetrachloroethylene	127184	1	4.48E-01	2.2E-07	2.6E-03
Trichloroethylene	79016	1	5.39E-01	1.8E-07	6.1E-02
Vinyl chloride	75014	1	6.74E-01	4.3E-06	1.5E-03

Notes:
µg/L = micrograms per liter
NA = Not applicable or not available

Table 12
Estimated Incremental Cancer Risks and Hazard Quotients per Unit Concentration
VOCs Detected in Groundwater
Berths 191 - 193
Port of Los Angeles
Wilmington, California

Chemical of Potential Concern (COPC)	CAS Number	Exposure to Indoor Air			
		Soil-Gas Concentration (µg/L)	Indoor Chemical Air Concentration (ug/m^3)	Cancer Risk per Unit Concentration Factor (Risk / ug/L)	Hazard Quotient per Unit Concentration Factor (HI / ug/L)
1,1-Dichloroethylene	75354	1	2.15E-01	NA	7.0E-04
1,2-Dichloroethane	107062	1	9.73E-03	2.1E-08	3.2E-04
1,2-Dichloroethylene (cis)	156592	1	3.42E-02	NA	9.8E-04
1,2-Dichloroethylene (trans)	156605	1	3.41E-02	NA	9.7E-05
MTBE	1634044	1	4.46E-03	9.4E-11	3.4E-07
Tetrachloroethylene	127184	1	9.22E-02	4.6E-08	5.3E-04
Trichloroethylene	79016	1	6.70E-02	2.2E-08	7.6E-03
Vinyl chloride	75014	1	2.73E-01	1.7E-06	6.2E-04

Notes:
µg/L = micrograms per liter
NA = Not applicable or not available

Table 13
Estimated Cancer Risk per Sampling Location
For VOCs Detected in Soil Gas
Berths 191 - 193
Port of Los Angeles
Wilmington, California

Sample Location	Volatile Organic Compounds (ug/L)								Total Cancer Risk per Sample Location
	1,1-Dichloroethylene	1,2-Dichloroethane	1,2-Dichloroethylene (cis)	1,2-Dichloroethylene (trans)	MTBE	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride	
Cancer Risk per Unit Concentration Factor (risk/ug/L)	NA	1.3E-06	NA	NA	1.2E-08	2.2E-07	1.8E-07	4.3E-06	
LB1-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.3E-05	4.2E-06	0.0E+00	4.E-05
LB6-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.4E-05	1.E-05
LB13-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	7.8E-09	4.7E-09	0.0E+00	1.E-08
LB23-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.E+00
LB25-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	5.8E-08	3.8E-09	0.0E+00	6.E-08
LB27-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.3E-08	5.2E-09	0.0E+00	3.E-08
LB31-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.E+00
LB34-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	6.1E-08	5.2E-09	0.0E+00	7.E-08
LB36-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.1E-08	0.0E+00	0.0E+00	3.E-08
LB38-3'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.E+00
LB39-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.9E-06	3.3E-06	6.0E-08	5.E-06
LB40-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	5.4E-08	2.6E-08	0.0E+00	8.E-08
LB42-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.7E-08	5.4E-09	0.0E+00	2.E-08
LB43-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.4E-09	0.0E+00	0.0E+00	2.E-09
LB49-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E-08	1.2E-08	9.0E-08	1.E-07

Notes:
Highlighted sampling locations exceed acceptable risk values.

Table 14
Estimated Cancer Risk per Sampling Location
For VOCs Detected in Groundwater
Port of Los Angeles
Wilmington, California

Sample Location	Volatile Organic Compounds (ug/L)								Total Cancer Risk per Sample Location
	1,1-Dichloroethylene	1,2-Dichloroethane	1,2-Dichloroethylene (cis)	1,2-Dichloroethylene (trans)	MTBE	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride	
Cancer Risk per Unit Concentration Factor (risk/ug/L)	NA	2.1E-08	NA	NA	9.4E-11	4.6E-08	2.2E-08	1.7E-06	
LB1-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	8.7E-04	1.8E-04	0.0E+00	1.E-03
LB6-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.8E-09	0.0E+00	0.0E+00	7.5E-05	7.E-05
LB13-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	9.2E-08	3.6E-08	0.0E+00	1.E-07
LB23-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	6.0E-08	1.7E-08	0.0E+00	8.E-08
LB25-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.8E-07	7.8E-08	0.0E+00	4.E-07
LB36-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.2E-10	1.2E-07	8.5E-08	1.3E-06	1.E-06
LB37-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E-05	1.9E-05	6.9E-06	5.E-05
LB38-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	4.7E-06	5.E-06
LB39-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.1E-10	1.7E-05	2.0E-05	1.3E-05	5.E-05
LB40-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.9E-10	5.5E-07	4.7E-07	1.9E-05	2.E-05
LB41-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.8E-06	2.5E-06	9.9E-05	1.E-04
LB42-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	4.4E-10	0.0E+00	0.0E+00	0.0E+00	4.E-10
LB43-GW	0.0E+00	2.3E-08	0.0E+00	0.0E+00	1.4E-09	0.0E+00	0.0E+00	4.2E-06	4.E-06
LB44-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	6.0E-10	0.0E+00	0.0E+00	0.0E+00	6.E-10
LB48-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.5E-07	2.2E-07	1.4E-05	1.E-05
LB49-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	6.4E-10	2.4E-08	4.0E-08	9.9E-05	1.E-04

Notes:
Highlighted sampling locations exceed acceptable risk values.

Table 15
Estimated Hazard Quotient per Sampling Location
For VOCs Detected in Soil Gas
Port of Los Angeles
Wilmington, California

Sample Location	Volatile Organic Compounds (ug/L)								Total Hazard Quotient per Sample Location
	1,1-Dichloroethylene	1,2-Dichloroethane	1,2-Dichloroethylene (cis)	1,2-Dichloroethylene (trans)	MTBE	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride	
Hazard Quotient per Unit Concentration Factor (risk/ug/L)	2.0E-03	2.0E-02	1.8E-02	1.7E-03	4.3E-05	2.6E-03	6.1E-02	1.5E-03	
LB1-4	4.8E-05	0.0E+00	5.4E-01	6.2E-03	0.0E+00	3.8E-01	1.4E+00	0.0E+00	2.E+00
LB6-4	0.0E+00	0.0E+00	3.8E-02	7.8E-04	0.0E+00	0.0E+00	0.0E+00	4.9E-03	4.E-02
LB13-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	8.9E-05	1.6E-03	0.0E+00	2.E-03
LB23-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.E+00
LB25-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	6.7E-04	1.3E-03	0.0E+00	2.E-03
LB27-4	0.0E+00	0.0E+00	1.9E-04	0.0E+00	0.0E+00	2.6E-04	1.8E-03	0.0E+00	2.E-03
LB31-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.E+00
LB34-4	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	7.0E-04	1.8E-03	0.0E+00	2.E-03
LB36-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.6E-04	0.0E+00	0.0E+00	4.E-04
LB38-3'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.E+00
LB39-4'	1.1E-04	0.0E+00	1.2E+00	4.7E-03	0.0E+00	2.2E-02	1.1E+00	2.2E-05	2.E+00
LB40-4'	0.0E+00	0.0E+00	3.8E-03	2.1E-05	0.0E+00	6.2E-04	9.0E-03	0.0E+00	1.E-02
LB42-4'	0.0E+00	0.0E+00	2.3E-03	0.0E+00	0.0E+00	1.9E-04	1.8E-03	0.0E+00	4.E-03
LB43-4'	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.8E-05	0.0E+00	0.0E+00	3.E-05
LB49-4'	0.0E+00	0.0E+00	1.8E-03	0.0E+00	0.0E+00	2.3E-04	3.9E-03	3.2E-05	6.E-03

Notes:
Highlighted sampling locations exceed acceptable hazard values.

Table 16
Estimated Hazard Quotient per Sampling Location
For VOCs Detected in Groundwater
Port of Los Angeles
Wilmington, California

Sample Location	Volatile Organic Compounds (ug/L)								Total Hazard Quotient per Sample Location
	1,1-Dichloroethylene	1,2-Dichloroethane	1,2-Dichloroethylene (cis)	1,2-Dichloroethylene (trans)	MTBE	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride	
Hazard Quotient per Unit	7.0E-04	3.2E-04	9.8E-04	9.7E-05	3.4E-07	5.3E-04	7.6E-03	6.2E-04	
LB1-GW	0.0E+00	0.0E+00	3.2E+00	2.0E-02	0.0E+00	1.0E+01	6.0E+01	0.0E+00	7.E+01
LB6-GW	0.0E+00	0.0E+00	7.6E-02	3.2E-03	6.4E-06	0.0E+00	0.0E+00	2.7E-02	1.E-01
LB13-GW	0.0E+00	0.0E+00	6.0E-04	0.0E+00	0.0E+00	1.1E-03	1.2E-02	0.0E+00	1.E-02
LB23-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	6.8E-04	6.0E-03	0.0E+00	7.E-03
LB25-GW	0.0E+00	0.0E+00	1.5E-03	0.0E+00	0.0E+00	3.3E-03	2.7E-02	0.0E+00	3.E-02
LB36-GW	0.0E+00	0.0E+00	7.4E-03	4.9E-05	4.4E-07	1.4E-03	2.9E-02	4.5E-04	4.E-02
LB37-GW	5.1E-03	0.0E+00	2.3E+00	2.2E-02	0.0E+00	2.3E-01	6.7E+00	2.5E-03	9.E+00
LB38-GW	0.0E+00	0.0E+00	2.3E-02	7.6E-05	0.0E+00	0.0E+00	0.0E+00	1.7E-03	3.E-02
LB39-GW	6.7E-03	0.0E+00	4.8E+00	2.1E-02	4.1E-07	2.0E-01	6.8E+00	4.8E-03	1.E+01
LB40-GW	0.0E+00	0.0E+00	3.7E-01	1.8E-03	6.8E-07	6.3E-03	1.6E-01	6.9E-03	5.E-01
LB41-GW	9.1E-03	0.0E+00	8.3E+00	2.8E-02	0.0E+00	2.1E-02	8.4E-01	3.6E-02	9.E+00
LB42-GW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.6E-06	0.0E+00	0.0E+00	0.0E+00	2.E-06
LB43-GW	0.0E+00	3.5E-04	5.8E-03	0.0E+00	5.1E-06	0.0E+00	0.0E+00	1.5E-03	8.E-03
LB44-GW	0.0E+00	0.0E+00	1.7E-02	0.0E+00	2.1E-06	0.0E+00	0.0E+00	0.0E+00	2.E-02
LB48-GW	2.0E-03	0.0E+00	1.1E+00	3.7E-03	0.0E+00	4.0E-03	7.6E-02	5.2E-03	1.E+00
LB49-GW	0.0E+00	0.0E+00	1.8E-01	3.4E-03	2.3E-06	2.7E-04	1.4E-02	3.6E-02	2.E-01

Notes:
Highlighted sampling locations exceed acceptable hazard values.

Table 17
Virtual Remediation of Diesel Range Organics in Soil
Berth 191-193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	DRO
USEPA RSL Industrial Soil			mg/kg	440
LB1-0.5	0.5	10/11/17	mg/kg	**200**
LB1-2.5	2.5	10/11/17	mg/kg	**8.4**
LB1-5.0	5	10/11/17	mg/kg	**5.0**
LB2-0.5	0.5	10/11/17	mg/kg	**720**
LB2-2.5	2.5	10/11/17	mg/kg	**8.7**
LB2-5.0	5	10/11/17	mg/kg	**8.1**
LB3-0.5	0.5	10/11/17	mg/kg	**20**
LB3-2.5	2.5	10/11/17	mg/kg	**6.1**
LB3-5.0	5	10/11/17	mg/kg	**10**
LB4-0.5	0.5	10/11/17	mg/kg	**640**
LB4-2.5	2.5	10/11/17	mg/kg	**22**
LB4-3.5	3.5	10/11/17	mg/kg	**70**
LB5-0.5	0.5	10/11/17	mg/kg	**470**
LB5-2.5	2.5	10/11/17	mg/kg	**20**
LB5-5.0	5	10/11/17	mg/kg	**19**
LB6-0.5	0.5	10/12/17	mg/kg	**7.1**
LB6-2.5	2.5	10/12/17	mg/kg	**6.8**
LB6-5.0	5	10/12/17	mg/kg	**1.2**
LB7-0.5	0.5	10/12/17	mg/kg	**270**
LB7-2.5	2.5	10/12/17	mg/kg	**92**
LB7-5.0	5	10/12/17	mg/kg	**10**
LB8-0.5	0.5	10/11/17	mg/kg	**180**
LB8-2.5	2.5	10/11/17	mg/kg	**4.8**
LB8-5.0	5	10/11/17	mg/kg	**3.7**
LB9-0.5	0.5	10/11/17	mg/kg	**690**
LB9-2.5	2.5	10/11/17	mg/kg	**75**
LB9-5.0	5	10/11/17	mg/kg	**8.9**
LB10-0.5	0.5	10/12/17	mg/kg	**840**
LB10-2.5	2.5	10/12/17	mg/kg	**5.2**
LB10-5.0	5	10/12/17	mg/kg	**1.3**
LB11-0.5	0.5	10/12/17	mg/kg	**310**
LB11-2.5	2.5	10/12/17	mg/kg	**8.6**
LB11-5.0	5	10/12/17	mg/kg	**12**
LB12-0.5	0.5	10/11/17	mg/kg	**180**
LB12-2.5	2.5	10/11/17	mg/kg	**5.7**
LB12-5.0	5	10/11/17	mg/kg	**6.4**
LB13-0.5	0.5	10/11/17	mg/kg	**350**
LB13-2.5	2.5	10/11/17	mg/kg	**6.9**
LB13-5.0	5	10/11/17	mg/kg	**6.7**
LB14-0.5	0.5	10/11/17	mg/kg	**160**
LB14-2.5	2.5	10/11/17	mg/kg	**9.2**
LB14-5.0	5	10/11/17	mg/kg	**3.6**
LB15-0.5	0.5	10/12/17	mg/kg	**20**
LB15-2.5	2.5	10/12/17	mg/kg	**4**
LB15-5.0	5	10/12/17	mg/kg	**2.9**
LB16-0.5	0.5	10/12/17	mg/kg	**7.7**
LB16-2.5	2.5	10/12/17	mg/kg	**390**

Table 17
Virtual Remediation of Diesel Range Organics in Soil
Berth 191-193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	DRO
USEPA RSL Industrial Soil			mg/kg	440
LB16-5.0	5	10/12/17	mg/kg	**63**
LB17-0.5	0.5	10/11/17	mg/kg	**1,400**
LB17-2.5	2.5	10/11/17	mg/kg	**11**
LB17-5.0	5	10/11/17	mg/kg	**6.7**
LB18-0.5	0.5	10/11/17	mg/kg	**110**
LB18-2.5	2.5	10/11/17	mg/kg	**6.1**
LB18-5.0	5	10/11/17	mg/kg	**11**
LB19-0.5	0.5	10/11/17	mg/kg	**8.8**
LB19-2.5	2.5	10/11/17	mg/kg	**3.3**
LB19-5.0	5	10/11/17	mg/kg	**3.9**
LB20-0.5	0.5	10/11/17	mg/kg	**14**
LB20-2.5	2.5	10/11/17	mg/kg	**3.2**
LB20-5.0	5	10/11/17	mg/kg	**4.2**
LB21-0.5	0.5	10/12/17	mg/kg	**9.1**
LB21-2.5	2.5	10/12/17	mg/kg	**20**
LB21-5.0	5	10/12/17	mg/kg	**7.2**
LB22-0.5	0.5	10/12/17	mg/kg	**11**
LB22-2.5	2.5	10/12/17	mg/kg	**8.6**
LB22-5.0	5	10/12/17	mg/kg	**9.6**
LB23-0.5	0.5	10/11/17	mg/kg	**14**
LB23-2.5	2.5	10/11/17	mg/kg	**6.3**
LB23-5.0	5	10/11/17	mg/kg	**8.7**
LB24-0.5	0.5	10/11/17	mg/kg	**5.1**
LB24-2.5	2.5	10/11/17	mg/kg	**5.6**
LB24-5.0	5	10/11/17	mg/kg	**4.3**
LB25-0.5	0.5	10/11/17	mg/kg	**2.6**
LB25-2.5	2.5	10/11/17	mg/kg	**2.1**
LB25-5.0	5	10/11/17	mg/kg	**2.4**
LB26-0.5	0.5	12-Oct-17	mg/kg	**11**
LB26-2.5	2.5	12-Oct-17	mg/kg	**12**
LB26-5.0	5	12-Oct-17	mg/kg	**20**
LB27-0.5	0.5	12-Oct-17	mg/kg	**41**
LB27-2.5	2.5	12-Oct-17	mg/kg	**9.5**
LB27-5.0	5	12-Oct-17	mg/kg	**8.1**
LB28-0.5	0.5	12-Oct-17	mg/kg	**530**
LB28-2.5	2.5	12-Oct-17	mg/kg	**480**
LB29-0.5	0.5	12-Oct-17	mg/kg	**54**
LB29-2.5	2.5	12-Oct-17	mg/kg	**8.8**
LB29-5.0	5	12-Oct-17	mg/kg	**5.4**
LB30-0.5	0.5	12-Oct-17	mg/kg	**32**
LB30-2.5	2.5	12-Oct-17	mg/kg	**220**
LB30-5.0	5	12-Oct-17	mg/kg	**9.2**
LB31-0.5	0.5	12-Oct-17	mg/kg	**230**
LB31-2.5	2.5	12-Oct-17	mg/kg	**5.7**
LB31-5.0	5	12-Oct-17	mg/kg	**9.3**
LB32-0.5	0.5	12-Oct-17	mg/kg	**170**
LB32-2.5	2.5	12-Oct-17	mg/kg	**6.8**

Table 17
Virtual Remediation of Diesel Range Organics in Soil
Berth 191-193
Port of Los Angeles
Wilmington, California

Sample ID	Depth (feet bgs)	Date	Units	DRO
USEPA RSL Industrial Soil			mg/kg	440
LB32-5.0	5	12-Oct-17	mg/kg	**13**
LB33-0.5	0.5	12-Oct-17	mg/kg	**78**
LB33-2.5	2.5	12-Oct-17	mg/kg	**2,500**
LB33-5.0	5	12-Oct-17	mg/kg	**9**
LB34-0.5	0.5	13-Oct-17	mg/kg	**1,100**
LB34-2.5	2.5	13-Oct-17	mg/kg	**30**
LB34-5.0	5	13-Oct-17	mg/kg	**5**
LB35-0.5	0.5	13-Oct-17	mg/kg	**2,400**
LB35-2.5	2.5	13-Oct-17	mg/kg	**1,800**
95UCL			mg/kg	**353.50**

Notes:
bgs = below ground surface
mg/kg = milligrams per kilogram
RSL = USEPA Regional Screening Level, industrial (November 2017). Most conservative value between aromatic/aliphatic
ND<0.20 = Not detected above the reporting detection limit.
GRO = Gasoline Range Petroleum Hydrocarbons
DRO = Diesel Range Petroleum Hydrocarbons
ORO = Oil Range Petroleum Hydrocarbons

FIGURES

LEGEND

- Approximate Boring Location
- Approximate Site Boundary

Red highlighted borings in areas with diesel impacted soil at 5 feet below ground surface (bgs)

Orange highlighted borings have known or potential vapor intrusion risk



Project: 11618.005	Engr./Geol. BFM
Scale: Approx. 1" = 100'	Date: February 2018

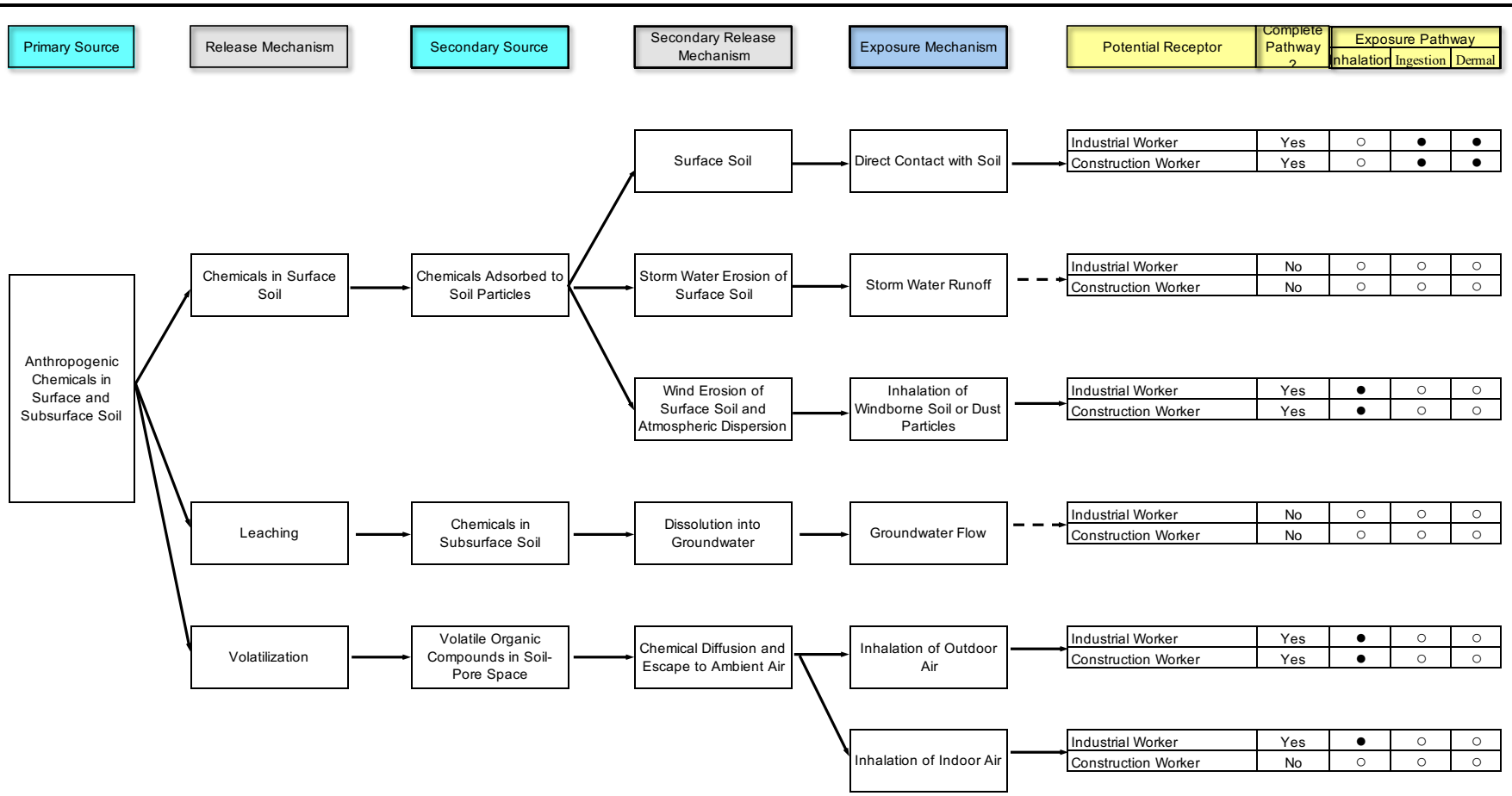
Base Map: Google Earth 2016
drafted by Mark Withrow

SITE PLAN

Berth 191-193
Wilmington, California

Figure 1

Leighton



ENVIRO-TOX services, inc.

Figure 2

Conceptual Site Model

Project:	Berth 191-193
Date:	March 2018

APPENDIX A

Johnson and Ettinger Model Spreadsheets

USEPA SG-SCREEN
Version 2.0, 04/2003

DTSC Modification
December 2014

Department of Toxic Substances Control
Vapor Intrusion Screening Model - Soil Gas

DATA ENTRY SHEET

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Soil Gas

Reset to Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
75354	1.00E+03			1,1-Dichloroethylene
107062	1.00E+03			1,2-Dichloroethane
156592	1.00E+03			cis-1,2-Dichloroethylene
156605	1.00E+03			trans-1,2-Dichloroethylene
1634044	1.00E+03			MTBE (methyl-tert-butyl ether)
127184	1.00E+03			Tetrachloroethylene
79016	1.00E+03			Trichloroethylene
75014	1.00E+03			Vinyl chloride (chloroethene)

Results Summary

Soil Gas Conc. ($\mu g/m^3$)	Attenuation Factor (unitless)	Indoor Air Conc. ($\mu g/m^3$)	Cancer Risk (unitless)	Noncancer Hazard (unitless)
1.00E+03	6.1E-04	6.1E-01	NA	2.0E-03
1.00E+03	6.1E-04	6.1E-01	1.3E-06	2.0E-02
1.00E+03	6.2E-04	6.2E-01	NA	1.8E-02
1.00E+03	6.1E-04	6.1E-01	NA	1.7E-03
1.00E+03	5.7E-04	5.7E-01	1.2E-08	4.3E-05
1.00E+03	4.5E-04	4.5E-01	2.2E-07	2.6E-03
1.00E+03	5.4E-04	5.4E-01	1.8E-07	6.1E-02
1.00E+03	6.7E-04	6.7E-01	4.3E-06	1.5E-03

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (^oC)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	121.92	24	SL		

4

MORE ↓

Lookup Soil Parameters

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SL	1.62	0.387	0.103	5

MORE ↓

Lookup Receptor Parameters

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$	ENTER Ceiliing Height CH (cm)

EW=>	Commercial	70	25	25	250	8	1	243.84
						(NEW)	(NEW)	(= **8.0** feet)
	END							

CAS	Chemical	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Unit risk factor, URF ($\mu g/m^3)^{-1}$
75354	1,1-Dichloroethylene	8.63E-02	1.10E-05	2.61E-02	25	6,247	304.80	576.10	0.0E+00
107062	1,2-Dichloroethane	8.57E-02	1.10E-05	1.18E-03	25	7,643	356.70	561.00	2.6E-05
156592	cis-1,2-Dichloroethylene	8.84E-02	1.13E-05	4.08E-03	25	7,192	333.70	544.00	0.0E+00
156605	trans-1,2-Dichloroethylene	8.76E-02	1.12E-05	4.08E-03	25	6,717	320.90	516.50	0.0E+00
1634044	MTBE (methyl-tert-butyl ether)	7.53E-02	8.59E-06	5.87E-04	25	6,678	328.30	497.10	2.6E-07
127184	Tetrachloroethylene	5.05E-02	9.46E-06	1.77E-02	25	8,288	394.40	620.20	6.1E-06
79016	Trichloroethylene	6.87E-02	1.02E-05	9.85E-03	25	7,505	360.40	544.20	4.1E-06
75014	Vinyl chloride (chloroethene)	1.07E-01	1.20E-05	2.78E-02	25	5,250	259.30	432.00	7.8E-05

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Soil Gas

CAS	Chemical	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)	Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)
75354	1,1-Dichloroethylene	7.0E-02	96.90	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
107062	1,2-Dichloroethane	7.0E-03	99.00	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
156592	cis-1,2-Dichloroethylene	8.0E-03	96.90	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
156605	trans-1,2-Dichloroethylene	8.0E-02	96.90	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
1634044	MTBE (methyl-tert-butyl ether)	3.0E+00	88.20	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
127184	Tetrachloroethylene	4.0E-02	166.00	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
79016	Trichloroethylene	2.0E-03	131.00	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09
75014	Vinyl chloride (chloroethene)	1.0E-01	62.50	106.92	0.284	0.184	6.07E-09	0.901	5.47E-09

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Soil Gas

CAS	Chemical	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)
75354	1,1-Dichloroethylene	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	6,299	2.52E-02
107062	1,2-Dichloroethane	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	8,368	1.13E-03
156592	cis-1,2-Dichloroethylene	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	7,592	3.91E-03
156605	trans-1,2-Dichloroethylene	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	6,987	3.92E-03
1634044	MTBE (methyl-tert-butyl ether)	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	7,113	5.64E-04
127184	Tetrachloroethylene	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	9,410	1.68E-02
79016	Trichloroethylene	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	8,383	9.39E-03
75014	Vinyl chloride (chloroethene)	4,000	1.00E+03	6.77E+04	1.00E+06	5.00E-03	15	4,841	2.70E-02

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Soil Gas

CAS	Chemical	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_{V} (cm^2/s)	Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)
75354	1,1-Dichloroethylene	1.03E+00	1.80E-04	8.71E-03	106.92	15	1.00E+03	1.25	8.33E+01	8.71E-03
107062	1,2-Dichloroethane	4.61E-02	1.80E-04	8.65E-03	106.92	15	1.00E+03	1.25	8.33E+01	8.65E-03
156592	cis-1,2-Dichloroethylene	1.60E-01	1.80E-04	8.92E-03	106.92	15	1.00E+03	1.25	8.33E+01	8.92E-03
156605	trans-1,2-Dichloroethylene	1.61E-01	1.80E-04	8.84E-03	106.92	15	1.00E+03	1.25	8.33E+01	8.84E-03
1634044	MTBE (methyl-tert-butyl ether)	2.31E-02	1.80E-04	7.60E-03	106.92	15	1.00E+03	1.25	8.33E+01	7.60E-03
127184	Tetrachloroethylene	6.88E-01	1.80E-04	5.10E-03	106.92	15	1.00E+03	1.25	8.33E+01	5.10E-03
79016	Trichloroethylene	3.85E-01	1.80E-04	6.94E-03	106.92	15	1.00E+03	1.25	8.33E+01	6.94E-03
75014	Vinyl chloride (chloroethene)	1.11E+00	1.80E-04	1.08E-02	106.92	15	1.00E+03	1.25	8.33E+01	1.08E-02

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Soil Gas

CAS	Chemical	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
75354	1,1-Dichloroethylene	5.00E+03	2.03E+08	**6.08E-04**	6.08E-01	NA	7.0E-02	**NA**	**2.0E-03**
107062	1,2-Dichloroethane	5.00E+03	2.32E+08	**6.06E-04**	6.06E-01	2.6E-05	7.0E-03	**1.3E-06**	**2.0E-02**
156592	cis-1,2-Dichloroethylene	5.00E+03	1.29E+08	**6.16E-04**	6.16E-01	NA	8.0E-03	**NA**	**1.8E-02**
156605	trans-1,2-Dichloroethylene	5.00E+03	1.53E+08	**6.13E-04**	6.13E-01	NA	8.0E-02	**NA**	**1.7E-03**
1634044	MTBE (methyl-tert-butyl ether)	5.00E+03	3.31E+09	**5.66E-04**	5.66E-01	2.6E-07	3.0E+00	**1.2E-08**	**4.3E-05**
127184	Tetrachloroethylene	5.00E+03	1.58E+14	**4.48E-04**	4.48E-01	6.1E-06	4.0E-02	**2.2E-07**	**2.6E-03**
79016	Trichloroethylene	5.00E+03	2.73E+10	**5.39E-04**	5.39E-01	4.1E-06	2.0E-03	**1.8E-07**	**6.1E-02**
75014	Vinyl chloride (chloroethene)	5.00E+03	5.02E+06	**6.74E-04**	6.74E-01	7.8E-05	1.0E-01	**4.3E-06**	**1.5E-03**

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Soil Gas

USEPA GW-SCREEN
Version 3.0, 04/2003

DTSC Modification
December 2014

Department of Toxic Substances Control — Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

Land Use: **Commercial**

Exposure Scenario: **For VOCs Detected in Groundwater**

Reset to Defaults

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical	Results Summary: Soil Gas Conc. (C_{source}) (µg/m³)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) (µg/m³)	Cancer Risk	Noncancer Hazard	Risk-Based Groundwater Concentration: Cancer Risk = 10^{-6} (µg/L)	Noncancer HQ = 1 (µg/L)
75354	1.00E+00	**1,1-Dichloroethylene**	1.03E+03	2.1E-04	2.2E-01	NA	7.0E-04	NA	NA
107062	1.00E+00	**1,2-Dichloroethane**	4.61E+01	2.1E-04	9.7E-03	2.1E-08	3.2E-04	NA	NA
156592	1.00E+00	**cis-1,2-Dichloroethylene**	1.60E+02	2.1E-04	3.4E-02	NA	9.8E-04	NA	NA
156605	1.00E+00	**trans-1,2-Dichloroethylene**	1.61E+02	2.1E-04	3.4E-02	NA	9.7E-05	NA	NA
1634044	1.00E+00	**MTBE (methyl-tert-butyl ether)**	2.31E+01	1.9E-04	4.5E-03	9.4E-11	3.4E-07	NA	NA
127184	1.00E+00	**Tetrachloroethylene**	6.88E+02	1.3E-04	9.2E-02	4.6E-08	5.3E-04	NA	NA
79016	1.00E+00	**Trichloroethylene**	3.85E+02	1.7E-04	6.7E-02	2.2E-08	7.6E-03	NA	NA
75014	1.00E+00	**Vinyl chloride (chloroethene)**	1.11E+03	2.5E-04	2.7E-01	1.7E-06	6.2E-04	NA	NA

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	152.4	S	24	5

5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$	ENTER Ceiling Height CH (cm)	
NEW=>	Commercial	1.0E-06	1	70	25	25	250	8	1	304.8	
		Used to calculate risk-based groundwater concentration.					(NEW)	(NEW)	**10.0**	(feet)

END

CHEMICAL PROPERTIES SHEET

CAS No.	Chemical	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)
75354	1,1-Dichloroethylene	8.63E-02	1.10E-05	2.61E-02	25	6,247	304.80	576.10	3.18E+01	2.42E+03
107062	1,2-Dichloroethane	8.57E-02	1.10E-05	1.18E-03	25	7,643	356.70	561.00	3.96E+01	8.60E+03
156592	cis-1,2-Dichloroethylene	8.84E-02	1.13E-05	4.08E-03	25	7,192	333.70	544.00	3.96E+01	6.41E+03
156605	trans-1,2-Dichloroethylene	8.76E-02	1.12E-05	4.08E-03	25	6,717	320.90	516.50	3.96E+01	4.52E+03
1634044	MTBE (methyl-tert-butyl ether)	7.53E-02	8.59E-06	5.87E-04	25	6,678	328.30	497.10	1.16E+01	5.10E+04
127184	Tetrachloroethylene	5.05E-02	9.46E-06	1.77E-02	25	8,288	394.40	620.20	9.49E+01	2.06E+02
79016	Trichloroethylene	6.87E-02	1.02E-05	9.85E-03	25	7,505	360.40	544.20	6.07E+01	1.28E+03
75014	Vinyl chloride (chloroethene)	1.07E-01	1.20E-05	2.78E-02	25	5,250	259.30	432.00	2.17E+01	8.80E+03

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Groundwater

CAS No.	Chemical	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)
75354	1,1-Dichloroethylene	0.0E+00	7.0E-02	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
107062	1,2-Dichloroethane	2.6E-05	7.0E-03	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
156592	cis-1,2-Dichloroethylene	0.0E+00	8.0E-03	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
156605	trans-1,2-Dichloroethylene	0.0E+00	8.0E-02	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
1634044	MTBE (methyl-tert-butyl ether)	2.6E-07	3.0E+00	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
127184	Tetrachloroethylene	6.1E-06	4.0E-02	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
79016	Trichloroethylene	4.1E-06	2.0E-03	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05
75014	Vinyl chloride (chloroethene)	7.8E-05	1.0E-01	137.4	0.284	0.184	6.07E-09	0.901	5.47E-09	17.05

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Groundwater

CAS No.	Chemical	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} ($atm\text{-}m^3/mol$)
75354	1,1-Dichloroethylene	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	6,299	2.52E-02
107062	1,2-Dichloroethane	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	8,368	1.13E-03
156592	cis-1,2-Dichloroethylene	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	7,592	3.91E-03
156605	trans-1,2-Dichloroethylene	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	6,987	3.92E-03
1634044	MTBE (methyl-tert-butyl ether)	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	7,113	5.64E-04
127184	Tetrachloroethylene	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	9,410	1.68E-02
79016	Trichloroethylene	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	8,383	9.39E-03
75014	Vinyl chloride (chloroethene)	0.375	0.122	0.253	4,000	8.47E+04	1.00E+06	5.00E-03	15	4,841	2.70E-02

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Groundwater

CHEMICAL PROPERTIES SHEET

CAS No.	Chemical	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_{V} (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_{T} (cm^2/s)	Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)
75354	1,1-Dichloroethylene	1.03E+00	1.80E-04	8.71E-03	5.53E-04	3.08E-03	137.4	15	1.03E+03	1.25	8.33E+01
107062	1,2-Dichloroethane	4.61E-02	1.80E-04	8.65E-03	5.66E-04	3.12E-03	137.4	15	4.61E+01	1.25	8.33E+01
156592	cis-1,2-Dichloroethylene	1.60E-01	1.80E-04	8.92E-03	5.71E-04	3.17E-03	137.4	15	1.60E+02	1.25	8.33E+01
156605	trans-1,2-Dichloroethylene	1.61E-01	1.80E-04	8.84E-03	5.66E-04	3.14E-03	137.4	15	1.61E+02	1.25	8.33E+01
1634044	MTBE (methyl-tert-butyl ether)	2.31E-02	1.80E-04	7.60E-03	5.10E-04	2.79E-03	137.4	15	2.31E+01	1.25	8.33E+01
127184	Tetrachloroethylene	6.88E-01	1.80E-04	5.10E-03	3.24E-04	1.80E-03	137.4	15	6.88E+02	1.25	8.33E+01
79016	Trichloroethylene	3.85E-01	1.80E-04	6.94E-03	4.42E-04	2.46E-03	137.4	15	3.85E+02	1.25	8.33E+01
75014	Vinyl chloride (chloroethene)	1.11E+00	1.80E-04	1.08E-02	6.86E-04	3.82E-03	137.4	15	1.11E+03	1.25	8.33E+01

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Groundwater

CAS No.	Chemical	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
75354	1,1-Dichloroethylene	8.71E-03	5.00E+03	2.03E+08	2.09E-04	2.15E-01	NA	7.0E-02	NA	7.0E-04
107062	1,2-Dichloroethane	8.65E-03	5.00E+03	2.32E+08	2.11E-04	9.73E-03	2.6E-05	7.0E-03	2.1E-08	3.2E-04
156592	cis-1,2-Dichloroethylene	8.92E-03	5.00E+03	1.29E+08	2.13E-04	3.42E-02	NA	8.0E-03	NA	9.8E-04
156605	trans-1,2-Dichloroethylene	8.84E-03	5.00E+03	1.53E+08	2.12E-04	3.41E-02	NA	8.0E-02	NA	9.7E-05
1634044	MTBE (methyl-tert-butyl ether)	7.60E-03	5.00E+03	3.31E+09	1.93E-04	4.46E-03	2.6E-07	3.0E+00	9.4E-11	3.4E-07
127184	Tetrachloroethylene	5.10E-03	5.00E+03	1.58E+14	1.34E-04	9.22E-02	6.1E-06	4.0E-02	4.6E-08	5.3E-04
79016	Trichloroethylene	6.94E-03	5.00E+03	2.73E+10	1.74E-04	6.70E-02	4.1E-06	2.0E-03	2.2E-08	7.6E-03
75014	Vinyl chloride (chloroethene)	1.08E-02	5.00E+03	5.02E+06	2.46E-04	2.73E-01	7.8E-05	1.0E-01	1.7E-06	6.2E-04

Land Use: Commercial

Exposure Scenario: For VOCs Detected in Groundwater

Soil Properties Lookup Table

SCS Soil Type	K_s (cm/h)	α_1 (1/cm)	N (unitless)	M (unitless)	n (cm^3/cm^3)	θ_r (cm^3/cm^3)	Mean Grain Diameter (cm)	Bulk Density (g/cm^3)	θ_w (cm^3/cm^3)	SCS Soil Name
C	0.61	0.01496	1.253	0.2019	0.459	0.098	0.0092	1.43	0.215	Clay
CL	0.34	0.01581	1.416	0.2938	0.442	0.079	0.016	1.48	0.168	Clay Loam
L	0.50	0.01112	1.472	0.3207	0.399	0.061	0.020	1.59	0.148	Loam
LS	4.38	0.03475	1.746	0.4273	0.390	0.049	0.040	1.62	0.076	Loamy Sand
S	26.78	0.03524	3.177	0.6852	0.375	0.053	0.044	1.66	0.054	Sand
SC	0.47	0.03342	1.208	0.1722	0.385	0.117	0.025	1.63	0.197	Sandy Clay
SCL	0.55	0.02109	1.330	0.2481	0.384	0.063	0.029	1.63	0.146	Sandy Clay Loam
SI	1.82	0.00658	1.679	0.4044	0.489	0.050	0.0046	1.35	0.167	Silt
SIC	0.40	0.01622	1.321	0.2430	0.481	0.111	0.0039	1.38	0.216	Silty Clay
SICL	0.46	0.00839	1.521	0.3425	0.482	0.090	0.0056	1.37	0.198	Silty Clay Loam
SIL	0.76	0.00506	1.663	0.3987	0.439	0.065	0.011	1.49	0.180	Silt Loam
SL	1.60	0.02667	1.449	0.3099	0.387	0.039	0.030	1.62	0.103	Sandy Loam

NEW => Receptor Lookup Table (added by HERO)

Receptor Type	AT_C (yrs)	AT_{NC} (yrs)	ED (yrs)	EF (days/yr)	ET (hrs/day)	ACH (1/hour)
Residential	70	30	30	350	24	0.5
Commercial	70	25	25	250	8	1
User-Defined						

Notes on Toxicity Criteria (see cell comments for individual chemical toxicity values)

1. Chemical name (blue) = Carcinogens with IUR
2. Values are from USEPA IRIS database except as indicated.
3. **Bold** = Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) toxicity value
4. IUR or RfC (red) = revised values (March 2014 update of December 2011 values)
5. X denotes route extrapolation from oral toxicity criteria.

