Department of Water and Power the City of Los Angeles

ANTONIO R. VILLARAIGOSA
Mayor

Commission
EDITH RAMIREZ, *Vice President*
LEE KANON ALPERT
WALLY KNOX
FORESCEE HOGAN-ROWLES
BARBARA E. MOSCHOS, *Secretary*

H. DAVID NAHAI,
Chief Executive Officer and General Manager

January 29, 2009

Dr. Ralph G. Appy
Director of Environmental Management
Los Angeles Harbor Department
425 South Palos Verdes Street
San Pedro, CA 90731

Dear Dr. Appy:

Subject: Wilmington Waterfront Development Project (Project)
Comments on Draft Environmental Impact Report (DEIR) from the
Los Angeles Department of Water and Power (LADWP)

Thank you for the opportunity to comment on the Project. Chapter 3 of the DEIR, Section 3.2.4.3.2 "Operation Impacts", Subsection AQ-7, states that "...LADWP elected to perform a subsequent Health Risk Analysis to account for various design features of the proposed Project that were not well defined in the 2004 study. Results are expected from LADWP in late 2008 or early 2009."

The updated Health Risk Assessment is attached. It quantifies the potential health risks to human receptors in the proposed park from emissions sources operating in the adjacent Harbor Generating Station. Please use it to update the health risk indices in Subsection AQ-7.

If you have any questions, please call me at (213) 367-0403.

Sincerely,

Mark J. Sedlacek
Director of Environmental Services

BMM:sc
Enclosure
c/enc: Jan Green-Rebstock, Los Angeles Harbor Department
Bruce M. Moore, LADWP

111 North Hope Street, Los Angeles, California 90012-2607 *Mailing address:* Box 51111, Los Angeles 90051-5700
Telephone: (213) 367-4211 *Cable address:* DEWAPOLA

REVISED HEALTH RISK ASSESSMENT (2009 HRA)
HARBOR GENERATING STATION

Prepared for:

LOS ANGELES DEPARTMENT OF WATER AND POWER
LOS ANGELES, CALIFORNIA

January 2009

PREPARED BY:

ENVIRONMENTAL MANAGEMENT PROFESSIONALS, LLC
22811 MADRONA AVENUE, TORRANCE - CALIFORNIA 90505
Tel/Fax: (310) 539-0606; e-mail: krishnanand44@msn.com

E0034

REVISED HEALTH RISK ASSESSMENT (2009 HRA) HARBOR GENERATING STATION

1.0 INTRODUCTION

The Los Angeles Department of Water & Power (LADWP) operates the Harbor Generating Station (HGS) for the generation of electrical power. The HGS is located at 161 North Island Avenue, City of Los Angeles (Wilmington) adjacent to the Port of Los Angeles. The LADWP recently evaluated the construction of a park on an approximately 8 acre parcel of land directly adjacent to the HGS. As part of this evaluation, LADWP conducted a health risk assessment (HRA) in 2004 to estimate the potential health risks from exposure to toxic air contaminants (TACs) emitted by HGS for individuals that would visit the proposed park and to determine if the park could potentially restrict future operations at HGS. A total of 1,844 receptors were used in the dispersion modeling for HRA, including gridded receptors at 25 m spacing within the proposed park. The HRA was performed assuming that the gridded receptors within the proposed park will be at ground elevation. However, it is now learnt that many receptors inside the park will be at higher elevations (maximum elevation of 42 ft). As a result of this new information, Environmental Management Professionals (EMP) revised the HRA with the same source parameters as used in 2004 HRA but with park receptors at higher elevations. The LADWP also requested that revised HRA should be performed using the latest version of the Hot Spots Analysis and Reporting Program (HARP). The results of the revised HRA (2009 HRA) are provided below.

2.0 FACILITY DESCRIPTION

The primary operation of the HGS is generation of electrical power. The HGS is located at 161 North Island Avenue, City of Los Angeles (Wilmington). Land use in the area is primarily industrial. The location of the HGS is given in Figure 1.

The HGS occupies an irregularly shaped parcel of land bordered by Harry Bridges Boulevard (formerly B Street) to the north, Avalon Boulevard to the east, a container storage area which borders the Los Angeles Harbor to the south, and Neptune Avenue to the west. Fries Avenue separates the eastern and western portions of the HGS. The nearest residential area is located approximately one quarter mile to the north. The proposed park site is east of the HGS on land owned by LADWP. The proposed park parcel is currently leased to Valero Petroleum and contains three large storage tanks and a small building. The storage tanks and the building will be removed if the park is constructed.

The facility's emission sources include five natural gas-fired LM6000 simple-cycle combustion turbines, two MS7001 natural gas-fired combined-cycle combustion turbines, a black start (emergency) generator, five cooling towers for the LM6000 turbines, a small

diesel-fired power washer, an oil-water separator (OSW), and fugitive VOC emissions from a diesel-oil storage tank and piping system. While the combustion turbines burn natural gas, they are permitted to burn diesel oil in the event of an interruption in the supply of natural gas. Consequently, there are monthly readiness tests of the seven combustion turbines burning diesel oil plus periodic testing of the emergency generator.

3.0 EMISSION ESTIMATION

The 2004 HRA was performed for the emission rates computed for the HGS based on permitted operating levels for the emission sources at the facility. The emission sources modeled included seven combustion turbines, five cooling towers, diesel internal combustion exhaust emissions from one emergency generator and one power washer, and fugitive volatile organic compounds (VOC) emissions from an oil-water separator, a diesel fuel oil storage tank, and the piping system delivering diesel oil to the turbines.

The primary fuel for the simple-cycle (LM6000) and combined-cycle (MS7001) combustion turbines is natural gas. However, the units are permitted to burn distillate oil (Diesel No. 2) in the event of a natural gas curtailment and they are tested regularly on diesel fuel. The emissions of TACs from the combustion turbines using natural gas and diesel were estimated using emission factors obtained from the California Air Toxic Emission Factor (CATEF) database. Emission factors for the internal combustion engines (black start generator and power washer) using diesel fuel were estimated using Ventura County Air Pollution Control District (VCAPCD) emission factors. Additional details of the emission estimation are provided in the 2004 HRA. A copy of this report is provided in Appendix A.

4.0 RISK ASSESSMENT METHODOLOGY

The risk assessment methodology followed for the 2004 HRA and the revised HRA (2009 HRA) are described below.