(Values posted by USEPA or OEHHA as inhalation criteria, including cancer slope factors, are not denoted except as in original USEPA 2002 Draft VI guidance.)

Chemical Properties Lookup Table (K_{oc}, D_a, D_w, S, H', H values updated per USEPA November 2013 RSL Table)

NEW => 11 Additional Chemicals (CAS No. in red)

DTSC-Recommended Toxicity Criteria Values Used to Calculate Risk and Hazard (last updated March 2014)

(0.0E+00 = no value available)

CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Pure component water solubility, S (mg/L)	Henry's law constant H' (unitless)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Enthalpy of vaporization at the normal boiling point, $DH_{v,b}$ (cal/mol)	Inhalation Unit Risk IUR ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)	Extrapolated from oral toxicity value: IUR (X)	Extrapolated from oral toxicity value: RfC (X)	Comment Flag (y)
56235	Carbon tetrachloride	4.39E+01	5.71E-02	9.79E-06	7.93E+02	1.13E+00	2.76E-02	25	349.9	556.6	7,127	**4.2E-05**	**1.0E-01**	1.54E+02			
57749	Chlordane	3.38E+04	3.44E-02	4.02E-06	5.60E-02	1.99E-03	4.85E-05	25	624.2	885.7	14,000	**3.4E-04**	7.0E-04	4.10E+02			
58899	gamma-HCH (Lindane)	2.81E+03	4.33E-02	5.06E-06	7.30E+00	2.10E-04	5.14E-06	25	596.6	839.4	15,000	**3.1E-04**	1.1E-03	2.91E+02		X	
60297	Ethyl ether	9.70E+00	8.52E-02	9.36E-06	6.04E+04	5.03E-02	1.23E-03	25	307.5	466.7	6,338	0.0E+00	7.0E-01	7.41E+01		X	
60571	Dieldrin	2.01E+04	2.33E-02	6.01E-06	1.95E-01	4.09E-04	1.00E-05	25	613.3	842.3	17,000	**4.6E-03**	1.8E-04	3.81E+02		X	
67641	Acetone	2.36E+00	1.06E-01	1.15E-05	1.00E+06	1.43E-03	3.50E-05	25	329.2	508.1	6,955	0.0E+00	3.1E+01	5.81E+01			
67663	Chloroform	3.18E+01	7.69E-02	1.09E-05	7.95E+03	1.50E-01	3.67E-03	25	334.3	536.4	6,988	2.3E-05	9.8E-02	1.19E+02			
67721	Hexachloroethane	1.97E+02	3.21E-02	8.89E-06	5.00E+01	1.59E-01	3.89E-03	25	458.0	695.0	9,510	**1.1E-05**	3.0E-02	2.37E+02			
71432	Benzene	1.46E+02	8.95E-02	1.03E-05	1.79E+03	2.27E-01	5.55E-03	25	353.2	562.2	7,342	**2.9E-05**	**3.0E-03**	7.81E+01			y
71556	1,1,1-Trichloroethane	4.39E+01	6.48E-02	9.60E-06	1.29E+03	7.03E-01	1.72E-02	25	347.2	545.0	7,136	0.0E+00	**1.0E+00**	1.33E+02			
72435	Methoxychlor	2.69E+04	2.21E-02	5.59E-06	1.00E-01	8.30E-06	2.03E-07	25	651.0	848.5	16,000	0.0E+00	1.8E-02	3.46E+02		X	
72559	DDE	1.18E+05	4.08E-02	4.76E-06	4.00E-02	1.70E-03	4.16E-05	25	636.4	860.4	15,000	**9.7E-05**	0.0E+00	3.18E+02	X		
74839	Methyl bromide (bromomethane)	1.32E+01	1.00E-01	1.35E-05	1.52E+04	3.00E-01	7.34E-03	25	276.7	467.0	5,714	0.0E+00	**5.0E-03**	9.49E+01			
74873	Methyl chloride (chloromethane)	1.32E+01	1.24E-01	1.36E-05	5.32E+03	3.61E-01	8.82E-03	25	249.0	416.3	5,115	0.0E+00	9.0E-02	5.05E+01			y
74908	Hydrogen cyanide	3.80E+00	1.68E-01	1.68E-05	1.00E+06	5.44E-03	1.33E-04	25	299.0	456.7	6,676	0.0E+00	8.0E-04	2.70E+01			
74953	Methylene bromide (dibromomethane)	2.17E+01	5.51E-02	1.19E-05	1.19E+04	3.36E-02	8.22E-04	25	370.0	583.0	7,868	0.0E+00	4.0E-03	1.74E+02			
75003	Chloroethane (ethyl chloride)	2.17E+01	1.04E-01	1.16E-05	6.71E+03	4.54E-01	1.11E-02	25	285.3	460.4	5,879	1.3E-06	1.0E+01	6.45E+01	X		y
75014	Vinyl chloride (chloroethene)	2.17E+01	1.07E-01	1.20E-05	8.80E+03	1.14E+00	2.78E-02	25	259.3	432.0	5,250	**7.8E-05**	1.0E-01	6.25E+01			
75058	Acetonitrile	4.67E+00	1.34E-01	1.41E-05	1.00E+06	1.41E-03	3.45E-05	25	354.6	545.5	7,110	0.0E+00	6.0E-02	4.11E+01			
75070	Acetaldehyde	1.00E+00	1.28E-01	1.35E-05	1.00E+06	2.73E-03	6.67E-05	25	293.1	466.0	6,157	**2.7E-06**	9.0E-03	4.41E+01			
75092	Methylene chloride (dichloromethane)	2.17E+01	9.99E-02	1.25E-05	1.30E+04	1.33E-01	3.25E-03	25	313.0	510.0	6,706	**1.0E-06**	**4.0E-01**	8.49E+01			
75150	Carbon disulfide	2.17E+01	1.06E-01	1.30E-05	2.16E+03	5.89E-01	1.44E-02	25	319.0	552.0	6,391	0.0E+00	7.0E-01	7.61E+01			
75218	Ethylene oxide	3.24E+00	1.34E-01	1.45E-05	1.00E+06	6.05E-03	1.48E-04	25	283.6	469.0	6,104	**8.8E-05**	**3.0E-02**	4.41E+01			
75252	Bromoform	3.18E+01	3.57E-02	1.04E-05	3.10E+03	2.19E-02	5.35E-04	25	422.4	696.0	9,479	1.1E-06	7.0E-02	2.53E+02		X	
75274	Bromodichloromethane	3.18E+01	5.63E-02	1.07E-05	3.03E+03	8.67E-02	2.12E-03	25	363.2	585.9	7,800	**3.7E-05**	7.0E-02	1.64E+02	X	X	
75296	2-Chloropropane	9.14E+00	8.88E-02	1.01E-05	3.73E+03	5.93E-01	1.45E-02	25	308.7	485.0	6,286	0.0E+00	1.0E-01	7.85E+01			y
75343	1,1-Dichloroethane	3.18E+01	8.36E-02	1.06E-05	5.04E+03	2.30E-01	5.62E-03	25	330.6	523.0	6,895	**1.6E-06**	8.0E-01	9.90E+01	X	X	
75354	1,1-Dichloroethylene	3.18E+01	8.63E-02	1.10E-05	2.42E+03	1.07E+00	2.61E-02	25	304.8	576.1	6,247	0.0E+00	**7.0E-02**	9.69E+01			
75456	Chlorodifluoromethane	3.18E+01	1.03E-01	1.33E-05	2.77E+03	1.66E+00	4.06E-02	25	232.4	369.3	4,836	0.0E+00	5.0E+01	8.65E+01			
75694	Trichlorofluoromethane	4.39E+01	6.54E-02	1.00E-05	1.10E+03	3.97E+00	9.70E-02	25	296.7	471.0	5,999	0.0E+00	1.2E+00	1.37E+02			
75718	Dichlorodifluoromethane	4.39E+01	7.60E-02	1.08E-05	2.80E+02	1.40E+01	3.43E-01	25	243.2	385.0	9,421	0.0E+00	1.0E-01	1.21E+02			
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	1.97E+02	3.76E-02	8.59E-06	1.70E+02	2.15E+01	5.26E-01	25	320.7	487.3	6,463	0.0E+00	5.0E+00	1.87E+02			
76448	Heptachlor	4.13E+04	2.23E-02	5.70E-06	1.80E-01	1.20E-02	2.94E-04	25	603.7	846.3	13,000	**1.2E-03**	1.8E-03	3.73E+02		X	
77474	Hexachlorocyclopentadiene	1.40E+03	2.72E-02	7.22E-06	1.80E+00	1.10E+00	2.70E-02	25	512.2	746.0	10,931	0.0E+00	2.0E-04	2.73E+02			
78831	Isobutanol	2.92E+00	8.97E-02	1.00E-05	8.50E+04	4.00E-04	9.78E-06	25	381.0	547.8	10,936	0.0E+00	1.1E+00	7.41E+01		X	
78875	1,2-Dichloropropane	6.07E+01	7.33E-02	9.73E-06	2.80E+03	1.15E-01	2.82E-03	25	369.5	572.0	7,590	**1.0E-05**	4.0E-03	1.13E+02	X		
78933	Methylethylketone (2-butanone)	4.51E+00	9.14E-02	1.02E-05	2.23E+05	2.33E-03	5.69E-05	25	352.5	536.8	7,481	0.0E+00	5.0E+00	7.21E+01			
79005	1,1,2-Trichloroethane	6.07E+01	6.69E-02	1.00E-05	4.59E+03	3.37E-02	8.24E-04	25	386.2	602.0	8,322	1.6E-05	2.0E-04	1.33E+02			
79016	Trichloroethylene	6.07E+01	6.87E-02	1.02E-05	1.28E+03	4.03E-01	9.85E-03	25	360.4	544.2	7,505	4.1E-06	2.0E-03	1.31E+02			y
79209	Methyl acetate	3.06E+00	9.58E-02	1.10E-05	2.43E+05	4.70E-03	1.15E-04	25	329.8	506.7	7,260	0.0E+00	3.5E+00	7.41E+01		X	
79345	1,1,2,2-Tetrachloroethane	9.49E+01	4.89E-02	9.29E-06	2.83E+03	1.50E-02	3.67E-04	25	419.6	661.2	8,996	**5.8E-05**	7.0E-02	1.68E+02		X	
79469	2-Nitropropane	3.08E+01	8.47E-02	1.02E-05	1.70E+04	4.87E-03	1.19E-04	25	393.2	594.0	8,383	2.7E-03	2.0E-02	8.91E+01			
80626	Methylmethacrylate	9.14E+00	7.50E-02	9.21E-06	1.50E+04	1.30E-02	3.19E-04	25	373.5	567.0	8,975	0.0E+00	7.0E-01	1.00E+02			
83329	Acenaphthene	5.03E+03	5.06E-02	8.33E-06	3.90E+00	7.52E-03	1.84E-04	25	550.5	803.2	12,155	0.0E+00	2.1E-01	1.54E+02		X	
86737	Fluorene	9.16E+03	4.40E-02	7.89E-06	1.69E+00	3.93E-03	9.62E-05	25	570.4	870.0	12,666	0.0E+00	1.4E-01	1.66E+02		X	
87683	Hexachloro-1,3-butadiene	8.45E+02	2.67E-02	7.03E-06	3.20E+00	4.21E-01	1.03E-02	25	486.2	738.0	10,206	2.2E-05	3.5E-03	2.61E+02		X	
88722	o-Nitrotoluene	3.71E+02	5.88E-02	8.67E-06	6.50E+02	5.11E-04	1.25E-05	25	495.0	720.0	12,239	6.3E-05	3.2E-03	1.37E+02	X	X	y
91203	Naphthalene	1.54E+03	6.05E-02	8.38E-06	3.10E+01	1.80E-02	4.40E-04	25	491.1	748.4	10,373	**3.4E-05**	3.0E-03	1.28E+02			
91576	2-Methylnaphthalene	2.48E+03	5.24E-02	7.78E-06	2.46E+01	2.11E-02	5.18E-04	25	514.3	761.0	12,600	0.0E+00	1.4E-02	1.42E+02		X	
92524	Biphenyl	5.13E+03	4.71E-02	7.56E-06	6.94E+00	1.26E-02	3.08E-04	25	529.1	789.0	10,890	0.0E+00	4.0E-04	1.54E+02			y

NEW => 11 Additional Chemicals (CAS No. in red)		**Chemical Properties Lookup Table** (K_{oc}, D_a, D_w, S, H', H values updated per USEPA November 2013 RSL Table)									**DTSC-Recommended Toxicity Criteria Values Used to Calculate Risk and Hazard** (last updated March 2014) (0.0E+00 = no value available)					
CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Pure component water solubility, S (mg/L)	Henry's law constant H' (unitless)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Enthalpy of vaporization at the normal boiling point, $DH_{v,b}$ (cal/mol)	Inhalation Unit Risk IUR ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)	Extrapolated from oral toxicity value IUR (X)	Extrapolated from oral toxicity value RfC (X)	Comment Flag (y)
95476	o-Xylene	3.83E+02	6.89E-02	8.53E-06	1.78E+02	2.12E-01	5.18E-03	25	417.6	630.3	8,661	0.0E+00	1.0E-01	1.06E+02			
95501	1,2-Dichlorobenzene	3.83E+02	5.62E-02	8.92E-06	1.56E+02	7.85E-02	1.92E-03	25	453.6	705.0	9,700	0.0E+00	2.0E-01	1.47E+02			
95578	2-Chlorophenol	3.07E+02	6.61E-02	9.48E-06	1.13E+04	4.58E-04	1.12E-05	25	447.5	675.0	9,572	0.0E+00	1.8E-02	1.29E+02		X	
95636	1,2,4-Trimethylbenzene	6.14E+02	6.07E-02	7.92E-06	5.70E+01	2.52E-01	6.16E-03	25	442.3	649.2	9,369	0.0E+00	6.0E-02	1.20E+02			
96128	1,2-Dibromo-3-chloropropane	1.16E+02	3.21E-02	8.90E-06	1.23E+03	6.01E-03	1.47E-04	25	469.0	703.5	9,960	6.0E-03	2.0E-04	2.36E+02			
96184	1,2,3-Trichloropropane	1.16E+02	5.75E-02	9.24E-06	1.75E+03	1.40E-02	3.43E-04	25	430.0	652.0	9,171	8.6E-03	3.0E-04	1.47E+02	X		y
96333	Methyl acrylate	5.84E+00	8.60E-02	1.02E-05	4.94E+04	8.14E-03	1.99E-04	25	353.7	536.0	7,749	0.0E+00	2.0E-02	8.61E+01			
97632	Ethylmethacrylate	1.67E+01	6.53E-02	8.38E-06	5.40E+03	2.34E-02	5.73E-04	25	390.0	571.0	10,957	0.0E+00	3.0E-01	1.14E+02			
98066	tert-Butylbenzene	1.00E+03	5.30E-02	7.37E-06	2.95E+01	5.40E-01	1.32E-02	25	442.1	1220.0	8,980	0.0E+00	4.0E-01	1.34E+02			
98828	Cumene	6.98E+02	6.03E-02	7.86E-06	6.13E+01	4.70E-01	1.15E-02	25	425.6	631.1	10,335	0.0E+00	4.0E-01	1.20E+02			y
98862	Acetophenone	5.19E+01	6.52E-02	8.72E-06	6.13E+03	4.25E-04	1.04E-05	25	475.0	709.5	11,732	0.0E+00	3.5E-01	1.20E+02		X	
98953	Nitrobenzene	2.26E+02	6.81E-02	9.45E-06	2.09E+03	9.81E-04	2.40E-05	25	484.0	719.0	10,566	4.0E-05	9.0E-03	1.23E+02			
100414	Ethylbenzene	4.46E+02	6.85E-02	8.46E-06	1.69E+02	3.22E-01	7.88E-03	25	409.3	617.2	8,501	**2.5E-06**	1.0E+00	1.06E+02			
100425	Styrene	4.46E+02	7.11E-02	8.78E-06	3.10E+02	1.12E-01	2.75E-03	25	418.3	636.0	8,737	0.0E+00	**9.0E-01**	1.04E+02			
100447	Benzylchloride	4.46E+02	6.34E-02	8.81E-06	5.25E+02	1.68E-02	4.12E-04	25	452.0	685.0	8,773	**4.9E-05**	1.0E-03	1.27E+02	X		
100527	Benzaldehyde	1.11E+01	7.44E-02	9.46E-06	6.95E+03	1.09E-03	2.67E-05	25	452.0	695.0	11,658	0.0E+00	3.5E-01	1.06E+02		X	
103651	n-Propylbenzene	8.13E+02	6.02E-02	7.83E-06	5.22E+01	4.29E-01	1.05E-02	25	432.2	630.0	9,123	0.0E+00	1.0E+00	1.20E+02			
104518	n-Butylbenzene	1.48E+03	5.28E-02	7.33E-06	1.18E+01	6.50E-01	1.59E-02	25	456.5	660.5	9,290	0.0E+00	1.8E-01	1.34E+02		X	
106423	p-Xylene	3.75E+02	6.82E-02	8.42E-06	1.62E+02	2.82E-01	6.90E-03	25	411.5	616.2	8,525	0.0E+00	1.0E-01	1.06E+02			
106467	1,4-Dichlorobenzene	3.75E+02	5.50E-02	8.68E-06	8.13E+01	9.85E-02	2.41E-03	25	447.2	684.8	9,271	**1.1E-05**	**8.0E-01**	1.47E+02			
106898	Epichlorohydrin	9.91E+00	8.89E-02	1.11E-05	6.59E+04	1.24E-03	3.04E-05	25	390.0	600.0	10	**2.3E-05**	1.0E-03	9.25E+01			
106934	1,2-Dibromoethane (ethylene dibromid	3.96E+01	4.30E-02	1.04E-05	3.91E+03	2.66E-02	6.50E-04	25	404.6	583.0	8,310	6.0E-04	**8.0E-04**	1.88E+02			
106990	1,3-Butadiene	3.96E+01	1.00E-01	1.03E-05	7.35E+02	3.01E+00	7.36E-02	25	268.6	425.0	5,370	**1.7E-04**	**2.0E-03**	5.41E+01			
107028	Acrolein	1.00E+00	1.12E-01	1.22E-05	2.12E+05	4.99E-03	1.22E-04	25	325.6	506.0	6,731	0.0E+00	2.0E-05	5.61E+01			
107062	1,2-Dichloroethane	3.96E+01	8.57E-02	1.10E-05	8.60E+03	4.82E-02	1.18E-03	25	356.7	561.0	7,643	2.6E-05	7.0E-03	9.90E+01			
107131	Acrylonitrile	8.51E+00	1.14E-01	1.23E-05	7.45E+04	5.64E-03	1.38E-04	25	350.3	519.0	7,786	**2.9E-04**	2.0E-03	5.31E+01			
108054	Vinyl acetate	5.58E+00	8.49E-02	1.00E-05	2.00E+04	2.09E-02	5.11E-04	25	345.7	519.1	7,800	0.0E+00	**2.0E-01**	8.61E+01			
108101	Methylisobutylketone (4-methyl-2-pent	1.26E+01	6.98E-02	8.35E-06	1.90E+04	5.64E-03	1.38E-04	25	389.5	571.0	8,243	0.0E+00	3.0E+00	1.00E+02			y
108203	Diisopropyl ether (DIPE)	2.28E+01	6.54E-02	7.76E-06	8.80E+03	7.76E-06	2.56E-03	25	341.5	499.9	6,950	0.0E+00	7.0E-01	1.02E+02			
108383	m-Xylene	3.75E+02	6.84E-02	8.44E-06	1.61E+02	2.94E-01	7.18E-03	25	412.3	617.1	8,523	0.0E+00	1.0E-01	1.06E+02			
108601	bis(2-Chloroisopropyl)ether	8.29E+01	3.99E-02	7.36E-06	1.70E+03	3.03E-03	7.42E-05	25	460.0	690.0	9,695	1.0E-05	1.4E-01	1.71E+02		X	
108678	1,3,5-Trimethylbenzene	6.02E+02	6.02E-02	7.84E-06	4.82E+01	3.59E-01	8.77E-03	25	437.9	637.3	9,321	0.0E+00	6.0E-02	1.20E+02			
108872	Methylcyclohexane	7.85E+01	7.35E-02	8.52E-06	1.40E+01	4.22E+00	1.03E-01	25	373.9	572.2	7,474	0.0E+00	7.0E-01	9.82E+01			
108883	Toluene	2.34E+02	7.78E-02	9.20E-06	5.26E+02	2.71E-01	6.64E-03	25	383.8	591.8	7,930	0.0E+00	**3.0E-01**	9.21E+01			
108907	Chlorobenzene	2.34E+02	7.21E-02	9.48E-06	4.98E+02	1.27E-01	3.11E-03	25	404.9	632.4	8,410	0.0E+00	5.0E-02	1.13E+02			
109660	Pentane, n-	7.22E+01	8.21E-02	8.80E-06	3.80E+01	5.11E+01	1.25E+00	25	309.0	469.7	6,155	0.0E+00	1.0E+00	7.22E+01			
109693	1-Chlorobutane	7.22E+01	7.84E-02	9.33E-06	1.10E+03	6.83E-01	1.67E-02	25	351.6	542.0	7,263	0.0E+00	1.4E-01	9.26E+01		X	
109999	Tetrahydrofuran	1.08E+01	9.54E-02	1.08E-05	1.00E+06	2.88E-03	7.05E-05	25	339.0	541.0	7,074	0.0E+00	2.0E+00	7.21E+01			y
110009	Furan	8.00E+01	1.03E-01	1.17E-05	1.00E+04	2.21E-01	5.40E-03	25	304.6	490.2	6,477	0.0E+00	3.5E-03	6.81E+01		X	y
110543	Hexane	1.32E+02	7.31E-02	8.17E-06	9.50E+00	7.36E+01	1.80E+00	25	341.7	508.0	6,895	0.0E+00	7.0E-01	8.62E+01			
110827	Cyclohexane	1.46E+02	8.00E-02	9.11E-06	5.50E+01	6.13E+00	1.50E-01	25	353.7	553.4	7,154	0.0E+00	6.0E+00	8.42E+01			
111444	Bis(2-chloroethyl)ether	3.22E+01	5.67E-02	8.71E-06	1.72E+04	6.95E-04	1.70E-05	25	451.2	659.8	10,803	**7.1E-04**	0.0E+00	1.43E+02			
115297	Endosulfan	6.76E+03	2.25E-02	5.76E-06	3.25E-01	2.66E-03	6.50E-05	25	674.4	942.9	14,000	0.0E+00	2.1E-02	4.07E+02		X	
118741	Hexachlorobenzene	6.20E+03	2.90E-02	7.85E-06	6.20E-03	6.95E-02	1.70E-03	25	582.6	825.0	14,447	**5.1E-04**	2.8E-03	2.85E+02		X	
120821	1,2,4-Trichlorobenzene	1.36E+03	3.96E-02	8.40E-06	4.90E+01	5.81E-02	1.42E-03	25	486.2	725.0	10,471	0.0E+00	2.0E-03	1.81E+02			
123739	Crotonaldehyde (2-butenal)	1.79E+00	9.56E-02	1.08E-05	1.50E+05	7.93E-04	1.94E-05	25	375.2	568.0	9	5.4E-04	0.0E+00	7.01E+01	X		
123911	1,4-Dioxane	2.63E+00	8.74E-02	1.05E-05	1.00E+06	1.96E-04	4.80E-06	25	374.3	587.2	8,164	**7.7E-06**	3.0E-02	8.81E+01			
124481	Dibromochloromethane	3.18E+01	3.66E-02	1.06E-05	2.70E+03	3.20E-02	7.83E-04	25	416.1	678.2	5,900	**2.7E-05**	7.0E-02	2.08E+02		X	
126987	Methacrylonitrile	1.31E+01	9.64E-02	1.06E-05	2.54E+04	1.01E-02	2.47E-04	25	363.3	554.0	7,600	0.0E+00	3.0E-02	6.71E+01			
126998	2-Chloro-1,3-butadiene (chloroprene)	6.07E+01	8.42E-02	1.00E-05	8.37E+02	2.29E+00	5.61E-02	25	332.4	525.0	8,075	3.0E-04	2.0E-02	8.85E+01			
127184	Tetrachloroethylene	9.49E+01	5.05E-02	9.46E-06	2.06E+02	7.24E-01	1.77E-02	25	394.4	620.2	8,288	**6.1E-06**	**4.0E-02**	1.66E+02			
129000	Pyrene	5.43E+04	2.78E-02	7.25E-06	1.35E-01	4.87E-04	1.19E-05	25	668.0	936.0	14,370	0.0E+00	1.1E-01	2.02E+02		X	
132649	Dibenzofuran	9.16E+03	4.11E-02	7.38E-06	3.10E+00	8.71E-03	2.13E-04	25	560.0	824.0	66,400	0.0E+00	3.5E-03	1.68E+02		X	
135988	sec-Butylbenzene	1.33E+03	5.28E-02	7.34E-06	1.76E+01	7.20E-01	1.76E-02	25	446.5	679.0	88,730	0.0E+00	4.0E-01	1.34E+02			
141786	Ethylacetate	5.58E+00	8.23E-02	9.70E-06	8.00E+04	5.48E-03	1.34E-04	25	350.3	523.3	7,634	0.0E+00	7.0E-02	8.81E+01			
142289	1,3-Dichloropropane	7.22E+01	7.39E-02	9.82E-06	2.75E+03	3.99E-02	9.76E-04	25	393.9	590.9	8,103	0.0E+00	7.0E-02	1.13E+02		X	
156592	cis-1,2-Dichloroethylene	3.96E+01	8.84E-02	1.13E-05	6.41E+03	1.67E-01	4.08E-03	25	333.7	544.0	7,192	0.0E+00	8.0E-03	9.69E+01		X	
156605	trans-1,2-Dichloroethylene	3.96E+01	8.76E-02	1.12E-05	4.52E+03	1.67E-01	4.08E-03	25	320.9	516.5	6,717	0.0E+00	8.0E-02	9.69E+01			
205992	Benzo(b)fluoranthene	5.99E+05	4.76E-02	5.56E-06	1.50E-03	2.69E-05	6.57E-07	25	715.9	969.3	17,000	**1.1E-04**	0.0E+00	2.52E+02			
218019	Chrysene	1.81E+05	2.61E-02	6.75E-06	2.00E-03	2.14E-04	5.23E-06	25	714.2	979.0	16,455	**1.1E-05**	0.0E+00	2.28E+02			
309002	Aldrin	8.20E+04	3.72E-02	4.35E-06	1.70E-02	1.80E-03	4.40E-05	25	603.0	839.4	15,000	**4.9E-03**	1.1E-04	3.65E+02		X	
319846	alpha-HCH (alpha-BHC)	2.81E+03	4.33E-02	5.06E-06	2.00E+00	2.10E-04	5.14E-06	25	596.6	839.4	15,000	1.8E-03	0.0E+00	2.91E+02			
541731	1,3-Dichlorobenzene	3.79E+02	5.56E-02	8.80E-06	1.19E+02	8.85E-02	2.17E-03	25	446.0	684.0	9,230	0.0E+00	1.1E-01	1.47E+02		X	y
542756	1,3-Dichloropropene	7.22E+01	7.63E-02	1.01E-05	2.80E+03	1.45E-01	3.55E-03	25	381.2	587.4	7,900	**1.6E-05**	2.0E-02	1.11E+02			
542881	bis(Chloromethyl)ether	9.70E+00	7.63E-02	1.04E-05	2.20E+04	1.78E-01	4.36E-03	25	379.0	568.5	7,910	6.2E-02	0.0E+00	1.15E+02			y
630206	1,1,1,2-Tetrachloroethane	8.60E+01	4.82E-02	9.10E-06	1.07E+03	1.02E-01	2.50E-03	25	403.5	624.0	9,768	7.4E-06	1.1E-01	1.68E+02		X	
924163	N-Nitroso-di-n-butylamine	9.15E+02	6.49E-02	7.59E-06	1.27E+03	5.40E-04	1.32E-05	25	389.0	583.5	11,200	**3.1E-03**	0.0E+00	1.58E+02			
1634044	MTBE (methyl-*tert*-butyl ether)	1.16E+01	7.53E-02	8.59E-06	5.10E+04	2.40E-02	5.87E-04	25	328.3	497.1	6,678	**2.6E-07**	3.0E+00	8.82E+01			
7439976	Mercury (elemental)	5.20E+01	3.07E-02	6.30E-06	6.00E-02	4.67E-01	1.14E-02	25	629.9	1750.0	14,127	0.0E+00	**3.0E-05**	2.01E+02			
123456789	TBD	5.20E+01	3.07E-02	6.30E-06	6.00E-02	4.67E-01	1.14E-02	25	629.9	1,750.0	14,127	0.0E+00	**1.0E+02**	2.01E+02			

SCS Soil Type	K_s (cm/h)
C	0.61
CL	0.34
L	0.50
LS	4.38
S	26.78
SC	0.47
SCL	0.55
SI	1.82
SIC	0.40
SICL	0.46
SIL	0.76
SL	1.60

NEW => Receptor Lookup Table (added by HERO)

Receptor Type	AT_C (yrs)
Residential	70
Commercial	70
User-Defined	

NEW => 11 Additional Chemicals (CAS No. in red)		USEPA-Recommended Toxicity Criteria November 2013 RSL Table				ARCHIVE Original USEPA (USEPA 2002 Draft Vapor	
		Inhalation Unit Risk	Reference conc.,	Extrapolated from oral toxicity value		Extrapolated from oral toxicity value	
CAS No.	Chemical	IUR $(\mu g/m^3)^{-1}$	RfC (mg/m^3)	IUR (X)	RfC (X)	URF (X)	RfC (X)
56235	Carbon tetrachloride	6.0E-06	1.0E-01				
57749	Chlordane	1.0E-04	7.0E-04				
58899	gamma-HCH (Lindane)	3.1E-04				X	X
60297	Ethyl ether						X
60571	Dieldrin	4.6E-03					X
67641	Acetone		3.1E+01				X
67663	Chloroform	2.3E-05	9.8E-02				
67721	Hexachloroethane	1.1E-05	3.0E-02				X
71432	Benzene	7.8E-06	3.0E-02				
71556	1,1,1-Trichloroethane		5.0E+00				
72435	Methoxychlor						X
72559	DDE	9.7E-05		X		X	
74839	Methyl bromide (bromomethane)		5.0E-03				
74873	Methyl chloride (chloromethane)		9.0E-02				
74908	Hydrogen cyanide		8.0E-04				
74953	Methylene bromide (dibromomethane		4.0E-03				X
75003	Chloroethane (ethyl chloride)		1.0E+01			X	
75014	Vinyl chloride (chloroethene)	8.8E-06	1.0E-01				
75058	Acetonitrile		6.0E-02				
75070	Acetaldehyde	2.2E-06	9.0E-03				
75092	Methylene chloride (dichloromethane)	1.0E-08	6.0E-01				
75150	Carbon disulfide		7.0E-01				
75218	Ethylene oxide	8.8E-05	3.0E-02				
75252	Bromoform	1.1E-06					X
75274	Bromodichloromethane	3.7E-05		X		X	X
75296	2-Chloropropane						
75343	1,1-Dichloroethane	1.6E-06					
75354	1,1-Dichloroethylene		2.0E-01				
75456	Chlorodifluoromethane		5.0E+01				
75694	Trichlorofluoromethane		7.0E-01				
75718	Dichlorodifluoromethane		1.0E-01				
76131	1,1,2-Trichloro-1,2,2-trifluoroethane		3.0E+01				
76448	Heptachlor	1.3E-03					X
77474	Hexachlorocyclopentadiene		2.0E-04				
78831	Isobutanol						X
78875	1,2-Dichloropropane	1.0E-05	4.0E-03			X	
78933	Methylethylketone (2-butanone)		5.0E+00				
79005	1,1,2-Trichloroethane	1.6E-05	2.0E-04				X
79016	Trichloroethylene	4.1E-06	2.0E-03			X	
79209	Methyl acetate						X
79345	1,1,2,2-Tetrachloroethane	5.8E-05					X
79469	2-Nitropropane	2.7E-03	2.0E-02				
80626	Methylmethacrylate		7.0E-01				
83329	Acenaphthene						X
86737	Fluorene						X
87683	Hexachloro-1,3-butadiene	2.2E-05					X
88722	o-Nitrotoluene						X
91203	Naphthalene	3.4E-05	3.0E-03				
91576	2-Methylnaphthalene						X
92524	Biphenyl		4.0E-04				X

NEW => 11 Additional Chemicals (CAS No. in red)		USEPA-Recommended Toxicity Criteria November 2013 RSL Table				ARCHIVE Original USEPA (USEPA 2002 Draft Vapor	
		Inhalation Unit Risk	Reference conc.,	Extrapolated from oral toxicity value		Extrapolated from oral toxicity value	
		IUR	RfC	IUR	RfC	URF	RfC
CAS No.	Chemical	$(\mu g/m^3)^{-1}$	(mg/m^3)	(X)	(X)	(X)	(X)
95476	o-Xylene		1.0E-01				
95501	1,2-Dichlorobenzene		2.0E-01				
95578	2-Chlorophenol						X
95636	1,2,4-Trimethylbenzene		7.0E-03				
96128	1,2-Dibromo-3-chloropropane	6.0E-03	2.0E-04				
96184	1,2,3-Trichloropropane		3.0E-04			X	
96333	Methyl acrylate		2.0E-02				X
97632	Ethylmethacrylate		3.0E-01				X
98066	tert-Butylbenzene						X
98828	Cumene		4.0E-01				
98862	Acetophenone						X
98953	Nitrobenzene	4.0E-05	9.0E-03				
100414	Ethylbenzene	2.5E-06	1.0E+00				
100425	Styrene		1.0E+00				
100447	Benzylchloride	4.9E-05	1.0E-03			X	
100527	Benzaldehyde						X
103651	n-Propylbenzene		1.0E+00				X
104518	n-Butylbenzene						X
106423	p-Xylene		1.0E-01				
106467	1,4-Dichlorobenzene	1.1E-05	8.0E-01				
106898	Epichlorohydrin	1.2E-06	1.0E-03				
106934	1,2-Dibromoethane (ethylene dibromic	6.0E-04	9.0E-03				
106990	1,3-Butadiene	3.0E-05	2.0E-03				
107028	Acrolein		2.0E-05				
107062	1,2-Dichloroethane	2.6E-05	7.0E-03				
107131	Acrylonitrile	6.8E-05	2.0E-03				
108054	Vinyl acetate		2.0E-01				
108101	Methylisobutylketone (4-methyl-2-pent		3.0E+00				
108203	Diisopropyl ether (DIPE)		7.0E-01				
108383	m-Xylene		1.0E-01				
108601	bis(2-Chloroisopropyl)ether	1.0E-05					
108678	1,3,5-Trimethylbenzene						
108872	Methylcyclohexane						
108883	Toluene		5.0E+00				
108907	Chlorobenzene		5.0E-02				
109660	Pentane, n-		1.0E+00				
109693	1-Chlorobutane						X
109999	Tetrahydrofuran		2.0E+00				
110009	Furan						X
110543	Hexane		7.0E-01				
110827	Cyclohexane		6.0E+00				
111444	Bis(2-chloroethyl)ether	3.3E-04					
115297	Endosulfan						X
118741	Hexachlorobenzene	4.6E-04					X
120821	1,2,4-Trichlorobenzene		2.0E-03				
123739	Crotonaldehyde (2-butenal)					X	
123911	1,4-Dioxane	5.0E-06	3.0E-02				
124481	Dibromochloromethane	2.7E-05				X	X
126987	Methacrylonitrile		3.0E-02				
126998	2-Chloro-1,3-butadiene (chloroprene)	3.0E-04	2.0E-02				
127184	Tetrachloroethylene	2.6E-07	4.0E-02				
129000	Pyrene						X
132649	Dibenzofuran						X
135988	sec-Butylbenzene						X
141786	Ethylacetate						X
142289	1,3-Dichloropropane						
156592	cis-1,2-Dichloroethylene						X
156605	trans-1,2-Dichloroethylene		6.0E-02				X
205992	Benzo(b)fluoranthene	1.1E-04				X	
218019	Chrysene	1.1E-05				X	
309002	Aldrin	4.9E-03					X
319846	alpha-HCH (alpha-BHC)	1.8E-03					
541731	1,3-Dichlorobenzene						X
542756	1,3-Dichloropropene	4.0E-06	2.0E-02				
542881	bis(Chloromethyl)ether	6.2E-02					
630206	1,1,1,2-Tetrachloroethane	7.4E-06					X
924163	N-Nitroso-di-n-butylamine	1.6E-03					
1634044	MTBE (methyl-*tert*-butyl ether)	2.6E-07	3.0E+00				
7439976	Mercury (elemental)		3.0E-04				
123456789	TBD		3.0E-04				

APPENDIX C

Boring Logs

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB50
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER N/A / N/A
GRAVEL PACK TYPE N/A
GROUT TYPE/QUANTITY Cement grout
DEPTH TO WATER 5
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	
			LB50-0.5		0.0	SM		@ 0.5' : Silty SAND, light brown, slightly moist, loose to medium dense, very fine to medium grained, trace gravel and shells, no odor or staining.		
			LB50-2.5		0.0					
5			LB50-5.0		0.0	SW		@5': SAND, medium brown, wet, loose, very fine to fine grained, trace silt and gravel	5.0	Cement grout
10									10.0	

Notes:
Total Depth: 10 feet below ground surface (bgs)
Groundwater encountered at 5 feet
Grab groundwater sample collected

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB51
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER N/A / N/A
GRAVEL PACK TYPE N/A
GROUT TYPE/QUANTITY Cement grout
DEPTH TO WATER 5
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	
			LB51-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, slightly moist, loose, very fine to fine grained, trace gravel and shells, no odor or staining.	2.5	
			LB51-2.5		0.0	SW		@2.5': SAND, medium brown, slightly moist, loose, very fine to fine grained, trace silt and shells		
5								@5': groundwater encountered		Cement grout
10									10.0	

Notes:
Total Depth: 10 feet below ground surface (bgs)
Groundwater encountered at 5 feet
Grab groundwater sample collected

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB52
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER N/A / N/A
GRAVEL PACK TYPE N/A
GROUT TYPE/QUANTITY Cement grout
DEPTH TO WATER 5.5
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	
			LB52-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, slightly moist, loose, very fine to medium grained sand, trace gravel and shells, no odor or staining.	2.5	
			LB52-2.5		0.0	SW		@2.5': SAND, medium brown, moist, loose, very fine to fine grained, trace gravel		Cement grout
5			LB52-5.0		0.0			▼	5.5	

Notes:
Total Depth: 5.5 feet below ground surface (bgs)
Groundwater encountered at 5.5 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB53
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER N/A / N/A
GRAVEL PACK TYPE N/A
GROUT TYPE/QUANTITY Cement grout
DEPTH TO WATER 4
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	
			LB53-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, slightly moist, loose, very fine to medium grained sand, trace gravel and shells, no odor or staining.	2.5	Cement grout
			LB53-2.5		0.0	SW		@2.5': SAND, medium brown, moist, loose, very fine to fine grained, trace gravel	4.0	

Notes:
Total Depth: 4 feet below ground surface (bgs)
Groundwater encountered at 4 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB54
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER N/A / N/A
GRAVEL PACK TYPE N/A
GROUT TYPE/QUANTITY Cement grout
DEPTH TO WATER 4
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
			LB54-0.5		0.0	SM		@ Surface : Silty SAND, light brown, slightly moist, dense, very fine to medium grained sand, trace gravel and shells, no odor or staining.	1.5	Cement grout
								@1.5': Asphalt layer	2.0	
			LB54-2.5		0.0	SW		@2.5': SAND, medium brown, moist, loose to medium dense, very fine to fine grained, trace gravel		
									4.0	

Notes:
Total Depth: 4 feet below ground surface (bgs)
Groundwater encountered at 4 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Direct Push
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB55
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER N/A / N/A
GRAVEL PACK TYPE N/A
GROUT TYPE/QUANTITY Cement grout
DEPTH TO WATER 4
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	
			LB55-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, slightly moist, loose, very fine to medium grained, trace gravel and shells, no odor or staining.	2.5	
			LB55-2.5		0.0	SW		@2.5': SAND, medium brown, slightly moist, loose, very fine to fine grained, trace shells @4': groundwater encountered		
5										Cement grout
								@8': dark grey, trace clay		
10									10.0	

Notes:
Total Depth: 10 feet below ground surface (bgs)
Groundwater encountered at 4 feet
Grab groundwater sample collected

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER	12736.024	**BORING/WELL NUMBER**	LB56
PROJECT NAME	B. 191 - 194 Baseline Investigation Addendum	**DATE DRILLED**	12/6/2022
LOCATION	B. 191- 194, Wilmington, CA	**CASING TYPE/DIAMETER**	Nylaflow / 1/4-inch
DRILLING METHOD	Hand Auger	**GRAVEL PACK TYPE**	#3 Sand
SAMPLING METHOD	Grab sample	**GROUT TYPE/QUANTITY**	Hydrated bentonite
GROUND ELEVATION		**DEPTH TO WATER**	4
TOP OF CASING	N/A	**GROUND WATER ELEVATION**	
LOGGED BY	TCD		
REMARKS	Drilling completed by Millennium Environmental Inc		

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	Hydrated bentonite
			LB56-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, moist, loose, very fine to medium grained, trace gravel and shells, no odor or staining.	2.5	
			LB56-2.5		0.0	SW		@2.5': SAND, medium brown, moist, loose, very fine to fine grained, trace shells	4.0	airstone probe No. 3 Sand Hydrated bentonite

Notes:
Total Depth: 4 feet below ground surface (bgs)
Groundwater encountered at 4 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER	12736.024	**BORING/WELL NUMBER**	LB57
PROJECT NAME	B. 191 - 194 Baseline Investigation Addendum	**DATE DRILLED**	12/6/2022
LOCATION	B. 191- 194, Wilmington, CA	**CASING TYPE/DIAMETER**	Nylaflow / 1/4-inch
DRILLING METHOD	Hand Auger	**GRAVEL PACK TYPE**	#3 Sand
SAMPLING METHOD	Grab sample	**GROUT TYPE/QUANTITY**	Hydrated bentonite
GROUND ELEVATION		**DEPTH TO WATER**	4
TOP OF CASING	N/A	**GROUND WATER ELEVATION**	
LOGGED BY	TCD		
REMARKS	Drilling completed by Millennium Environmental Inc		

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 4 inches of concrete	0.3	Hydrated bentonite
			LB57-0.5		0.0	SW		@ 0.5' : SAND, medium brown, moist, loose, very fine to fine grained, trace silt and shells		
			LB57-2.5		0.0					airstone probe
									4.0	No. 3 Sand
										Hydrated bentonite

Notes:
Total Depth: 4 feet below ground surface (bgs)
Groundwater encountered at 4 feet
Vapor probe set at 3 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER 12736.024
PROJECT NAME B. 191 - 194 Baseline Investigation Addendum
LOCATION B. 191- 194, Wilmington, CA
DRILLING METHOD Hand Auger
SAMPLING METHOD Grab sample
GROUND ELEVATION
TOP OF CASING N/A
LOGGED BY TCD
REMARKS Drilling completed by Millennium Environmental Inc

BORING/WELL NUMBER LB58
DATE DRILLED 12/6/2022
CASING TYPE/DIAMETER Nylaflow / 1/4-inch
GRAVEL PACK TYPE #3 Sand
GROUT TYPE/QUANTITY Hydrated bentonite
DEPTH TO WATER 4
GROUND WATER ELEVATION

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	Hydrated bentonite
			LB58-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, moist, loose, very fine to medium grained, trace gravel and shells, no staining or odor	2.5	
			LB58-2.5		0.0	SW		@2.5': SAND, medium brown, moist, loose, very fine to fine grained, trace silt, gravel and shells	4.0	airstone probe No. 3 Sand Hydrated bentonite

Notes:
Total Depth: 4 feet below ground surface (bgs)
Groundwater encountered at 4 feet
Vapor probe set at 3 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

SOIL VAPOR PROBE CONSTRUCTION LOG

PROJECT NUMBER	12736.024	**BORING/WELL NUMBER**	LB59
PROJECT NAME	B. 191 - 194 Baseline Investigation Addendum	**DATE DRILLED**	12/6/2022
LOCATION	B. 191- 194, Wilmington, CA	**CASING TYPE/DIAMETER**	Nylaflow / 1/4-inch
DRILLING METHOD	Hand Auger	**GRAVEL PACK TYPE**	#3 Sand
SAMPLING METHOD	Grab sample	**GROUT TYPE/QUANTITY**	Hydrated bentonite
GROUND ELEVATION		**DEPTH TO WATER**	4
TOP OF CASING	N/A	**GROUND WATER ELEVATION**	
LOGGED BY	TCD		
REMARKS	Drilling completed by Millennium Environmental Inc		

DEPTH (ft. BGL)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	PID (ppm)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								@Surface: 6 inches of asphalt	0.5	
			LB59-0.5		0.0	SM		@ 0.5' : Silty SAND, medium brown, moist, loose, very fine to medium grained, trace gravel and shells, no staining or odor	2.5	Hydrated bentonite
			LB59-2.5		0.0	SW		@2.5': SAND, medium brown, moist, loose, very fine to fine grained, trace gravel and shells	4.0	airstone probe No. 3 Sand Hydrated bentonite

Notes:
Total Depth: 4 feet below ground surface (bgs)
Groundwater encountered at 4 feet
Vapor probe set at 3 feet

LAEWNN01 - SOIL VAPOR BORING LOGS LB50-LB59.GPJ ROCKLOG2012.GDT 2/23/23

APPENDIX D

Boring Permit

ENVIRONMENTAL HEALTH

Drinking Water Program

5050 Commerce Drive, Baldwin Park, CA 91706
Telephone: (626) 430-5420 • http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm

Work Plan Approval

WORK SITE ADDRESS	CITY	ZIP	EMAIL ADDRESS
Signal Street	San Pedro	90731	mwithrow@leightongroup.com

NOTICE:

- WORK PLAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).
- WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- WORK PLAN APPROVALS ARE LIMITED TO COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC.
- THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.

TO BE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM:

X	WORK PLAN APPROVED FOR: 3 Soil Boring/Exp. Hole	**PERMIT NUMBER:**	SR0315214	**DATE:**	November 23, 2022

ADDITIONAL APPROVAL CONDITIONS:

- Work plan approval is issued for scope of work submitted to the Drinking Water Program. Any modifications to the scope of work will require additional work plan review.
- As discussed, please ensure the boring/exploration hole is backfilled within 24 hours of boring construction.
- Ensure to backfill using a tremie pipe under pressure or equivalent equipment with approved cement grout, proceeding upward from the bottom of the boring/exploration hole to surface.
- Ensure soil borings are sealed per California Well Standards 74-90
  - **Cement grout mix ratio of 5-6 gallons of water per 94-pound bag of Portland cement.**
  - Up to 6% of Bentonite may be added to the cement-based mix.
  - No hydrated Bentonite chips and/or soil cuttings.
- Borings/Exploration holes must comply with all applicable requirements published in the California Well Standards (Bulletins 74-81 and 74-90) and the Los Angeles County Code, Title 11.

APPROVED BY:

Teri Hachey, REHS
26415 Carl Boyer Dr.
Santa Clarita, Ca 91350
(661) 287-7017

5770

APPENDIX E

Laboratory Reports and Chain-of-Custody Documents

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

18 December 2022

Mark Withrow
Leighton Consulting
17781 Cowan
Irvine, CA

Re: POLA Berths 191-194

Enclosed are the results of analyses for samples received by the laboratory on 12/13/22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB59-3	JEI220355-01	Soil Gas	12/13/2022 13:33	12/13/2022 13:33
LB58-3	JEI220355-02	Soil Gas	12/13/2022 13:33	12/13/2022 13:33
LB57-3	JEI220355-03	Soil Gas	12/13/2022 13:33	12/13/2022 13:33
LB56-3	JEI220355-04	Soil Gas	12/13/2022 13:33	12/13/2022 13:33

DETECTIONS SUMMARY

Sample ID: LB59-3 **Laboratory ID:** JEI220355-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Freon 11	44	16	µg/m3	EPA 8260	
Tetrachloroethene	104	8	µg/m3	EPA 8260	
m,p-Xylene	27	16	µg/m3	EPA 8260	

Sample ID: LB58-3 **Laboratory ID:** JEI220355-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	50	8	µg/m3	EPA 8260	

Sample ID: LB57-3 **Laboratory ID:** JEI220355-03

No Results Detected

Sample ID: LB56-3 **Laboratory ID:** JEI220355-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	13	8	µg/m3	EPA 8260	
1,2,4-Trimethylbenzene	10	8	µg/m3	EPA 8260	
m,p-Xylene	17	16	µg/m3	EPA 8260	

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB59-3

JEI220355-01(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Benzene	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
Bromodichloromethane	ND	8	µg/m3	"	"		"	"	
Bromoform	ND	8	µg/m3	"	"		"	"	
n-Butylbenzene	ND	12	µg/m3	"	"		"	"	
sec-Butylbenzene	ND	12	µg/m3	"	"		"	"	
tert-Butylbenzene	ND	12	µg/m3	"	"		"	"	
Carbon tetrachloride	ND	8	µg/m3	"	"		"	"	
Chlorobenzene	ND	8	µg/m3	"	"		"	"	
Chloroform	ND	8	µg/m3	"	"		"	"	
Dibromochloromethane	ND	8	µg/m3	"	"		"	"	
1,2-Dibromoethane (EDB)	ND	8	µg/m3	"	"		"	"	
1,2-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,3-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,4-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
Freon 12	ND	16	µg/m3	"	"		"	"	
Freon 11	44	16	µg/m3	"	"		"	"	
Freon 113	ND	16	µg/m3	"	"		"	"	
1,1-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,2-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,1-Dichloroethene	ND	8	µg/m3	"	"		"	"	
cis-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
trans-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
Ethylbenzene	ND	8	µg/m3	"	"		"	"	
Isopropylbenzene	ND	8	µg/m3	"	"		"	"	
4-Isopropyltoluene	ND	8	µg/m3	"	"		"	"	
Methylene chloride	ND	8	µg/m3	"	"		"	"	
Naphthalene	ND	40	µg/m3	"	"		"	"	
n-Propylbenzene	ND	8	µg/m3	"	"		"	"	
Styrene	ND	8	µg/m3	"	"		"	"	
1,1,1,2-Tetrachloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2,2-Tetrachloroethane	ND	16	µg/m3	"	"		"	"	
Tetrachloroethene	104	8	µg/m3	"	"		"	"	
Toluene	ND	8	µg/m3	"	"		"	"	
1,1,1-Trichloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2-Trichloroethane	ND	8	µg/m3	"	"		"	"	
Trichloroethene	ND	8	µg/m3	"	"		"	"	
1,2,4-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	
1,3,5-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB59-3

JEI220355-01(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Vinyl chloride	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
m,p-Xylene	27	16	µg/m3	"	"		"	"	
o-Xylene	ND	8	µg/m3	"	"		"	"	
Methyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Ethyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Di-isopropylether	ND	40	µg/m3	"	"		"	"	
tert-amylmethylether	ND	40	µg/m3	"	"		"	"	
tert-Butylalcohol	ND	400	µg/m3	"	"		"	"	
Gasoline Range Organics (C4-C12)	ND	2000	µg/m3	"	"		"	"	
n-Hexane (LCC)	ND	80	µg/m3	"	"		"	"	
n-Pentane (LCC)	ND	80	µg/m3	"	"		"	"	
Isopropanol (LCC)	ND	80	µg/m3	"	"		"	"	
n-Propanol (LCC)	ND	80	µg/m3	"	"		"	"	
Surrogate: Toluene-d8	*99.06 %*	*60 - 140*							
Surrogate: Dibromofluoromethane	*74.07 %*	*60 - 140*							
Surrogate: 4-Bromofluorobenzene	*96.12 %*	*60 - 140*							

Jones Environmental, Inc.

Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB58-3

JEI220355-02(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Benzene	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
Bromodichloromethane	ND	8	µg/m3	"	"		"	"	
Bromoform	ND	8	µg/m3	"	"		"	"	
n-Butylbenzene	ND	12	µg/m3	"	"		"	"	
sec-Butylbenzene	ND	12	µg/m3	"	"		"	"	
tert-Butylbenzene	ND	12	µg/m3	"	"		"	"	
Carbon tetrachloride	ND	8	µg/m3	"	"		"	"	
Chlorobenzene	ND	8	µg/m3	"	"		"	"	
Chloroform	ND	8	µg/m3	"	"		"	"	
Dibromochloromethane	ND	8	µg/m3	"	"		"	"	
1,2-Dibromoethane (EDB)	ND	8	µg/m3	"	"		"	"	
1,2-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,3-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,4-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
Freon 12	ND	16	µg/m3	"	"		"	"	
Freon 11	ND	16	µg/m3	"	"		"	"	
Freon 113	ND	16	µg/m3	"	"		"	"	
1,1-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,2-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,1-Dichloroethene	ND	8	µg/m3	"	"		"	"	
cis-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
trans-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
Ethylbenzene	ND	8	µg/m3	"	"		"	"	
Isopropylbenzene	ND	8	µg/m3	"	"		"	"	
4-Isopropyltoluene	ND	8	µg/m3	"	"		"	"	
Methylene chloride	ND	8	µg/m3	"	"		"	"	
Naphthalene	ND	40	µg/m3	"	"		"	"	
n-Propylbenzene	ND	8	µg/m3	"	"		"	"	
Styrene	ND	8	µg/m3	"	"		"	"	
1,1,1,2-Tetrachloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2,2-Tetrachloroethane	ND	16	µg/m3	"	"		"	"	
Tetrachloroethene	50	8	µg/m3	"	"		"	"	
Toluene	ND	8	µg/m3	"	"		"	"	
1,1,1-Trichloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2-Trichloroethane	ND	8	µg/m3	"	"		"	"	
Trichloroethene	ND	8	µg/m3	"	"		"	"	
1,2,4-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	
1,3,5-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB58-3

JEI220355-02(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Vinyl chloride	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
m,p-Xylene	ND	16	µg/m3	"	"		"	"	
o-Xylene	ND	8	µg/m3	"	"		"	"	
Methyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Ethyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Di-isopropylether	ND	40	µg/m3	"	"		"	"	
tert-amylmethylether	ND	40	µg/m3	"	"		"	"	
tert-Butylalcohol	ND	400	µg/m3	"	"		"	"	
Gasoline Range Organics (C4-C12)	ND	2000	µg/m3	"	"		"	"	
n-Hexane (LCC)	ND	80	µg/m3	"	"		"	"	
n-Pentane (LCC)	ND	80	µg/m3	"	"		"	"	
Isopropanol (LCC)	ND	80	µg/m3	"	"		"	"	
n-Propanol (LCC)	ND	80	µg/m3	"	"		"	"	
Surrogate: Toluene-d8	*100.75 %*	*60 - 140*							
Surrogate: Dibromofluoromethane	*69.76 %*	*60 - 140*							
Surrogate: 4-Bromofluorobenzene	*94.61 %*	*60 - 140*							

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB57-3

JEI220355-03(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Benzene	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
Bromodichloromethane	ND	8	µg/m3	"	"		"	"	
Bromoform	ND	8	µg/m3	"	"		"	"	
n-Butylbenzene	ND	12	µg/m3	"	"		"	"	
sec-Butylbenzene	ND	12	µg/m3	"	"		"	"	
tert-Butylbenzene	ND	12	µg/m3	"	"		"	"	
Carbon tetrachloride	ND	8	µg/m3	"	"		"	"	
Chlorobenzene	ND	8	µg/m3	"	"		"	"	
Chloroform	ND	8	µg/m3	"	"		"	"	
Dibromochloromethane	ND	8	µg/m3	"	"		"	"	
1,2-Dibromoethane (EDB)	ND	8	µg/m3	"	"		"	"	
1,2-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,3-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,4-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
Freon 12	ND	16	µg/m3	"	"		"	"	
Freon 11	ND	16	µg/m3	"	"		"	"	
Freon 113	ND	16	µg/m3	"	"		"	"	
1,1-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,2-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,1-Dichloroethene	ND	8	µg/m3	"	"		"	"	
cis-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
trans-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
Ethylbenzene	ND	8	µg/m3	"	"		"	"	
Isopropylbenzene	ND	8	µg/m3	"	"		"	"	
4-Isopropyltoluene	ND	8	µg/m3	"	"		"	"	
Methylene chloride	ND	8	µg/m3	"	"		"	"	
Naphthalene	ND	40	µg/m3	"	"		"	"	
n-Propylbenzene	ND	8	µg/m3	"	"		"	"	
Styrene	ND	8	µg/m3	"	"		"	"	
1,1,1,2-Tetrachloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2,2-Tetrachloroethane	ND	16	µg/m3	"	"		"	"	
Tetrachloroethene	ND	8	µg/m3	"	"		"	"	
Toluene	ND	8	µg/m3	"	"		"	"	
1,1,1-Trichloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2-Trichloroethane	ND	8	µg/m3	"	"		"	"	
Trichloroethene	ND	8	µg/m3	"	"		"	"	
1,2,4-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	
1,3,5-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB57-3

JEI220355-03(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Vinyl chloride	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
m,p-Xylene	ND	16	µg/m3	"	"		"	"	
o-Xylene	ND	8	µg/m3	"	"		"	"	
Methyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Ethyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Di-isopropylether	ND	40	µg/m3	"	"		"	"	
tert-amylmethylether	ND	40	µg/m3	"	"		"	"	
tert-Butylalcohol	ND	400	µg/m3	"	"		"	"	
Gasoline Range Organics (C4-C12)	ND	2000	µg/m3	"	"		"	"	
n-Hexane (LCC)	ND	80	µg/m3	"	"		"	"	
n-Pentane (LCC)	ND	80	µg/m3	"	"		"	"	
Isopropanol (LCC)	ND	80	µg/m3	"	"		"	"	
n-Propanol (LCC)	ND	80	µg/m3	"	"		"	"	
Surrogate: Toluene-d8	*99.73 %*	*60 - 140*							
Surrogate: Dibromofluoromethane	*76.95 %*	*60 - 140*							
Surrogate: 4-Bromofluorobenzene	*96.31 %*	*60 - 140*							

Jones Environmental, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB56-3

JEI220355-04(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Benzene	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
Bromodichloromethane	ND	8	µg/m3	"	"		"	"	
Bromoform	ND	8	µg/m3	"	"		"	"	
n-Butylbenzene	ND	12	µg/m3	"	"		"	"	
sec-Butylbenzene	ND	12	µg/m3	"	"		"	"	
tert-Butylbenzene	ND	12	µg/m3	"	"		"	"	
Carbon tetrachloride	ND	8	µg/m3	"	"		"	"	
Chlorobenzene	ND	8	µg/m3	"	"		"	"	
Chloroform	ND	8	µg/m3	"	"		"	"	
Dibromochloromethane	ND	8	µg/m3	"	"		"	"	
1,2-Dibromoethane (EDB)	ND	8	µg/m3	"	"		"	"	
1,2-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,3-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
1,4-Dichlorobenzene	ND	16	µg/m3	"	"		"	"	
Freon 12	ND	16	µg/m3	"	"		"	"	
Freon 11	ND	16	µg/m3	"	"		"	"	
Freon 113	ND	16	µg/m3	"	"		"	"	
1,1-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,2-Dichloroethane	ND	8	µg/m3	"	"		"	"	
1,1-Dichloroethene	ND	8	µg/m3	"	"		"	"	
cis-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
trans-1,2-Dichloroethene	ND	8	µg/m3	"	"		"	"	
Ethylbenzene	ND	8	µg/m3	"	"		"	"	
Isopropylbenzene	ND	8	µg/m3	"	"		"	"	
4-Isopropyltoluene	ND	8	µg/m3	"	"		"	"	
Methylene chloride	ND	8	µg/m3	"	"		"	"	
Naphthalene	ND	40	µg/m3	"	"		"	"	
n-Propylbenzene	ND	8	µg/m3	"	"		"	"	
Styrene	ND	8	µg/m3	"	"		"	"	
1,1,1,2-Tetrachloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2,2-Tetrachloroethane	ND	16	µg/m3	"	"		"	"	
Tetrachloroethene	13	8	µg/m3	"	"		"	"	
Toluene	ND	8	µg/m3	"	"		"	"	
1,1,1-Trichloroethane	ND	8	µg/m3	"	"		"	"	
1,1,2-Trichloroethane	ND	8	µg/m3	"	"		"	"	
Trichloroethene	ND	8	µg/m3	"	"		"	"	
1,2,4-Trimethylbenzene	10	8	µg/m3	"	"		"	"	
1,3,5-Trimethylbenzene	ND	8	µg/m3	"	"		"	"	

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

LB56-3

JEI220355-04(Soil Gas)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA 8260									
Vinyl chloride	ND	8	µg/m3	1	QC2212058		12/13/22	EPA 8260	
m,p-Xylene	17	16	µg/m3	"	"		"	"	
o-Xylene	ND	8	µg/m3	"	"		"	"	
Methyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Ethyl-tert-butylether	ND	40	µg/m3	"	"		"	"	
Di-isopropylether	ND	40	µg/m3	"	"		"	"	
tert-amylmethylether	ND	40	µg/m3	"	"		"	"	
tert-Butylalcohol	ND	400	µg/m3	"	"		"	"	
Gasoline Range Organics (C4-C12)	ND	2000	µg/m3	"	"		"	"	
n-Hexane (LCC)	ND	80	µg/m3	"	"		"	"	
n-Pentane (LCC)	ND	80	µg/m3	"	"		"	"	
Isopropanol (LCC)	ND	80	µg/m3	"	"		"	"	
n-Propanol (LCC)	ND	80	µg/m3	"	"		"	"	
Surrogate: Toluene-d8	*98.53 %*	*60 - 140*							
Surrogate: Dibromofluoromethane	*71.32 %*	*60 - 140*							
Surrogate: 4-Bromofluorobenzene	*95.76 %*	*60 - 140*							

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	%REC Limits	Notes
Batch QC2212058 - EPA 8260										
CCV 1										
Benzene	5	8	%	5		96	80 - 120		120	
Chlorobenzene	5	8	%	5		102	80 - 120		120	
1,1-Dichloroethene	4	8	%	5		81	80 - 120		120	
cis-1,2-Dichloroethene	5	8	%	5		92	80 - 120		120	
Ethylbenzene	5	8	%	5		99	80 - 120		120	
Tetrachloroethene	6	8	%	5		110	80 - 120		120	
Toluene	5	8	%	5		96	80 - 120		120	
1,1,1-Trichloroethane	4	8	%	5		72*	80 - 120		120	
Trichloroethene	5	8	%	5		100	80 - 120		120	
1,2,4-Trimethylbenzene	5	8	%	5		101	80 - 120		120	
Vinyl chloride	5	8	%	5		110	80 - 120		120	
LCS 1										
Benzene	5.84	8	%	5		117	70 - 130			
Chlorobenzene	5.95	8	%	5		119	70 - 130			
1,1-Dichloroethene	4.44	8	%	5		89	60 - 140			
cis-1,2-Dichloroethene	5.35	8	%	5		107	70 - 130			
Ethylbenzene	5.51	8	%	5		110	70 - 130			
Tetrachloroethene	5.85	8	%	5		117	70 - 130			
Toluene	5.66	8	%	5		113	70 - 130			
1,1,1-Trichloroethane	3.81	8	%	5		76	70 - 130			
Trichloroethene	6.02	8	%	5		120	70 - 130			
1,2,4-Trimethylbenzene	5.60	8	%	5		112	70 - 130			
Vinyl chloride	2.20	8	%	5		44^	60 - 140			
Surrogate: Toluene-d8		*99.47 %*	*60 - 140*							
Surrogate: Dibromofluoromethane		*88.48 %*	*60 - 140*							
Surrogate: 4-Bromofluorobenzene		*99.28 %*	*60 - 140*							
LCSD 1										
Benzene	5.55	8	%	5		111		4.99		
Chlorobenzene	5.88	8	%	5		118		1.23		

Jones Environmental, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	%REC Limits	Notes
Batch QC2212058 - EPA 8260										
LCSD 1										
1,1-Dichloroethene	4.18	8	%	5		84		6.03		
cis-1,2-Dichloroethene	4.68	8	%	5		94		13.50		
Ethylbenzene	5.62	8	%	5		112		2.00		
Tetrachloroethene	6.00	8	%	5		120		2.47		
Toluene	5.46	8	%	5		109		3.53		
1,1,1-Trichloroethane	3.31	8	%	5		66*		14.16		
Trichloroethene	5.61	8	%	5		112		7.07		
1,2,4-Trimethylbenzene	5.64	8	%	5		113		0.62		
Vinyl chloride	2.34	8	%	5		47^		6.17		
Surrogate: Toluene-d8		*99.33 %*	*60 - 140*							
Surrogate: Dibromofluoromethane		*81.41 %*	*60 - 140*							
Surrogate: 4-Bromofluorobenzene		*96.86 %*	*60 - 140*							
Method Blank 1										
Benzene	ND	8	µg/m3							
Bromodichloromethane	ND	8	µg/m3							
Bromoform	ND	8	µg/m3							
n-Butylbenzene	ND	12	µg/m3							
sec-Butylbenzene	ND	12	µg/m3							
tert-Butylbenzene	ND	12	µg/m3							
Carbon tetrachloride	ND	8	µg/m3							
Chlorobenzene	ND	8	µg/m3							
Chloroform	ND	8	µg/m3							
Dibromochloromethane	ND	8	µg/m3							
1,2-Dibromoethane (EDB)	ND	8	µg/m3							
1,2-Dichlorobenzene	ND	16	µg/m3							
1,3-Dichlorobenzene	ND	16	µg/m3							
1,4-Dichlorobenzene	ND	16	µg/m3							
Freon 12	ND	16	µg/m3							
Freon 11	ND	16	µg/m3							
Freon 113	ND	16	µg/m3							
1,1-Dichloroethane	ND	8	µg/m3							
1,2-Dichloroethane	ND	8	µg/m3							
1,1-Dichloroethene	ND	8	µg/m3							
cis-1,2-Dichloroethene	ND	8	µg/m3							
trans-1,2-Dichloroethene	ND	8	µg/m3							

Jones Environmental, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	%REC Limits	Notes
Batch QC2212058 - EPA 8260										
Method Blank 1										
Ethylbenzene	ND	8	µg/m3							
Isopropylbenzene	ND	8	µg/m3							
4-Isopropyltoluene	ND	8	µg/m3							
Methylene chloride	ND	8	µg/m3							
Naphthalene	ND	40	µg/m3							
n-Propylbenzene	ND	8	µg/m3							
Styrene	ND	8	µg/m3							
1,1,1,2-Tetrachloroethane	ND	8	µg/m3							
1,1,2,2-Tetrachloroethane	ND	16	µg/m3							
Tetrachloroethene	ND	8	µg/m3							
Toluene	ND	8	µg/m3							
1,1,1-Trichloroethane	ND	8	µg/m3							
1,1,2-Trichloroethane	ND	8	µg/m3							
Trichloroethene	ND	8	µg/m3							
1,2,4-Trimethylbenzene	ND	8	µg/m3							
1,3,5-Trimethylbenzene	ND	8	µg/m3							
Vinyl chloride	ND	8	µg/m3							
m,p-Xylene	ND	16	µg/m3							
o-Xylene	ND	8	µg/m3							
Methyl-tert-butylether	ND	40	µg/m3							
Ethyl-tert-butylether	ND	40	µg/m3							
Di-isopropylether	ND	40	µg/m3							
tert-amylmethylether	ND	40	µg/m3							
tert-Butylalcohol	ND	400	µg/m3							
Gasoline Range Organics (C4-C12)	ND	2000	µg/m3							
n-Hexane (LCC)	ND	80	µg/m3							
n-Pentane (LCC)	ND	80	µg/m3							
Isopropanol (LCC)	ND	80	µg/m3							
n-Propanol (LCC)	ND	80	µg/m3							
Surrogate: Toluene-d8		*99.39 %*		*60 - 140*						
Surrogate: Dibromofluoromethane		*78.50 %*		*60 - 140*						
Surrogate: 4-Bromofluorobenzene		*94.40 %*		*60 - 140*						
Sample Blank 1										
Benzene	ND	8	µg/m3							
Bromodichloromethane	ND	8	µg/m3							

Jones Environmental, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	%REC Limits	Notes
Batch QC2212058 - EPA 8260										
Sample Blank 1										
Bromoform	ND	8	µg/m3							
n-Butylbenzene	ND	12	µg/m3							
sec-Butylbenzene	ND	12	µg/m3							
tert-Butylbenzene	ND	12	µg/m3							
Carbon tetrachloride	ND	8	µg/m3							
Chlorobenzene	ND	8	µg/m3							
Chloroform	ND	8	µg/m3							
Dibromochloromethane	ND	8	µg/m3							
1,2-Dibromoethane (EDB)	ND	8	µg/m3							
1,2-Dichlorobenzene	ND	16	µg/m3							
1,3-Dichlorobenzene	ND	16	µg/m3							
1,4-Dichlorobenzene	ND	16	µg/m3							
Freon 12	ND	16	µg/m3							
Freon 11	ND	16	µg/m3							
Freon 113	ND	16	µg/m3							
1,1-Dichloroethane	ND	8	µg/m3							
1,2-Dichloroethane	ND	8	µg/m3							
1,1-Dichloroethene	ND	8	µg/m3							
cis-1,2-Dichloroethene	ND	8	µg/m3							
trans-1,2-Dichloroethene	ND	8	µg/m3							
Ethylbenzene	ND	8	µg/m3							
Isopropylbenzene	ND	8	µg/m3							
4-Isopropyltoluene	ND	8	µg/m3							
Methylene chloride	ND	8	µg/m3							
Naphthalene	ND	40	µg/m3							
n-Propylbenzene	ND	8	µg/m3							
Styrene	ND	8	µg/m3							
1,1,1,2-Tetrachloroethane	ND	8	µg/m3							
1,1,2,2-Tetrachloroethane	ND	16	µg/m3							
Tetrachloroethene	ND	8	µg/m3							
Toluene	ND	8	µg/m3							
1,1,1-Trichloroethane	ND	8	µg/m3							
1,1,2-Trichloroethane	ND	8	µg/m3							
Trichloroethene	ND	8	µg/m3							
1,2,4-Trimethylbenzene	ND	8	µg/m3							
1,3,5-Trimethylbenzene	ND	8	µg/m3							
Vinyl chloride	ND	8	µg/m3							

Jones Environmental, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	%REC Limits	Notes
Batch QC2212058 - EPA 8260										
Sample Blank 1										
m,p-Xylene	ND	16	µg/m3							
o-Xylene	ND	8	µg/m3							
Methyl-tert-butylether	ND	40	µg/m3							
Ethyl-tert-butylether	ND	40	µg/m3							
Di-isopropylether	ND	40	µg/m3							
tert-amylmethylether	ND	40	µg/m3							
tert-Butylalcohol	ND	400	µg/m3							
Gasoline Range Organics (C4-C12)	ND	2000	µg/m3							
n-Hexane (LCC)	ND	80	µg/m3							
n-Pentane (LCC)	ND	80	µg/m3							
Isopropanol (LCC)	ND	80	µg/m3							
n-Propanol (LCC)	ND	80	µg/m3							
Surrogate: Toluene-d8		*98.97 %*		*60 - 140*						
Surrogate: Dibromofluoromethane		*76.68 %*		*60 - 140*						
Surrogate: 4-Bromofluorobenzene		*96.91 %*		*60 - 140*						

Jones Environmental, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Colby Wakeman
Lab Director

JONES ENVIRONMENTAL, INC.

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
714-449-9937 PHONE
562-646-1611 FAX

Leighton Consulting	Project: POLA Berths 191-194	
17781 Cowan	Project Number: 12736.024	Reported
Irvine, CA	Project Manager: Mark Withrow	12/18/22 12:33

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry
RPD	Relative Percent Difference
E	Estimated Concentration; concentration exceeds calibration range.
LCC	Leak Check Compound
MDL	Compound Reported to Method Detection Limit
*	Recovery outside of acceptable limits. LCS recovery and LCS/LCSD % RSD were within QC limits, therefore data was accepted.
^	Recovery outside of acceptable limits. CCV recovery and LCS/LCSD % RSD were within QC limits, therefore data was accepted.

Jones Environmental, Inc.



Colby Wakeman
Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Soil-Gas Chain-of-Custody Record

Client: Leighton Consulting, Inc.
Client Address: 17781 Cowan
Project Name: POLA Berths 191-194
Project Address: 340 Yacht Street, Wilmington, CA
Report To: Mark Withrow
Email/Phone:
Sampler: Madison Jones

Date: 12/13/2022
Client Project #: 12736.024

Tedlar Hold-Time Requested:
- ☐ 6 hr (DTSC)
- ☐ 72 hr (EPA)
- ☐ 5 Day

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

LAB USE ONLY
Jones Project #
JEI220355

Page 1 of 1

Sample Container: Summa
If different than above, see Notes.