2004 Health Risk Assessment Methodology

The 2004 HRA was performed using the HARP Version 1.0, released by the California Air Resources Board (CARB) in December 2003. This version of the HARP model included the latest (at the time of the release of the model) risk assessment and dispersion modeling methodology defined by the California Office of Environmental Health Hazard Assessment (OEHHA), released in October, 2003, as supplemented by the CARB interim guidance for residential inhalation exposure. Combined, the guidelines developed by OEHHA and CARB are referenced as the "HRA Guidelines" in this document. A Tier-1 point estimate HRA was performed for this Project.

The HRA was conducted in three steps. First, TAC emissions were estimated for current facility operations using permitted operating conditions for all sources as discussed

above. Second, exposure calculations were performed using the ISCST3 dispersion model that is an integral part of HARP. Third, results of the exposure calculations, along with the respective cancer potency factors and chronic and acute non-cancer reference exposure levels (RELs) for each toxic substance, were used in HARP to perform the risk characterization needed to quantify individual health risks associated with predicted exposure levels.

The risk assessment included a multi-pathway risk analysis for those TACs that have an ingestion, dermal or other non-inhalation exposure pathway. Although inhalation is the dominant potential pathways for public exposure to chemical substances released by the HGS, the multi-pathway analysis also conservatively evaluated exposure through soil ingestion, dermal absorption and mother's milk ingestion for those TACs that have non-inhalation exposure pathways. The modeling was performed using the SCAQMD 1981 meteorological data for Long Beach.

Revised Health Risk Assessment (2009 HRA) Methodology

The revised HRA methodology was the same as used for performing 2004 HRA. The only change was the use of latest version of the HARP (Version 1.4a), released by the CARB on July 24, 2008. A comparison of the TACs and their toxicities included in HARP Model Versions 1.0 and 1.4a indicated that ethyl benzene and naphthalene are now identified as carcinogenic substances. Thus, carcinogenic risk estimated for HGS is expected to be higher when risk assessment is performed using HARP Version 1.4a in comparison to using HARP Version 1.0.

5.0 MODELING SCENARIOS

For the 2004 HRA, eight modeling scenarios were developed and modeled in the HRA. Four scenarios each were modeled for the case with the park (With-Park) and the existing facility without the park (Without-Park). For the With-Park and Without-Park cases, there were four emission scenarios each modeled that consisted of one annual emission scenario and three short-term emission scenarios. The annual emission scenarios were used to determine potential cancer and non-cancer chronic risk. The three short-term scenarios for each case were used to assess non-cancer acute risk. The descriptions of the eight modeling scenarios are provided in 2004 HRA (see Appendix A for this report). As it turned out, there were no material differences in the results of the HRA estimated risks for the With-Park and Without-Park modeling cases.

For the 2009 HRA, only one short-term scenario was considered (Scenario 3), which had provided the highest non-cancer acute risk for 2004 HRA. This scenario included the following sources of emissions for dispersion modeling and exposure assessment: (1) LM6000 in normal operation (CT1, CT2, CT4, and CT5), (2) LM6000 readiness testing

(CT3), (3) MS7001 normal operation (CT1-CT2), (4) cooling towers normal operation (1-5), (5) normal operation of Tank 55002, and (6) fugitive emissions.

Modeling scenario for estimating the carcinogenic risk and chronic hazard index for both HRAs (2004 and 2009) included the following sources of emissions; (1) LM6000 in normal operation (CT1-CT5), (2) LM6000 readiness testing (CT1-CT5), (3) MS7001 normal operation (CT1-CT2), (4) black start generator (including the diesel exhaust particulate matter emissions), (5) cooling towers normal operation (1-5), (6) normal operation of Tank 55002, and (7) fugitive emissions.

6.0 RECEPTORS

Receptors for 2004 HRA

A total of 1,844 receptors were used in the modeling. The details of the receptors selected for dispersion modeling are presented below.

1. Boundary receptors spaced 20 m apart on the facility and proposed park site boundaries;
2. Gridded receptors at 1,000 m spacing out to 10 kilometers;
3. Gridded receptors at 100 and 1,000 m spacing used in the Rule 1401 HRA analysis for the Repowering Project;
4. Gridded receptors at 25 m spacing within the proposed park;
5. Receptors at 25 m spacing on Fries Avenue and A Avenue, representing potential short-term exposure locations on nearby public roads;
6. Residential receptors representing nearby residences;
7. Sensitive receptors, including schools, hospitals, and parks;
8. Receptors located at the centroids of census tracts within 2 km of the facility, i.e., the facility's zone of impact (ZOI). Cancer risks predicted at these receptors and associated population data are used to estimate the cancer burden. The zone of impact (ZOI) is defined as the area subjected to an excess cancer risk of one in a million (1.0E-6) or greater.

Figure 2 presents the close-in receptors to the facility, including receptors on the proposed park and on Fries Avenue and "A" Avenue.

Receptors for 2009 HRA

For the 2009 HRA, only boundary receptors spaced 20 m apart on the facility and proposed park site boundaries, and gridded receptors at 25 m spacing within the proposed park were selected.

7.0 RECEPTOR ELEVATIONS

A review of the elevations used for 2004 HRA indicated that elevations for all the park receptors were assumed to be 20 ft. Figure 3 shows the elevations of park receptors used for 2004 HRA.

Port of LA was contacted to obtain the design information relating to the elevation of park receptors for performing 2009 HRA. The following information was provided by the Port of LA Consultant (Mr. Chuck Coronis, Senior Associate, Sasaki, Tel: 617/923-7292):

- Elevation for all receptors at the north and south end of the proposed park will be 15 ft;
- Highest elevation of any park receptor will be 42 ft;
- Peak elevation receptor will be closer to the south end of the park (about 1/3rd distance from the south end of the park of the total distance between the north and south ends of the park).

The above information was used to assign elevations to the proposed park receptors for 2009 HRA (Step 2). Figure 4 shows the elevations of the proposed park receptors used for 2009 HRA. Figures 3 and 4 show that maximum difference in the receptor elevations between 2009 and 2004 HRAs is only 22 ft.

Port of LA (Jan Green Rebstock, Tel: 310/732-3949) also informed that the proposed park's western boundary, at the south end, will not extend to the HGS eastern fenceline. For the 2009 HRA it was therefore assumed that the western boundary of the proposed park, at the south end will be about 30 meters from the HGS eastern fenceline.

8.0 THRESHOLD SIGNIFICANCE LEVELS

The significance thresholds used for the 2004 HRA have also been used for the 2009 HRA. A description of the significance thresholds used for 2004 HRA is provided below.

"The significance thresholds used in the HRA are based on South Coast Air Quality Management District (SCAQMD) significance levels in Rule 1401 – New Source Review of Toxic Air Contaminants. Because the HRA is not required by Rule 1401 nor it is required under the AB-2588 Toxic Hot Spots program, the Rule 1401 and AB-2588 significance criteria are not explicitly applicable to this HRA. However, the significance criteria provide a reasonable baseline to evaluate risk at the site.