Turn Around Requested
- ☐ Immediate Attention-200%
- ☐ Rush 24 Hours-100%
- ☐ Rush 48 Hours-75%
- ☐ Rush 72 Hours-50%
- ☐ Rush 96 Hours-25%
- ☒ Normal - No Surcharge

Tracer
- ☒ n-pentane
- ☒ n-hexane
- ☐ n-heptane
- ☐ Helium
- ☐ 1,1-DFA
- ☒ ~~Propanol~~

Reporting Limits Requested
- ☐ 20 ug/m³
- ☒ 8 ug/m³
- ☐ __ ug/m³

Units
- ☒ ug/m³
- ☐ ug/L
- ☐ ppmV

Analysis Requested

Sample ID	Purge Number	Purge Volume (mL)	Date	Sample Collection Time	Jones ID (Lab Use Only)	Purge Rate (mL/min)	Pump ID	Magnehelic ID	Sample Matrix: Soil Gas (SG), Air (A), Material (M)	8260B	Gasoline Range Organics	ASTM D1946, Methane/Fixed Gas/H_2S		Magnehelic Vacuum (In/H_2O)	Number of Containers	Notes & Special Instructions
LB59-3	3	3250	12/13	9:53	JEI220355-01	500	Zarak	118012	SG	X	X			42	1	
LB58-3	↓	↓	↓	10:03	-02	↓	Venom	M100.007	↓	↓	↓			↓	↓	
LB57-3	↓	↓	↓	10:19	-03	↓	Zarak	M100.500	↓	↓	↓			↓	↓	
LB56-3	↓	↓	↓	10:22	-04	↓	Venom	M100.501	↓	↓	↓			↓	↓	

Relinquished By (Signature)	Printed Name	Received By (Signature)	Printed Name		
	Theresa Duncan		Madison Jones	4	Total Number of Containers
Company: LCI	Date: 12/13/22 Time: 1032	Company: Jones Environmental	Date: 12/13/2022 Time: 1032		
Relinquished By (Signature)	Printed Name: Casey Ellis	Received By Laboratory (Signature)	Printed Name	Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been requested, and the information provided herein is correct and accurate.	
Company: JEL	Date: 12/13/22 Time: 1400	Company	Date Time		

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

SAMPLE RECEIPT FORM

Jones ID: JEI220355

CLIENT: Leighton Consulting
PROJECT: POLA Berms 191-194
DATE/TIME (LAB RECEIVED): 12/13/2022
RECEIVED BY: _____
Delivered by: □ Client ☒ Jones Courier □UPS / FedEx / USPS □Other _____

TEMPERATURE: Thermometer ID: T-2 (Corrected Temp.) Calibration Due: 07/12/2023

Temperature Cooler #1 _____.____°C ± the CF(+0.5°C) _____.____°C Blank Sample

Temperature Cooler #2 _____.____°C ± the CF(+0.5°C) _____.____°C Blank Sample

Temperature Criteria: 0 ≤ 6°C (NO frozen containers) Criteria Met? □ Yes □ No

If criteria is not met:

Sample Received on ice? □ Yes □ No

Sample received Chilled on same day of sampling? □ Yes □ No

Checked By: _____

Temperature Non-Conformance (NC): **NC No.** _____

□ Sample not received on ice
□ sample not received chilled
□ Sample received chilled, but not on the same day of sampling

SAMPLE CONDITION:	YES	NO*	N/A
Chain of Custody (COC) received filled out completely	☑	□*	□
Total number of containers received match COC	☑	□*	□
Sample container label(s) consistent with COC	☑	□*	□
Sample container(s) intact and in good condition	☑	□*	□
Proper containers and sufficient volume for analyses requested on COC	☑	□*	□
Proper preservative indicated on COC/container for analyses requested	□	□*	☑
Volatile analysis container(s) free of headspace (EPA 8260 water)	□	□*	☑
Custody Seals Intact on Cooler/Sample	□	□*	☑

CONTAINER TYPE:

Solid:
5035 Kits: _____
Glass Jar: _____
Sleeve: _____
Other: _____

Aqueous:
Amber Bottle: _____
VOAs: _____
Poly Bottle: _____
5030 Kits: _____
Other: _____

Air / Soil Gas:
Tedlar Bag: _____
6 hr
72 hr
5 Day
Summa:
(1L) 4 (6L) _____

Complete Non-Conformance if checked

Checked by: _____

07.29.2022 - Version 5.6

JONES ENVIRONMENTAL, INC
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/22
Client Address:	17781 Cowan Irvine, CA 92614	**JEL Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/06/22
		Date Received:	12/06/22
Project:	B191-194	**Date Analyzed:**	12/7-9/22
		Physical State:	Soil & Water

ANALYSES REQUESTED

Soil:

1. EPA 8015M – Extended Range Hydrocarbons
2. EPA 8260B – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics
3. EPA 6010B and EPA 7471A – CAM 17 Metals

Water:

1. EPA 8015M – Extended Range Hydrocarbons
2. EPA 8260B by 5030B – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics
3. EPA 6010B and EPA 7470A – CAM 17 Metals

Approval: 

Douglas A. Fowler, M.S.
Senior Chemist

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**LB50-0.5**	**B50-2.5**	**LB50-5**	**LB58-0.5**	**LB58-2.5**		
Jones ID:	**ST-21305-01**	**ST-21305-02**	**ST-21305-03**	**ST-21305-05**	**ST-21305-06**	**Reporting Limit**	**Units**
Carbon Chain Range							
C13 - C22	**117**	**90.4**	**93.9**	**176**	ND	10.0	mg/kg
C23 - C40	**2470**	**2930**	**3020**	**4380**	ND	10.0	mg/kg
Dilution Factor	5	10	10	10	1		
Surrogate Recovery:						**QC Limits**	
Hexacosane	77%	59%	56%	55%	99%	50 - 140	
Batch:	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**LB59-0.5**	**LB59-2.5**	**LB56-0.5**	**LB56-2.5**	**LB57-0.5**		
Jones ID:	**ST-21305-07**	**ST-21305-08**	**ST-21305-09**	**ST-21305-10**	**ST-21305-11**	**Reporting Limit**	**Units**
Carbon Chain Range							
C13 - C22	**204**	ND	**32.7**	ND	ND	10.0	mg/kg
C23 - C40	**5760**	ND	**1050**	ND	ND	10.0	mg/kg
Dilution Factor	10	1	1	1	1		
Surrogate Recovery:						**QC Limits**	
Hexacosane	54%	78%	92%	88%	84%	50 - 140	
Batch:	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**LB57-2.5**	**LB54-0.5**	**LB54-2.5**	**LB55-0.5**	**LB55-2.5**		
Jones ID:	**ST-21305-12**	**ST-21305-13**	**ST-21305-14**	**ST-21305-15**	**ST-21305-16**	**Reporting Limit**	**Units**
Carbon Chain Range							
C13 - C22	ND	**1710**	ND	**281**	ND	10.0	mg/kg
C23 - C40	ND	**14600**	ND	**8940**	ND	10.0	mg/kg
Dilution Factor	1	20	1	10	1		
Surrogate Recovery:						**QC Limits**	
Hexacosane	80%	50%	68%	53%	74%	50 - 140	
Batch:	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**LB53-0.5**	**LB53-2.5**	**LB52-0.5**	**LB52-2.5**	**LB52-5**		
Jones ID:	**ST-21305-18**	**ST-21305-19**	**ST-21305-20**	**ST-21305-21**	**ST-21305-22**	**Reporting Limit**	**Units**
Carbon Chain Range							
C13 - C22	**690**	**27.1**	**551**	**223**	ND	10.0	mg/kg
C23 - C40	**8660**	**479**	**5960**	**9790**	ND	10.0	mg/kg
Dilution Factor	10	1	10	10	1		
Surrogate Recovery:						**QC Limits**	
Hexacosane	56%	79%	63%	54%	97%	50 - 140	
Batch:	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01	FID7_120822_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**LB51-0.5**	**LB51-2.5**		
Jones ID:	**ST-21305-23**	**ST-21305-24**	**Reporting Limit**	**Units**
Carbon Chain Range				
C13 - C22	**39.0**	ND	10.0	mg/kg
C23 - C40	**513**	ND	10.0	mg/kg
Dilution Factor	1	1		
Surrogate Recovery:			**QC Limits**	
Hexacosane	74%	53%	50 - 140	
Batch:	FID8_120822_01	FID8_120822_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**METHOD BLANK #1**	**METHOD BLANK #2**		
Jones ID:	**MB1-120822FID7**	**MB1-120822FID8**	**Reporting Limit**	**Units**
Carbon Chain Range				
C13 - C22	ND	ND	10.0	mg/kg
C23 - C40	ND	ND	10.0	mg/kg
Dilution Factor	1	1		
Surrogate Recovery:			**QC Limits**	
Hexacosane	133%	123%	50 - 140	
Batch:	FID7_120822_01	FID8_120822_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

BATCH: **FID7_ 120822_01** **Prepared:** 12/7/2022 **Analyzed:** 12/8/2022

EPA 8015M - Total Petroleum Hydrocarbons

	Result	Spike Level	% Recovery	% RPD	% Recovery Limits	Units
LCS:	LCS1-120822FID7	**SAMPLE SPIKED:**	CLEAN SOIL			
Analyte:						
Diesel	**465**	500	93%		60 - 140	mg/kg
Surrogate Recovery:						
Hexacosane			134%		50 - 140	
LCSD:	LCSD1-120822FID7	**SAMPLE SPIKED:**	CLEAN SOIL			
Analyte:						
Diesel	**485**	500	97%	4.2%	60 - 140	mg/kg
Surrogate Recoveries:						
Hexacosane			129%		50 - 140	
CCV:	CCV1-120822FID7					
Analyte:						
Diesel	**1140**	1000	114%		80 - 120	mg/kg
Surrogate Recoveries:						
Hexacosane			139%		50 - 140	

LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
805-399-0060
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/8/2022
		Physical State:	Soil

BATCH: **FID8_ 120822_01** **Prepared:** 12/8/2022 **Analyzed:** 12/8/2022

EPA 8015M - Total Petroleum Hydrocarbons

	Result	Spike Level	% Recovery	% RPD	% Recovery Limits	Units
LCS:	LCS1-120822FID8	**SAMPLE SPIKED:**	CLEAN SOIL			
Analyte:						
Diesel	**547**	500	109%		60 - 140	mg/kg
Surrogate Recovery:						
Hexacosane			116%		50 - 140	
LCSD:	LCSD1-120822FID8	**SAMPLE SPIKED:**	CLEAN SOIL			
Analyte:						
Diesel	**561**	500	112%	2.5%	60 - 140	mg/kg
Surrogate Recoveries:						
Hexacosane			111%		50 - 140	
CCV:	CCV1-120822FID8					
Analyte:						
Diesel	**1200**	1000	120%		80 - 120	mg/kg
Surrogate Recoveries:						
Hexacosane			109%		50 - 140	

LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB50-2.5**	**LB50-5**	**LB58-2.5**	**LB59-2.5**	**LB56-2.5**		
Jones ID:	**ST-21305-02**	**ST-21305-03**	**ST-21305-06**	**ST-21305-08**	**ST-21305-10**	**Reporting Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	1.0	µg/kg
Bromobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Bromodichloromethane	ND	ND	ND	ND	ND	1.0	µg/kg
Bromoform	ND	ND	ND	ND	ND	1.0	µg/kg
n-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
sec-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
tert-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Carbon tetrachloride	ND	ND	ND	ND	ND	1.0	µg/kg
Chlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Chloroform	ND	ND	ND	ND	ND	1.0	µg/kg
2-Chlorotoluene	ND	ND	ND	ND	ND	1.0	µg/kg
4-Chlorotoluene	ND	ND	ND	ND	ND	1.0	µg/kg
Dibromochloromethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	1.0	µg/kg
Dibromomethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
2,2-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	LB50-2.5	LB50-5	LB58-2.5	LB59-2.5	LB56-2.5		
Jones ID:	ST-21305-02	ST-21305-03	ST-21305-06	ST-21305-08	ST-21305-10	Reporting Limit	Units
Analytes:							
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg
Ethylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Freon 11	ND	ND	ND	ND	ND	5.0	µg/kg
Freon 12	ND	ND	ND	ND	ND	5.0	µg/kg
Freon 113	ND	ND	ND	ND	ND	5.0	µg/kg
Hexachlorobutadiene	ND	ND	ND	ND	ND	1.0	µg/kg
Isopropylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
4-Isopropyltoluene	ND	ND	ND	ND	ND	1.0	µg/kg
Methylene chloride	ND	ND	ND	ND	ND	1.0	µg/kg
Naphthalene	ND	ND	ND	ND	ND	5.0	µg/kg
n-Propylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Styrene	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
Tetrachloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
Toluene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
Trichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Vinyl chloride	ND	ND	ND	ND	ND	1.0	µg/kg
m,p-Xylene	ND	ND	ND	ND	ND	2.0	µg/kg
o-Xylene	ND	ND	ND	ND	ND	1.0	µg/kg
Methyl-tert-butylether	ND	ND	ND	ND	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	ND	ND	ND	ND	5.0	µg/kg
Di-isopropylether	ND	ND	ND	ND	ND	5.0	µg/kg
tert-amylmethylether	ND	ND	ND	ND	ND	5.0	µg/kg
tert-Butylalcohol	ND	ND	ND	ND	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	ND	ND	ND	ND	ND	0.20	mg/kg
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	89%	91%	93%	90%	88%	60 - 140	
Toluene-d$_8$	99%	103%	96%	97%	96%	60 - 140	
4-Bromofluorobenzene	99%	88%	105%	101%	99%	60 - 140	
Batch:	VOC7-120922-01	VOC7-120922-01	VOC7-120922-01	VOC7-120922-01	VOC7-120922-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB57-2.5**	**LB54-2.5**	**LB55-2.5**	**LB53-2.5**	**LB52-2.5**		
Jones ID:	**ST-21305-12**	**ST-21305-14**	**ST-21305-16**	**ST-21305-19**	**ST-21305-21**	**Reporting Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	1.0	µg/kg
Bromobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Bromodichloromethane	ND	ND	ND	ND	ND	1.0	µg/kg
Bromoform	ND	ND	ND	ND	ND	1.0	µg/kg
n-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
sec-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
tert-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Carbon tetrachloride	ND	ND	ND	ND	ND	1.0	µg/kg
Chlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Chloroform	ND	ND	ND	ND	ND	1.0	µg/kg
2-Chlorotoluene	ND	ND	ND	ND	ND	1.0	µg/kg
4-Chlorotoluene	ND	ND	ND	ND	ND	1.0	µg/kg
Dibromochloromethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	1.0	µg/kg
Dibromomethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
2,2-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	LB57-2.5	LB54-2.5	LB55-2.5	LB53-2.5	LB52-2.5		
Jones ID:	ST-21305-12	ST-21305-14	ST-21305-16	ST-21305-19	ST-21305-21	Reporting Limit	Units
Analytes:							
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg
Ethylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Freon 11	ND	ND	ND	ND	ND	5.0	µg/kg
Freon 12	ND	ND	ND	ND	ND	5.0	µg/kg
Freon 113	ND	ND	ND	ND	ND	5.0	µg/kg
Hexachlorobutadiene	ND	ND	ND	ND	ND	1.0	µg/kg
Isopropylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
4-Isopropyltoluene	ND	ND	ND	ND	ND	1.0	µg/kg
Methylene chloride	ND	ND	ND	ND	ND	1.0	µg/kg
Naphthalene	ND	ND	ND	ND	ND	5.0	µg/kg
n-Propylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Styrene	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
Tetrachloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
Toluene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
Trichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Vinyl chloride	ND	ND	ND	ND	ND	1.0	µg/kg
m,p-Xylene	ND	ND	ND	ND	ND	2.0	µg/kg
o-Xylene	ND	ND	ND	ND	ND	1.0	µg/kg
Methyl-tert-butylether	ND	ND	ND	ND	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	ND	ND	ND	ND	5.0	µg/kg
Di-isopropylether	ND	ND	ND	ND	ND	5.0	µg/kg
tert-amylmethylether	ND	ND	ND	ND	ND	5.0	µg/kg
tert-Butylalcohol	ND	ND	ND	ND	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	ND	ND	ND	ND	ND	0.20	mg/kg
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	91%	90%	92%	92%	87%	60 - 140	
Toluene-d_8	97%	97%	97%	97%	96%	60 - 140	
4-Bromofluorobenzene	101%	101%	102%	101%	104%	60 - 140	
Batch:	VOC7-120922-01	VOC7-120922-01	VOC7-120922-01	VOC7-120922-01	VOC7-120922-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB52-5**	**LB51-2.5**		
Jones ID:	**ST-21305-22**	**ST-21305-24**	**Reporting Limit**	**Units**
Analytes:				
Benzene	ND	ND	1.0	µg/kg
Bromobenzene	ND	ND	1.0	µg/kg
Bromodichloromethane	ND	ND	1.0	µg/kg
Bromoform	ND	ND	1.0	µg/kg
n-Butylbenzene	ND	ND	1.0	µg/kg
sec-Butylbenzene	ND	ND	1.0	µg/kg
tert-Butylbenzene	ND	ND	1.0	µg/kg
Carbon tetrachloride	ND	ND	1.0	µg/kg
Chlorobenzene	ND	ND	1.0	µg/kg
Chloroform	ND	ND	1.0	µg/kg
2-Chlorotoluene	ND	ND	1.0	µg/kg
4-Chlorotoluene	ND	ND	1.0	µg/kg
Dibromochloromethane	ND	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	ND	1.0	µg/kg
Dibromomethane	ND	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	ND	1.0	µg/kg
1,1-Dichloroethane	ND	ND	1.0	µg/kg
1,2-Dichloroethane (EDC)	ND	ND	1.0	µg/kg
1,1-Dichloroethene	ND	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	ND	1.0	µg/kg
1,2-Dichloropropane	ND	ND	1.0	µg/kg
1,3-Dichloropropane	ND	ND	1.0	µg/kg
2,2-Dichloropropane	ND	ND	1.0	µg/kg
1,1-Dichloropropene	ND	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB52-5**	**LB51-2.5**		
Jones ID:	**ST-21305-22**	**ST-21305-24**	**Reporting Limit**	**Units**
Analytes:				
trans-1,3-Dichloropropene	ND	ND	1.0	µg/kg
Ethylbenzene	ND	ND	1.0	µg/kg
Freon 11	ND	ND	5.0	µg/kg
Freon 12	ND	ND	5.0	µg/kg
Freon 113	ND	ND	5.0	µg/kg
Hexachlorobutadiene	ND	ND	1.0	µg/kg
Isopropylbenzene	ND	ND	1.0	µg/kg
4-Isopropyltoluene	ND	ND	1.0	µg/kg
Methylene chloride	ND	ND	1.0	µg/kg
Naphthalene	ND	ND	5.0	µg/kg
n-Propylbenzene	ND	ND	1.0	µg/kg
Styrene	ND	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	ND	1.0	µg/kg
Tetrachloroethene	ND	ND	1.0	µg/kg
Toluene	ND	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	ND	1.0	µg/kg
Trichloroethene	ND	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	ND	1.0	µg/kg
Vinyl chloride	ND	ND	1.0	µg/kg
m,p-Xylene	ND	ND	2.0	µg/kg
o-Xylene	ND	ND	1.0	µg/kg
Methyl-tert-butylether	ND	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	ND	5.0	µg/kg
Di-isopropylether	ND	ND	5.0	µg/kg
tert-amylmethylether	ND	ND	5.0	µg/kg
tert-Butylalcohol	ND	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	ND	ND	0.20	mg/kg
Dilution Factor	1	1		
Surrogate Recoveries:			**QC Limits**	
Dibromofluoromethane	90%	89%	60 - 140	
Toluene-d_8	97%	97%	60 - 140	
4-Bromofluorobenzene	106%	105%	60 - 140	
Batch:	VOC7-120922-01	VOC7-120922-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**120922-V7MB1**	**Reporting Limit**	**Units**
Analytes:			
Benzene	ND	1.0	µg/kg
Bromobenzene	ND	1.0	µg/kg
Bromodichloromethane	ND	1.0	µg/kg
Bromoform	ND	1.0	µg/kg
n-Butylbenzene	ND	1.0	µg/kg
sec-Butylbenzene	ND	1.0	µg/kg
tert-Butylbenzene	ND	1.0	µg/kg
Carbon tetrachloride	ND	1.0	µg/kg
Chlorobenzene	ND	1.0	µg/kg
Chloroform	ND	1.0	µg/kg
2-Chlorotoluene	ND	1.0	µg/kg
4-Chlorotoluene	ND	1.0	µg/kg
Dibromochloromethane	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	1.0	µg/kg
Dibromomethane	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	1.0	µg/kg
1,1-Dichloroethane	ND	1.0	µg/kg
1,2-Dichloroethane	ND	1.0	µg/kg
1,1-Dichloroethene	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	1.0	µg/kg
1,2-Dichloropropane	ND	1.0	µg/kg
1,3-Dichloropropane	ND	1.0	µg/kg
2,2-Dichloropropane	ND	1.0	µg/kg
1,1-Dichloropropene	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**120922-V7MB1**	**Reporting Limit**	**Units**
Analytes:			
trans-1,3-Dichloropropene	ND	1.0	µg/kg
Ethylbenzene	ND	1.0	µg/kg
Freon 11	ND	5.0	µg/kg
Freon 12	ND	5.0	µg/kg
Freon 113	ND	5.0	µg/kg
Hexachlorobutadiene	ND	1.0	µg/kg
Isopropylbenzene	ND	1.0	µg/kg
4-Isopropyltoluene	ND	1.0	µg/kg
Methylene chloride	ND	1.0	µg/kg
Naphthalene	ND	5.0	µg/kg
n-Propylbenzene	ND	1.0	µg/kg
Styrene	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	µg/kg
Tetrachloroethene	ND	1.0	µg/kg
Toluene	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	1.0	µg/kg
Trichloroethene	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	1.0	µg/kg
Vinyl chloride	ND	1.0	µg/kg
m,p-Xylene	ND	2.0	µg/kg
o-Xylene	ND	1.0	µg/kg
Methyl-tert-butylether	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	5.0	µg/kg
Di-isopropylether	ND	5.0	µg/kg
tert-amylmethylether	ND	5.0	µg/kg
tert-Butylalcohol	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	ND	0.20	mg/kg
Dilution Factor	1		
Surrogate Recoveries:		**QC Limits**	
Dibromofluoromethane	87%	60 - 140	
Toluene-d8	101%	60 - 140	
4-Bromofluorobenzene	104%	60 - 140	
Batch:	VOC7-120922-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

GC#:	**VOC7-120922-01**					
Jones ID:	120922-V7LCS1	120922-V7LCSD1			120922-V7CCV1	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl chloride	87%	85%	2%	60 - 140	113%	80 - 120
1,1-Dichloroethene	88%	83%	6.0%	60 - 140	85%	80 - 120
Cis-1,2-Dichloroethene	85%	93%	8.0%	70 - 130	85%	80 - 120
1,1,1-Trichloroethane	85%	85%	0.5%	70 - 130	82%	80 - 120
Benzene	102%	105%	2.7%	70 - 130	105%	80 - 120
Trichloroethene	88%	86%	2.2%	70 - 130	85%	80 - 120
Toluene	110%	110%	0.6%	70 - 130	109%	80 - 120
Tetrachloroethene	90%	94%	4.3%	70 - 130	91%	80 - 120
Chlorobenzene	110%	111%	1.4%	70 - 130	110%	80 - 120
Ethylbenzene	100%	101%	1.7%	70 - 130	110%	80 - 120
1,2,4 Trimethylbenzene	94%	100%	5.6%	70 - 130	99%	80 - 120
Gasoline Range Organics (C4-C12)	102%	104%	2.6%	70 - 130	106%	
Surrogate Recovery:						
Dibromofluoromethane	86%	86%		60 - 140	99%	60 - 140
Toluene-d$_8$	102%	100%		60 - 140	114%	60 - 140
4-Bromofluorobenzene	109%	109%		60 - 140	129%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Sample ID:	**LB50-0.5**	**B50-2.5**	**LB50-5**	**LB58-0.5**	**LB58-2.5**		
Jones ID:	**ST-21305-01**	**ST-21305-02**	**ST-21305-03**	**ST-21305-05**	**ST-21305-06**	**Reporting Limit**	**Units**
Analytes:							
Silver, Ag	ND	ND	ND	ND	ND	0.5	mg/kg
Arsenic, As	ND	ND	ND	ND	**938***	5.0	mg/kg
Barium, Ba	**83.8**	**90.8**	**59.2**	**51.2**	**65.0**	0.5	mg/kg
Beryllium, Be	ND	ND	ND	ND	ND	0.5	mg/kg
Cadmium, Cd	**1.2**	**1.1**	**1.0**	**1.1**	**6.7**	0.5	mg/kg
Cobalt, Co	**5.4**	**4.5**	**3.7**	**4.9**	**3.7**	0.5	mg/kg
Chromium, Cr	**14.1**	**12.6**	**9.0**	**10.3**	**85.2**	0.5	mg/kg
Copper, Cu	**17.3**	**17.6**	**14.5**	**10.4**	**2010***	0.5	mg/kg
Molybdenum, Mo	ND	ND	**0.5**	ND	ND	0.5	mg/kg
Nickel, Ni	**14.9**	**13.3**	**11.1**	**10.8**	**14.7**	0.5	mg/kg
Lead, Pb	**20.2**	**25.4**	**22.9**	**12.5**	**514**	0.5	mg/kg
Antimony, Sb	ND	ND	ND	ND	**6.7**	5.0	mg/kg
Selenium, Se	ND	ND	ND	ND	ND	5.0	mg/kg
Thallium, Tl	ND	ND	ND	ND	ND	5.0	mg/kg
Vanadium, V	**25.5**	**21.7**	**19.2**	**23.2**	**20.3**	0.5	mg/kg
Zinc, Zn	**56.1**	**59.2**	**55.3**	**166**	**1070***	0.5	mg/kg
Dilution Factor	1	1	1	1	1/5*		
Batch ID:	I22120701	I22120701	I22120701	I22120701	I22120701/ I22120801*		

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Sample ID:	**LB50-0.5**	**B50-2.5**	**LB50-5**	**LB58-0.5**	**LB58-2.5**		
Jones ID:	**ST-21305-01**	**ST-21305-02**	**ST-21305-03**	**ST-21305-05**	**ST-21305-06**	**Reporting Limit**	**Units**
Mercury, Hg	**0.069**	**0.104**	**0.099**	**0.053**	**0.059**	0.020	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	H22120701	H22120701	H22120701	H22120701	H22120701		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Sample ID:	**LB59-0.5**	**LB59-2.5**	**LB56-0.5**	**LB56-2.5**	**LB57-0.5**		
Jones ID:	**ST-21305-07**	**ST-21305-08**	**ST-21305-09**	**ST-21305-10**	**ST-21305-11**	**Reporting Limit**	**Units**
Analytes:							
Silver, Ag	ND	ND	ND	ND	ND	0.5	mg/kg
Arsenic, As	ND	ND	ND	ND	ND	5.0	mg/kg
Barium, Ba	**49.7**	**29.4**	**51.8**	**31.8**	**80.8**	0.5	mg/kg
Beryllium, Be	ND	ND	ND	ND	ND	0.5	mg/kg
Cadmium, Cd	**1.0**	**1.1**	**1.2**	**0.8**	**1.4**	0.5	mg/kg
Cobalt, Co	**4.1**	**3.0**	**4.5**	**3.4**	**5.2**	0.5	mg/kg
Chromium, Cr	**8.7**	**8.8**	**10.4**	**7.2**	**12.3**	0.5	mg/kg
Copper, Cu	**26.5**	**9.3**	**16.6**	**3.9**	**30.3**	0.5	mg/kg
Molybdenum, Mo	ND	ND	ND	ND	ND	0.5	mg/kg
Nickel, Ni	**11.8**	**6.8**	**8.9**	**4.6**	**10.4**	0.5	mg/kg
Lead, Pb	**14.1**	**18.2**	**38.6**	**1.2**	**96.7**	0.5	mg/kg
Antimony, Sb	ND	ND	ND	ND	ND	5.0	mg/kg
Selenium, Se	ND	ND	ND	ND	ND	5.0	mg/kg
Thallium, Tl	ND	ND	ND	ND	ND	5.0	mg/kg
Vanadium, V	**22.7**	**20.9**	**23.9**	**15.2**	**26.5**	0.5	mg/kg
Zinc, Zn	**74.0**	**62.6**	**66.2**	**24.6**	**93.3**	0.5	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	I22120701	I22120701	I22120701	I22120701	I22120701		

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Sample ID:	**LB59-0.5**	**LB59-2.5**	**LB56-0.5**	**LB56-2.5**	**LB57-0.5**		
Jones ID:	**ST-21305-07**	**ST-21305-08**	**ST-21305-09**	**ST-21305-10**	**ST-21305-11**	**Reporting Limit**	**Units**
Mercury, Hg	**0.032**	**0.055**	**0.206**	**0.023**	**0.481**	0.020	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	H22120701	H22120701	H22120701	H22120701	H22120701		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Sample ID:	**LB57-2.5**	**LB54-0.5**	**LB54-2.5**	**LB55-0.5**	**LB55-2.5**		
Jones ID:	**ST-21305-12**	**ST-21305-13**	**ST-21305-14**	**ST-21305-15**	**ST-21305-16**	**Reporting Limit**	**Units**
Analytes:							
Silver, Ag	ND	ND	ND	ND	ND	0.5	mg/kg
Arsenic, As	ND	ND	ND	ND	ND	5.0	mg/kg
Barium, Ba	**33.9**	**78.3**	**30.6**	**83.3**	**35.1**	0.5	mg/kg
Beryllium, Be	ND	ND	ND	ND	ND	0.5	mg/kg
Cadmium, Cd	**0.9**	**1.3**	**0.7**	**2.0**	**0.9**	0.5	mg/kg
Cobalt, Co	**3.4**	**5.6**	**2.8**	**6.6**	**3.8**	0.5	mg/kg
Chromium, Cr	**7.8**	**12.6**	**6.9**	**17.1**	**8.3**	0.5	mg/kg
Copper, Cu	**6.8**	**25.3**	**85.9**	**35.8**	**4.7**	0.5	mg/kg
Molybdenum, Mo	ND	ND	ND	ND	ND	0.5	mg/kg
Nickel, Ni	**4.4**	**16.2**	**3.4**	**15.4**	**4.6**	0.5	mg/kg
Lead, Pb	**5.7**	**25.0**	**6.6**	**58.0**	**2.1**	0.5	mg/kg
Antimony, Sb	ND	ND	ND	ND	ND	5.0	mg/kg
Selenium, Se	ND	ND	ND	ND	ND	5.0	mg/kg
Thallium, Tl	ND	ND	ND	ND	ND	5.0	mg/kg
Vanadium, V	**18.6**	**27.5**	**16.1**	**32.2**	**17.8**	0.5	mg/kg
Zinc, Zn	**27.7**	**63.4**	**23.9**	**152**	**20.2**	0.5	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	I22120701	I22120701	I22120701	I22120701	I22120701		

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Sample ID:	**LB57-2.5**	**LB54-0.5**	**LB54-2.5**	**LB55-0.5**	**LB55-2.5**		
Jones ID:	**ST-21305-12**	**ST-21305-13**	**ST-21305-14**	**ST-21305-15**	**ST-21305-16**	**Reporting Limit**	**Units**
Mercury, Hg	**0.090**	**0.472**	**0.032**	**0.101**	**0.070**	0.020	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	H22120701	H22120701	H22120701	H22120701	H22120701		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Sample ID:	**LB53-0.5**	**LB53-2.5**	**LB52-0.5**	**LB52-2.5**	**LB52-5**		
Jones ID:	**ST-21305-18**	**ST-21305-19**	**ST-21305-20**	**ST-21305-21**	**ST-21305-22**	**Reporting Limit**	**Units**
Analytes:							
Silver, Ag	ND	ND	ND	ND	ND	0.5	mg/kg
Arsenic, As	ND	ND	ND	ND	**9.3**	5.0	mg/kg
Barium, Ba	**76.3**	**74.3**	**61.2**	**41.7**	**164**	0.5	mg/kg
Beryllium, Be	ND	ND	ND	ND	ND	0.5	mg/kg
Cadmium, Cd	**1.5**	**1.5**	**1.4**	**0.8**	**3.3**	0.5	mg/kg
Cobalt, Co	**5.5**	**4.7**	**5.0**	**3.6**	**8.8**	0.5	mg/kg
Chromium, Cr	**13.2**	**15.8**	**11.7**	**5.8**	**21.3**	0.5	mg/kg
Copper, Cu	**52.5**	**44.1**	**89.4**	**14.8**	**377**	0.5	mg/kg
Molybdenum, Mo	ND	ND	ND	ND	ND	0.5	mg/kg
Nickel, Ni	**16.3**	**7.9**	**15.1**	**13.8**	**13.0**	0.5	mg/kg
Lead, Pb	**30.9**	**97.6**	**34.0**	**5.6**	**171**	0.5	mg/kg
Antimony, Sb	ND	**12.4**	ND	ND	**9.4**	5.0	mg/kg
Selenium, Se	ND	ND	ND	ND	ND	5.0	mg/kg
Thallium, Tl	ND	ND	ND	ND	ND	5.0	mg/kg
Vanadium, V	**30.7**	**24.4**	**25.4**	**22.0**	**37.2**	0.5	mg/kg
Zinc, Zn	**145**	**81.8**	**106**	**28.8**	**173**	0.5	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	I22120701	I22120701	I22120701	I22120701	I22120701		

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Sample ID:	**LB53-0.5**	**LB53-2.5**	**LB52-0.5**	**LB52-2.5**	**LB52-5**		
Jones ID:	**ST-21305-18**	**ST-21305-19**	**ST-21305-20**	**ST-21305-21**	**ST-21305-22**	**Reporting Limit**	**Units**
Mercury, Hg	**0.096**	**0.330**	**0.126**	**0.040**	**0.138**	0.020	mg/kg
Dilution Factor	1	1	1	1	1		
Batch ID:	H22120701	H22120701	H22120701	H22120701	H22120701		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Sample ID:	**LB51-0.5**	**LB51-2.5**		
Jones ID:	**ST-21305-23**	**ST-21305-24**	**Reporting Limit**	**Units**
Analytes:				
Silver, Ag	ND	ND	0.5	mg/kg
Arsenic, As	**9.2**	ND	5.0	mg/kg
Barium, Ba	**95.9**	**22.5**	0.5	mg/kg
Beryllium, Be	ND	ND	0.5	mg/kg
Cadmium, Cd	**1.9**	**0.8**	0.5	mg/kg
Cobalt, Co	**6.0**	**3.1**	0.5	mg/kg
Chromium, Cr	**21.6**	**7.4**	0.5	mg/kg
Copper, Cu	**148**	**3.0**	0.5	mg/kg
Molybdenum, Mo	**1.0**	ND	0.5	mg/kg
Nickel, Ni	**14.8**	**3.8**	0.5	mg/kg
Lead, Pb	**41.3**	**1.0**	0.5	mg/kg
Antimony, Sb	ND	ND	5.0	mg/kg
Selenium, Se	ND	ND	5.0	mg/kg
Thallium, Tl	ND	ND	5.0	mg/kg
Vanadium, V	**31.0**	**19.4**	0.5	mg/kg
Zinc, Zn	**153**	**17.7**	0.5	mg/kg
Dilution Factor	1	1		
Batch ID:	I22120801	I22220801		

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Sample ID:	**LB51-0.5**	**LB51-2.5**		
Jones ID:	**ST-21305-23**	**ST-21305-24**	**Reporting Limit**	**Units**
Mercury, Hg	**0.141**	**0.041**	0.020	mg/kg
Dilution Factor	1	1		
Batch ID:	H22120801	H22120801		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Batch ID: I22120701 **Prepared:** 12/7/2022 **Analyzed:** 12/7/2022

Analytes:	Result	Reporting Limit	Units
METHOD BLANK:	**I221207-MB1**		
Silver, Ag	ND	0.5	mg/kg
Arsenic, As	ND	5.0	mg/kg
Barium, Ba	ND	0.5	mg/kg
Beryllium, Be	ND	0.5	mg/kg
Cadmium, Cd	ND	0.5	mg/kg
Cobalt, Co	ND	0.5	mg/kg
Chromium, Cr	ND	0.5	mg/kg
Copper, Cu	ND	0.5	mg/kg
Molybdenum, Mo	ND	0.5	mg/kg
Nickel, Ni	ND	0.5	mg/kg
Lead, Pb	ND	0.5	mg/kg
Antimony, Sb	ND	5.0	mg/kg
Selenium, Se	ND	5.0	mg/kg
Thallium, Tl	ND	5.0	mg/kg
Vanadium, V	ND	0.5	mg/kg
Zinc, Zn	ND	0.5	mg/kg

ND= Not Detected

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Batch ID: I22120701 **Prepared:** 12/7/2022 **Analyzed:** 12/7/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Units
LCS:	**I221207-LCS1**					
Barium, Ba	**204**	200	102%		80 - 120	mg/kg
Cobalt, Co	**51.2**	50.0	102%		80 - 120	mg/kg
Lead, Pb	**52.0**	50.0	104%		80 - 120	mg/kg
Selenium, Se	**185**	200	93%		80 - 120	mg/kg
Zinc, Zn	**44.1**	50.0	88%		80 - 120	mg/kg
LCSD:	**I221207-LCSD1**					
Barium, Ba	**206**	200	103%	1.0%	80 - 120	mg/kg
Cobalt, Co	**49.6**	50.0	99%	3.2%	80 - 120	mg/kg
Lead, Pb	**49.7**	50.0	99%	4.5%	80 - 120	mg/kg
Selenium, Se	**175**	200	88%	5.6%	80 - 120	mg/kg
Zinc, Zn	**44.4**	50.0	89%	0.7%	80 - 120	mg/kg
CCV:	**I221207-CCV1**					
Barium, Ba	**1.03**	1.00	103%		90-110	mg/L
Cobalt, Co	**1.04**	1.00	104%		90-110	mg/L
Lead, Pb	**1.06**	1.00	106%		90-110	mg/L
Selenium, Se	**1.04**	1.00	104%		90-110	mg/L
Zinc, Zn	**1.03**	1.00	103%		90-110	mg/L

CCV = Continuing Calibration Verification
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Batch ID: I22120801 **Prepared:** 12/8/2022 **Analyzed:** 12/8/2022

Analytes:	Result	Reporting Limit	Units
METHOD BLANK:	**I221208-MB1**		
Silver, Ag	ND	0.5	mg/kg
Arsenic, As	ND	5.0	mg/kg
Barium, Ba	ND	0.5	mg/kg
Beryllium, Be	ND	0.5	mg/kg
Cadmium, Cd	ND	0.5	mg/kg
Cobalt, Co	ND	0.5	mg/kg
Chromium, Cr	ND	0.5	mg/kg
Copper, Cu	ND	0.5	mg/kg
Molybdenum, Mo	ND	0.5	mg/kg
Nickel, Ni	ND	0.5	mg/kg
Lead, Pb	ND	0.5	mg/kg
Antimony, Sb	ND	5.0	mg/kg
Selenium, Se	ND	5.0	mg/kg
Thallium, Tl	ND	5.0	mg/kg
Vanadium, V	ND	0.5	mg/kg
Zinc, Zn	ND	0.5	mg/kg

ND= Not Detected

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 6010B - CAM 17 Metals by ICP-OES

Batch ID: I22120801 **Prepared:** 12/8/2022 **Analyzed:** 12/8/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Units
LCS:	**I221208-LCS1**					
Barium, Ba	**232**	200	116%		80 - 120	mg/kg
Cobalt, Co	**55.3**	50.0	111%		80 - 120	mg/kg
Lead, Pb	**57.5**	50.0	115%		80 - 120	mg/kg
Selenium, Se	**218**	200	109%		80 - 120	mg/kg
Zinc, Zn	**48.3**	50.0	97%		80 - 120	mg/kg
LCSD:	**I221208-LCSD1**					
Barium, Ba	**223**	200	112%	4.0%	80 - 120	mg/kg
Cobalt, Co	**54.9**	50.0	110%	0.7%	80 - 120	mg/kg
Lead, Pb	**56.8**	50.0	114%	1.2%	80 - 120	mg/kg
Selenium, Se	**218**	200	109%	0.2%	80 - 120	mg/kg
Zinc, Zn	**46.5**	50.0	93%	3.8%	80 - 120	mg/kg
CCV:	**I221208-CCV1**					
Barium, Ba	**1.02**	1.00	102%		90-110	mg/L
Cobalt, Co	**1.05**	1.00	105%		90-110	mg/L
Lead, Pb	**1.07**	1.00	107%		90-110	mg/L
Selenium, Se	**1.06**	1.00	106%		90-110	mg/L
Zinc, Zn	**0.99**	1.00	99%		90-110	mg/L

CCV = Continuing Calibration Verification
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Batch ID: H22120701 **Prepared:** 12/7/2022 **Analyzed:** 12/8/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Reporting Limit	Units
METHOD BLANK:	**H221207-MB1**						
Mercury, Hg	ND					0.020	mg/kg
LCS:	**H221207-LCS1**						
Mercury, Hg	**1.00**	1.00	100%		80 - 120		mg/kg
LCSD:	**H221207-LCSD1**						
Mercury, Hg	**0.98**	1.00	98%	**2.0%**	80 - 120		mg/kg
CCV:	**H221207-CCV1**						
Mercury, Hg	**4.96**	5.00	99%		90-110		µg/L

ND= Not Detected
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7-8/2022
		Physical State:	Soil

EPA 7471A - Mercury by Cold Vapor Atomic Absorption

Batch ID: H22120801 **Prepared:** 12/8/2022 **Analyzed:** 12/8/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Reporting Limit	Units
METHOD BLANK:	**H221208-MB1**						
Mercury, Hg	ND					0.020	mg/kg
LCS:	**H221208-LCS1**						
Mercury, Hg	**1.05**	1.00	105%		80 - 120		mg/kg
LCSD:	**H221208-LCSD1**						
Mercury, Hg	**1.04**	1.00	104%	**1.0%**	80 - 120		mg/kg
CCV:	**H221208-CCV1**						
Mercury, Hg	**5.23**	5.00	105%		90-110		µg/L

ND= Not Detected
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7/2022
		Physical State:	Water

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**LB50-GW**	**LB55-GW**	**LB51-GW**		
Jones ID:	**ST-21305-04**	**ST-21305-17**	**ST-21305-25**	**Reporting Limit**	**Units**
Carbon Chain Range					
C13 - C22	ND	ND	ND	1.0	mg/L
C23 - C40	ND	ND	ND	1.0	mg/L
Dilution Factor	1	1	1		
Surrogate Recovery:				**QC Limits**	
Hexacosane	134%	138%	97%	50 - 140	
Batch:	FID7_120722_01	FID7_120722_01	FID7_120722_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7/2022
		Physical State:	Water

EPA 8015M - Total Petroleum Hydrocarbons

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**MB1-120722FID7**	**Reporting Limit**	**Units**
Carbon Chain Range			
C13 - C22	ND	1.0	mg/L
C23 - C40	ND	1.0	mg/L
Dilution Factor	1		
Surrogate Recovery:		**QC Limits**	
Hexacosane	92%	50 - 140	
Batch:	FID7_120722_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7/2022
		Physical State:	Water

BATCH: **FID7_ 120722_01** **Prepared:** 12/7/2022 **Analyzed:** 12/7/2022

EPA 8015M - Total Petroleum Hydrocarbons

	Result	Spike Level	% Recovery	% RPD	% Recovery Limits	Units
LCS:	LCS1-120722FID7	**SAMPLE SPIKED:**	CLEAN WATER			
Analyte:						
Diesel	**393**	500	79%		60 - 140	mg/L
Surrogate Recovery:						
Hexacosane			135%		50 - 140	
LCSD:	LCSD1-120722FID7	**SAMPLE SPIKED:**	CLEAN WATER			
Analyte:						
Diesel	**407**	500	81%	3.5%	60 - 140	mg/L
Surrogate Recoveries:						
Hexacosane			133%		50 - 140	
CCV:	CCV1-120722FID7					
Analyte:						
Diesel	**1200**	1000	120%		80 - 120	mg/L
Surrogate Recoveries:						
Hexacosane			123%		50 - 140	

LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Winthrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Water