Based on Rule 1401, the assumed significance level for the Maximum Individual Cancer Risk (MICR) is ten in one-million. The cancer risk represents the probability that one person would contract cancer within his or her lifetime from exposure to the emitted carcinogenic TACs. Thus, a cancer risk of ten in one-million means that an individual would

have a ten in one-million chance of contracting cancer, or that there would be ten additional cancer cases in an exposed population of one million people.

For acute and chronic exposure to non-carcinogenic TACs, the assumed significance level is a Hazard Index (HI) of 1.0. The acute and chronic HIs are computed as the ratio of the estimated short and long-term levels of exposures to a TAC contaminant for a potential maximally exposed individual to the acute and chronic reference exposure levels (RELs) for that TAC. The REL is a level below which no adverse effects are expected to occur, and thus, an HI of less than 1.0 means that no adverse effects would occur. "

9.0 RISK CHARACTERIZATION

As mentioned above, the HARP model, released in the public domain by the CARB and OEHHA, was used in analyzing cancer and non-cancer health effects. It fully implements the methodologies and assumptions of the CARB and OEHHA guidelines. It can evaluate risks at many receptors, multiple emission sources and several pollutants (including multipathway). For carcinogens, the model computes the cancer excess risks and excess burden. For noncancer health effects, hazard indices are computed for acute and chronic exposure for all affected toxicological endpoints. The latest version of the HARP model, as of July 21, 2008, was used in this risk assessment. Copies of the ISCST3 and HARP model input and output are provided on the attached CD-ROM.

2004 HRA RESULTS

Cancer Risk

Cancer risk is the probability or chance of contracting cancer over a human life span (assumed to be 70 years). Carcinogens are assumed to have no threshold below which there would be no human health impact. In other words, any exposure to a carcinogen is assumed to have some probability of causing cancer; the lower the exposure, the lower the cancer risk (i.e., a linear, no-threshold model). The maximum off-site cancer risk from the HGS was estimated at 8.0 per million, computed as the high-point estimate for a 70-year (residential) exposure. The location of the peak cancer risk was identified to be on the boundary between the HGS and the proposed park (see Figure 2, MEI). However, this location is not a residential location and hence use of the assumed 70-year exposure assumption will cause the risk at this location to be overestimated.

To estimate the cancer risk posed to children that may visit the park, HARP was used to estimate the cancer risk posed to children over an exposure period of 9-years. Because of the assumed lower exposure duration, the 9-year child cancer risk at the location of the maximum exposed individual was estimated at 1.5 per million (see Figure 2, MEI).

No-Cancer Health Effects

Non-cancer health effects can be either chronic or acute. In determining potential non-cancer health risks (chronic and acute) from air toxics, it is assumed that there is a dose of the chemical of concern below which there would be no impact on human health. For this health risk assessment, hazard indices were computed separately for each target organ and summed. This method lead to a conservative (upper bound) assessment.

Chronic Hazard Index

Chronic toxicity is defined as adverse health effects from prolonged chemical exposure, caused by chemicals accumulating in the body. Because chemical accumulation to toxic levels typically occurs slowly, symptoms of chronic effects usually do not appear until long after exposure commences. The highest no-effect chronic exposure level for a non-carcinogenic air toxic is the chronic REL. Below this threshold, the body is capable of eliminating or detoxifying the chemical rapidly enough to prevent its accumulation. The chronic HI for emissions from the HGS facility was estimated at 0.03 at the cancer MEI location (see Figure 2, MEI). This chronic hazard index is well below the significance level of 1.0. A higher chronic HI value of 0.05 at a sensitive receptor outside the proposed park site was also reported in the 2004 HRA report. However, this receptor location chronic HI was termed as questionable due to distance (2,550 m) from the cancer MEI and also because it is generally in upwind direction.

Acute Hazard Index

Acute toxicity is defined as adverse health effects caused by a short-term chemical exposure of no more than 24 hours. For most chemicals, the multi-pathway exposure required to produce acute effects is higher than the levels required to produce chronic effects, because the duration of exposure is shorter. Because acute toxicity is predominantly manifested in the upper respiratory system at threshold exposures, all hazard indices are typically summed to calculate the total acute hazard index. Model-predicted one-hour average TAC concentrations are divided by the respective acute RELs and summed to obtain a hazard index for health effects caused by relatively high, short-term exposure to air toxics. The maximum modeled acute HI for the facility was conservatively estimated to be 0.74 and this occurred on the proposed park site (inside the park). This acute hazard index is 74 percent of the significance level of 1.0. Figure 2 shows the location of the highest acute hazard index.

The results of the 2004 HRA are provided in Table 1.

2009 HRA RESULTS

2009 HRA was performed in two steps. In Step 1, HRA was performed using all the 2004 input parameters including the park receptor elevations with HARP Model Version 1.4a. This analysis provided the changes in risk estimates due to the changes in HARP model. The results of this risk analysis are presented in Table 2. A comparison of the risk estimates presented in Tables 1 and 2 indicated that there were no changes in the highest acute hazard index estimated in 2004 (0.74) and 2009 (Step 1). However, the cancer risk changed from 8.0 in a million to 10.8 in a million at the boundary between the HGS and the proposed park (see Figure 2, MEI). This suggests that risks from HGS will keep on increasing as additional toxic air contaminants are included in the HARP model. Cancer risk will also increase as noncarcinogenic toxic air contaminants already included in the HARP model are reclassified as carcinogens.

In the 2004 HRA report, the cancer risk is reported for only the HGS fenceline receptor (boundary between the HGS and the proposed park). However, in Step 1 HRA, health risks were estimated and analyzed for receptors located at the boundary of the proposed park as well as inside the park, in addition to the receptors at the HGS fenceline. Furthermore, it was assumed that the western boundary of the park will be only about 5 meters from the HGS fenceline (same distance as specified in 2004 HRA). The results of this analysis indicated that highest carcinogenic risk will be 9.9 in a million at the 2004 defined park western boundary (at about 5 meters from the HGS fenceline). However, the cancer risk was predicted at 5.7 million at the newly defined western boundary of the park (at about 30 meters from the HGS fenceline).

The results for the non-cancer chronic hazard index analysis indicated that there will be a slight decrease in the chronic hazard index at the 2004 defined park western boundary when analysis was performed using the revised elevation because the revised elevation is slightly lower than the elevation used in 2004 HRA. The maximum chronic hazard index was estimated at about 0.029 at the park boundary. The maximum chronic hazard index at receptors inside the park was estimated at about 0.02.