EPA 8260B by 5030 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB50-GW**	**LB55-GW**	**LB51-GW**		
Jones ID:	**ST-21305-04**	**ST-21305-17**	**ST-21305-25**	**Reporting Limit**	**Units**
Analytes:					
Benzene	ND	ND	ND	0.5	µg/L
Bromobenzene	ND	ND	ND	0.5	µg/L
Bromodichloromethane	ND	ND	ND	0.5	µg/L
Bromoform	ND	ND	ND	0.5	µg/L
n-Butylbenzene	ND	ND	ND	0.5	µg/L
sec-Butylbenzene	ND	ND	ND	0.5	µg/L
tert-Butylbenzene	ND	ND	ND	0.5	µg/L
Carbon tetrachloride	ND	ND	ND	0.5	µg/L
Chlorobenzene	ND	ND	ND	0.5	µg/L
Chloroform	ND	ND	ND	0.5	µg/L
2-Chlorotoluene	ND	ND	ND	0.5	µg/L
4-Chlorotoluene	ND	ND	ND	0.5	µg/L
Dibromochloromethane	ND	ND	ND	0.5	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	0.5	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	0.5	µg/L
Dibromomethane	ND	ND	ND	0.5	µg/L
1,2- Dichlorobenzene	ND	ND	ND	0.5	µg/L
1,3-Dichlorobenzene	ND	ND	ND	0.5	µg/L
1,4-Dichlorobenzene	ND	ND	ND	0.5	µg/L
1,1-Dichloroethane	ND	ND	ND	0.5	µg/L
1,2-Dichloroethane	ND	ND	ND	0.5	µg/L
1,1-Dichloroethene	ND	ND	ND	0.5	µg/L
cis-1,2-Dichloroethene	**3.3**	ND	ND	0.5	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	0.5	µg/L
1,2-Dichloropropane	ND	ND	ND	0.5	µg/L
1,3-Dichloropropane	ND	ND	ND	0.5	µg/L
2,2-Dichloropropane	ND	ND	ND	0.5	µg/L
1,1-Dichloropropene	ND	ND	ND	0.5	µg/L
cis-1,3-Dichloropropene	ND	ND	ND	0.5	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5030 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	LB50-GW	LB55-GW	LB51-GW		
Jones ID:	**ST-21305-04**	**ST-21305-17**	**ST-21305-25**	**Reporting Limit**	**Units**
Analytes:					
trans-1,3-Dichloropropene	ND	ND	ND	0.5	µg/L
Ethylbenzene	ND	ND	ND	0.5	µg/L
Freon 11	ND	ND	ND	2.5	µg/L
Freon 12	ND	ND	ND	2.5	µg/L
Freon 113	ND	ND	ND	2.5	µg/L
Hexachlorobutadiene	ND	ND	ND	0.5	µg/L
Isopropylbenzene	ND	ND	ND	0.5	µg/L
4-Isopropyltoluene	ND	ND	ND	0.5	µg/L
Methylene chloride	ND	ND	ND	0.5	µg/L
Naphthalene	ND	ND	ND	2.5	µg/L
n-Propylbenzene	ND	ND	ND	0.5	µg/L
Styrene	ND	ND	ND	0.5	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	0.5	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.5	µg/L
Tetrachloroethene	**0.7**	ND	ND	0.5	µg/L
Toluene	ND	ND	ND	0.5	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	1.5	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	1.5	µg/L
1,1,1-Trichloroethane	ND	ND	ND	0.5	µg/L
1,1,2-Trichloroethane	ND	ND	ND	0.5	µg/L
Trichloroethene	**2.9**	ND	ND	0.5	µg/L
1,2,3-Trichloropropane	ND	ND	ND	0.5	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	0.5	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	0.5	µg/L
Vinyl chloride	ND	ND	ND	0.5	µg/L
m,p-Xylene	ND	ND	ND	1.0	µg/L
o-Xylene	ND	ND	ND	0.5	µg/L
Methyl-tert-butylether	**5.0**	ND	**6.7**	2.5	µg/L
Ethyl-tert-butylether	ND	ND	ND	2.5	µg/L
Di-isopropylether	ND	ND	ND	2.5	µg/L
tert-amylmethylether	ND	ND	ND	2.5	µg/L
tert-Butylalcohol	ND	ND	ND	25.0	µg/L
Gasoline Range Organics (C4-C12)	ND	ND	ND	0.10	mg/L
Dilution Factor	1	1	1		
Surrogate Recoveries:				**QC Limits**	
Dibromofluoromethane	96%	96%	92%	60 - 140	
Toluene-d$_8$	92%	91%	93%	60 - 140	
4-Bromofluorobenzene	97%	92%	91%	60 - 140	
Batch:	VOC5-120922-01	VOC5-120922-01	VOC5-120922-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 9067(
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Winthrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Water

EPA 8260B by 5030 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**120922-V5MB1**	**Reporting Limit**	**Units**
Analytes:			
Benzene	ND	0.5	µg/L
Bromobenzene	ND	0.5	µg/L
Bromodichloromethane	ND	0.5	µg/L
Bromoform	ND	0.5	µg/L
n-Butylbenzene	ND	0.5	µg/L
sec-Butylbenzene	ND	0.5	µg/L
tert-Butylbenzene	ND	0.5	µg/L
Carbon tetrachloride	ND	0.5	µg/L
Chlorobenzene	ND	0.5	µg/L
Chloroform	ND	0.5	µg/L
2-Chlorotoluene	ND	0.5	µg/L
4-Chlorotoluene	ND	0.5	µg/L
Dibromochloromethane	ND	0.5	µg/L
1,2-Dibromo-3-chloropropane	ND	0.5	µg/L
1,2-Dibromoethane (EDB)	ND	0.5	µg/L
Dibromomethane	ND	0.5	µg/L
1,2- Dichlorobenzene	ND	0.5	µg/L
1,3-Dichlorobenzene	ND	0.5	µg/L
1,4-Dichlorobenzene	ND	0.5	µg/L
1,1-Dichloroethane	ND	0.5	µg/L
1,2-Dichloroethane	ND	0.5	µg/L
1,1-Dichloroethene	ND	0.5	µg/L
cis-1,2-Dichloroethene	ND	0.5	µg/L
trans-1,2-Dichloroethene	ND	0.5	µg/L
1,2-Dichloropropane	ND	0.5	µg/L
1,3-Dichloropropane	ND	0.5	µg/L
2,2-Dichloropropane	ND	0.5	µg/L
1,1-Dichloropropene	ND	0.5	µg/L
cis-1,3-Dichloropropene	ND	0.5	µg/L

EPA 8260B by 5030 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	METHOD BLANK #1		
Jones ID:	120922-V5MB1	**Reporting Limit**	**Units**
Analytes:			
trans-1,3-Dichloropropene	ND	0.5	µg/L
Ethylbenzene	ND	0.5	µg/L
Freon 11	ND	2.5	µg/L
Freon 12	ND	2.5	µg/L
Freon 113	ND	2.5	µg/L
Hexachlorobutadiene	ND	0.5	µg/L
Isopropylbenzene	ND	0.5	µg/L
4-Isopropyltoluene	ND	0.5	µg/L
Methylene chloride	ND	0.5	µg/L
Naphthalene	ND	2.5	µg/L
n-Propylbenzene	ND	0.5	µg/L
Styrene	ND	0.5	µg/L
1,1,1,2-Tetrachloroethane	ND	0.5	µg/L
1,1,2,2-Tetrachloroethane	ND	0.5	µg/L
Tetrachloroethene	ND	0.5	µg/L
Toluene	ND	0.5	µg/L
1,2,3-Trichlorobenzene	ND	1.5	µg/L
1,2,4-Trichlorobenzene	ND	1.5	µg/L
1,1,1-Trichloroethane	ND	0.5	µg/L
1,1,2-Trichloroethane	ND	0.5	µg/L
Trichloroethene	ND	0.5	µg/L
1,2,3-Trichloropropane	ND	0.5	µg/L
1,2,4-Trimethylbenzene	ND	0.5	µg/L
1,3,5-Trimethylbenzene	ND	0.5	µg/L
Vinyl chloride	ND	0.5	µg/L
m,p-Xylene	ND	1.0	µg/L
o-Xylene	ND	0.5	µg/L
Methyl-tert-butylether	ND	2.5	µg/L
Ethyl-tert-butylether	ND	2.5	µg/L
Di-isopropylether	ND	2.5	µg/L
tert-amylmethylether	ND	2.5	µg/L
tert-Butylalcohol	ND	25.0	µg/L
Gasoline Range Organics (C4-C12)	ND	0.10	mg/L
Dilution Factor	1		
Surrogate Recoveries:		**QC Limits**	
Dibromofluoromethane	98%	60 - 140	
Toluene-d8	91%	60 - 140	
4-Bromofluorobenzene	96%	60 - 140	
Batch:	VOC5-120922-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Winthrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/9/2022
		Physical State:	Water

EPA 8260B by 5030 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

GC#:	**VOC5-120922-01**					
Jones ID:	120922-V5LCS1	120922-V5LCSD1			120922-V5CCV1	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl chloride	67%	72%	8.0%	60 - 140	91%	80 - 120
1,1-Dichloroethene	89%	93%	4.8%	60 - 140	86%	80 - 120
Cis-1,2-Dichloroethene	79%	90%	12.4%	70 - 130	98%	80 - 120
1,1,1-Trichloroethane	95%	97%	1.7%	70 - 130	101%	80 - 120
Benzene	100%	101%	1.5%	70 - 130	106%	80 - 120
Trichloroethene	102%	107%	5.4%	70 - 130	108%	80 - 120
Toluene	89%	92%	4.0%	70 - 130	91%	80 - 120
Tetrachloroethene	83%	86%	4.0%	70 - 130	85%	80 - 120
Chlorobenzene	103%	106%	3.5%	70 - 130	113%	80 - 120
Ethylbenzene	88%	93%	5.2%	70 - 130	96%	80 - 120
1,2,4 Trimethylbenzene	89%	98%	10.2%	70 - 130	96%	80 - 120
Gasoline Range Organics (C4-C12)	91%	96%	5.2%	70 - 130		
Surrogate Recovery:						
Dibromofluoromethane	92%	94%		60 - 140	97%	60 - 140
Toluene-d8	82%	86%		60 - 140	90%	60 - 140
4-Bromofluorobenzene	88%	92%		60 - 140	101%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7&9/2022
		Physical State:	Water

EPA 6010B - CAM 17 Trace Metals by ICP-OES

Sample ID:	**LB50-GW**	**LB55-GW**	**LB51-GW**		
Jones ID:	**ST-21305-04**	**ST-21305-17**	**ST-21305-25**	**Reporting Limit**	**Units**
Analytes:					
Silver, Ag	ND	ND	ND	10	µg/L
Arsenic, As	ND	ND	ND	100	µg/L
Barium, Ba	**50**	**82**	**52**	10	µg/L
Beryllium, Be	ND	ND	ND	10	µg/L
Cadmium, Cd	ND	ND	ND	10	µg/L
Cobalt, Co	ND	ND	ND	10	µg/L
Chromium, Cr	ND	ND	ND	10	µg/L
Copper, Cu	ND	ND	ND	10	µg/L
Molybdenum, Mo	**22**	**18**	**31**	10	µg/L
Nickel, Ni	ND	ND	ND	10	µg/L
Lead, Pb	ND	ND	ND	10	µg/L
Antimony, Sb	ND	ND	ND	100	µg/L
Selenium, Se	ND	ND	ND	100	µg/L
Thallium, Tl	ND	ND	ND	100	µg/L
Vanadium, V	ND	**12**	ND	10	µg/L
Zinc, Zn	**32**	**24**	**20**	10	µg/L
Dilution Factor	1	1	1		
Batch:	I22120701	I22120701	I22120701		

EPA 7470A - Mercury by Cold Vapor Atomic Absorption

Sample ID:	**LB50-GW**	**LB55-GW**	**LB51-GW**		
Jones ID:	**ST-21305-04**	**ST-21305-17**	**ST-21305-25**	**Reporting Limit**	**Units**
Mercury, Hg	ND	ND	ND	0.10	µg/L
Dilution Factor	1	1	1		
Batch:	H22120901	H22120901	H22120901		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7&9/2022
		Physical State:	Water

EPA 6010B - CAM 17 Trace Metals by ICP-OES

BATCH: **I22120701** **Prepared:** 12/7/2022 **Analyzed:** 12/7/2022

Analytes:	Result	Spike Level	% REC	% REC Limits	% RPD	Reporting Limit	Units
METHOD BLANK:	**I221207-MB1**						
Silver, Ag	ND					10	µg/L
Arsenic, As	ND					100	µg/L
Barium, Ba	ND					10	µg/L
Beryllium, Be	ND					10	µg/L
Cadmium, Cd	ND					10	µg/L
Cobalt, Co	ND					10	µg/L
Chromium, Cr	ND					10	µg/L
Copper, Cu	ND					10	µg/L
Molybdenum, Mo	ND					10	µg/L
Nickel, Ni	ND					10	µg/L
Lead, Pb	ND					10	µg/L
Antimony, Sb	ND					100	µg/L
Selenium, Se	ND					100	µg/L
Thallium, Tl	ND					100	µg/L
Vanadium, V	ND					10	µg/L
Zinc, Zn	ND					10	µg/L

ND= Not Detected

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7&9/2022
		Physical State:	Water

EPA 6010B - CAM 17 Trace Metals by ICP-OES

BATCH: I22120701 **Prepared:** 12/7/2022 **Analyzed:** 12/7/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Units
LCS:	**I221207-LCS1**					
Barium, Ba	**4200**	4000	105%		80 - 120	µg/L
Cobalt, Co	**1020**	1000	102%		80 - 120	µg/L
Lead, Pb	**1030**	1000	103%		80 - 120	µg/L
Selenium, Se	**3640**	4000	91%		80 - 120	µg/L
Zinc, Zn	**899**	1000	90%		80 - 120	µg/L
LCSD:	**I221207-LCSD1**					
Barium, Ba	**4090**	4000	102%	2.7%	80 - 120	µg/L
Cobalt, Co	**1000**	1000	100%	2.0%	80 - 120	µg/L
Lead, Pb	**1010**	1000	101%	2.0%	80 - 120	µg/L
Selenium, Se	**3530**	4000	88%	3.1%	80 - 120	µg/L
Zinc, Zn	**879**	1000	88%	2.2%	80 - 120	µg/L
CCV:	**I221207-CCV1**					
Barium, Ba	**1040**	1000	104%		90-110	µg/L
Cobalt, Co	**1050**	1000	105%		90-110	µg/L
Lead, Pb	**1060**	1000	106%		90-110	µg/L
Selenium, Se	**1040**	1000	104%		90-110	µg/L
Zinc, Zn	**1030**	1000	103%		90-110	µg/L

CCV = Continuing Calibration Verification
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
ND= Not Detected
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/14/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/7&9/2022
		Physical State:	Water

EPA 7470A - Mercury by Cold Vapor Atomic Absorption

BATCH: **H22120901** **Prepared:** 12/8/2022 **Analyzed:** 12/9/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Reporting Limit	Units
METHOD BLANK:	**H221209-MB1**						
Mercury, Hg	ND					0.10	µg/L
LCS:	**H221209-LCS1**						
Mercury, Hg	**4.47**[1]	3.65	122%[1]		80 - 120		µg/L
LCSD:	**H221209-LCSD1**						
Mercury, Hg	**4.52**[1]	3.65	124%[1]	**1.2%**	80 - 120		µg/L
CCV:	**H221209-CCV1**						
Mercury, Hg	**3.92**	3.65	107%		90-110		µg/L

ND= Not Detected
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
1 = LCS/LCSD recoveries exceeded range but were accepted since samples were ND.

JONES ENVIRONMENTAL, INC.

11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Chain-of-Custody Record

Turn Around Requested:
- ☐ Immediate Attention - 200%
- ☐ Rush 24 Hours - 100%
- ☐ Rush 48 Hours - 50%
- ☐ Rush 72 Hours - 25%
- ☐ Rush 96 Hours - 10%
- ☒ Normal - No Surcharge

LAB USE ONLY

Jones Project # ST-21305

Page 1 of 3

Client: Leighton Consulting
Project Name: B191-194
Project Address:
Email: mwithrow@leightongroup.com
Phone: 949-394-2194
Report To: Mark Withrow
Sampler: TCD
Date: 12/6/22
Client Project #: 12736.024

Sample Container / Preservative Abbreviations

AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

Sample ID	Sample Collection Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	TCLP	Analysis Requested: Title 22 Metals 6010B/7000	TPH-g, d-o EPA 8015	VOCs EPA 8260	PAHs EPA 8270SIM	Number of Containers	Notes & Special Instructions
LB50 - 0.5	12/6/22	0725	ST-21305-01	Ice	glass	S		X	X			1	
LB50 - 2.5		0735	ST-21305-02		glass	S		X	X	X		4	
LB50 - 5		750	ST-21305-03		glass	S		X	X	X		4	
LB50 - GW		0805	ST-21305-04		glass/poly	A		X	X	X	X	8	
LB58 - 0.5		0832	ST-21305-05		glass	S		X	X	~~X~~	TCP	1	
LB58 - 2.5		0835	ST-21305-06		glass	S		X	X	X		4	
LB59 - 0.5		0852	ST-21305-07		glass	S		X	X	~~X~~	TCP	1	
LB59 - 2.5		0854	ST-21305-08		glass	S		X	X	X		4	
LB56 - 0.5		0918	ST-21305-09		glass	S		X	X	~~X~~	TCP	1	
~~LB56 - 2.5~~ LB57 - 2.5 TCD		0924	ST-21305-10		glass	S		X	X	X		4	

Total Number of Containers

Relinquished By (Signature): [signature] Printed Name: Theresa Duncan Company: LCI Date: 12/6/22 Time: 1423

Received By (Signature): [signature] Printed Name: Annalyse Tooz Company: JEL Date: 12-6-22 Time: 1424

Relinquished By (Signature): Printed Name: Company: Date: Time:

Received By Laboratory (Signature): Printed Name: Company: Date: Time:

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

Chain-of-Custody Record

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Turn Around Requested:
- ☐ Immediate Attention - 200%
- ☐ Rush 24 Hours - 100%
- ☐ Rush 48 Hours - 50%
- ☐ Rush 72 Hours - 25%
- ☐ Rush 96 Hours - 10%
- ☒ Normal - No Surcharge

LAB USE ONLY
Jones Project # ST-21305
Page 2 of 3

Client: Leighton Consulting	Date: 12/6/22
Project Name: B191-194	Client Project #: 12736.024
Project Address:	
Email: mwithrow@leightongroup.com	
Phone: 949-394-2194	
Report To: Mark Withrow	Sampler: TCO

Sample Container / Preservative Abbreviations
AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

Sample ID	Sample Collection Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	Analysis Requested: Title 22 Metals 6010B/7000	TPH-g, d,o EPA 8015	VOCs EPA 8260	PAHs EPA 8270SIM	Number of Containers	Notes & Special Instructions
LB57-0.5	12/6/22	0944	ST-21305-11	Ice	glass	S	X	X	~~X~~ TCP		1	
LB57-2.5		0946	ST-21305-12		glass	S	X	X	X		4	
LB54-0.5		1006	ST-21305-13		glass	S	X	X	~~X~~ TCP		1	
LB54-2.5		1016	ST-21305-14		poly	S	X	X	X		4	
LB55-0.5		1028	ST-21305-15		glass	S	X	X	~~X~~ TCP		1	
LB55-2.5		1032	ST-21305-16		glass	S	X	X	X		4	
LB55-GW		1045	ST-21305-17		glass & poly	A	X	X	X	X	8	
LB53-0.5		1110	ST-21305-18		glass	S	X	X	~~X~~ TCP		1	
LB53-2.5		1115	ST-21305-19		poly	S	X	X	X		4	
LB52-0.5		1138	ST-21305-20		glass poly TCP	S	X	X	~~X~~ TCP		1	

Total Number of Containers

Relinquished By (Signature)	Printed Name: Theresa Duncan	Received By (Signature)	Printed Name: Annalise Otock
Company: LCE	Date: 12/6/22 Time: 1423	Company: JEL	Date: 12-6-22 Time: 1424
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name
Company	Date: Time	Company	Date Time

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

Chain-of-Custody Record

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Turn Around Requested:
- □ Immediate Attention - 200%
- □ Rush 24 Hours - 100%
- □ Rush 48 Hours - 50%
- □ Rush 72 Hours - 25%
- □ Rush 96 Hours - 10%
- □ Normal - No Surcharge

LAB USE ONLY
Jones Project # ST-21305
Page 3 of 3

Client: Leighton Consulting
Date: 12/6/22
Project Name: B191 - 194
Client Project #: 12736.024
Project Address:
Email: mwithrow@leightongroup.com
Phone: (949) 394-2194
Report To: Mark Withrow
Sampler: TCD

Sample Container / Preservative Abbreviations
AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Report Options
EDD ____
EDF* - 10% Surcharge____
*Global ID _____

Sample ID	Sample Collection Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	Analysis Requested: Title 22 metals 6010B/7000	TPH - g,d,o EPA 8015	VOCs EPA 8260	PAHs EPA 8270SIM	Number of Containers	Notes & Special Instructions
LB52 - 2.5	12/6/22	1140	ST-21305-21	Ice	poly	S	x	x	x		4	
LB52 - 5		1142 1144 DUP	ST-21305-22		poly	S	x	x	x		4	
LB51 - 0.5		1152	ST-21305-23		poly	S	x	x	x	TCD	1	
LB51 - 2.5		1154	ST-21305-24		poly	S	x	x	x		4	
LB51 - GW		1206	ST-21305-25		glass + poly	A	x	x	x	x	8	

Total Number of Containers

Relinquished By (Signature)	Printed Name	Received By (Signature)	Printed Name
	Theresa Duncan		Annalize Ortega
Company: LCI	Date: 12/6/22 Time: 1423	Company: JEL	Date: 12-6-22 Time: 1424
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name
Company	Date: Time	Company	Date Time

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

SAMPLE RECEIPT FORM

Jones ID: ST-21305

CLIENT: Leighton Consulting
DATE/TIME (LAB RECEIVED): 12/6/22 - 1424
PROJECT: B191-194
RECEIVED BY: ANO
Delivered by: ☑ Client ☐ Jones Courier ☐ UPS / FedEx / USPS ☐ Other

TEMPERATURE: Thermometer ID: T-2 (Corrected Temp.) Calibration Due: 07/~~12~~/2023

Temperature Cooler #1 0.0 °C ± the CF(+0.5°C) 0.9 °C Blank Sample
Temperature Cooler #2 0.0 °C ± the CF(+0.5°C) 0.5 °C Blank Sample

Temperature Criteria: 0 ≤ 6°C (NO frozen containers) Criteria Met? ☑ Yes ☐ No

If criteria is not met:

Sample Received on ice? ☐ Yes ☐ No
Sample received Chilled on same day of sampling? ☐ Yes ☐ No

Checked By: ANO

Temperature Non-Conformance (NC): **NC No.** _____

☐ Sample not received on ice
☐ sample not received chilled
☐ Sample received chilled, but not on the same day of sampling

SAMPLE CONDITION:	YES	NO*	N/A
Chain of Custody (COC) received filled out completely	☑	☐*	☐
Total number of containers received match COC	☑	☐*	☐
Sample container label(s) consistent with COC	☑	☐*	☐
Sample container(s) intact and in good condition	☑	☐*	☐
Proper containers and sufficient volume for analyses requested on COC	☑	☐*	☐
Proper preservative indicated on COC/container for analyses requested	☑	☐*	☐
Volatile analysis container(s) free of headspace (EPA 8260 water)	☑	☐*	☐
Custody Seals Intact on Cooler/Sample	☐	☐*	☑

CONTAINER TYPE:

Solid:
5035 Kits: 12
Glass Jar: 15
Sleeve: 7
Other: _____

Aqueous:
Amber Bottle: 6
VOAs: _____
Poly Bottle: 3
5030 Kits: 6
Other: _____

Air / Soil Gas:
Tedlar Bag: _____
6 hr
72 hr
5 Day
Summa:
(1L) _____ (6L) _____

Complete Non-Conformance if checked

Checked by: VP

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/28/2022
		Physical State:	Soil

ANALYSES REQUESTED

Soil:

1. EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics
2. EPA 8082 – Polychlorinated Biphenyls (PCBs) by GC/ECD
3. STLC CA-Waste Extraction Test (CA-WET) by EPA 6010B by ICP-OES
4. TCLP by EPA 6010B by ICP-OES

Approval: Juan Camacho

Juan Camacho, M.S.
Stationary Lab Technical Manager

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/28/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB58-0.5**	**LB59-0.5**	**LB56-0.5**	**LB57-0.5**	**LB54-0.5**		
Jones ID:	**ST-21305-05**	**ST-21305-07**	**ST-21305-09**	**ST-21305-11**	**ST-21305-13**	**Reporting Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	1.0	µg/kg
Bromobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Bromodichloromethane	ND	ND	ND	ND	ND	1.0	µg/kg
Bromoform	ND	ND	ND	ND	ND	1.0	µg/kg
n-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
sec-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
tert-Butylbenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Carbon tetrachloride	ND	ND	ND	ND	ND	1.0	µg/kg
Chlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
Chloroform	ND	ND	ND	ND	ND	1.0	µg/kg
2-Chlorotoluene	ND	ND	ND	ND	ND	1.0	µg/kg
4-Chlorotoluene	ND	ND	ND	ND	ND	1.0	µg/kg
Dibromochloromethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	1.0	µg/kg
Dibromomethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
2,2-Dichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB58-0.5**	**LB59-0.5**	**LB56-0.5**	**LB57-0.5**	**LB54-0.5**		
Jones ID:	**ST-21305-05**	**ST-21305-07**	**ST-21305-09**	**ST-21305-11**	**ST-21305-13**	**Reporting Limit**	**Units**
Analytes:							
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	1.0	µg/kg
Ethylbenzene	**40.5**	**10.9**	ND	ND	**6.0**	1.0	µg/kg
Freon 11	ND	ND	ND	ND	ND	5.0	µg/kg
Freon 12	ND	ND	ND	ND	ND	5.0	µg/kg
Freon 113	ND	ND	ND	ND	ND	5.0	µg/kg
Hexachlorobutadiene	ND	ND	ND	ND	ND	1.0	µg/kg
Isopropylbenzene	ND	ND	ND	ND	**5.5**	1.0	µg/kg
4-Isopropyltoluene	ND	ND	ND	ND	**8.8**	1.0	µg/kg
Methylene chloride	ND	ND	ND	ND	ND	1.0	µg/kg
Naphthalene	ND	ND	ND	ND	**339**	5.0	µg/kg
n-Propylbenzene	ND	ND	ND	ND	**6.7**	1.0	µg/kg
Styrene	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
Tetrachloroethene	ND	ND	ND	ND	ND	1.0	µg/kg
Toluene	**1.1**	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	1.0	µg/kg
Trichloroethene	ND	ND	ND	ND	**1.0**	1.0	µg/kg
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	ND	ND	ND	**69.7**	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	ND	ND	ND	**22.9**	1.0	µg/kg
Vinyl chloride	ND	ND	ND	ND	ND	1.0	µg/kg
m,p-Xylene	**289**	**81.3**	ND	ND	**5.2**	2.0	µg/kg
o-Xylene	**59.6**	**17.5**	ND	ND	**4.4**	1.0	µg/kg
Methyl-tert-butylether	ND	ND	ND	ND	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	ND	ND	ND	ND	5.0	µg/kg
Di-isopropylether	ND	ND	ND	ND	ND	5.0	µg/kg
tert-amylmethylether	ND	ND	ND	ND	ND	5.0	µg/kg
tert-Butylalcohol	ND	ND	ND	ND	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	**0.35**	ND	ND	ND	**3.11**	0.20	mg/kg
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	92%	91%	91%	93%	92%	60 - 140	
Toluene-d_8	108%	102%	101%	101%	100%	60 - 140	
4-Bromofluorobenzene	88%	89%	90%	93%	111%	60 - 140	
Batch:	VOC7-122822-01	VOC7-122822-01	VOC7-122822-01	VOC7-122822-01	VOC7-122822-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/28/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB55-0.5**	**LB53-0.5**	**LB52-0.5**	**LB51-0.5**		
Jones ID:	**ST-21305-15**	**ST-21305-18**	**ST-21305-20**	**ST-21305-23**	**Reporting Limit**	**Units**
Analytes:						
Benzene	ND	ND	ND	ND	1.0	µg/kg
Bromobenzene	ND	ND	ND	ND	1.0	µg/kg
Bromodichloromethane	ND	ND	ND	ND	1.0	µg/kg
Bromoform	ND	ND	ND	ND	1.0	µg/kg
n-Butylbenzene	ND	ND	ND	ND	1.0	µg/kg
sec-Butylbenzene	ND	ND	ND	ND	1.0	µg/kg
tert-Butylbenzene	ND	ND	ND	ND	1.0	µg/kg
Carbon tetrachloride	ND	ND	ND	ND	1.0	µg/kg
Chlorobenzene	ND	ND	ND	ND	1.0	µg/kg
Chloroform	ND	ND	ND	ND	1.0	µg/kg
2-Chlorotoluene	ND	ND	ND	ND	1.0	µg/kg
4-Chlorotoluene	ND	ND	ND	ND	1.0	µg/kg
Dibromochloromethane	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	1.0	µg/kg
Dibromomethane	ND	ND	ND	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	ND	ND	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethane	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloroethene	ND	ND	ND	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	ND	ND	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	ND	ND	ND	1.0	µg/kg
1,2-Dichloropropane	ND	ND	ND	ND	1.0	µg/kg
1,3-Dichloropropane	ND	ND	ND	ND	1.0	µg/kg
2,2-Dichloropropane	ND	ND	ND	ND	1.0	µg/kg
1,1-Dichloropropene	ND	ND	ND	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	ND	ND	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**LB55-0.5**	**LB53-0.5**	**LB52-0.5**	**LB51-0.5**		
Jones ID:	**ST-21305-15**	**ST-21305-18**	**ST-21305-20**	**ST-21305-23**	**Reporting Limit**	**Units**
Analytes:						
trans-1,3-Dichloropropene	ND	ND	ND	ND	1.0	µg/kg
Ethylbenzene	ND	ND	ND	ND	1.0	µg/kg
Freon 11	ND	ND	ND	ND	5.0	µg/kg
Freon 12	ND	ND	ND	ND	5.0	µg/kg
Freon 113	ND	ND	ND	ND	5.0	µg/kg
Hexachlorobutadiene	ND	ND	ND	ND	1.0	µg/kg
Isopropylbenzene	ND	ND	ND	ND	1.0	µg/kg
4-Isopropyltoluene	ND	ND	ND	ND	1.0	µg/kg
Methylene chloride	ND	ND	ND	ND	1.0	µg/kg
Naphthalene	**28.4**	**32.8**	ND	ND	5.0	µg/kg
n-Propylbenzene	ND	ND	ND	ND	1.0	µg/kg
Styrene	ND	ND	ND	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	1.0	µg/kg
Tetrachloroethene	**10.9**	ND	ND	ND	1.0	µg/kg
Toluene	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	ND	ND	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	ND	ND	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	ND	ND	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	ND	ND	ND	1.0	µg/kg
Trichloroethene	ND	ND	ND	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	ND	ND	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	**10.2**	ND	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	**6.8**	ND	ND	1.0	µg/kg
Vinyl chloride	ND	ND	ND	ND	1.0	µg/kg
m,p-Xylene	ND	ND	ND	ND	2.0	µg/kg
o-Xylene	ND	ND	ND	ND	1.0	µg/kg
Methyl-tert-butylether	ND	ND	ND	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	ND	ND	ND	5.0	µg/kg
Di-isopropylether	ND	ND	ND	ND	5.0	µg/kg
tert-amylmethylether	ND	ND	ND	ND	5.0	µg/kg
tert-Butylalcohol	ND	ND	ND	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	ND	**0.52**	ND	ND	0.20	mg/kg
Dilution Factor	1	1	1	1		
Surrogate Recoveries:					**QC Limits**	
Dibromofluoromethane	82%	92%	90%	91%	60 - 140	
Toluene-d_8	108%	110%	115%	115%	60 - 140	
4-Bromofluorobenzene	100%	89%	83%	74%	60 - 140	
Batch:	VOC7-122822-01	VOC7-122822-01	VOC7-122822-01	VOC7-122822-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/28/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**122822-V7MB1**	**Reporting Limit**	**Units**
Analytes:			
Benzene	ND	1.0	µg/kg
Bromobenzene	ND	1.0	µg/kg
Bromodichloromethane	ND	1.0	µg/kg
Bromoform	ND	1.0	µg/kg
n-Butylbenzene	ND	1.0	µg/kg
sec-Butylbenzene	ND	1.0	µg/kg
tert-Butylbenzene	ND	1.0	µg/kg
Carbon tetrachloride	ND	1.0	µg/kg
Chlorobenzene	ND	1.0	µg/kg
Chloroform	ND	1.0	µg/kg
2-Chlorotoluene	ND	1.0	µg/kg
4-Chlorotoluene	ND	1.0	µg/kg
Dibromochloromethane	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	1.0	µg/kg
Dibromomethane	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	1.0	µg/kg
1,1-Dichloroethane	ND	1.0	µg/kg
1,2-Dichloroethane	ND	1.0	µg/kg
1,1-Dichloroethene	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	1.0	µg/kg
1,2-Dichloropropane	ND	1.0	µg/kg
1,3-Dichloropropane	ND	1.0	µg/kg
2,2-Dichloropropane	ND	1.0	µg/kg
1,1-Dichloropropene	ND	1.0	µg/kg
cis-1,3-Dichloropropene	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**122822-V7MB1**	**Reporting Limit**	**Units**
Analytes:			
trans-1,3-Dichloropropene	ND	1.0	µg/kg
Ethylbenzene	ND	1.0	µg/kg
Freon 11	ND	5.0	µg/kg
Freon 12	ND	5.0	µg/kg
Freon 113	ND	5.0	µg/kg
Hexachlorobutadiene	ND	1.0	µg/kg
Isopropylbenzene	ND	1.0	µg/kg
4-Isopropyltoluene	ND	1.0	µg/kg
Methylene chloride	ND	1.0	µg/kg
Naphthalene	ND	5.0	µg/kg
n-Propylbenzene	ND	1.0	µg/kg
Styrene	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	µg/kg
Tetrachloroethene	ND	1.0	µg/kg
Toluene	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	3.0	µg/kg
1,2,4-Trichlorobenzene	ND	3.0	µg/kg
1,1,1-Trichloroethane	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	1.0	µg/kg
Trichloroethene	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	1.0	µg/kg
Vinyl chloride	ND	1.0	µg/kg
m,p-Xylene	ND	2.0	µg/kg
o-Xylene	ND	1.0	µg/kg
Methyl-tert-butylether	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	5.0	µg/kg
Di-isopropylether	ND	5.0	µg/kg
tert-amylmethylether	ND	5.0	µg/kg
tert-Butylalcohol	ND	50.0	µg/kg
Gasoline Range Organics (C4-C12)	ND	0.20	mg/kg
Dilution Factor	1		
Surrogate Recoveries:		**QC Limits**	
Dibromofluoromethane	90%	60 - 140	
Toluene-d8	101%	60 - 140	
4-Bromofluorobenzene	95%	60 - 140	
Batch:	VOC7-122822-01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/28/2022
		Physical State:	Soil

EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

GC#:	**VOC7-122822-01**					
Jones ID:	122822-V7LCS1	122822-V7LCSD1			122822-V7CCV1	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl chloride	68%	67%	1.3%	60 - 140	97%	80 - 120
1,1-Dichloroethene	103%	92%	10.5%	60 - 140	97%	80 - 120
Cis-1,2-Dichloroethene	84%	78%	6.7%	70 - 130	83%	80 - 120
1,1,1-Trichloroethane	88%	82%	7.3%	70 - 130	96%	80 - 120
Benzene	106%	97%	9.0%	70 - 130	116%	80 - 120
Trichloroethene	101%	94%	7.1%	70 - 130	103%	80 - 120
Toluene	98%	87%	11.4%	70 - 130	114%	80 - 120
Tetrachloroethene	95%	89%	6.5%	70 - 130	102%	80 - 120
Chlorobenzene	103%	97%	6.1%	70 - 130	113%	80 - 120
Ethylbenzene	91%	84%	7.7%	70 - 130	113%	80 - 120
1,2,4 Trimethylbenzene	88%	79%	10.2%	70 - 130	116%	80 - 120
Gasoline Range Organics (C4-C12)	96%	87%	9.6%	70 - 130	115%	
Surrogate Recovery:						
Dibromofluoromethane	87%	88%		60 - 140	93%	60 - 140
Toluene-d_8	101%	100%		60 - 140	114%	60 - 140
4-Bromofluorobenzene	106%	107%		60 - 140	127%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/20/2022
		Physical State:	Soil

EPA 8082 – Polychlorinated Biphenyls (PCBs) by GC/ECD

Sample ID:	**LB50-0.5**	**LB50-5**	**LB58-0.5**	**LB59-0.5**	**LB56-0.5**		
Jones ID:	**ST-21305-01**	**ST-21305-03**	**ST-21305-05**	**ST-21305-07**	**ST-21305-09**	**Reporting Limit**	**Units**
Analytes:							
Aroclor 1016	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1221	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1232	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1242	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1248	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1254	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1260	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1262	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1268	ND	ND	ND	ND	ND	50	µg/kg
Dilution Factor:	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
TCMX	73%	75%	55%	64%	56%	30 - 120	
Decachlorobiphenyl	75%	86%	51%	45%	70%	30 - 120	
Batch:	ECD4_122022_01	ECD4_122022_01	ECD4_122022_01	ECD4_122022_01	ECD4_122022_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:**	ST-21305
		Client Ref. No.:	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/20/2022
Project Address:		**Physical State:**	Soil

EPA 8082 – Polychlorinated Biphenyls (PCBs) by GC/ECD

Sample ID:	**LB54-0.5**	**LB55-0.5**	**LB53-0.5**	**LB52-0.5**	**LB52-2.5**		
Jones ID:	**ST-21305-13**	**ST-21305-15**	**ST-21305-18**	**ST-21305-20**	**ST-21305-21**	**Reporting Limit**	**Units**
Analytes:							
Aroclor 1016	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1221	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1232	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1242	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1248	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1254	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1260	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1262	ND	ND	ND	ND	ND	50	µg/kg
Aroclor 1268	ND	ND	ND	ND	ND	50	µg/kg
Dilution Factor:	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
TCMX	■	65%	37%	51%	57%	30 - 120	
Decachlorobiphenyl	■	70%	75%	■	■	30 - 120	
Batch:	ECD4_122022_01	ECD4_122022_01	ECD4_122022_01	ECD4_122022_01	ECD4_122022_01		

ND = Value less than reporting limit

■ = Sample matrix prevented adequate surrogate recovery

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:** **Date Received:**	12/6/2022 12/6/2022
Project:	B191-194	**Date Analyzed:**	12/20/2022
Project Address:		**Physical State:**	Soil

EPA 8082 – Polychlorinated Biphenyls (PCBs) by GC/ECD

Sample ID:	**METHOD BLANK #1**		
Jones ID:	**MB1-122022ECD4**	**Reporting Limit**	**Units**
Analytes:			
Aroclor 1016	ND	50	µg/kg
Aroclor 1221	ND	50	µg/kg
Aroclor 1232	ND	50	µg/kg
Aroclor 1242	ND	50	µg/kg
Aroclor 1248	ND	50	µg/kg
Aroclor 1254	ND	50	µg/kg
Aroclor 1260	ND	50	µg/kg
Aroclor 1262	ND	50	µg/kg
Aroclor 1268	ND	50	µg/kg
Dilution Factor:	1		
Surrogate Recoveries:		**QC Limits**	
TCMX	119%	30 - 120	
Decachlorobiphenyl	114%	30 - 120	
Batch:	ECD4_122022_01		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/20/2022
		Physical State:	Soil

BATCH: ECD4_ 122022_01 **Prepared:** 12/19/2022 **Analyzed:** 12/20/2022

EPA 8082 – Polychlorinated Biphenyls (PCBs) by GC/ECD

	Result	Spike Level	% Recovery	% RPD	% Recovery Limits	Units
LCS:	**LCS1-122022ECD4**		**SAMPLE SPIKED:**	**CLEAN SOIL**		
Analytes:						
Aroclor 1016	**490**	500	98%		50 - 120	ppb
Aroclor 1260	**515**	500	103%		50 - 120	ppb
Surrogate Recoveries:						
TCMX			104%		30 - 120	
Decachlorobiphenyl			111%		30 - 120	
LCSD:	**LCSD1-122022ECD4**		**SAMPLE SPIKED:**	**CLEAN SOIL**		
Aroclor 1016	**502**	500	100%	2.4%	50 - 120	ppb
Aroclor 1260	**525**	500	105%	1.9%	50 - 120	ppb
Surrogate Recovery:						
TCMX			106%		30 - 120	
Decachlorobiphenyl			118%		30 - 120	
CCV:	**CCV1-122022ECD4**					
Analytes:						
Aroclor 1016	**760**	700	109%		80-120	ppb
Aroclor 1260	**799**	700	114%		80-120	ppb
Surrogate Recoveries:						
TCMX			115%		80-120	
Decachlorobiphenyl			119%		80-120	