Cancer health risks and chronic hazard indices estimated at various park receptors are shown in Figures 5 and 6, respectively. A summary of these results are presented in Table 2.

Step 2, 2009 HRA

In Step 2, HRA was performed using all the 2004 source input parameters but with revised elevations for park receptors. Acute and chronic hazard indices, and cancer health risks [70-yr exposure as well as 9-yr exposure (children)] estimated at various park receptors are shown in Figures 7, 8, 9 and 10, respectively. A summary of these results are presented in Table 3.

A comparison of the risk estimates presented in Tables 2 and 3 indicate that the maximum acute hazard index will increase from 0.74 to 0.89. This acute hazard index is about 90 percent of the significance level of 1.0.

There will be no changes in the cancer risks at the HGS fenceline (10.8 in a million), 2004 defined park western boundary (9.9 in a million), as well as at 2009 defined park western boundary (5.7 in a million).

A comparison of the chronic hazard indices presented in Tables 2 and 3 indicated that there will be almost no changes in the maximum chronic hazard indices at the 2004 defined park western boundary (0.029) and at the receptor inside the park (0.022). These chronic hazard indices are well below the significance level of 1.0.

9.0 CONCLUSION

The results of the 2009 HRA indicated that the maximum acute hazard index from HGS toxic air contaminant emissions will be 0.89 which is about 90 percent of the significance level.

The maximum cancer risk at the 2004 defined park western boundary location was estimated at 9.9 per million (assumed 70-year exposure). However, at the 2009 defined western boundary the maximum carcinogenic risk will be 5.7 in a million. The 9-year risks at these two receptors were estimated at 2.0 in a million and 1.2 in a million.

The maximum chronic hazard indices at the park western boundary and at receptors inside the park were estimated at 0.029 and 0.022, respectively. These hazard indices are well below the significance level of 1.0. Thus, no significant impact of TAC emissions from the HGS on the proposed park site is anticipated. However, the emissions from a new source could drive the acute hazard index above the significance threshold of 1.0, therefore limiting the LADWP's ability to expand generating capacity at the Harbor Generating Station.

The results of the HRAs also indicated that model predicted carcinogenic risks from HGS could increase even if there is no actual increase in emissions of toxic air contaminants from HGS. This will be due to the inclusion of additional toxic air contaminants in the future in the HARP model, which occurs when OEHHA annually reviews the TAC list. Model predicted cancer risks from HGS will also increase if the HGS emitted noncarcinogenic toxic air contaminants already included in the HARP model are reclassified as carcinogens.

Table 1
2004 Health Risk Assessment Results

Risk Index	Risk value	Receptor Type	Receptor Elevation, ft	Receptor Coordinates
Cancer Risk	8.0 per million	HGS Fenceline, MEI (70-yr)	9.8	383,096m UTME 3,736,971m UTMN
Cancer Risk	1.5 per million	HGS Fenceline, MEI (9-yr)	9.8	383,096m UTME 3,736,971m UTMN
Chronic Hazard Index	0.03	HGS Fenceline, MEI	9.8	383,096m UTME 3,736,971m UTMN
Acute Hazard Index	0.74	Inside Park Receptor	20	383,200m UTME 3,737,025m UTMN

Table 2
2009 Step 1 Health Risk Assessment Results (Elevations Same as 2004 HRA)

Risk Index	Risk value	Receptor Type	Receptor Elevation, ft	Receptor Coordinates
Cancer Risk	10.8 per million	HGS Fenceline, MEI (70-yr)	9.8	383,096m UTME 3,736,971m UTMN
Cancer Risk	9.9 per million	Park Receptor (western boundary; about 5 meters from HGS eastern boundary) (70-Yr)	20	383,100m UTME 3,736,975m UTMN
Cancer Risk	5.7 per million	Park Receptor (western boundary; about 30 meters from HGS eastern boundary) (70-Yr)	15	383,125m UTME 3,737,000m UTMN
Chronic Hazard Index	0.029	Park Receptor (western boundary; about 5 meters from HGS eastern boundary)	20	383,100m UTME 3,736,975m UTMN
Acute Hazard Index	0.74	Inside Park Receptor	20	383,200m UTME 3,737,025m UTMN

Table 3
2009 Step 2 Health Risk Assessment Results (Updated Elevations)

Risk Index	Risk Value	Receptor Type	Receptor Elevation, ft	Receptor Coordinates
Cancer Risk	9.9 per million	Park Receptor (western boundary; about 5 meters from HGS eastern boundary) (70-Yr)	15	383,100m UTME 3,736,975m UTMN
Cancer Risk	5.7 per million	Park Receptor (western boundary; about 30 meters from HGS eastern boundary) (70-Yr)	15	383,1250m UTME 3,737,000m UTMN
Cancer Risk	2.0 per million	Park Receptor (western boundary; about 5 meters from HGS eastern boundary) (9-Yr)	15	383,100m UTME 3,736,975m UTMN
Cancer Risk	1.2 per million	Park Receptor (western boundary; about 30 meters from HGS eastern boundary) (9-Yr)	15	383,1250m UTME 3,737,000m UTMN
Chronic Hazard Index	0.029	Park Receptor (western boundary; about 5 meters from HGS eastern boundary)	15	383,100m UTME 3,736,975m UTMN
Chronic Hazard Index	0.022	Inside Park Receptor	15	-
Acute Hazard Index	0.89	Inside Park Receptor	24	383,200m UTME 3,737,025m UTMN

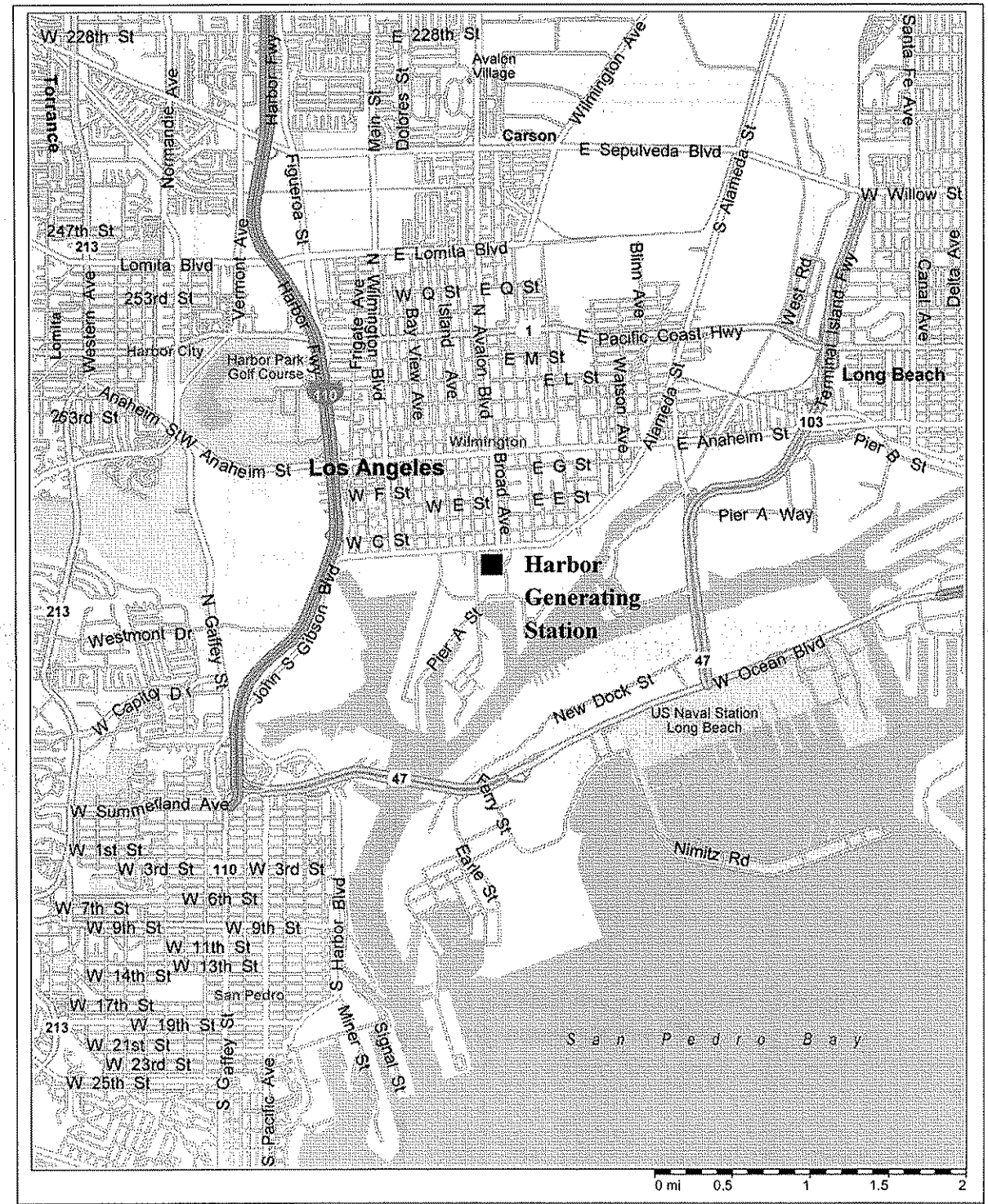

Figure 1 – Location of the Harbor Generating Station

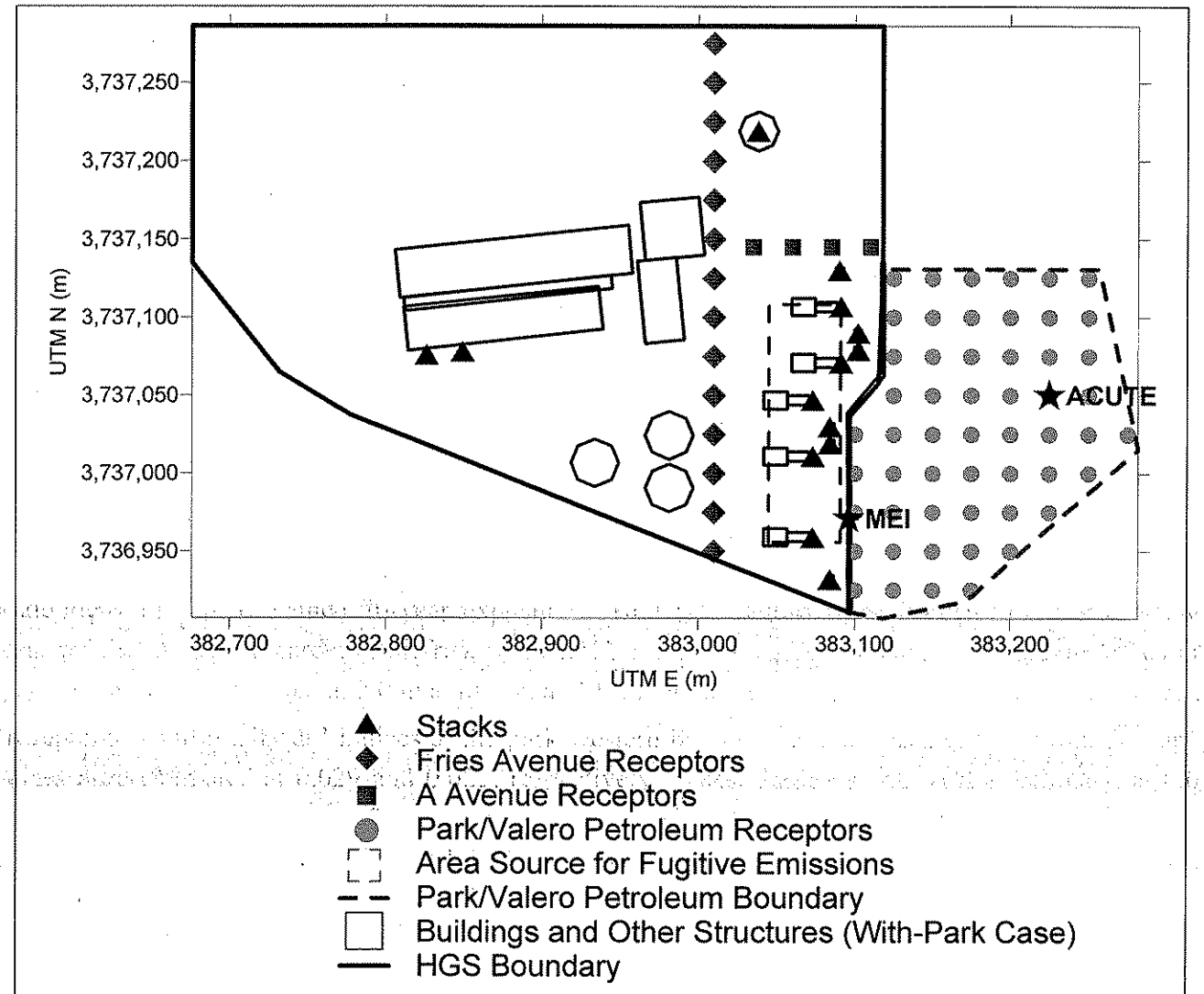

Figure 2 – HGS Source and Building Locations, Locations of Nearby Receptors, MEI and Maximum Acute Hazard Index Receptors