LCS= Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV= Continuing Calibration Verification
RPD = Relative Percent Difference

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21&28/2022
		Physical State:	Soil

STLC CA-Waste Extraction Test (CA-WET) by EPA 6010B by ICP-OES

Sample ID:	**LB58-2.5**		
Jones ID:	**ST-21305-06**	**Reporting Limit**	**Units**
Analytes:			
Arsenic, As	ND	0.10	mg/L
Chromium, Cr	**0.02**	0.01	mg/L
Copper, Cu	**0.98**	0.01	mg/L
Lead, Pb	**3.47**	0.01	mg/L
Dilution Factor	1		
Batch:	I22122702		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21&28/2022
		Physical State:	Soil

STLC CA-Waste Extraction Test (CA-WET) by EPA 6010B by ICP-OES

Sample ID:	**LB57-0.5**	**LB55-0.5**	**LB53-2.5**		
Jones ID:	**ST-21305-11**	**ST-21305-15**	**ST-21305-19**	**Reporting Limit**	**Units**
Analytes:					
Lead, Pb	**1.44**	**2.02**	ND	0.01	mg/L
Dilution Factor	1	1	1		
Batch:	I22121901	I22121901	I22121901		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21&28/2022
		Physical State:	Soil

STLC CA-Waste Extraction Test (CA-WET) by EPA 6010B by ICP-OES

Sample ID:	**LB52-5**		
Jones ID:	**ST-21305-22**	**Reporting Limit**	**Units**
Analytes:			
Copper, Cu	**5.30**	0.01	mg/L
Lead, Pb	**6.68**	0.01	mg/L
Dilution Factor	1		

Batch: I22122702

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	12/29/2022
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21&28/2022
		Physical State:	Soil

STLC CA-Waste Extraction Test (CA-WET) by EPA 6010B by ICP-OES

BATCH: I22121901 **Prepared:** 12/19/2022 **Analyzed:** 12/21/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Reporting Limit	Units
Method Blank:	**I221219-MB1**						
Arsenic, As	ND					0.10	mg/L
Chromium, Cr	ND					0.01	mg/L
Copper, Cu	ND					0.01	mg/L
Lead, Pb	ND					0.01	mg/L
LCS:	**I221219-LCS1**						
Arsenic, As	**3.81**	4.00	95%		80 - 120		mg/L
Chromium, Cr	**0.43**	0.40	108%		80 - 120		mg/L
Copper, Cu	**0.60**	0.50	120%		80 - 120		mg/L
Lead, Pb	**1.02**	1.00	102%		80 - 120		mg/L
LCSD:	**I221219-LCSD1**						
Arsenic, As	**3.80**	4.00	95%	0.3%	80 - 120		mg/L
Chromium, Cr	**0.43**	0.40	108%	0.2%	80 - 120		mg/L
Copper, Cu	**0.61**	0.50	122%	1.7%	80 - 120		mg/L
Lead, Pb	**1.02**	1.00	102%	0.2%	80 - 120		mg/L
CCV:	**I221219-CCV1**						
Arsenic, As	**1.03**	1.00	103%		90-110		mg/L
Chromium, Cr	**1.01**	1.00	101%		90-110		mg/L
Copper, Cu	**1.10**	1.00	110%		90-110		mg/L
Lead, Pb	**1.05**	1.00	105%		90-110		mg/L

ND= Not Detected

RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

LCS = Laboratory Control Sample

LCSD= Laboratory Control Sample Duplicate

CCV = Continuing Calibration Verification

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	12/29/2022
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21&28/2022
		Physical State:	Soil

STLC CA-Waste Extraction Test (CA-WET) by EPA 6010B by ICP-OES

BATCH: I22122702 **Prepared:** 12/27/2022 **Analyzed:** 12/28/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Reporting Limit	Units
Method Blank:	**I221227-MB2**						
Arsenic, As	ND					0.10	mg/L
Chromium, Cr	ND					0.01	mg/L
Copper, Cu	ND					0.01	mg/L
Lead, Pb	ND					0.01	mg/L
LCS:	**I221227-LCS2**						
Arsenic, As	**4.20**	4.00	105%		80 - 120		mg/L
Chromium, Cr	**0.41**	0.40	103%		80 - 120		mg/L
Copper, Cu	**0.57**	0.50	114%		80 - 120		mg/L
Lead, Pb	**1.06**	1.00	106%		80 - 120		mg/L
LCSD:	**I221227-LCSD2**						
Arsenic, As	**4.27**	4.00	107%	1.7%	80 - 120		mg/L
Chromium, Cr	**0.42**	0.40	104%	1.0%	80 - 120		mg/L
Copper, Cu	**0.57**	0.50	114%	0.4%	80 - 120		mg/L
Lead, Pb	**1.08**	1.00	108%	1.9%	80 - 120		mg/L
CCV:	**I221227-CCV2**						
Arsenic, As	**1.05**	1.00	105%		90-110		mg/L
Chromium, Cr	**1.07**	1.00	107%		90-110		mg/L
Copper, Cu	**1.07**	1.00	107%		90-110		mg/L
Lead, Pb	**1.04**	1.00	104%		90-110		mg/L

ND= Not Detected

RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

LCS = Laboratory Control Sample

LCSD= Laboratory Control Sample Duplicate

CCV = Continuing Calibration Verification

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21/2022
		Physical State:	Soil

TCLP by EPA 6010B by ICP-OES

Sample ID:	**LB58-2.5**		
Jones ID:	**ST-21305-06**	**Reporting Limit**	**Units**
Analytes:			
Arsenic, As	ND	0.10	mg/L
Lead, Pb	ND	0.01	mg/L
Dilution Factor	1		
Batch:	I22122101		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan Irvine, CA 92614	**Jones Ref. No.:** **Client Ref. No.:**	ST-21305 12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21/2022
		Physical State:	Soil

TCLP by EPA 6010B by ICP-OES

Sample ID:	**LB52-5**		
Jones ID:	**ST-21305-22**	**Reporting Limit**	**Units**
Analytes:			
Lead, Pb	**4.81**	0.01	mg/L
Dilution Factor	1		
Batch:	I22122101		

ND = Value less than reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Leighton Consulting, Inc.	**Report date:**	12/29/2022
Client Address:	17781 Cowan	**Jones Ref. No.:**	ST-21305
	Irvine, CA 92614	**Client Ref. No.:**	12736.024
Attn:	Mark Withrow	**Date Sampled:**	12/6/2022
		Date Received:	12/6/2022
Project:	B191-194	**Date Analyzed:**	12/21/2022
		Physical State:	Soil

TCLP by EPA 6010B by ICP-OES

BATCH: I22122101 **Prepared:** 12/21/2022 **Analyzed:** 12/21/2022

Analytes:	Result	Spike Level	% REC	% RPD	% REC Limits	Reporting Limit	Units
Method Blank:	**I221221-MB1**						
Arsenic, As	ND					0.10	mg/L
Lead, Pb	ND					0.01	mg/L
LCS:	**I221221-LCS1**						
Arsenic, As	**3.94**	4.00	99%		80 - 120		mg/L
Lead, Pb	**0.86**	1.00	86%		80 - 120		mg/L
LCSD:	**I221221-LCSD1**						
Arsenic, As	**3.95**	4.00	99%	0.3%	80 - 120		mg/L
Lead, Pb	**0.85**	1.00	85%	1.2%	80 - 120		mg/L
CCV:	**I221221-CCV1**						
Arsenic, As	**0.99**	1.00	99%		90-110		mg/L
Lead, Pb	**1.01**	1.00	101%		90-110		mg/L

ND= Not Detected
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%
LCS = Laboratory Control Sample
LCSD= Laboratory Control Sample Duplicate
CCV = Continuing Calibration Verification

Chain-of-Custody Record

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Turn Around Requested:
- ☐ Immediate Attention - 200%
- ☐ Rush 24 Hours - 100%
- ☐ Rush 48 Hours - 50%
- ☐ Rush 72 Hours - 25%
- ☐ Rush 96 Hours - 10%
- X Normal - No Surcharge

LAB USE ONLY
Jones Project # ST-21305
Page 1 of 3

Client: Leighton Consulting	Date: 12/6/22
Project Name: B191-194	Client Project #: 12736.024
Project Address:	
Email: mwithrow@leightongroup.com	
Phone: 949-394-2194	
Report To: Mark Withrow	Sampler: TLD

Sample Container / Preservative Abbreviations
AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

Sample ID	Sample Collection Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	TLD	~~TPHmo EPA 8015~~	Title 22 Metals 6010B/7000	TPH-g,d-o EPA 8015	VOCs EPA 8260	PAHs EPA 8270SIM	EPA 8260B-GRO-[Added 12-15-16 JC]	EPA 8082-PCBs-[Added 12-15-16 JC]	8270C PAHs SIM-[Added 12-15-16 JC]	STLC-[Added 12-15-16 JC]	TCLP-[Added 12-15-16 JC]		Number of Containers	Notes & Special Instructions
LB50 - 0.5	12/6/22	0725	ST-21305-01	Ice	glass	S			X	X			X	X	X				1	
LB50 - 2.5		0735	ST-21305-02		glass	S			X	X	X								4	
LB50 - 5		750	ST-21305-03		glass	S			X	X	X			X	X				4	
LB50 - GW		0805	ST-21305-04		glass/poly	A			X	X	X	X							8	
LB58 - 0.5		0832	ST-21305-05		glass	S			X	X	~~X~~	TLP	X	X	X				1	
LB58 - 2.5		0835	ST-21305-06		glass	S			X	X	X					X	X		4	STLC-As, Cr, Cu, Pb TCLP-As, Pb
LB59 - 0.5		0852	ST-21305-07		glass	S			X	X	~~X~~	TLP	X	X	X				1	
LB59 - 2.5		0854	ST-21305-08		glass	S			X	X	X								4	
LB56 - 0.5		0918	ST-21305-09		glass	S			X	X	~~X~~	TLP	X	X	X				1	
~~LB56 -2.5~~ ~~LB57 - 2.5~~	TLD	0924	ST-21305-10		glass	S			X	X	X								4	

Relinquished By (Signature)	Printed Name	Received By (Signature)	Printed Name	
	Theresa Duncan		Annaliese Tootle	Total Number of Containers
Company: LCI	Date: 12/6/22 Time: 1423	Company: JEL	Date: 12-6-22 Time: 1424	
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name	Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.
Company	Date: Time	Company	Date Time	

Chain-of-Custody Record

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Turn Around Requested:
- ☐ Immediate Attention - 200%
- ☐ Rush 24 Hours - 100%
- ☐ Rush 48 Hours - 50%
- ☐ Rush 72 Hours - 25%
- ☐ Rush 96 Hours - 10%
- X Normal - No Surcharge

LAB USE ONLY

Jones Project # ST-21305

Page 2 of 3

Client	Leighton Consulting
Date	12/6/22
Project Name	B191-194
Client Project #	12736.024
Project Address	
Email	mwithrow@leightongroup.com
Phone	949-394-2194
Report To	Mark Withrow
Sampler	TCO

Sample Container / Preservative Abbreviations

AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

Analysis Requested

Sample ID	Sample Collection Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	Title 22 Metals 6010B/7000	TPH-g, d,o EPA 8015	VOCs EPA 8260	PAHs EPA 8270SIM	EPA 8260B-GRO-[Added 12-15-16 JC]	EPA 8082-PCBs-[Added 12-15-16 JC]	8270C PAHs SIM-[Added 12-15-16 JC]	STLC-[Added 12-15-16 JC]	TCLP-[Added 12-15-16 JC]			Number of Containers	Notes & Special Instructions
LB57-0.5	12/6/22	0944	ST-21305-11	Ice	glass	S	X	X	X	TCP	X			X				1	STLC-Pb
LB57-2.5		0946	ST-21305-12		glass	S	X	X	X									4	
LB54-0.5		1006	ST-21305-13		glass	S	X	X	X	TCP	X	X	X					1	
LB54-2.5		1016	ST-21305-14		poly	S	X	X	X									4	
LB55-0.5		1028	ST-21305-15		glass	S	X	X	X	TCP	X	X	X	X				1	STLC-Pb
LB55-2.5		1032	ST-21305-16		glass	S	X	X	X									4	
LB55-GW		1045	ST-21305-17		glass + poly	A	X	X	X	X								8	
LB53-0.5		1110	ST-21305-18		glass	S	X	X	X	TCP	X	X	X					1	
LB53-2.5		1115	ST-21305-19		poly	S	X	X	X					X				4	STLC-Pb
LB52-0.5		1138	ST-21305-20		glass poly	S	X	X	X	TCP	X	X	X					1	
																			Total Number of Containers

Relinquished By (Signature)	**Printed Name**	**Received By (Signature)**	**Printed Name**
	Theresa Duran		Annalise Otoch
Company	**Date / Time**	**Company**	**Date / Time**
LCE	12/6/22 1423	JEL	12-6-22 1424
Relinquished By (Signature)	**Printed Name**	**Received By Laboratory (Signature)**	**Printed Name**
Company	**Date: / Time**	**Company**	**Date / Time**

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

Chain-of-Custody Record

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
reports@jonesenv.com
www.jonesenv.com

Turn Around Requested:
- ☐ Immediate Attention - 200%
- ☐ Rush 24 Hours - 100%
- ☐ Rush 48 Hours - 50%
- ☐ Rush 72 Hours - 25%
- ☐ Rush 96 Hours - 10%
- ☐ Normal - No Surcharge

LAB USE ONLY
Jones Project # ST-21305
Page 3 of 3

Client: Leighton Consulting	Date: 12/6/22
Project Name: B191 - 194	Client Project #: 12736.024
Project Address:	
Email: mwitherow@leightongroup.com	
Phone: (949) 394-2194	
Report To: Mark Witherow	Sampler: TCD

Sample Container / Preservative Abbreviations
AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

Sample ID	Sample Collection Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	Title 22 metals 6010B/7000	TPH - g,d,o EPA 8015	VOCs EPA 8260	PAHs EPA 8270SIM	EPA 8260B-GRO-[Added 12-15-16 JC]	EPA 8082-PCBs-[Added 12-15-16 JC]	8270C PAHs SIM-[Added 12-15-16 JC]	STLC-[Added 12-15-16 JC]	TCLP-[Added 12-15-16 JC]			Number of Containers	Notes & Special Instructions
LB52 - 2.5	12/6/22	1140	ST-21305-21	Ice	poly	S	X	X	X			X	X					4	
LB52 - 5		1142 1142 dup	ST-21305-22		poly	S	X	X	X					X	X			4	STLC-Cu, Pb TCLP-Pb
LB51 - 0.5		1152	ST-21305-23		poly	S	X	X	X	TCN	X							1	
LB51 - 2.5		1154	ST-21305-24		poly	S	X	X	X									4	
LB51 - GW		1206	ST-21305-25		glass 1 poly	A	X	X	X	X								8	

Relinquished By (Signature): Teresa Duncan	Printed Name: Teresa Duncan	Received By (Signature): Annalise Otarre	Printed Name: Annalise Otarre
Company: LGI	Date: 12/6/22 Time: 1423	Company: JEL	Date: 12-6-22 Time: 1424
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name
Company	Date: Time	Company	Date Time

Total Number of Containers

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

SAMPLE RECEIPT FORM

Jones ID: ST-21305

CLIENT: Leighton Consulting
DATE/TIME (LAB RECEIVED): 12/6/22 - 1424
PROJECT: B191-194
RECEIVED BY: ANO
Delivered by: ☑ Client ☐ Jones Courier ☐ UPS / FedEx / USPS ☐ Other

TEMPERATURE: Thermometer ID: T-2 (Corrected Temp.) Calibration Due: 07/~~12~~/2023

Temperature Cooler #1 0.0 °C ± the CF(+0.5°C) 0.9 °C Blank Sample
Temperature Cooler #2 0.0 °C ± the CF(+0.5°C) 0.5 °C Blank Sample

Temperature Criteria: 0 ≤ 6°C (NO frozen containers) Criteria Met? ☑ Yes ☐ No

If criteria is not met:

Sample Received on ice? ☐ Yes ☐ No
Sample received Chilled on same day of sampling? ☐ Yes ☐ No

Checked By: ANO

Temperature Non-Conformance (NC): **NC No.** _____

☐ Sample not received on ice
☐ sample not received chilled
☐ Sample received chilled, but not on the same day of sampling

SAMPLE CONDITION:	YES	NO*	N/A
Chain of Custody (COC) received filled out completely	☑	☐*	☐
Total number of containers received match COC	☑	☐*	☐
Sample container label(s) consistent with COC	☑	☐*	☐
Sample container(s) intact and in good condition	☑	☐*	☐
Proper containers and sufficient volume for analyses requested on COC	☑	☐*	☐
Proper preservative indicated on COC/container for analyses requested	☑	☐*	☐
Volatile analysis container(s) free of headspace (EPA 8260 water)	☑	☐*	☐
Custody Seals Intact on Cooler/Sample	☐	☐*	☑

CONTAINER TYPE:

Solid:
5035 Kits: 12
Glass Jar: 15
Sleeve: 7
Other: _____

Aqueous:
Amber Bottle: 6
VOAs: _____
Poly Bottle: 3
5030 Kits: 6
Other: _____

Air / Soil Gas:
Tedlar Bag: _____
6 hr
72 hr
5 Day
Summa:
(1L) _____ (6L) _____

Complete Non-Conformance if checked

Checked by: VP

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

14 December 2022

Colby Wakeman
Jones Environmental
11007 Forest Place
Santa Fe Springs, CA 90670

RE: B191-194

Enclosed are the results of analyses for samples received by the laboratory on 12/07/22 13:22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joann Marroquin

Joann Marroquin
Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB50-GW	T223523-01	Water	12/06/22 08:05	12/07/22 13:22
LB55-GW	T223523-02	Water	12/06/22 10:45	12/07/22 13:22
LB51-GW	T223523-03	Water	12/06/22 12:06	12/07/22 13:22

SunStar Laboratories, Inc.

Joann Marroquin

Joann Marroquin, Director of Operations

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

DETECTIONS SUMMARY

Sample ID: LB50-GW **Laboratory ID:** T223523-01

No Results Detected

Sample ID: LB55-GW **Laboratory ID:** T223523-02

No Results Detected

Sample ID: LB51-GW **Laboratory ID:** T223523-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	**1.98**	1.00	ug/l	EPA 8270C SIM	
Benzo (b) fluoranthene	**3.78**	1.00	ug/l	EPA 8270C SIM	
Benzo (k) fluoranthene	**1.02**	1.00	ug/l	EPA 8270C SIM	
Benzo (a) pyrene	**1.22**	1.00	ug/l	EPA 8270C SIM	
Chrysene	**3.02**	1.00	ug/l	EPA 8270C SIM	
Fluoranthene	**1.22**	1.00	ug/l	EPA 8270C SIM	
Pyrene	**1.56**	1.00	ug/l	EPA 8270C SIM	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

LB50-GW

T223523-01 (Water)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	1.00	ug/l	1	22L0148	12/09/22	12/13/22	EPA 8270C SIM	
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	1.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
Phenanthrene	ND	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surrogate: Terphenyl-dl4		*64.1 %*	*33-141*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

LB55-GW

T223523-02 (Water)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	1.00	ug/l	1	22L0148	12/09/22	12/13/22	EPA 8270C SIM	
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	1.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Fluorene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
Phenanthrene	ND	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surrogate: Terphenyl-dl4		*62.0 %*		*33-141*	"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

LB51-GW

T223523-03 (Water)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	1.00	ug/l	1	22L0148	12/09/22	12/13/22	EPA 8270C SIM	
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	**1.98**	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	**3.78**	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	**1.02**	1.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	**1.22**	1.00	"	"	"	"	"	"	
Chrysene	**3.02**	1.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	1.00	"	"	"	"	"	"	
Fluoranthene	**1.22**	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Fluorene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
Phenanthrene	ND	1.00	"	"	"	"	"	"	
Pyrene	**1.56**	1.00	"	"	"	"	"	"	
Surrogate: Terphenyl-dl4		*50.8 %*		*33-141*	"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22L0148 - EPA 3510C GCMS/ECD										
Blank (22L0148-BLK1)				Prepared: 12/09/22 Analyzed: 12/13/22						
Acenaphthene	ND	1.00	ug/l							
Acenaphthylene	ND	1.00	"							
Anthracene	ND	1.00	"							
Benzo (a) anthracene	ND	1.00	"							
Benzo (b) fluoranthene	ND	1.00	"							
Benzo (k) fluoranthene	ND	1.00	"							
Benzo (g,h,i) perylene	ND	1.00	"							
Benzo (a) pyrene	ND	1.00	"							
Chrysene	ND	1.00	"							
Dibenz (a,h) anthracene	ND	1.00	"							
Fluoranthene	ND	1.00	"							
Indeno (1,2,3-cd) pyrene	ND	1.00	"							
Fluorene	ND	1.00	"							
Naphthalene	ND	1.00	"							
Phenanthrene	ND	1.00	"							
Pyrene	ND	1.00	"							
Surrogate: Terphenyl-dl4	*19.4*		"	*20.0*		*97.2*	*33-141*			
LCS (22L0148-BS1)				Prepared: 12/09/22 Analyzed: 12/13/22						
Acenaphthene	11.4	1.00	ug/l	20.0		56.9	50-130			
Pyrene	10.4	1.00	"	20.0		51.8	41.8-88			
Surrogate: Terphenyl-dl4	*19.8*		"	*20.0*		*98.8*	*33-141*			
LCS Dup (22L0148-BSD1)				Prepared: 12/09/22 Analyzed: 12/13/22						
Acenaphthene	12.2	1.00	ug/l	20.0		60.9	50-130	6.79	31	
Pyrene	10.2	1.00	"	20.0		50.9	41.8-88	1.75	30	
Surrogate: Terphenyl-dl4	*20.3*		"	*20.0*		*102*	*33-141*			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/14/22 14:28

Notes and Definitions

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

T223523

Chain-of-Custody Record

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
Fax (714) 449-9685
www.jonesenv.com

Client
Leighton Consulting

Project Name
B191-194

Project Address

Email
reports@jonesenv.com

Phone
(747) 449-9937

Report To **Sampler**
Colby Wakeman

Date
12/7/2022

Client Project #
12736.024

Turn Around Requested:
- □ Immediate Attention
- □ Rush 24 Hours
- □ Rush 48 Hours
- □ Rush 72 Hours
- X Normal

Report Options
EDD ____
EDF* - 10% Surcharge___
*Global ID _____

LAB USE ONLY
Jones Project #

Page
of

Sample Condition as Recieved:
Chilled ✓ yes □ no
Sealed □ yes □ no
2.6°C

Sample Container / Preservative Abbreviations

AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HNO3 - Nitric Acid
O - Other (See Notes)

Analysis Requested

Sample ID	Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	PAHS EPA 8270 SIM											Number of Containers	Notes & Special Instructions
LB50-GW	12/6/2022	805		N		A	X												ST-21305-04
LB55-GW	12/6/2022	1045		N		A	X												ST-21305-17
LB51-GW	12/6/2022	1206		N		A	X												ST-21305-25

Relinquished By (Signature)	Printed Name: Doug Fowler	Received By (Signature)	Printed Name: Carlos
Company: JEL	Date: 12/07/22 Time: 12:39	Company: Sunstar	Date: 12/7/22 Time: 12:39
Relinquished By (Signature)	Printed Name: Carlos	Received By Laboratory (Signature)	Printed Name: Dave
Company: Sunstar	Date: 12/7/22 Time: 13:32	Company: Sunstar	Date: 12.7.22 Time: 1332

Total Number of Containers

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been requested, and the information provided herein is correct and accurate.

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: _____

Client Name: Jones Project: Leighton Consulting - B191-194

Delivered by: ☐ Client ☒ SunStar Courier ☐ GLS ☐ FedEx ☐ Other

If Courier, Received by: Carlos Date/Time Courier Received: 12.7.22 1239

Lab Received by: Dave Date/Time Lab Received: 12.7.22 1332

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due : 8/2/23

Temperature:	Cooler #1	2.5 °C +/- the CF (+ 0.1°C)	= 2.6	°C corrected temperature
Temperature:	Cooler #2	°C +/- the CF (+ 0.1°C)	=	°C corrected temperature
Temperature:	Cooler #3	°C +/- the CF (+ 0.1°C)	=	°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☒ **Yes** ☐ **No** ☐ **N/A**
If NO:		
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☒ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☐ Yes	☐ No*	☒ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: DB 12.8.22

Comments:

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T223523

Client: **Jones Environmental** **Project Manager:** **Joann Marroquin**
Project: **B191-194** **Project Number:** **ST-21305**

Report To:
Jones Environmental
Colby Wakeman
11007 Forest Place
Santa Fe Springs, CA 90670

Date Due: 12/14/22 17:00 (5 day TAT)
Received By: Dave Berner Date Received: 12/07/22 13:22
Logged In By: Rebecca Traficanto Date Logged In: 12/08/22 13:54

Samples Received at: **2.6°C**
Custody Seals No Received On Ice No
Containers Intact No
COC/Labels Agree No
Preservation Confirm No

Analysis	Due	TAT	Expires	Comments
T223523-01 LB50-GW [Water] Sampled 12/06/22 08:05 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/14/22 15:00	5	12/13/22 08:05	
T223523-02 LB55-GW [Water] Sampled 12/06/22 10:45 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/14/22 15:00	5	12/13/22 10:45	
T223523-03 LB51-GW [Water] Sampled 12/06/22 12:06 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/14/22 15:00	5	12/13/22 12:06	

Reviewed By Date

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

27 December 2022

Colby Wakeman
Jones Environmental
11007 Forest Place
Santa Fe Springs, CA 90670

RE: B191-194

Enclosed are the results of analyses for samples received by the laboratory on 12/19/22 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joann Marroquin
Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LB50-0.5	T223645-01	Soil	12/06/22 07:25	12/19/22 15:30
LB50-5	T223645-02	Soil	12/06/22 07:50	12/19/22 15:30
LB58-0.5	T223645-03	Soil	12/06/22 08:32	12/19/22 15:30
LB59-0.5	T223645-04	Soil	12/06/22 08:52	12/19/22 15:30
LB56-0.5	T223645-05	Soil	12/06/22 09:18	12/19/22 15:30
LB54-0.5	T223645-06	Soil	12/06/22 10:06	12/19/22 15:30
LB55-0.5	T223645-07	Soil	12/06/22 10:28	12/19/22 15:30
LB53-0.5	T223645-08	Soil	12/06/22 11:10	12/19/22 15:30
LB52-0.5	T223645-09	Soil	12/06/22 11:38	12/19/22 15:30
LB52-2.5	T223645-10	Soil	12/06/22 11:40	12/19/22 15:30

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

DETECTIONS SUMMARY

Sample ID: LB50-0.5 **Laboratory ID:** T223645-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	77	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	93	50	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	57	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	60	50	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB50-5 **Laboratory ID:** T223645-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Acenaphthylene	70	50	ug/kg	EPA 8270C SIM	O-05, R-07
Anthracene	120	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (a) anthracene	150	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (b) fluoranthene	140	100	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	160	50	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	120	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	200	50	ug/kg	EPA 8270C SIM	O-05, R-07
Indeno (1,2,3-cd) pyrene	60	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	140	50	ug/kg	EPA 8270C SIM	O-05, R-07
Pyrene	220	100	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB58-0.5 **Laboratory ID:** T223645-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	110	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	100	50	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	93	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	77	50	ug/kg	EPA 8270C SIM	O-05, R-07
Pyrene	110	100	ug/kg	EPA 8270C SIM	O-05, R-07

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

Sample ID: LB59-0.5 **Laboratory ID:** T223645-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	73	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	140	50	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	160	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	57	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	60	50	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB56-0.5 **Laboratory ID:** T223645-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	7.0	5.0	ug/kg	EPA 8270C SIM	O-05
Benzo (g,h,i) perylene	11	5.0	ug/kg	EPA 8270C SIM	O-05
Chrysene	12	5.0	ug/kg	EPA 8270C SIM	O-05
Fluoranthene	8.3	5.0	ug/kg	EPA 8270C SIM	O-05
Phenanthrene	7.0	5.0	ug/kg	EPA 8270C SIM	O-05

Sample ID: LB54-0.5 **Laboratory ID:** T223645-06

Analyte	Result	Reporting Limit	Units	Method	Notes
Acenaphthylene	400	50	ug/kg	EPA 8270C SIM	O-05, R-07
Anthracene	370	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (a) anthracene	570	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	310	50	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	1100	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	1800	50	ug/kg	EPA 8270C SIM	O-05, R-07
Naphthalene	9300	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	1600	50	ug/kg	EPA 8270C SIM	O-05, R-07
Pyrene	1700	100	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB55-0.5 **Laboratory ID:** T223645-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Acenaphthene	380	100	ug/kg	EPA 8270C SIM	O-05, R-07
Acenaphthylene	120	50	ug/kg	EPA 8270C SIM	O-05, R-07
Anthracene	980	50	ug/kg	EPA 8270C SIM	O-05, R-07

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

Sample ID: LB55-0.5 **Laboratory ID:** T223645-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	580	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	170	50	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	670	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	3500	50	ug/kg	EPA 8270C SIM	O-05, R-07
Indeno (1,2,3-cd) pyrene	90	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	4500	50	ug/kg	EPA 8270C SIM	O-05, R-07
Pyrene	3100	100	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB53-0.5 **Laboratory ID:** T223645-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Acenaphthylene	170	50	ug/kg	EPA 8270C SIM	O-05, R-07
Anthracene	430	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (a) anthracene	690	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (b) fluoranthene	1200	100	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (k) fluoranthene	480	100	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	570	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (a) pyrene	640	100	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	1200	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	1100	50	ug/kg	EPA 8270C SIM	O-05, R-07
Indeno (1,2,3-cd) pyrene	490	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	460	50	ug/kg	EPA 8270C SIM	O-05, R-07
Pyrene	1600	100	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB52-0.5 **Laboratory ID:** T223645-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Acenaphthylene	500	50	ug/kg	EPA 8270C SIM	O-05, R-07
Anthracene	1200	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (a) anthracene	1500	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (b) fluoranthene	3500	100	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (k) fluoranthene	990	100	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	1200	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (a) pyrene	1800	100	ug/kg	EPA 8270C SIM	O-05, R-07
Chrysene	3000	50	ug/kg	EPA 8270C SIM	O-05, R-07

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

Sample ID: LB52-0.5 **Laboratory ID:** T223645-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Dibenz (a,h) anthracene	**320**	50	ug/kg	EPA 8270C SIM	O-05, R-07
Fluoranthene	**1600**	50	ug/kg	EPA 8270C SIM	O-05, R-07
Indeno (1,2,3-cd) pyrene	**1200**	50	ug/kg	EPA 8270C SIM	O-05, R-07
Phenanthrene	**290**	50	ug/kg	EPA 8270C SIM	O-05, R-07
Pyrene	**6300**	100	ug/kg	EPA 8270C SIM	O-05, R-07

Sample ID: LB52-2.5 **Laboratory ID:** T223645-10

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzo (a) anthracene	**50**	50	ug/kg	EPA 8270C SIM	O-05, R-07
Benzo (g,h,i) perylene	**83**	50	ug/kg	EPA 8270C SIM	O-05, R-07

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB50-0.5

T223645-01 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	ND	50	"	"	"	"	"	"	O-05, R-07
Anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**77**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**93**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**57**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**60**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	ND	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	ND	50	"	"	"	"	"	"	O-05, R-07
Pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*126 %*	*18-137*		"	"	"	"	*O-05, R-07*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB50-5

T223645-02 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	**70**	50	"	"	"	"	"	"	O-05, R-07
Anthracene	**120**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**150**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	**140**	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**160**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**120**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**200**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	**60**	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**140**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	**220**	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*121 %*		*18-137*	"	"	"	"	*O-05, R-07*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB58-0.5

T223645-03 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	ND	50	"	"	"	"	"	"	O-05, R-07
Anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**110**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**100**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**93**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	ND	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**77**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	**110**	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*107 %*	*18-137*		"	"	"	"	*O-05, R-07*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB59-0.5

T223645-04 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	ND	50	"	"	"	"	"	"	O-05, R-07
Anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**73**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**140**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**160**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**57**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	ND	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**60**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*167 %*		*18-137*	"	"	"	"	*O-05, R-07, S-06*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB56-0.5

T223645-05 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	10	ug/kg	1	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05
Acenaphthylene	ND	5.0	"	"	"	"	"	"	O-05
Anthracene	ND	5.0	"	"	"	"	"	"	O-05
Benzo (a) anthracene	**7.0**	5.0	"	"	"	"	"	"	O-05
Benzo (b) fluoranthene	ND	10	"	"	"	"	"	"	O-05
Benzo (k) fluoranthene	ND	10	"	"	"	"	"	"	O-05
Benzo (g,h,i) perylene	**11**	5.0	"	"	"	"	"	"	O-05
Benzo (a) pyrene	ND	10	"	"	"	"	"	"	O-05
Chrysene	**12**	5.0	"	"	"	"	"	"	O-05
Dibenz (a,h) anthracene	ND	5.0	"	"	"	"	"	"	O-05
Fluoranthene	**8.3**	5.0	"	"	"	"	"	"	O-05
Fluorene	ND	10	"	"	"	"	"	"	O-05
Indeno (1,2,3-cd) pyrene	ND	5.0	"	"	"	"	"	"	O-05
Naphthalene	ND	5.0	"	"	"	"	"	"	O-05
Phenanthrene	**7.0**	5.0	"	"	"	"	"	"	O-05
Pyrene	ND	10	"	"	"	"	"	"	O-05
Surrogate: Terphenyl-dl4		*110 %*		*18-137*	"	"	"	"	*O-05*

SunStar Laboratories, Inc.

Joann Marroquin

Joann Marroquin, Director of Operations

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB54-0.5

T223645-06 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	**400**	50	"	"	"	"	"	"	O-05, R-07
Anthracene	**370**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**570**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**310**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**1100**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**1800**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	ND	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	**9300**	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**1600**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	**1700**	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*147 %*	*18-137*		"	"	"	"	*O-05, R-07, S-06*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB55-0.5

T223645-07 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	**380**	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	**120**	50	"	"	"	"	"	"	O-05, R-07
Anthracene	**980**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**580**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**170**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**670**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**3500**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	**90**	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**4500**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	**3100**	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*164 %*	*18-137*		"	"	"	"	*O-05, R-07, S-06*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB53-0.5

T223645-08 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	**170**	50	"	"	"	"	"	"	O-05, R-07
Anthracene	**430**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**690**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	**1200**	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	**480**	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**570**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	**640**	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**1200**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**1100**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	**490**	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**460**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	**1600**	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*177 %*		*18-137*	"	"	"	"	*O-05, R-07, S-06*

SunStar Laboratories, Inc.

Joann Marroquin

Joann Marroquin, Director of Operations

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB52-0.5

T223645-09 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	**500**	50	"	"	"	"	"	"	O-05, R-07
Anthracene	**1200**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**1500**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	**3500**	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	**990**	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**1200**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	**1800**	100	"	"	"	"	"	"	O-05, R-07
Chrysene	**3000**	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	**320**	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	**1600**	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	**1200**	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	**290**	50	"	"	"	"	"	"	O-05, R-07
Pyrene	**6300**	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*168 %*	*18-137*		"	"	"	"	*O-05, R-07, S-06*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

LB52-2.5

T223645-10 (Soil)

SunStar Laboratories, Inc.

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	100	ug/kg	10	22L0269	12/20/22	12/21/22	EPA 8270C SIM	O-05, R-07
Acenaphthylene	ND	50	"	"	"	"	"	"	O-05, R-07
Anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	**50**	50	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	**83**	50	"	"	"	"	"	"	O-05, R-07
Benzo (a) pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Chrysene	ND	50	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluoranthene	ND	50	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	100	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	ND	50	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	50	"	"	"	"	"	"	O-05, R-07
Phenanthrene	ND	50	"	"	"	"	"	"	O-05, R-07
Pyrene	ND	100	"	"	"	"	"	"	O-05, R-07
Surrogate: Terphenyl-dl4		*179 %*		*18-137*	"	"	"	"	*O-05, R-07, S-06*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22L0269 - EPA 3550 ECD/GCMS										
Blank (22L0269-BLK1)				Prepared: 12/20/22 Analyzed: 12/21/22						
Acenaphthene	ND	10	ug/kg							
Acenaphthylene	ND	5.0	"							
Anthracene	ND	5.0	"							
Benzo (a) anthracene	ND	5.0	"							
Benzo (b) fluoranthene	ND	10	"							
Benzo (k) fluoranthene	ND	10	"							
Benzo (g,h,i) perylene	ND	5.0	"							
Benzo (a) pyrene	ND	10	"							
Chrysene	ND	5.0	"							
Dibenz (a,h) anthracene	ND	5.0	"							
Fluoranthene	ND	5.0	"							
Fluorene	ND	10	"							
Indeno (1,2,3-cd) pyrene	ND	5.0	"							
Naphthalene	ND	5.0	"							
Phenanthrene	ND	5.0	"							
Pyrene	ND	10	"							
Surrogate: Terphenyl-dl4	*332*		*"*	*333*		*99.6*	*18-137*			
LCS (22L0269-BS1)				Prepared: 12/20/22 Analyzed: 12/21/22						
Acenaphthene	279	10	ug/kg	333		83.6	50-130			
Pyrene	211	10	"	333		63.2	33.8-100			
Surrogate: Terphenyl-dl4	*394*		*"*	*333*		*118*	*18-137*			
LCS Dup (22L0269-BSD1)				Prepared: 12/20/22 Analyzed: 12/21/22						
Acenaphthene	281	10	ug/kg	333		84.2	50-130	0.715	31	
Pyrene	232	10	"	333		69.6	33.8-100	9.64	30	
Surrogate: Terphenyl-dl4	*424*		*"*	*333*		*127*	*18-137*			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Jones Environmental	Project: B191-194	
11007 Forest Place	Project Number: ST-21305	**Reported:**
Santa Fe Springs CA, 90670	Project Manager: Colby Wakeman	12/27/22 16:45

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
R-07	Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
O-05	This sample was extracted outside of the EPA recommended holding time.
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

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin, Director of Operations

T22365

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
Fax (714) 449-9685
www.jonesenv.com

Chain-of-Custody Record

Client
Leighton Consulting

Project Name
B191-194

Project Address

Email
reports@jonesenv.com

Phone
(747) 449-9937

Report To Colby Wakeman

Sampler

Date
12/19/2022

Client Project #
12736.024

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24 Hours
- ☐ Rush 48 Hours
- ☐ Rush 72 Hours
- X Normal

Report Options
EDD ____
EDF* - 10% Surcharge____
*Global ID _____

LAB USE ONLY
Jones Project #

Page 1 of 1

Sample Condition as Recieved:
Chilled ☑ yes ☐ no
Sealed ☐ yes ☑ no

2.7°C

Sample Container / Preservative Abbreviations

AS - Acetate Sleeve
SS - Stainless Steel Sleeve
BS - Brass Sleeve
G - Glass
AB - Amber Bottle
P - Plastic
SOBI - Sodium Bisulfate
MeOH - Methanol
HCl - Hydrochloric Acid
HN03 - Nitric Acid
O - Other (See Notes)

Analysis Requested

Sample ID	Date	Sample Collection Time	Laboratory Sample ID	Preservative	Sample Container	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Free Product (FP)	PAHS EPA 8270 SIM	Number of Containers	Notes & Special Instructions
LB50-0.5 1	12/6/2022	725	01	N	P	S	X		ST-21305-01
LB50-5 2	12/6/2022	750	02	N	P	S	X		ST-21305-03
LB58-0.5 3	12/6/2022	832	03	N	P	S	X		ST-21305-05
LB59-0.5 4	12/6/2022	852	04	N	P	S	X		ST-21305-07
LB56-0.5 5	12/6/2022	918	05	N	P	S	X		ST-21305-09
LB54-0.5 6	12/6/2022	1006	06	N	P	S	X		ST-21305-13
LB55-0.5 7	12/6/2022	1028	07	N	P	S	X		ST-21305-15
LB53-0.5 8	12/6/2022	1110	08	N	P	S	X		ST-21305-18
LB52-0.5 9	12/6/2022	1138	09	N	P	S	X		ST-21305-20
LB52-2.5 10	12/6/2022	1140	10	N	P	S	X		ST-21305-21

Relinquished By (Signature)	Printed Name	Received By (Signature)	Printed Name	Total Number of Containers
Company	Date / Time	Company	Date / Time	
Jones Env.	12-19-22 14:36	SunStar	12-19-22 14:36	
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name	
Company	Date / Time	Company	Date / Time	
SunStar	12-19-22 15:30	SunStar Labs	12/19/22 15:30	

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been requested, and the information provided herein is correct and accurate.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T22364J

Client Name: Jones Project: Leighton Consulting - B191-194

Delivered by: ☐ Client ☑ SunStar Courier ☐ GLS ☐ FedEx ☐ Other

If Courier, Received by: Travis Date/Time Courier Received: 12/19/22 14:36

Lab Received by: Paul Date/Time Lab Received: 12/19/22 15:30

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due : 8/2/23

Temperature: Cooler #1	2.6 °C +/- the CF (+ 0.1°C)	=	2.7 °C	corrected temperature
Temperature: Cooler #2	°C +/- the CF (+ 0.1°C)	=	°C	corrected temperature
Temperature: Cooler #3	°C +/- the CF (+ 0.1°C)	=	°C	corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☑ **Yes** ☐ **No** ☐ **N/A**
If NO:		
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☑ N/A
Sample containers intact	☑ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☑ Yes	☐ No*	
Total number of containers received match COC	☑ Yes	☐ No*	
Proper containers received for analyses requested on COC	☑ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☐ Yes	☐ No*	☑ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☑ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: PB 12/19/22

Comments:

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T223645

Client: Jones Environmental
Project: B191-194
Project Manager: Joann Marroquin
Project Number: ST-21305

Report To:
Jones Environmental
Colby Wakeman
11007 Forest Place
Santa Fe Springs, CA 90670

Date Due: 12/28/22 17:00 (5 day TAT)
Received By: Paul Berner
Date Received: 12/19/22 15:30
Logged In By: Rebecca Traficanto
Date Logged In: 12/20/22 09:08

Samples Received at: **2.7°C**
Custody Seals Yes Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirm No

Analysis	Due	TAT	Expires	Comments
T223645-01 LB50-0.5 [Soil] Sampled 12/06/22 07:25 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 07:25	
T223645-02 LB50-5 [Soil] Sampled 12/06/22 07:50 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 07:50	
T223645-03 LB58-0.5 [Soil] Sampled 12/06/22 08:32 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 08:32	
T223645-04 LB59-0.5 [Soil] Sampled 12/06/22 08:52 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 08:52	
T223645-05 LB56-0.5 [Soil] Sampled 12/06/22 09:18 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 09:18	
T223645-06 LB54-0.5 [Soil] Sampled 12/06/22 10:06 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 10:06	
T223645-07 LB55-0.5 [Soil] Sampled 12/06/22 10:28 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 10:28	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T223645

Client:	**Jones Environmental**	**Project Manager:**	**Joann Marroquin**
Project:	**B191-194**	**Project Number:**	**ST-21305**

Analysis	Due	TAT	Expires	Comments
T223645-08 LB53-0.5 [Soil] Sampled 12/06/22 11:10 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 11:10	
T223645-09 LB52-0.5 [Soil] Sampled 12/06/22 11:38 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 11:38	
T223645-10 LB52-2.5 [Soil] Sampled 12/06/22 11:40 (GMT-08:00) Pacific Time (US &				
8270C PAH SIM	12/28/22 15:00	5	12/20/22 11:40	

Reviewed By

Date

APPENDIX C

SCAQMD RULE 1166, SCAQMD RULE 1455, and SCAQMD RULE 403

Leighton
a verdantas company

(Adopted August 5, 1988)(Amended July 14, 1995)(Amended May 11, 2001)

RULE 1166. VOLATILE ORGANIC COMPOUND EMISSIONS FROM DECONTAMINATION OF SOIL

(a) Applicability

This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, handling and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

(b) Definitions

(1) EXCAVATION is the process of digging out and removing materials, including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.