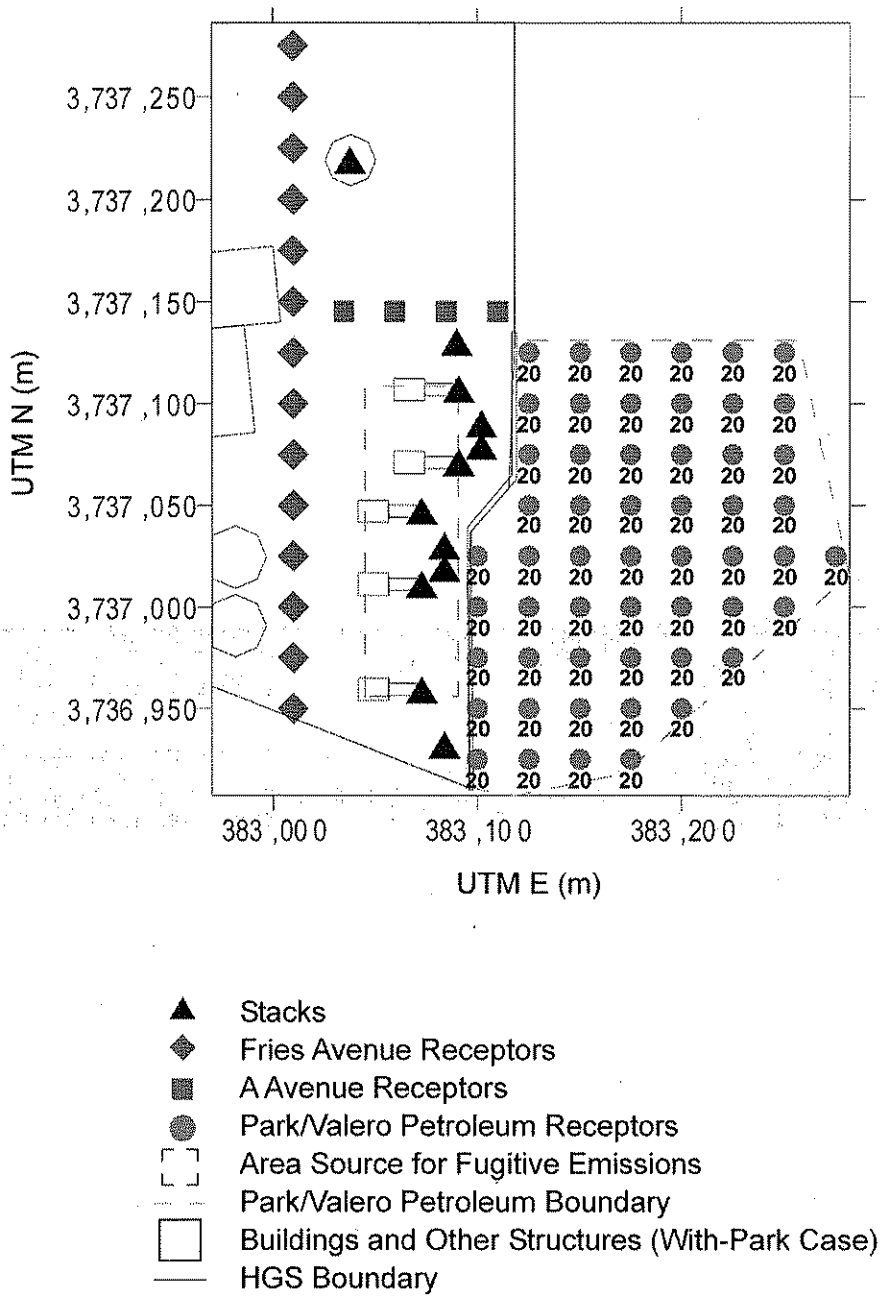

Figure 3 - Elevation of Park Receptors used for 2004 HRA and 2009 HRA, Step 1

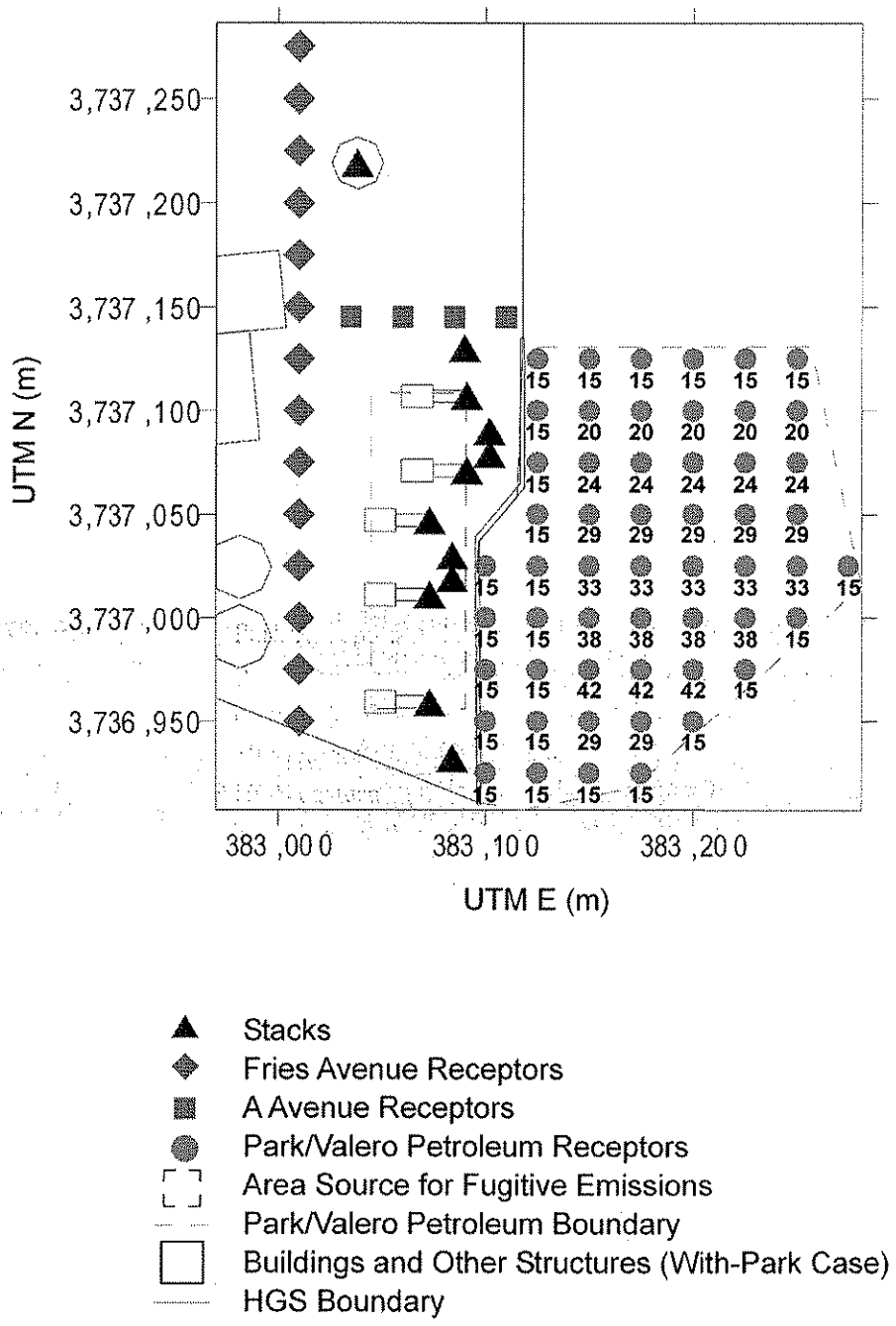

Figure 4 – Elevation of Park Receptors used for 2009 HRA, Step 2

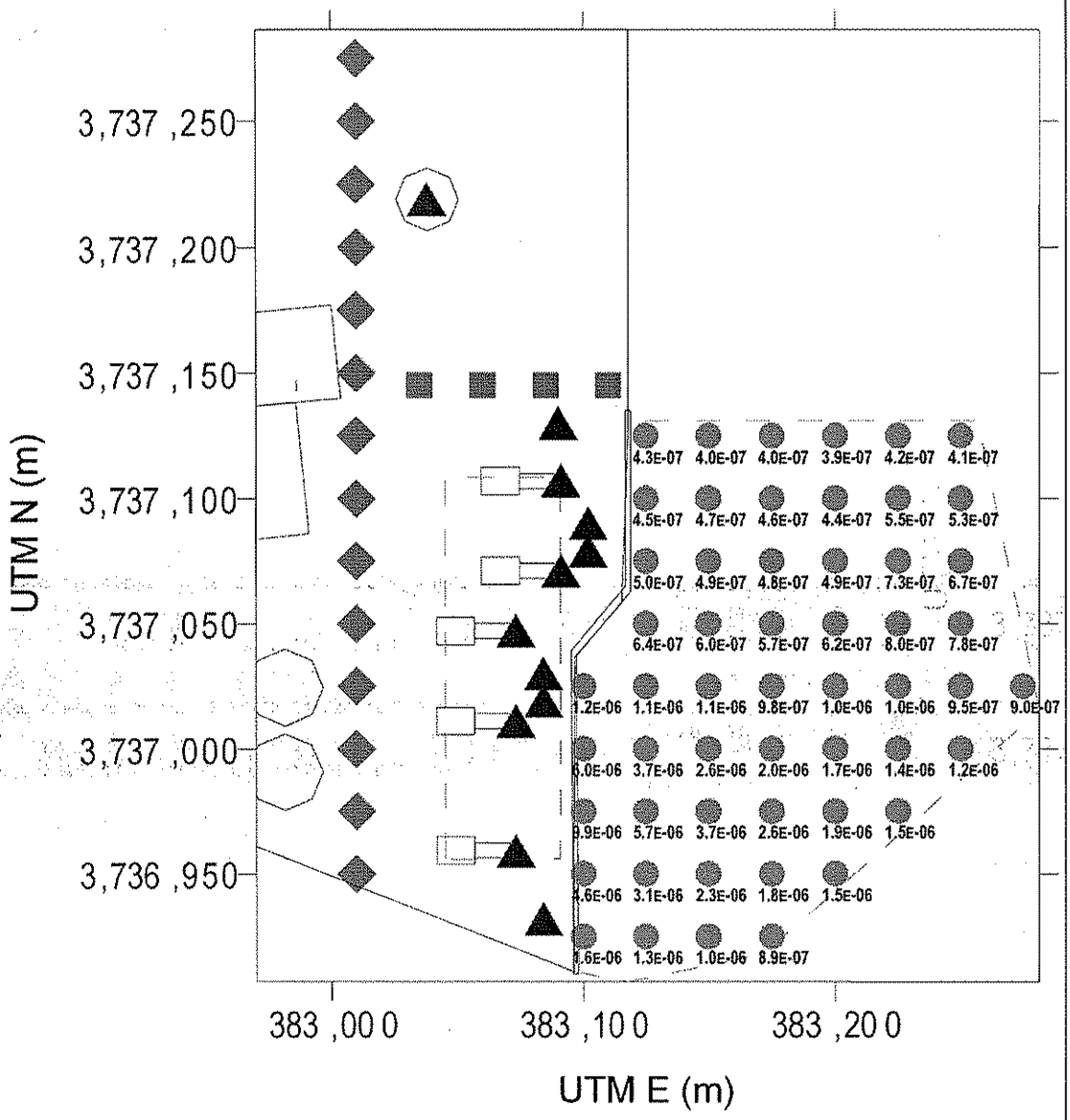

Figure 5 – Carcinogenic risk (70-yr risk) for the Scenario 2004 with New Model (Old Elevation), Step 1