(2) GRADING is the process of leveling off to produce a smooth surface including the removal of any material necessary to that process such as asphalt and concrete necessary to expose known VOC contaminated soil.

(3) SOIL DECONTAMINATION MEASURE is any process approved by the Executive Officer to remediate, destroy, remove, or encapsulate VOC and VOC-contaminated soil.

(4) UNDERGROUND STORAGE TANK means any one or combination of tanks, including pipes connected thereto, which is used for the storage of organic liquid which is more than 50% beneath the surface of the ground.

(5) VOC CONTAMINATED SOIL is a soil which registers a concentration of 50 ppm or greater of Volatile Organic Compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.

(6) VOC CONTAMINATED SOIL MITIGATION PLAN is a plan to minimize VOC emissions to the atmosphere during excavation and any subsequent handling of VOC-contaminated soil.

(7) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. Exempt compounds are defined in Rule 102—Definition Of Terms.

(8) VOLATILE ORGANIC MATERIALS include gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvent, resin, monomer, and/or any other material containing VOC.

(c) Requirements

(1) A person excavating an underground storage tank and/or transfer piping storing or previously storing VOC materials, or excavating or grading soil containing VOC materials shall:

(A) Apply for, obtain and operate pursuant to a mitigation plan approved by the Executive Officer prior to commencement of excavation or handling. The mitigation plan general requirement and application requirements are found in Attachment A to this rule. A copy of the approved plan must be on site during the entire excavation period.

(B) Notify the Executive Officer at least 24 hours prior to excavation using a form approved by the Executive Officer which is fully completed.

If the excavation does not commence on start date, renotification is required.

An alternative notification procedure may be authorized for multiple excavations within a single facility, with prior written approval from the Executive Officer.

(C) Monitor for VOC contamination pursuant to subdivision (e), at least once every 15 minutes commencing at the beginning of excavation or grading and record all VOC concentration readings in a format approved by the Executive Officer; and

(D) When VOC-contaminated soil is detected during excavation or grading:

(i) Implement the approved mitigation plan (Attachment A).

(ii) Notify the Executive Officer within 24 hours of detection of VOC-contaminated soil.

(iii) Monitor and record VOC concentration readings as prescribed in the plan. Monitoring records must be kept available on site.

(iv) Keep calibration records for all monitoring instruments available on site.

(2) A person handling VOC-contaminated soil at or from an excavation or grading site shall:

(A) Segregate VOC-contaminated stockpiles from non-VOC contaminated stockpiles such that mixing of the stockpiles does not take place.

(B) Spray VOC-contaminated soil stockpiles with water and/or approved vapor suppressant and cover them with plastic sheeting for all periods of inactivity lasting more than one hour.

(C) Conduct a daily visual inspection of all covered VOC contaminated soil stockpiles to ensure the integrity of the plastic covered surfaces. A daily inspection record must be maintained on site.

(D) Comply with the provisions in subparagraph (c) (1)(A) and clause (c)(1)(D)(i).

(E) Maintain a record of the identification and business addresses of the generator, transporter and storage/treatment facilities. Such record shall be signed by each party at the time custody is transferred.

(F) Treat or remove contaminated soil from an excavation or grading site within 30 days from the time of excavation.

(3) If the VOC concentration in the excavated soil is measured at greater than 1000 ppm, spray the soil with water or vapor suppressant and:

(A) As soon as possible, but not more than 15 minutes, place the soil in sealed containers, or

(B) As soon as possible, but not more than 15 minutes, load into trucks, moisten with additional water, cover and transport off site, or

(C) Implement other alternative storage methods approved in writing by the Executive Officer.

(4) A person treating VOC-contaminated soil shall:

(A) Obtain a permit to construct and operate treatment equipment, as applicable, from the Executive Officer, and

(B) Implement VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology applied during all segments, and which include, but are not limited to, at least one of the following:

(i) Installation and operation of an underground VOC collection system and a disposal system prior to excavation.

(ii) Collection and disposal of the VOC from the excavated soil on-site using equipment approved by the Executive Officer.

(iii) Any equivalent VOC-contaminated soil control measure previously approved in writing by the Executive Officer.

(5) A person shall not engage in or allow any on-site or off-site spreading, grading or screening of VOC-contaminated soil, which results in uncontrolled evaporation of VOC to the atmosphere.

(6) Loading trucks for contaminated soil must meet the following:

(A) The truck and trailer shall be adequately tarped prior to leaving the site; no excavated materials shall extend above the sides or rear of the truck or trailer to prevent soil spillage during transport, and

(B) The exterior of the truck, trailer and tires shall be cleaned off prior to the truck leaving the site.

(d) Exemptions

(1) The provisions of this rule shall not apply to the following:

(A) Excavation, handling, and treating of less than one (1) cubic yard of contaminated soil.

(B) Removal of soil for sampling purposes.

(C) Accidental spillage of five (5) gallons or less of VOC containing material.

(2) The provisions of paragraphs (c)(1) and (c)(2) shall not apply to soil excavation or handling as a result of an emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer. Whenever possible, the Executive Officer shall be notified by telephone prior to commencing such excavation. The Executive Officer shall be notified in writing no later than 48 hours following such excavation. Written notification shall include written emergency declaration from the authorized officer.

(e) Test Methods

(1) A person shall measure excavated soils for volatile organic compounds to determine contamination by:

(A) Using an organic vapor analyzer calibrated with hexane, complying with 40 CFR Part 60 Appendix A, EPA Reference Method 21 Section 3 or any equivalent method with prior approval in writing by the Executive Officer. If other calibrating gases are used, then the measured readings shall be correlated to and expressed as hexane.

(B) Placing the probe inlet at a distance of no more than three inches from the surface of the excavated soil and while slowly moving the probe across the soil surface, observe the instrument readout. If an increased meter reading is observed, continue to sample the excavated soil until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately double the instrument response time. If the maximum observed meter reading is greater than the 50 ppm standard in the regulation, record and report the results.

(2) The presence of VOC in stored or spillage materials shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in Headspace] and/or Method 304 (Determination of Volatile Organic Compounds in Various Materials) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(f) Enforcement

(1) Violation of any provision of this rule or the violation of the approved mitigation plan shall be grounds for the Executive Officer to amend or revoke the mitigation plan, in addition to penalties provided by the Health & Safety Code.

(2) If the owner or operator is served with a Notice of Violation for creating a public nuisance, the owner or operator shall suspend operation until the public nuisance is mitigated to the satisfaction of the Executive Officer.

ATTACHMENT A
GENERAL MITIGATION PLANS REQUIREMENTS

VOC Contaminated Soil Mitigation Plans shall be written to minimize VOC emissions to the atmosphere during excavation, grading, handling and treatment of VOC contaminated soil. VOC Contaminated Soil Mitigation Plans shall consist of three types: Various Locations, Site Specific and Facility Treatment.

(1) General Requirements

(A) A plan is not transferable.

(B) A person responsible for the excavation, grading or handling of VOC contaminated soil must be completely familiar with the plan and must adhere to the plan requirement. The Executive Officer may require that the plan be signed by the owner and/or operator.

(C) A plan may be amended upon renewal.

(D) Permission to excavate, grade or handle VOC contaminated soil may be withdrawn by the District upon a finding by the Executive Officer that the excavation, grading or handling of the VOC contaminated soil is causing a public nuisance or violating other AQMD rules or regulations.

(2) Various Location Plans:

(A) Shall be limited to the excavation of 2000 cubic yards or less of VOC contaminated soil in any consecutive 12 month period at the same site.

(B) Shall not be used in conjunction with any other various location plan at the same site within a consecutive 12-month period.

(C) Shall expire after one year from issuance unless renewed.

(D) Shall not be issued for nor used for operations that involve grading, soil treatment or remediation, or landfills.

(3) Site Specific Plans:

(A) Shall be for excavation of greater than 2000 cubic yards of VOC contaminated soil.

(B) Shall be issued for specific excavation or grading locations for a period not to exceed two years.

(C) Shall not be renewable.

(4) Facility Treatment Plans:

(A) Shall be issued for a treatment facility at a permanent location.

(B) Shall expire after one year from issuance unless renewed.

(5) Applications for Site Specific Plans shall contain as a minimum:

(A) Reasons for excavation or grading.

(B) Cause of VOC soil contamination and history of the site.

(C) Description of tanks or piping associated with the soil contamination.

(D) An estimate of the amount of contaminated soil.

(E) The operating schedule for excavation and removal.

(F) Description of how the excavation or grading will be conducted.

(G) Description of mitigation measures for dust, odors and VOC.

(H) Details of disposal of VOC contaminated soil, including the ultimate receptor.

(I) Description of monitoring equipment and techniques.

(J) A map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.

(K) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.

(6) Applications for Facility Treatment Plans shall at a minimum:

(A) Include a list of all AQMD permits to construct or operate which have been issued for that treatment and control equipment.

(B) Provide for the implementation of VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology during all operations.

(C) Provide a map showing the facility layout including the location of all proposed VOC and non-VOC contaminated soil stockpiles.

(D) Specify the total amount of VOC contaminated soil proposed to be stockpiled on site.

(E) Provide for VOC contaminated soil stockpiles to be kept moist with water or suppressant and be covered to prevent fugitive emissions.

(F) Provide for VOC contaminated soil stockpiles to be segregated from non-VOC contaminated soil stockpiles.

(G) Provide for maintenance of records for stockpiles according to the source name, address and dates of reception.

(H) Provide for records of the generator, transporter and storage/treatment facilities and indicate their identification and business addresses. Such records shall be signed by each party at the time custody is transferred.

(I) Provide a map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential area or other sensitive receptors such as hospitals, or locations where children or elderly people live or work.

(J) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.

(K) Specify the operating schedule and maximum amount of VOC-contaminated soil proposed to be remediated on a daily basis.

(7) In approving a plan, the Executive Officer require reasonable conditions deemed necessary to ensure the operations comply with the plan and AQMD rules. The conditions may include, but shall not be limited to, procedures for ensuring responsibility for the implementation of the plan, accessibility to the site for AQMD staff, notification of actions required by the plan, identification of emission receptors, monitoring and testing, suppression and covering of stockpiles, prevention of public nuisance from VOC or dust emissions, prevention of fugitive emissions of VOC contaminated soil, loading of truck trailers, and disposal and treatment.

(8) In approving a plan, the Executive Officer may require any records deemed necessary to be maintained by the operator to demonstrate compliance with the plan. Such records shall be retained for at least 2 years and be made available to the Executive officer upon request.

(Adopted July 7, 2017)(Amended December 1, 2017)(Amended June 4, 2021)

RULE 1466. CONTROL OF PARTICULATE EMISSIONS FROM SOILS WITH TOXIC AIR CONTAMINANTS

(a) Purpose

The purpose of this rule is to minimize the amount of off-site fugitive dust emissions containing toxic air contaminants by reducing particulate emissions in the ambient air as a result of earth-moving activities, including, dredging, excavating, grading, earth-cutting and filling, loading, unloading, handling, mechanized land clearing, treating, stockpiling, transferring, and removing of soil that contains applicable toxic air contaminants, from sites that meet the applicability requirements of subdivision (b).

(b) Applicability

(1) This rule shall apply to any owner or operator conducting earth-moving activities of soil with applicable toxic air contaminant(s) as defined in paragraph (c)(16) that have been identified as contaminant(s) of concern at a site that has been designated and notified by:

(A) The U.S. Environmental Protection Agency (U.S. EPA) as a Superfund National Priorities List site;

(B) The California Department of Toxic Substances Control (DTSC) as a Brownfield or Cleanup Program site;

(C) The State Water Resources Control Board (State Water Board) or Regional Water Quality Control Board (Regional Water Board) as a Site Cleanup Program site;

(D) A county, local, or state regulatory agency as a Hazardous Material Release site, as defined in California Health and Safety Code Section 25260; or

(E) The Executive Officer pursuant to subdivision (i).

(2) This rule shall not apply to:

(A) Earth-moving activities of soil with applicable toxic air contaminant(s) of less than 50 cubic yards; or

(B) Removal of soil for sampling purposes.

(c) Definitions

(1) ADEQUATELY WET means the condition of being sufficiently mixed or penetrated with water to prevent the release of particulates or visible emissions. The process by which an adequately wet condition is achieved is by using a dispenser

or water hose with a nozzle that permits the use of a fine, low-pressure spray or mist.

(c) (2) ADJACENT ATHLETIC AREA means any outdoor athletic field or park where youth organized sports occur that is in physical contact or separated solely by a public roadway or other public right-of-way to a SCHOOL.

(3) ADJOINING means in physical contact with or separated solely by a public roadway or other public right-of-way.

(4) CHEMICAL STABILIZERS means any non-toxic chemicals that are used to bind soil together to control FUGITIVE DUST emissions.

(5) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for FUGITIVE DUST. This definition excludes those areas which have:

(A) Been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) Been paved or otherwise covered by a permanent structure; or

(C) Sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(6) DUST SUPPRESSANTS means water or hygroscopic materials, other than CHEMICAL STABILIZERS, that are used as a treatment material to reduce FUGITIVE DUST emissions.

(7) EARTH-MOVING ACTIVITIES means, for the purpose of this rule, any activity on a site that meets the applicability requirements of subdivision (b) where SOIL WITH APPLICABLE TOXIC AIR CONTAMINANT(S) is being moved or uncovered, including: dredging, excavating, grading, earth-cutting and filling operations, loading, unloading, handling, mechanized land clearing, treating, transferring, removing, and adding to or removing from STOCKPILES, and vehicular movement of equipment associated with these activities. EARTH-MOVING ACTIVITIES do not include vehicular movement from: delivery vehicles, passenger vehicles transporting personnel to and from the site, vehicles used for administrative purposes, vehicles transporting personnel for the purposes of soil sampling and conducting ambient PM_{10} monitoring requirements, watering trucks, and equipment used exclusively on a portion(s) of the site where there is no SOIL WITH APPLICABLE TOXIC AIR CONTAMINANT(S).

(c) (8) FUGITIVE DUST means, for the purpose of this rule, any solid particulate matter that is in contact with ambient air and has the potential to become airborne, other than solid particulate matter that is emitted from an exhaust stack.

(9) JOINT USE AGREEMENT PROPERTY means a shared public facility in which a formal agreement exists between a SCHOOL and another government entity setting forth the terms and conditions for shared use.

(10) OWNER OR OPERATOR means any firm, business establishment, association, partnership, corporation or individual, whether acting as principal, agent, employee, contractor, or other capacity.

(11) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excludes access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal, or any other governmental or quasi-governmental agencies. Private paved roads are any PAVED ROADS not defined as public.

(12) PROPERTY LINE means the boundary of an area where a person has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(13) SCHOOL means any public or private education center, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the education center in kindergarten through grade 12. A SCHOOL also includes an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as preschools, Early Head Starts, Head Start, First Five, and Child Development Centers. A SCHOOL does not include any private education center in which education is primarily conducted in private homes. A SCHOOL includes any building or structure, playground, athletic field, or other area of school property.

(14) SLAG means, for the purpose of this rule, the by-product material that is separated from metals during smelting or refining of ore.

(15) SOIL means dirt, sand, gravel, clay, SLAG, and aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(16) SOIL WITH APPLICABLE TOXIC AIR CONTAMINANT(S) means, for the purpose of this rule, SOIL that has been identified by the U.S. EPA, the DTSC, the

State Water Board, the Regional Water Board, or a county, local, or state regulatory agency, to contain one or more of the applicable toxic air contaminants listed in Table I that exceed action levels as specified by the designating agency, or soil that has been identified by the Executive Officer to contain one or more of the toxic air contaminants listed in Rule 1401 – New Source Review of Toxic Air Contaminants (Table I) or Hazardous Air Pollutants Identified as Toxic Air Contaminants as listed in California Code of Regulations Section 93001, excluding volatile organic compounds regulated under Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil.

(c) (17) STABILIZED SURFACE means any previously DISTURBED SURFACE AREA or STOCKPILE, which through the application of CHEMICAL STABILIZERS or DUST SUPPRESSANTS, shows visual or other evidence of surface crusting and is resistant to WIND-DRIVEN FUGITIVE DUST, and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the most current version of the South Coast AQMD *Rule 403 Fugitive Dust Implementation Handbook* or in Volumes I and II of South Coast AQMD's *Dust Control in the Coachella Valley*.

(18) STOCKPILE means any accumulation of SOIL, which is not fully enclosed and which attains a height of three feet or more and a total surface area of 150 square feet or more.

(19) TRACK-OUT means, for the purpose of this rule, any SOIL that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that has been released onto a PAVED ROAD and that can be removed by a vacuum sweeper under normal operating conditions.

(20) WIND-DRIVEN FUGITIVE DUST means visible emissions from any DISTURBED SURFACE AREA, which is generated by wind action alone.

(d) Monitoring Requirements

(1) When on-site earth-moving activities occur, the owner or operator shall conduct continuous direct-reading near real-time ambient monitoring of PM_{10} concentrations pursuant to paragraph (d)(3).

(2) If the PM_{10} concentration exceeds 25 micrograms per cubic meter, as measured pursuant to paragraph (d)(3) and as determined pursuant to paragraph (d)(9), the owner or operator shall cease on-site earth-moving activities, apply dust suppressant to fugitive dust sources, or implement other dust control measures as

necessary until the PM_{10} concentration is equal to or less than 25 micrograms per cubic meter averaged over 30 minutes.

(d) (3) The owner or operator conducting on-site earth-moving activities shall install PM_{10} monitors and conduct ambient PM_{10} monitoring:

(A) In accordance with a U.S. EPA-approved equivalent method for PM_{10} monitoring or using a Rule 1466 Approved PM_{10} Monitor;

(B) Using a minimum of two monitors, placing each monitor as close to the property line as feasible, where:

(i) One or more monitors is in the seasonal prevailing wind direction upwind of the area(s) of on-site earth-moving activity, indicative of background PM_{10} levels, and not generally influenced by fugitive dust sources from the site; and

(ii) One or more monitors is in the seasonal prevailing wind direction downwind of the area(s) of on-site earth-moving activity;

(C) Using PM_{10} monitors that are identical in: make and model, settings, and configuration; and

(D) Using ambient PM_{10} monitors that are operated, maintained, and calibrated in accordance with appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent methods for PM_{10} and manufacturer's instructions.

(4) On and before December 31, 2021, the owner or operator shall collect ambient PM_{10} data with a data acquisition system (DAS) that is capable of logging direct-reading near real-time data providing the date, time, and PM_{10} concentration in micrograms per cubic meter every 10 minutes or less.

(5) On and after January 1, 2022, the owner or operator shall collect ambient PM_{10} data with a DAS that is capable of logging direct-reading near real-time data providing the date and time, calibrated to Pacific Standard Time (PST), and PM_{10} concentration in micrograms per cubic meter every 1 minute or less.

(6) On and after January 1, 2022, the owner or operator shall operate PM_{10} monitors with the heated sampler inlet on.

(7) On and after January 1, 2022, prior to conducting any on-site earth-moving activities, and weekly thereafter, the owner operator shall conduct intra-instrument precision tests with the PM_{10} monitors in accordance with *Appendix 2 – Procedures to Demonstrate Intra-Instrument Precision*, or make available documentation and supporting data certifying that such intra-instrument precision tests were run by an

equipment rental company or other third party, that demonstrate an intra-instrument precision of:

(d) (7) (A) No more than 25 percent as calculated pursuant to Step 7a in *Appendix 2* when ambient PM_{10} concentrations are equal to or greater than 15 micrograms per cubic meter; or

(B) No more than 5 micrograms per cubic meter as calculated pursuant to Step 7b in *Appendix 2* when ambient PM_{10} concentrations are less than 15 micrograms per cubic meter.

(8) On and after January 1, 2022, each day prior to conducting on-site earth-moving activities, the owner or operator shall conduct a passing zero check on each PM_{10} monitor in accordance with:

(A) Steps 4 and 5 of *Appendix 2* that demonstrates an average PM_{10} concentration of 0 ± 3 micrograms per cubic meter; or

(B) Manufacturer's instructions if a monitor is operated using an auto-zero check procedure that directs filtered particle-free air into the measurement chamber.

(9) The owner or operator shall calculate the PM_{10} concentration as a 120-minute rolling average, where:

(A) The initial average starts at the commencement of on-site earth-moving activities and ends 120 minutes after the commencement of on-site earth-moving activities;

(B) On and before December 31, 2021, the averages subsequent to the initial average specified in subparagraph (d)(9)(A) are to be calculated every 10 minutes and cover the previous 120-minute period;

(C) On and after January 1, 2022, the averages subsequent to the initial average specified in subparagraph (d)(9)(A) are to be calculated every 1 minute and cover the previous 120-minute period;

(D) The PM_{10} concentration is calculated by subtracting the results of the upwind monitor(s) from the downwind monitor(s) for the same averaging period;

(i) If the wind direction is in the seasonal prevailing wind direction, then the monitor(s) described pursuant to clause (d)(3)(B)(i) shall be designated as the upwind monitor(s) and the monitor(s) described pursuant to clause (d)(3)(B)(ii) shall be designated as the downwind monitor(s); and

(d) (9) (D) (ii) If there is greater than a ± 90 degree change in wind direction from the seasonal prevailing wind direction, then the monitor(s) described pursuant to clause (d)(3)(B)(i) shall be designated as the downwind monitor(s) and the monitor(s) described pursuant to clause (d)(3)(B)(ii) shall be designated as the upwind monitor(s);

(E) If there is more than one upwind monitor, the upwind result is the average concentration of all upwind monitors for the same rolling averaging period;

(F) If there is more than one downwind monitor, the downwind result is the maximum concentration of any of the downwind monitors for the same rolling averaging period;

(G) On and before December 31, 2021, when on-site earth-moving activities resume after ceasing pursuant to paragraph (d)(2), the average shall start when on-site earth-moving activities resume and shall end 120 minutes after on-site earth-moving activities resume, and the subsequent averages are to be calculated every 10 minutes and shall cover the previous 120-minute period; and

(H) On and after January 1, 2022, when on-site earth-moving activities resume after ceasing pursuant to paragraph (d)(2), the average shall start when on-site earth-moving activities resume and shall end 120 minutes after on-site earth-moving activities resume, and the subsequent averages are to be calculated every one minute and shall cover the previous 120-minute period.

(10) An owner or operator that elects to move the monitors accordingly when there is a change in wind direction in place of meeting the requirements specified in clauses (d)(3)(B)(i), (d)(3)(B)(ii), (d)(9)(D)(i), and (d)(9)(D)(ii), shall:

(A) Place a minimum of one upwind monitor in the upwind direction of the area(s) of on-site earth-moving activity, indicative of background PM_{10} levels, and not generally influenced by fugitive dust sources from the site;

(B) Place a minimum of one downwind monitor in the downwind direction of the area(s) of on-site earth-moving activity; and

(C) Move the monitor(s) in subparagraph (d)(10)(A) to the new upwind location and the monitor(s) in subparagraph (d)(10)(B) to the new downwind location when there is a change in wind direction.

(11) In the event that a DAS fails to log ambient PM_{10} data pursuant to paragraph (d)(5) or that the data management system integrated with the PM_{10} monitor(s) and

DAS(s) fails to calculate PM_{10} concentrations pursuant to subparagraph (d)(9)(C) due to a technical issue beyond the reasonable control of an owner or operator, including, but not limited to, internet connection disruptions and computer malfunctions, the owner or operator shall:

(d) (11) (A) Restore the DAS or data management system to working condition as soon as practicable and no later than the start of the next working day; and

(B) Manually record the PM_{10} concentration from the monitor(s) associated with the non-operational DAS once every 10 minutes or less and calculate the PM_{10} concentration pursuant to the averages specified in subparagraph (d)(9)(B) until the DAS is restored or calculate the PM_{10} concentration pursuant to the averages specified in subparagraph (d)(9)(B) until the data management system is restored.

(12) When conducting ambient PM_{10} monitoring as required in paragraph (d)(1), the owner or operator shall monitor wind direction and speed using a minimum of one stationary anemometer or wind sensor that:

(A) Is sited over open, level terrain within the project site with minimal obstructions to the wind flow at a minimum height of eight feet above grade;

(B) Meets the performance criteria of:

(i) Wind direction accuracy of ± 7 degrees and resolution of 1 degree; and

(ii) Wind speed accuracy of 2 miles per hour (mph) or ± 5 percent of the observed wind speed, whichever is greater, and resolution of 1 mph;

(C) Has a National Institute of Standards and Technology (NIST) Traceability certification;

(D) Is equipped with a data logger that records wind direction and speed data once every 1 minute or less and archives the recorded wind direction and speed data, including the date and time, calibrated to PST; and

(E) Is operated, calibrated, and maintained in accordance with manufacturer's specifications, but no less frequent than once every 6 months of cumulative operation.

(13) The Executive Officer may approve a PM_{10} monitor to be added as a Rule 1466 Approved PM_{10} Monitor if the PM_{10} monitor meets the specifications listed in *Appendix 1 – Rule 1466 Approved PM_{10} Monitors*. The request for a PM_{10} monitor to be added as a Rule 1466 Approved PM_{10} Monitor shall:

(A) Be submitted to Rule1466ApprovedMonitors@aqmd.gov;

(d) (13) (B) Include a description of the PM_{10} monitor, any accessories, and all monitor specifications; and

(C) Include documentation demonstrating compliance with each specification listed in *Appendix 1*.

(e) Requirements to Minimize Fugitive Dust Emissions

(1) On and before December 31, 2021, an owner or operator shall not conduct on-site earth-moving activities unless the area is surrounded with fencing that is a minimum of 6 feet tall and at least as tall as the height of the tallest stockpile, with a windscreen that has a porosity of 50 ± 5 percent. A section of the perimeter surrounding an on-site earth-moving activity area may be excluded from this requirement if that section:

(A) Has a solid physical barrier, such as a solid wall or other solid feature that minimizes air flow, that is a minimum of 6 feet tall but at least 6 inches taller than the height of the tallest stockpile; or

(B) Does not have on-site earth-moving activity occurring within 300 feet from the perimeter of that section.

(2) On and after January 1, 2022, an owner or operator shall not conduct on-site earth-moving activities unless the area is surrounded with fencing that is a minimum of 6 feet tall but at least 6 inches taller than the height of the tallest stockpile, with a windscreen that has a porosity of 50 ± 5 percent or a mesh windscreen that has a shade value or opacity of 85 ± 5 percent. A section of the perimeter surrounding an on-site earth-moving activity area may be excluded from this requirement if that section meets the conditions as specified in subparagraph (e)(1)(A) or (e)(1)(B).

(3) An owner or operator conducting on-site earth-moving activities shall:

(A) Adequately wet to the depth of earth-moving activity and allow time for penetration; and

(B) Adequately wet at frequencies to prevent the generation of visible dust plumes.

(4) An owner or operator that is moving vehicles on, within, or off a site shall:

(A) Post signs at all entrances of the site to designate the speed limit as 15 mph;

(B) Stabilize the surface of all vehicular traffic and parking areas by applying gravel, paving, chemical stabilizers pursuant to paragraph (e)(13), or dust suppressant;

(C) Not allow any track-out outside of the property line that is 25 feet or more in cumulative length. Remove any track-out at a minimum frequency of

once each day using a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97 percent control efficiency for 0.3 micron particles;

(e) (4) (D) Clean the soil from the exterior of trucks, trailers, and tires prior to the truck leaving the site, without the use of forced air; and

(E) Utilize at least one of the following measures at each vehicle egress from the site to a public road:

(i) Install a pad consisting of washed gravel (minimum-size: 1 inch), maintained in a clean condition, to a depth of at least 6 inches and extending at least 30 feet wide and at least 50 feet long;

(ii) Pave the surface extending at least 100 feet from the property line and at least 30 feet wide;

(iii) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipes, or grates) at least 24 feet long and 30 feet wide; or

(iv) Install and utilize a wheel washing system to remove soil from tires and vehicle undercarriages.

(5) An owner or operator conducting on-site earth-moving activities shall ensure that stockpiles with any soil with applicable toxic air contaminant(s) be:

(A) Segregated from non-contaminated stockpiles;

(B) Labelled with "South Coast AQMD Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminant(s) Applicable Soil";

(C) Maintained to avoid steep sides or faces that exceed the angle of repose;

(D) No more than 400 cubic yards of soil;

(E) Maintained to minimize fugitive dust emissions containing toxic air contaminants by applying chemical stabilizers pursuant to paragraph (e)(13), applying dust suppressant, or completely covering pursuant to paragraph (e)(14); and

(F) Either chemically stabilized pursuant to paragraph (e)(13) and/or completely covered pursuant to paragraph (e)(14) at all times when earth-moving activities and ambient PM_{10} monitoring are not occurring.

(6) An owner or operator conducting truck and trailer loading activities of soil containing applicable toxic air contaminant(s) shall:

(A) Apply dust suppressant to material prior to loading;

(B) Empty the loader bucket slowly so that no visible dust plumes are generated;

(e) (6) (C) Minimize the drop height from the loader bucket;

(D) Maintain at least 6 inches of space between the soil and the top of the truck bed and trailer while transporting within a site; and

(E) Completely cover the truck bed and trailer prior to leaving the site.

(7) An owner or operator conducting truck and trailer unloading activities of soil containing applicable toxic air contaminant(s) shall:

(A) Apply dust suppressant to material prior to unloading; and

(B) Empty the trailer slowly so that no visible dust plumes are generated.

(8) The owner or operator shall immediately remove any spilled soil.

(9) The owner or operator shall cease on-site earth-moving activities if the wind speed is greater than 15 mph averaged over a 15-minute period or the instantaneous wind speed exceeds 25 mph.

(10) During on-site earth-moving activities, the owner or operator shall have an on-site dust control supervisor that:

(A) Is employed by or contracted with the owner or operator;

(B) Is located on the site during working hours;

(C) Is in a position to expeditiously employ sufficient dust control measures to ensure compliance with all rule requirements;

(D) Has completed the South Coast AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(E) Has the following credentials, if asbestos is an applicable toxic air contaminant:

(i) Successfully completed the Asbestos Abatement Contractor/Supervisor course pursuant to the Asbestos Hazard Emergency Response Act (AHERA), and obtained and maintained accreditation as an AHERA Asbestos Abatement Contractor/Supervisor; and

(ii) Trained on the provisions of 40 CFR Part 61.145, 61.146, 61.147 and 61.152 (Asbestos NESHAP provisions) and Part 763, and has the means to comply with these provisions.

(11) An owner or operator shall apply a chemical stabilizer pursuant to paragraph (e)(13) and/or use a cover pursuant to paragraph (e)(14) on potential sources of fugitive dust when earth-moving activities are not occurring in the specific location(s) containing the potential source(s) of fugitive dust.

(e) (12) An owner or operator shall inspect daily, including days when no on-site earth-moving activities are occurring, labeled stockpiles pursuant to subparagraph (e)(5)(B) and stabilized or covered stockpiles pursuant to (e)(5)(F).

(A) For a stabilized stockpile, such inspections shall include a demonstration of stabilization by one or more of the applicable test methods contained in the most current version of the South Coast AQMD *Rule 403 Fugitive Dust Implementation Handbook* or Volumes I and II of South Coast AQMD's *Dust Control in the Coachella Valley*.

(B) For a covered stockpile, such inspections shall include a visual inspection of all seams and plastic cover surfaces to ensure that no portion of the soil is exposed to the atmosphere.

(13) When utilizing a chemical stabilizer, an owner or operator shall:

(A) Ensure the chemical stabilizer meets any specifications, criteria, or tests required by any federal, state, or local agency or any applicable law, rule, or regulation; and

(B) Unless otherwise indicated, use a sufficient concentration of the chemical stabilizer and an application frequency sufficient to maintain a stabilized surface and no less than what is specified by the manufacturer for the period of inactivity.

(14) When using a cover for stockpiles, an owner or operator shall ensure the cover:

(A) Is at least 10 mil thick plastic sheeting that overlaps a minimum of 24 inches; and

(B) Is anchored and secured so that no portion of the soil is exposed to the atmosphere.

(15) An owner or operator that is conducting earth-moving activities of soil with applicable toxic air contaminant(s) at a school, joint use agreement property, adjacent athletic area, or at a site that is adjoining a school, joint use agreement property, or adjacent athletic area shall:

(A) Only conduct earth-moving activities at a school or at a site that is adjoining a school outside of the hours between 7:30 a.m. and 4:30 p.m. on days when the school is in session;

(B) Not conduct earth-moving activities at a school, joint use agreement property, adjacent athletic area, or at a site that is adjoining a school, joint use agreement property, or adjacent athletic area if there is a school sponsored activity or youth organized sports taking place at that site;

(e) (15) (C) Handle excavated soils with applicable toxic air contaminant(s) by:

(i) Immediately placing soil in a leak-tight container whereby any contained solids or liquids are prevented from escaping or spilling out;

(ii) Directly loading soil in truck beds, trailers, and bins for transport, applying chemical stabilizer pursuant to paragraph (e)(13) or dust suppressant, and completely covering prior to transporting; or

(iii) Stockpiling pursuant to paragraph (e)(5), in a fenced area that is not accessible to the general public, and locked when not in use; and

(D) Within five days of its excavation, remove all soil with applicable toxic air contaminant(s) from the site.

(f) Notification Requirements

(1) The owner or operator shall electronically submit an initial notification to the Executive Officer, using a format approved by the Executive Officer, of the intent to conduct any on-site earth-moving activities.

(A) Initial notifications shall be submitted:

(i) At least 72 hours but no more than 30 days prior to conducting any earth-moving activities on any site meeting the applicability requirements of subdivision (b); or

(ii) As soon as the information becomes available but no later than 48 hours after the information becomes available that on-site earth-moving activities of soil with applicable toxic air contaminant(s) exceed 50 cubic yards.

(B) Initial notifications shall include the following requirements:

(i) Name, address, telephone number, and e-mail address of the owner or operator;

(ii) Name, telephone number, and e-mail address of the on-site dust control supervisor;

(iii) Project name and, if applicable, the project identification number from the designating agency;

(iv) Project location (address and/or coordinates);

(v) Identify whether the site is a school, joint use agreement property, adjacent athletic area, or is adjoining a school, joint use agreement property, or adjacent athletic area;

(f) (1) (B) (vi) A map indicating the specific location(s) of each on-site earth-moving activity and the concentrations of the applicable toxic air contaminant(s) and location of PM_{10} monitors;

(vii) A description of the on-site earth-moving activities, estimated volume of soil with applicable toxic air contaminant(s), and a schedule that includes the anticipated start and completion dates of on-site earth-moving activities;

(viii) Current and/or previous type of operation(s) and use(s) at the site;

(ix) Applicable exemption(s); and

(x) Whether the notice being provided is a revised notification.

(2) Notification Updates

Initial notifications pursuant to paragraph (f)(1) shall be updated when any of the following conditions arise:

(A) Earlier Start Date

A change in the start date of on-site earth-moving activities to an earlier date shall be reported to the South Coast AQMD no later than 72 hours before any on-site earth-moving activities begin.

(B) Later Start Date

A delay in the start date of on-site earth-moving activities shall be reported to the South Coast AQMD as soon as the information becomes available, but no later than the original start date.

(C) Change in Exemption Status

Any change(s) in exemption status pursuant to subdivision (k) shall be reported to the South Coast AQMD as soon as the information becomes available, but no later than 48 hours after the information becomes available.

(D) Completion Date

The completion date of on-site earth-moving activities shall be reported to the South Coast AQMD no later than 48 hours after on-site earth-moving activities are completed.

(3) Within 72 hours of an exceedance of the PM_{10} emission limit specified in paragraph (d)(2), the owner or operator shall electronically submit a notification to the Executive Officer, using a format approved by the Executive Officer, of the exceedance and shall include the following information:

(f) (3) (A) Name, address, telephone number, and e-mail address of the owner or operator;

(B) Name, telephone number, and e-mail address of the on-site dust control supervisor;

(C) Project name and, if applicable, the project identification number from the designating agency;

(D) Project location (address and/or coordinates);

(E) PM_{10} monitoring results and wind direction and speed results pursuant to subdivision (d), including location of monitors, result, date and time of exceedance(s), 12 hours before first exceedance, and 12 hours after last exceedance;

(F) On-site earth-moving activities occurring at the date and time of exceedance(s); and

(G) Dust control measure(s) taken to mitigate fugitive dust.

(g) Signage Requirements

When conducting on-site earth-moving activities, the owner or operator shall install and maintain project signage.

(1) Unless otherwise approved in writing by the Executive Officer, signage shall:

(A) Be installed at all entrances and at intervals of 1,000 feet or less along the property line or perimeter of the site, with a minimum of one sign along each side;

(B) Be located between 6 and 8 feet above grade from the bottom of the sign;

(C) Display lettering at least 4 inches tall with text contrasting with the sign background; and

(D) Display the following information:

(i) Local or toll-free phone number for the site contact or pre-recorded notification center that is accessible 24 hours a day; and

(ii) Warning statement:

"THIS SITE CONTAINS SOILS THAT CONTAIN THE FOLLOWING CHEMICALS: [LIST APPLICABLE TOXIC AIR CONTAMINANT(S)]
TO REPORT ANY DUST LEAVING THE SITE PLEASE CALL [FACILITY CONTACT AND PHONE NUMBER] OR THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG".

(g) (2) If signage pursuant to paragraph (g)(1) exceeds 48 inches by 96 inches, the owner or operator or designating agency shall include the warning statement referenced in clause (g)(1)(D)(ii), displaying lettering at least 4 inches tall with text contrasting with the sign background, but may use 2.5 inch tall lettering to list applicable toxic air contaminant(s). All other signage requirements set forth in paragraph (g)(1) shall remain the same. If signage continues to exceed 48 inches by 96 inches with these parameters, the owner or operator or designating agency may use alternative signage as set forth in paragraph (g)(3).

(3) The owner or operator or designating agency may use alternative signage approved by the Executive Officer pursuant to subdivision (j). Notwithstanding subdivision (j), the request shall include a visual representation of the alternative sign, including proposed lettering height, and locations and, at a minimum, the alternative signage shall:

(A) Display text contrasting with the sign background; and

(B) Display the following warning statement:

"THIS SITE CONTAINS SOILS THAT CONTAIN THE FOLLOWING CHEMICALS: [LIST APPLICABLE TOXIC AIR CONTAMINANT(S)] TO REPORT ANY DUST LEAVING THE SITE PLEASE CALL THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG".

(4) The owner or operator may be excluded from installing and maintaining project signage pursuant to subparagraph (g)(1)(A) at any entrance(s) or interval(s) along the property line or perimeter of the site that is not visible and not accessible to the public unless the site is a school, joint use agreement property, or adjacent athletic area or the site is adjoining a school, joint use agreement property, or adjacent athletic area.

(h) Recordkeeping Requirements

The owner or operator shall maintain records for a period of not less than 3 years and shall make such records available to the Executive Officer upon request. At a minimum, records shall be maintained daily and shall include:

(1) Inspections of all stabilized or covered stockpiles containing soils with applicable toxic air contaminant(s) and all re-stabilization, cover repair, and label maintenance activities, including dates and times the specific activities were conducted;

(2) Results of wind and PM_{10} monitoring, including: ambient PM_{10} data; rolling average PM_{10} concentrations and calculations; wind direction and speed

corresponding to the rolling average PM_{10} concentrations; movement of monitoring instruments corresponding to wind direction changes; instrument make and model; settings; proof of valid calibration in accordance with manufacturer's recommended schedule; configuration; calibration, correction, and correlation factors; maintenance; operator training; daily instrument performance check records and manual zero or auto-check results; weekly zero calibration records and intra-instrument precision test data and calculation results; and all instrument logs for all monitoring instruments;

(h) (3) All instrument maintenance activities, including: zero calibration, cleaning, filter replacement, and performance checks, including dates and times of the specific procedures;

(4) Documentation of all DAS and data management system failures, including date and time of the failure, date and time of the correction, the technical issue(s) causing the failure, and activities performed to restore the failed DAS or data management system to working condition;

(5) On-site earth-moving activities conducted and the corresponding volume of soil with applicable toxic air contaminant(s);

(6) Names and business addresses of the transporting and receiving facilities, and a copy of the shipping manifest;

(7) Complaints called in, including the name of complainant and contact information, date and time, on-site earth-moving activities occurring at the date and time, complaint, and action taken to mitigate the source of the complaint; and

(8) A copy of all submitted notifications for the project.

(i) Executive Officer Designated Sites

(1) The Executive Officer may designate a site if the Executive Officer has evidence that the site contains soil with applicable toxic air contaminant(s) as defined in paragraph (c)(16), after consultation with U.S. EPA, DTSC, the State Water Resources Control Board, the Regional Water Quality Control Board, and/or local, county, or state regulatory agencies, and consideration of the following:

(A) Site history, including current and/or previous type(s) of operation(s) and use(s) at the site and regulatory history;

(B) Concentration(s) of applicable toxic air contaminant(s) in the soil;

(C) Background concentration(s) of applicable toxic air contaminant(s);

(D) Volume of soil with applicable toxic air contaminant(s);

(i) (1) (E) Distance to a residence, park, school, joint use agreement property, adjacent athletic area, or a site adjoining a school, joint use agreement property, or adjacent athletic area;

(F) Meteorological data;

(G) Health risk information or other data provided by the owner or operator, if available; and

(H) Ambient monitoring data and other applicable data, if available.

(2) Prior to making a determination, the Executive Officer will notify the owner or operator in writing that the site may be subject to this rule.

(A) In the event the owner or operator exercises this opportunity to demonstrate that this rule does not apply, the owner or operator shall submit information to the Executive Officer within 14 days of the notification substantiating why the site should be excluded from this rule.

(B) Upon final determination, the Executive Officer will notify the owner or operator in writing if the site is subject to this rule.

(3) During the determination period, the owner or operator shall comply with the provisions of this rule or cease all on-site earth-moving activities until a determination is made.

(j) Alternative Provisions

(1) If requesting an alternative provision pursuant to paragraph (g)(3), the owner or operator or designating agency shall submit the request in writing at least 30 days prior to conducting any earth-moving activities and include all information to the Executive Officer to substantiate its position.

(2) The Executive Officer may request additional information from the owner or operator or designating agency.

(3) The owner or operator or designating agency shall submit all requested information within 14 days of the request for additional information.

(4) The Executive Officer will review the request for an alternative provision and will approve or reject the data and notify the owner or operator or designating agency in writing. Approved alternative provisions may not be used retroactively.

(5) Alternative provisions that were approved and notified in writing by the Executive Officer before June 4, 2021 shall be deemed compliant with the requirements of the applicable provisions of the rule, shall remain in effect only for the period of time and for the specific project for which they were granted, and shall not be renewed or extended.

(k) Exemptions

(1) The owner or operator may be exempt from one or more provisions of this rule provided there is written confirmation that the designating agency under subparagraphs (b)(1)(A) through (b)(1)(D) has consulted with the Executive Officer and has determined that the provision(s) are not needed based on information specified in subparagraphs (i)(1)(A) through (i)(1)(H).

(2) On-site earth-moving activities performed within an enclosed system vented to South Coast AQMD permitted air pollution control equipment shall be exempt from all requirements except: subparagraphs (e)(4)(C) through (e)(4)(E), subparagraphs (e)(6)(D) and (e)(6)(E), and subdivisions (f), (g), and (h).

(3) Linear trenching for natural gas, power, sewer, and water projects on roadways with soil with applicable toxic air contaminant(s), directly loaded into a truck bed, trailer, or bin for transport, shall be exempt from all requirements except: paragraphs (e)(3) through (e)(9), paragraphs (e)(13) and (e)(15), and subdivisions (f), (h), and (i).

(4) On-site earth-moving activities consisting only of excavation activities of soil with applicable toxic air contaminant(s) of less than 500 cubic yards, directly loaded into a truck bed, trailer, or bin for transport, shall be exempt from all requirements except: paragraphs (e)(3) through (e)(9), paragraphs (e)(13) and (e)(15), and subdivisions (f), (h), and (i).

(5) On-site earth-moving activities conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer shall be exempt from all requirements. The Executive Officer shall be notified electronically no later than 48 hours following such on-site earth-moving activities. Written notification shall include written emergency declaration from the authorized officer.

(6) On-site earth-moving activities conducted by essential service utilities to provide electricity, natural gas, telephone, water, or sewer during periods of service outages and emergency disruptions shall be exempt from all requirements. The Executive Officer shall be notified electronically no later than 48 hours following such on-site earth-moving activities.

Table I – Applicable Toxic Air Contaminants

CAS Number	Substance
7440-38-2	**arsenic and arsenic compounds (inorganic)**
	including, but not limited to:
	arsenic compounds (inorganic)
7784-42-1	arsine
1332-21-4	Asbestos
7440-43-9	cadmium and cadmium compounds
57-74-9	chlordane
	dibenzo-p-dioxins (chlorinated)
1746-01-6	tetrachlorodibenzo-p-dioxin, 2,3,7,8-
40321-76-4	pentachlorodibenzo-p-dioxin, 1,2,3,7,8-
39227-28-6	hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-
57653-85-7	hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-
19408-74-3	hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-
35822-46-9	heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-
3268-87-9	octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-
41903-57-5	total tetrachlorodibenzo-p-dioxin
36088-22-9	total pentachlorodibenzo-p-dioxin
34465-46-8	total hexachlorodibenzo-p-dioxin
37871-00-4	total heptachlorodibenzo-p-dioxin
72-54-8	dichlorodiphenyldichloroethane
72-55-9	dichlorodiphenyldichloroethylene
50-29-3	dichlorodiphenyltrichloroethane

Table I – Applicable Toxic Air Contaminants (cont.)

CAS Number	Substance
18540-29-9	**chromium (hexavalent) and chromium compounds**
	including, but not limited to:
10294-40-3	barium chromate
13765-19-0	calcium chromate
7758-97-6	lead chromate
10588-01-9	sodium dichromate
7789-06-2	strontium chromate
13530-65-9	zinc chromate
7439-92-1	**lead and lead compounds (inorganic, including elemental lead)**
	including, but not limited to:
	lead compounds (inorganic)
301-04-2	lead acetate
7758-97-6	lead chromate
7446-27-7	lead phosphate
1335-32-6	lead subacetate
7439-97-6	**mercury and mercury compounds (inorganic)**
	including, but not limited to:
7487-94-7	mercuric chloride
593-74-8	methyl mercury

Table I – Applicable Toxic Air Contaminants (cont.)

CAS Number	Substance
7440-02-0	**nickel and nickel compounds**
	including, but not limited to:
373-02-4	nickel acetate
3333-67-3	nickel carbonate
13463-39-3	nickel carbonyl
12054-48-7	nickel hydroxide
1313-99-1	nickel oxide
12035-72-2	nickel subsulfide
1271-28-9	nickelocene
	refinery dust from the pyrometallurgical process
1336-36-3	**polychlorinated biphenyls (PCBs)**
32598-13-3	3,3’,4,4’-tetrachlorobiphenyl (PCB 77)
70362-50-4	3,4,4’,5-tetrachlorobiphenyl (PCB 81)
32598-14-4	2,3,3’,4,4’-pentachlorobiphenyl (PCB 105)
74472-37-0	2,3,4,4’,5-pentachlorobiphenyl (PCB 114)
31508-00-6	2,3’,4,4’,5-pentachlorobiphenyl (PCB 118)
65510-44-3	2,3',4,4',5'-pentachlorobiphenyl (PCB 123)
57465-28-8	3,3’,4,4’,5-pentachlorobiphenyl (PCB 126)
38380-08-4	2,3,3’,4,4’,5-hexachlorobiphenyl (PCB 156)
69782-90-7	2,3,3’,4,4’,5’-hexachlorobiphenyl (PCB 157)
52663-72-6	2,3’,4,4’,5,5’-hexachlorobiphenyl (PCB 167)
32774-16-6	3,3’,4,4’,5,5’-hexachlorobiphenyl (PCB 169)
39635-31-9	2,3,3’4,4’,5,5’-heptachlorobiphenyl (PCB 189)

Table I – Applicable Toxic Air Contaminants (cont.)

CAS Number	Substance
	polycyclic aromatic hydrocarbons (PAHs)
56-55-3	benzo[a]anthracene
50-32-8	benzo[a]pyrene
205-99-2	benzo[b]fluoranthene
207-08-9	benzo[k]fluoranthene
218-01-9	chrysene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-c,d]pyrene

Appendix 1 – Rule 1466 Approved PM_{10} Monitors

The Executive Officer may approve PM_{10} monitors that meet the following physical and performance requirements.

1. Physical Requirements
   - 1.1. PM_{10} monitors shall be continuous direct-reading near-real time monitors and shall monitor particulate matter less than 10 microns.
   - 1.2. PM_{10} monitors shall be equipped with:
     - 1.2.a. Omni-directional heated sampler inlet;
     - 1.2.b. Sample pump with active flow control mechanism;
     - 1.2.c. Enclosure;
     - 1.2.d. Data logger capable of logging each data point with average concentration, time, date, and data point number; and
     - 1.2.e. Conductive tubing that minimizes particle loss for any external tubing used to carry sampled air prior to measurement.

2. Performance Requirements
   - 2.1 PM_{10} monitors shall have the following minimum performance standards:
     - 2.1.a. Range: 0 - 10,000 $\mu g/m^3$;
     - 2.1.b. Accuracy, determined through factory testing against a U.S. EPA Federal Reference Method or Federal Equivalent Method, for a minimum of 30 measurements each averaged over 24 hours, to show:
       - 2.1.b.i. ± 5% of reading ± precision; or
       - 2.1.b.ii. Coefficient of determination (R^2) of ≥ 0.95 through simple linear regression;
     - 2.1.c. Resolution: 1.0 $\mu g/m^3$;
     - 2.1.d. Flow control accuracy of ± 5% of factory setpoint; and
     - 2.1.e. Measurement Cycle: User selectable (30 minute and 2 hour).
   - 2.2 Monitors that have a valid *Monitoring Certification Scheme* certification meeting the latest version of the *Monitoring Certification Scheme* (*MCERTS): Performance Standard for Indicative Ambient Particulate Monitors* may be exempt from meeting the performance requirements listed above, but shall meet all stated physical requirements.

3. Quality Assurance/Quality Control Requirements

In order to ensure the validity of the PM_{10} measurements performed, there shall be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the owner or operator to adequately supplement QA/QC Plans to include the following critical features: instrument calibration, instrument maintenance, operator training, and daily instrument performance checks.

Appendix 2 – Procedures to Demonstrate Intra-Instrument Precision

An owner or operator shall perform the following procedures to demonstrate the intra-instrument precision of all PM_{10} monitors as required in paragraph (d)(7).

1. Ensure monitors are identical in make and model, settings, and configuration.
2. Ensure monitor inlets are at the same height and located within 4 meters of each other but no less than 1 meter apart for the duration of the test.
3. Power on the monitors and turn on the heated sampler inlet. Allow the monitors to warm-up per manufacturer's recommendations or when readings have stabilized.
4. For each monitor, conduct a zero calibration in accordance with manufacturer's instructions, then conduct a manual zero check by removing any sampling inlet and installing a filter, rated by the manufacturer to achieve a 99.97 percent control efficiency for 0.3 micron particles, on the inlet of the monitor for a minimum of 10 minutes. If the monitors are operated using an auto-zero check procedure that directs filtered particle-free air into the measurement chamber, conduct the zero check in accordance with manufacturer's instructions.
5. Log the PM_{10} concentration reading every minute, and calculate and record the average of the readings of the manual zero check. The average of the manual zero check readings shall be 0 ± 3 micrograms per cubic meter before proceeding to Step 6. If conducting an auto-zero check, the monitor shall pass the zero check in accordance with manufacturer's instructions before proceeding to Step 6. If any monitors fail either the manual zero check or the auto-zero check, the owner or operator shall conduct a zero calibration in accordance with manufacturer's instructions and/or correct any issue(s) causing the failure, followed by conducting a passing zero check on the PM_{10} monitor(s) in accordance with Steps 4 and 5.
6. Remove the filter and install the monitor inlet as required. After waiting 10 minutes, operate the monitors simultaneously and log the PM_{10} concentration reading every minute for a minimum of 60 minutes.

7. Calculate the intra-instrument precision using either of the following equations:
   a. Intra-instrument precision in relative standard deviation or correlation of variation (%) when ambient PM_{10} concentrations are greater than or equal to 15 micrograms per cubic meter:

$$P = \frac{S_t}{C_t} \, x \, 100\%$$

where,

P = Intra-instrument precision in percent (%);

S_t = Standard deviation of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration, to be calculated as:

$$S_t = \sqrt{\frac{\sum(x_i - \bar{x})^2}{(n-1)}}$$

where,

x_i = Mean of the PM_{10} concentration readings for a tested monitor over time t of testing duration,

$\bar{x}$ = Mean of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration, and

n = Number of tested monitors; and

C_t = Mean of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration; or

   b. Intra-instrument precision in absolute value (micrograms per cubic meter) when ambient PM_{10} concentrations are less than 15 micrograms per cubic meter:

$$P = S_t$$

where,

P = Intra-instrument precision in micrograms per cubic meter, and

S_t = Standard deviation of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration.

8. Record the results of the calculations.

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

APPENDIX D

Port of Los Angeles Environmental Guidance for Industrial Fill Material, December 2021

Leighton
a verdantas company

ENVIRONMENTAL GUIDANCE FOR INDUSTRIAL FILL MATERIAL

DECEMBER 2021

The City of Los Angeles Harbor Department (Harbor Department) Environmental Management Division (EMD) has prepared and routinely updates this guidance document to ensure that fill materials (i.e., soil, topsoil, CMB, etc.) meet both Harbor Department and regulatory and environmental standards for acceptable industrial land use fill material. In addition, the guidance procedures are intended to both reduce Harbor Department liability and potential future cleanup costs by preventing the inadvertent placement or reuse of contaminated soil/fill material on Port property. The environmental chemical concentrations listed in this section are intended only for industrial land use for the protection of human health and the environment. They are not appropriate in determining suitable soil/fill material for use at former or active regulated/cleanup sites, public access/land use areas, or for worker health & safety protection.

• Environmental Suitability of Soil/Fill Material for Industrial Use

The general process steps for determining the environmental suitability of fill material for industrial land use are the following:

1. Source Location Identification and Suitability
2. Volume Estimation of Soil/Fill Materials
3. Sampling Requirements and Sample Frequency Determination
4. Chemical Analyses Based on Source
5. Representative Sample Collection
6. Applicable Samples Analyses
7. Comparisons with Allowable Concentrations
8. Documentation and Retention

• Source Location Identification and Suitability

It is important to know the source location of the soil/fill material, including the former and current land uses of the material. Past activities performed on, or near, the proposed source location can directly affect the quality of the fill material and the suitability of use of the material. Prior use of the source site should be documented and be made available for review.

Also, the unique hydrogeological characteristics of the Port area (i.e., shallow groundwater and proximity to harbor waters) require added attention for the protection of water quality. It is strongly recommended that clean crushed miscellaneous base (CMB) only be used for applications such as road base, paving, container terminal construction, and/or asphalt/concrete parking. CMB should not be used as a substitute for soil as general fill, or within sensitive-use areas including, but not limited to, sites

under regulatory oversight or remediation, park lands, public access areas, and waterfront areas in potential contact with harbor waters.

- **Volume Estimation of Soil/Fill Material**

  The volume of soil/fill material determines the sampling frequency required. It is important to have a fairly accurate estimate of the material volume prior to sample collection and analysis. If the volume of soil/fill material cannot be accurately determined, the upper-end estimate of the volume shall be used for purposes of determining sampling frequency.

- **Sampling Requirements and Sampling Frequency Determination**

  The minimum sampling frequency and number of total samples of soil/fill material for stockpile sampling are shown in Table 1. All samples should be collected as individual grab samples. Composite samples are not acceptable. Borrow sources that are not contiguous to each other are considered to be separate or different sources and should be tested separately according to the frequencies described in Table 1. In order to distinguish between multiple borrow sources, the sampler/supplier shall provide a "unique identifier" for each stockpile or borrow source sampled (e.g. Stockpile A, Stockpile B, etc.). A site plan (e.g. map) showing the location of the source material and sample locations should be provided. In addition, the results of laboratory analytical chemical data and an approval certification stating the environmental status/condition of the material from the supplier for the sources should also be provided.

Table 1. Sampling Frequency for Each (Separate) Source of Stockpiled Fill Material

Volume of Borrow Area Stockpile	Required Number of Samples per Volume
Up to 1,000 CY	1 sample per 250 CY
1,000 to 5,000 CY	4 samples for first 1000 CY +1 sample per each additional 500 CY
Greater than 5,000 CY	12 samples for first 5,000 CY +1 sample per each additional 1,000 CY

NOTE: CY = Cubic Yard
Source: Information Advisory Clean Imported Fill Material, DTSC, October 2001

The number of samples per volume for sources not yet excavated or stockpiled (i.e., in-situ sources) may differ from the table above. This is described further in the *Representative Sample Collection* section below.

- **Chemical Analyses Based on Source**

  Table 2 provides a set of recommended chemical analyses based on the source or origin of the fill material. Except as noted, soil/fill source areas shall NOT be located in:

  a. Industrial/manufacturing areas (with the exception of soils/material generated within the Port of Los Angeles [Port]).
  b. Sites designated for or undergoing environmental cleanup or within a one-mile radius of sites undergoing environmental cleanup.
  c. Sites where hazardous materials were historically used or hazardous wastes were generated (e.g., service or fueling stations, dry cleaners, oil refineries, scrap yards, boatyards, chemical/liquid storage areas, painting facilities, metal processing shops, etc.).

  The potential for the proposed borrow site to be located in an area related to items a, b, and/or c above should be determined by the contractor PRIOR to proposing the borrow site to the Harbor Department. At a minimum, the contractor must demonstrate due diligence in obtaining the information (e.g., Phase I, searched on Geotracker and Envirostor, etc.) about historical property land uses at proposed existing and off-site borrow locations prior to placement of the material within the Port.

  For both excavated on-site and off-site material, target compounds to be analyzed for testing the suitability of the fill source may be pre-determined or reduced by assessing environmental conditions of the borrow area prior to implementing the excavation. Although, the Harbor Department does not recommend the use of soil/fill material from land adjacent to freeways and highways, mining areas, and/or agricultural lands, Table 2 provides a suggested list of target compounds and sampling tests for such locations.

Table 2. Recommended Chemical Analyses of Material Based on Source/Origin

Fill Source	Target Compounds and Analyses
Land adjacent to or within 250 feet from existing freeway or major highway	• TPH (modified EPA Method 8015) • Lead (EPA Method 6010B) • PAHs (EPA Method 8310)
Mining area or rock quarry	• Heavy metals (EPA Methods 6020 and 7471A) • Asbestos (polarized light microscopy)
Agricultural	• Pesticides and Herbicides (Organochlorine Pesticides: EPA Method 8081A or 8080A; Organophosphorus Pesticides: EPA Method 8141A; Chlorinated Herbicides: EPA Method 8151A) • Heavy metals (EPA Methods 6020 and 7471A), including hexavalent chromium (EPA Method 7199)

Fill Source	Target Compounds and Analyses
Acceptable commercial land	• VOCs (EPA Method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035) • Semi-VOCs (EPA Method 8270SIM) • TPH (modified EPA Method 8015B) • PCBs (EPA Method 8082 or 8080A) • Heavy metals including lead (EPA Methods 6020 and 7471A), including hexavalent chromium (EPA Method 7199)

- ## Representative Sample Collection

  Soil/fill material samples need to be collected in a manner (both in sample number and depth) that accurately represents the overall environmental chemical quality of the excavation area, borrow site, or stockpile(s). In-situ sampling requirements for in-place fill material is more complex than stockpile sampling, and the proposed plan for characterization shall be determined in advance with consultation/discussions with qualified Port personnel (e.g., Project Manager/Construction Manager). Table 1 is not necessarily appropriate for in-situ sampling. At a minimum, a map showing the borrow site boundaries, depths of proposed excavation, depth horizons that will be used for fill, and proposed number of samples and analyses, must be provided to the Port for initial discussion. Additional information may be requested by the Port based on the information provided. Sampling must be overseen by an environmental professional.

  Any and all samples must be collected and properly preserved/stored (e.g., specified temperatures, within appropriate containers and holding times, etc.) until delivery to a California-certified analytical laboratory (e.g., ELAP and/or NELAP certification) for analyses. Appropriate sample handling and preservation procedures are specified in the US EPA "Test Methods for Evaluating Solid Waste-Physical/Chemical Methods (SW-846)." Each collected soil/material sample will be recorded on a chain-of-custody form prior to submittal to the laboratory for analysis.

- ## Applicable Samples Analyses

  All soil samples need to be analyzed using the applicable EPA Methods listed in Table 3. If one is aware of, has knowledge of, or suspects possible contaminants in the soil/fill material (e.g., observations of staining, discoloration, and/or odors) that are not included in the list, an analysis of the suspected contaminant(s) should be conducted.

- ## Comparisons with Allowable Concentrations

  Table 3 presents the chemical concentrations for soil/ fill material at the Port of Los Angeles. Generally, soil/fill material with sample results below (less than) the permissible chemical concentrations may be used as industrial-use fill within the Port. Soil/fill material with sample results above (greater than) the permissible chemical concentrations material cannot be used as fill and must be properly disposed of, unless directed otherwise. It's important to note that the recommended sampling frequencies in Table 1 and the subsequent sampling results only provide an indication of potential

contamination with the soil/fill material. Slight exceedances in Table 3 limits in some of the samples do not necessarily make the entire stockpile or borrow area unusable. Unless the exceedances are present throughout a number of the samples, a combination of both professional judgment and sectioning-off of the contaminated areas will likely allow use of most of the selected fill material.

In general, the primary target or 'driver' compounds of concern in the Port are TPH, benzene, PCBs, lead, and copper. While there are a number of other chemicals (including human carcinogens) found in the Port, these target compounds are the most prevalent. At a minimum, all samples should be tested for these target compounds.

Please note in Table 3 that any soil/fill sample having undergone chemical analyses with a dilution factor greater than 1 (see Footnote #3) or uses detection limits greater than the permissible concentrations in Table 3 may be rejected due to potentially elevated concentrations of one or more contaminants.

As a reminder, the environmental chemical concentrations listed in Table 3 are intended only for general industrial land use for the protection of human health and the environment. The listed concentrations are not intended to be applicable or to determine suitable soil/fill material for use at former or active regulated/cleanup sites, public/recreation land use areas, or for worker health & safety protection.

Table 3. Permissible Chemical Concentrations in Fill Material[1]

Chemicals of Concern (COC) Industrial Land Use	Soil/Fill Material Concentration (*mg/kg*)	Source
Total Petroleum Hydrocarbons (TPH) *(EPA Method 8015M/8015B)*		
TPH (Total Petroleum Hydrocarbons)	1,000	Cal-EPA SWRCB[2]
➢ Gasoline (if present)	180	Cal-EPA SWRCB/DTSC[2]
➢ Diesel (if present)	180	Cal-EPA SWRCB/DTSC[2]
Heavy Metals *(EPA Method 6020/7471A)*		
Antimony	150	10 X STLC[3]
Arsenic	8.7	Cal-EPA SWRCB/DTSC[2]
Barium	1000	10 X STLC[3]
Beryllium	7.5	10 X STLC[3]
Cadmium	1.4	Cal-EPA SWRCB/DTSC[2]
Chromium VI (EPA Method 7199/3060A)	2.8	Cal-EPA SWRCB/DTSC[2]
Total Chromium	100	20 X TCLP/STLC[3]
Cobalt	350	Cal-EPA SWRCB/DTSC[2]
Copper	69	Cal-EPA SWRCB/DTSC[2]
Lead	50	10 X STLC[3]
Mercury	0.69	Cal-EPA SWRCB/DTSC[2]
Molybdenum	4.4	Cal-EPA SWRCB/DTSC[2]
Nickel	200	10 X STLC[3]
Selenium	0.23	Cal-EPA SWRCB[2]
Silver	3.75	Cal-EPA SWRCB/DTSC[2]
Thallium	0.95	Cal-EPA SWRCB[2]
Vanadium	240	10 X STLC[3]
Zinc	680	Cal-EPA SWRCB/DTSC[2]
BTEX *(EPA Method 8260)*		
Benzene	0.055	Cal-EPA SWRCB/DTSC[2]
Toluene	56	Cal-EPA SWRCB[2]
Ethylbenzene	3.9	Cal-EPA SWRCB[2]
Xylene	7.2	Cal-EPA SWRCB[2]
Naphthalene	0.17	Cal-EPA SWRCB[2]
Asbestos *(OSHA Method ID-191)*	ND	Laboratory Reporting Limit[4]
Polychlorinated Biphenyls (PCBs) *(EPA 8082)*	ND	Laboratory Reporting Limit[4]/USEPA
Chemicals of Concern[5]		
Volatile Organic Compounds (VOCs) (EPA Method 8260)	ND	Laboratory Reporting Limit[4]
Polynuclear Aromatic Hydrocarbons (PAHs) (EPA Method 8310)	ND	Laboratory Reporting Limit[4]
Semi Volatile Organic Compounds (SVOCs) (EPA Method8270)	ND	Laboratory Reporting Limit[4]
Organochlorine Pesticides (EPA Method 8081A)	ND	Laboratory Reporting Limit[4]
Organophosphorus Pesticides (EPA Method 8141A)	ND	Laboratory Reporting Limit[4]
Chlorinated Herbicides (EPA Method 8151A)	ND	Laboratory Reporting Limit[4]

NOTES:

1. Acceptable Soil/Fill Material concentrations may vary between regulated Sites. Please consult the Port **prior to** analysis of samples to ensure the correct Laboratory Reporting Limits are achieved.
2. Cal-EPA State Water Resources Control Board & Department of Toxic Substances Control Action Goals for Industrial Land Use sites only. The listed concentrations/levels may not be applicable for former or active cleanup sites, public land use, or worker health & safety.
3. Soluble Threshold Limit Concentration (STLC) and Toxicity Characteristic Leaching Procedure (TCLP), California Code of Regulations (CCR), Title 22, Section 66261.24. Characteristic of Toxicity.
4. Laboratory Reporting Limit is based on reporting limits commonly used by Southern California laboratories (DAF=1). Note that for some regulated Sites (to be determined by the Port) target Laboratory Reporting Limits may need to be provided to the laboratory prior to sampling.
5. Any other suspected constituents or contaminants not shown on this table should be discussed with the Port.

- **Documentation and Retention**

  A written, preferably electronic, record of the sampling protocols, sampling locations, photographs, analytical results, and determination of suitability for industrial land use as fill shall be maintained and made available for staff review, upon request.

- **Authorization for Soil/Fill Concentrations**

  The chemical/contaminant criteria utilized in this document for industrial land use soil/fill material were compiled from a number of current sources, standards, regulations, and/or guidance documents including, but not limited to:

  - Compliance with applicable laws and regulations;
  - California Environmental Protection Agency - State Water Resources Control Board (SWRCB) and Department of Toxic Substances Control (DTSC);
  - Title 40, Code of Federal Regulations (40 CFR)
  - California Health and Safety Code (HSC), Division 20, Chapter 6.5, Hazardous Waste Control Law and California Code of Regulations, Division 4.5, Title 22 CCR;
  - Information Advisory Clean Imported Fill Material (DTSC, October 2001);
  - User's Guide: Derivation and Application of Environmental Screening Levels (SFRWQCB), 2019);
  - Revised Responses to Stakeholder's Comments Memorandum – Former GATX Los Angeles Marine Terminal (LAMT), Bertha 171 through 173, Wilmington, CA (Cleanup and Abatement Order No. R4-2008-006), (LARWQCB Geotracker), January 19, 2010); and
  - Commonly reported Laboratory Reporting Limits (LRLs) and Method Detection Limits (MDLs) by analytical laboratories in Southern California.

Approval of Soil/Fill Material

An Import Material Checklist (Attachment 1), along with a photograph(s) of the source in which it represents, will be submitted for each proposed fill source. All analytical data submitted to determine the quality and suitability of the soil/fill material will be reviewed by qualified Port personnel. Meeting the concentration criteria listed in Table 3 is essential for the fill or excavated material to be considered minimally acceptable for industrial use as general fill within the Port. This guidance document and its contents may be amended or updated to reflect future changes in Port policies and/or regulatory requirements. The Port reserves the right to observe contractor's sampling activities and data; and independently sample, analyze, and/or verify the results of any analytical data submitted for evaluation.

The Port will not be responsible for any construction schedule delays or costs if the soil/fill material is rejected due to incomplete or inaccurate data submittals, exceedances of permissible chemical concentrations (i.e., sample results fail to meet the criteria requirements in this section), and/or the soil/fill material does not comply with regulatory requirements (e.g., material would be classified as hazardous wastes,

SCAQMD Rule 1166 requirements, UST requirements, site-specific plans or directives, etc.). If a third-party (e.g., contractor) brings any soil/fill material into the Port that classifies as hazardous waste (i.e., RCRA and non-RCRA), the third party will be considered the generator of the waste. The third-party (contractor) will be responsible for all costs, including costs incurred by the Port, associated with removal and proper disposal of the waste. Further, the third party will also have signatory responsibility for the hazardous waste uniform manifest.

Acronym List

BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
Cal-EPA	California Environmental Protection Agency
CY	Cubic Yard
DTSC	Department of Toxic Substances Control
ELAP	Environmental Laboratory Accreditation Program
EMD	Environmental Management Division
ESL	Environmental Screening Level
LARWQCB	Los Angeles Regional Water Quality Control Board
LRL	Laboratory Reporting Limit
MHHW	Mean Higher High Water
MDL	Method Detection Limit
NELAP	National Environmental Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
POLA	Port of Los Angeles
SCAQMD	South Coast Air Quality Management District
SFRWQCB	San Francisco Regional Water Quality Control Board
STLC	Soluble Threshold Limit Concentration
SVOC	Semi-Volatile Organic Compound
SWRCB	State Water Resources Control Board
TPH	Total Petroleum Hydrocarbons
TTLC	Total threshold Limit Concentration
USEPA	United Stated Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

References

Asbestos - https://ww2.arb.ca.gov/sites/default/files/classic/toxics/atcm/asb2atcm.htm

Benzene - https://wwwn.cdc.gov/TSP/substances/ToxSubstance.aspx?toxid=14

CCR - https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I77C6B3D0D4BA11DE8879F88E8B0DAAAE&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)

Clean Imported Fill Material - https://dtsc.ca.gov/information-advisory-clean-imported-fill-material-fact-sheet/

Copper - https://wwwn.cdc.gov/TSP/substances/ToxSubstance.aspx?toxid=37

DTSC - https://www.dtsc.ca.gov/

ELAP - http://www.waterboards.ca.gov/drinking_water/certlic/labs/index.shtml

Generator - http://www.dtsc.ca.gov/HazardousWaste/Generators.cfm

Geotracker - http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=SL377432476&enforcement_id=6041012

Hazardous wastes - https://dtsc.ca.gov/defining-hazardous-waste/

Hazardous waste uniform manifest - https://dtsc.ca.gov/hazardous-waste-manifest-information/

HSC - https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=HSC&division=20.&title=&part=&chapter=6.5.&article

Laboratory Reporting Limits - https://www.mywaterquality.ca.gov/monitoring_council/collaboration_network/docs/bvanbuuren_jan2012.pdf

Lead - https://wwwn.cdc.gov/TSP/substances/ToxSubstance.aspx?toxid=22

MDLs - http://water.usgs.gov/owq/OFR_99-193/detection.html

NELAP - http://www.nelac-institute.org/

non-RCRA - https://www.law.cornell.edu/regulations/california/22-CCR-Sec-66261-101#

PCBs - https://wwwn.cdc.gov/TSP/substances/ToxSubstance.aspx?toxid=26

RCRA - https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-regulations

Rule 1166 - http://www.aqmd.gov/home/regulations/compliance/rule-1166-site-specific-and-various-locations-soil-mitigation-plan

SFRWQCB - https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html

STLC - http://www.eurofinsus.com/media/161417/hazardous_waste_regulatory_limits.pdf

SWRCB - http://www.swrcb.ca.gov/

SW-846 - https://www.epa.gov/hw-sw846/sw-846-test-method-8327-and-polyfluoroalkyl-substances-pfas-liquid-chromatographytandem

TPH - https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=423&toxid=75

UST - http://www.waterboards.ca.gov/ust/

20 X TCLP/STLC - https://www.ssalabs.com/wp-content/uploads/2019/06/STLC-TTLC-Regulatory-Limits.pdf

40 CFR - http://www2.epa.gov/laws-regulations/regulations

ATTACHMENT 1

Import Material Checklist

LOS ANGELES HARBOR DEPARTMENT
IMPORT MATERIAL CHECKLIST

GENERAL INFORMATION

POLA Project Name: _____ **Contract Spec No.**: _____

POLA Project Address: _____

Source of Import Material*
Name/Address of Source: _____Unique Identifier (if any): _____
*For stockpiled materials, enter information for the source and staging of the stockpiles.

Origin of Import Material: Quarry:____ Industrial/Commercial: _____ Other: _____

Current/Historical Operations of the Source: _____

SAMPLING INFORMATION

Sampling Firm Name: _____

Firm Address:_____

Sampler's Name(s): _____
Sample Type: Grab from within stockpile(s): ___ In-Situ (Contractor should have a Port-Approved sampling plan): ____

Analytical Laboratory Name/Address: _____

Laboratory Report Number (s): _____

_____

CERTIFICATION

I certify that all information, sampling, and analytical laboratory data and results provided regarding the subject material are representative, accurate, correct, and complete to the best of my knowledge and belief.

_____ Date: _____
Contractor Signature – Licensed Professional

_____ Title: _____
Print Contractor Name – Licensed Professional

Note: Contractor must attach copies of all pertinent information, including approved sampling plan (if applicable), sample location map, laboratory reports, and photographs for checklist verification.

POLA ACCEPTANCE

_____Approved _____Reject (Explain): _____

_____ _____ _____
POLA Authorization Signature Print Name Date

APPENDIX E

DTSC Clean Fill Material Advisory

Leighton
a verdantas company

Information Advisory
Clean Imported Fill Material

October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location
Volume of Borrow Area Stockpile	**Samples per Volume**
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Shahir Haddad, P.E. at (714) 484-5368.

APPENDIX F

Potential Waste Disposal Facilities

Leighton
a verdantas company

B. Waste Disposal Service providers:

RCRA Hazardous and TSCA Waste for Landfill or Treatment:

- Chemical Waste Management - Kettleman Hills, Kettleman City, CA
- Clean Harbors Buttonwillow, LLC, Buttonwillow, CA (very limited TSCA)
- US Ecology Nevada, Beatty, NV

Non-RCRA Hazardous (California Haz) Waste for Landfill

- Chemical Waste Management - Kettleman Hills, Kettleman City, CA
- Clean Harbors Buttonwillow, LLC, Buttonwillow, CA
- US Ecology Nevada, Beatty, NV

Nonhazardous Contaminated Waste for Landfill

- Simi Valley Landfill - Waste Management, Simi Valley, CA
- Sunshine Canyon Landfill – Republic Services, Sylmar, CA
- Chiquita Canyon Landfill – Waste Connections, Valencia, CA

Non-hazardous Contaminated Waste for Thermal Desorption Recycling (nonhazardous TPH contaminated soil)

- Thermal Remediation Solutions (TRS) Facility – Waste Management, Azusa, CA
- Soil Safe, Inc., Adelanto, CA

Treated Weathered Wood Waste (railroad ties, etc.)

- Sunshine Canyon Landfill – Republic Services, Sylmar, CA
- Chiquita Canyon Landfill – Waste Connections, Valencia, CA
- Simi Valley Landfill – Waste Management, Simi Valley, CA

RCRA Hazardous Waste Liquid, Non-RCRA (California Haz) Waste Liquid, and/or Nonhazardous Waste Liquid

- DeMenno/ Kerdoon, Compton, CA
- Clean Harbors, Wilmington, CA