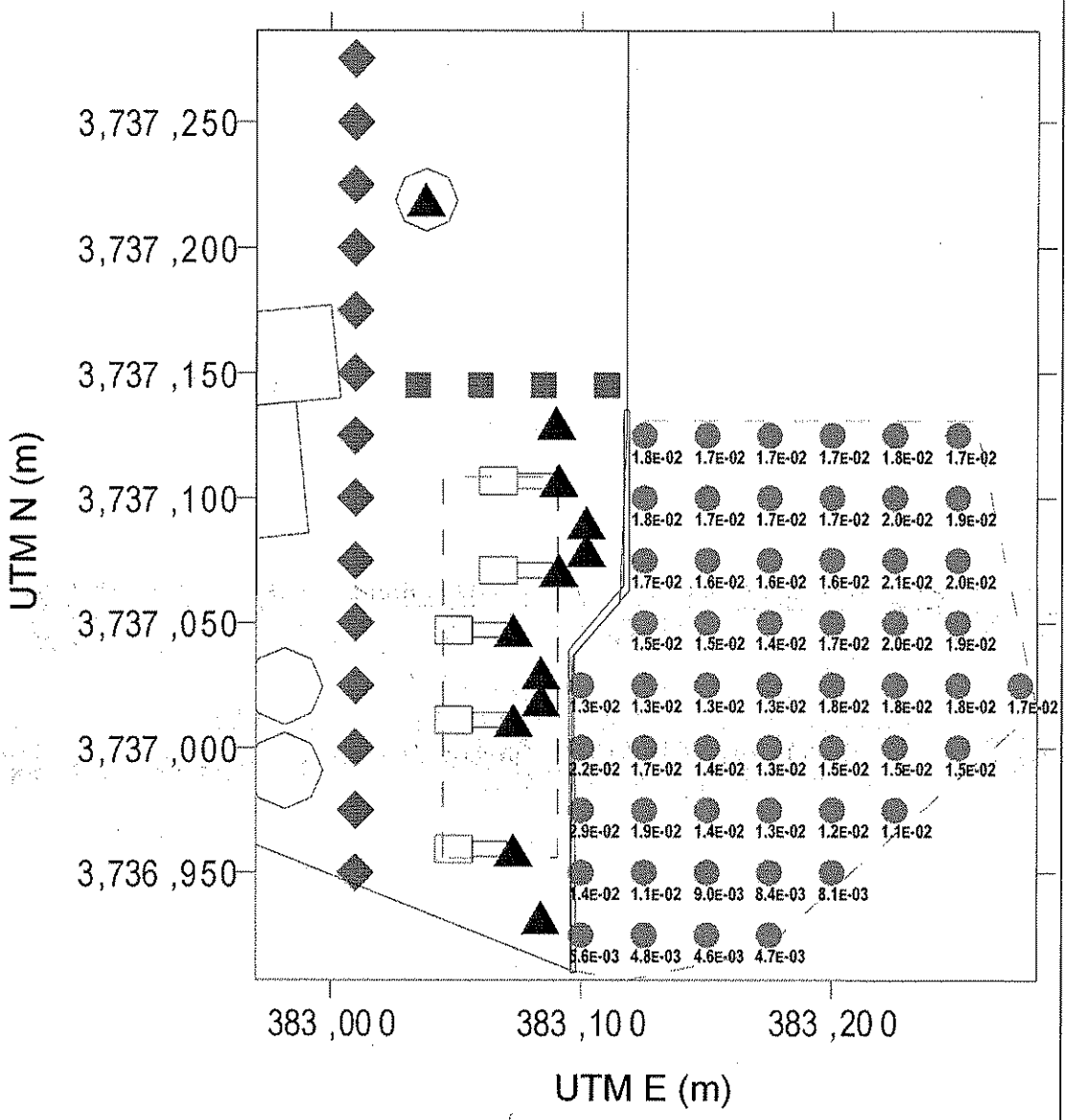

Figure 6 – Chronic Hazard Index for the Scenario 2004 with New Model (Old Elevation), Step 1

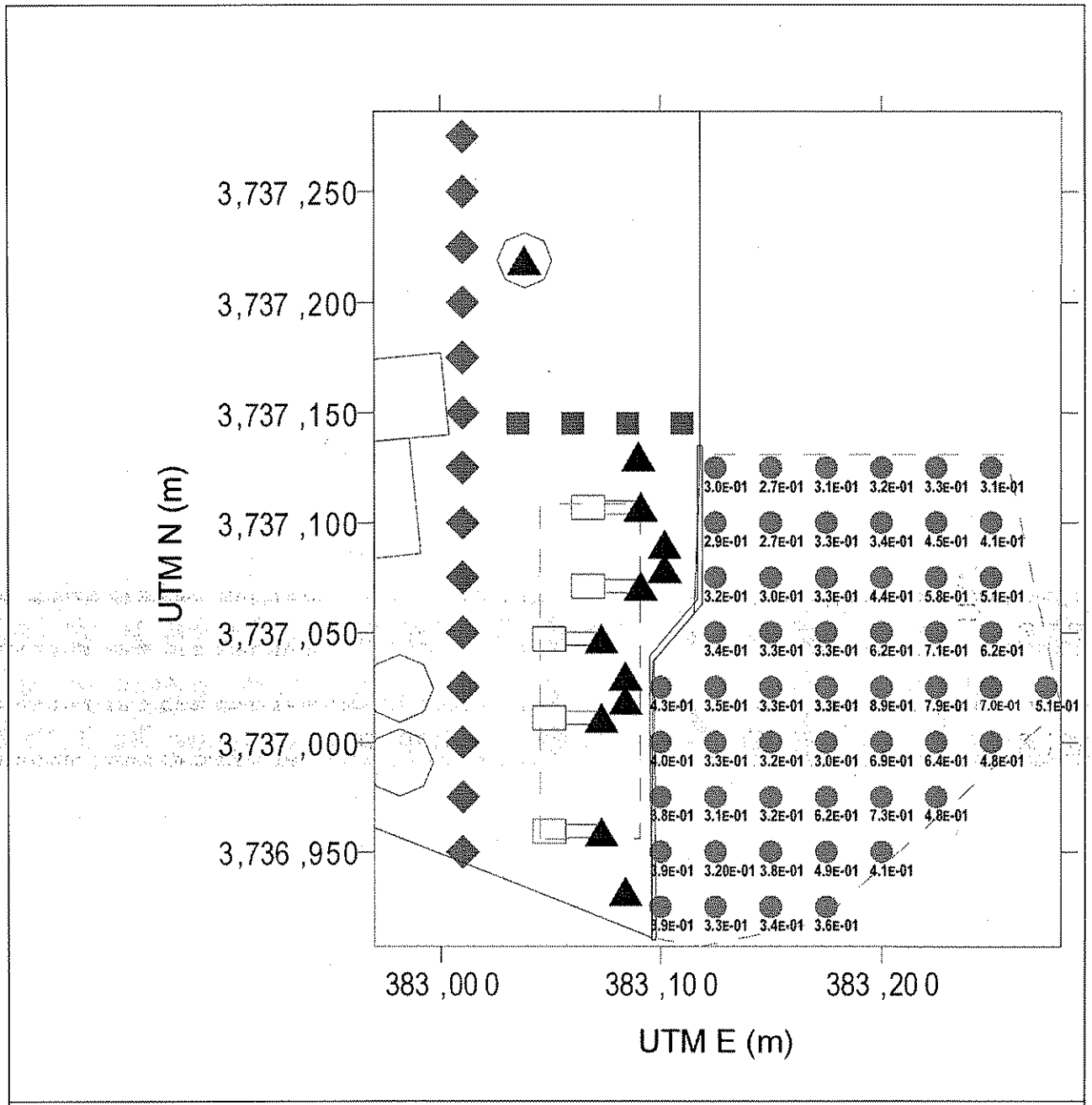

Figure 7 – Acute Hazard Index for the Scenario 2004 with New Model (New Elevation), Step 2

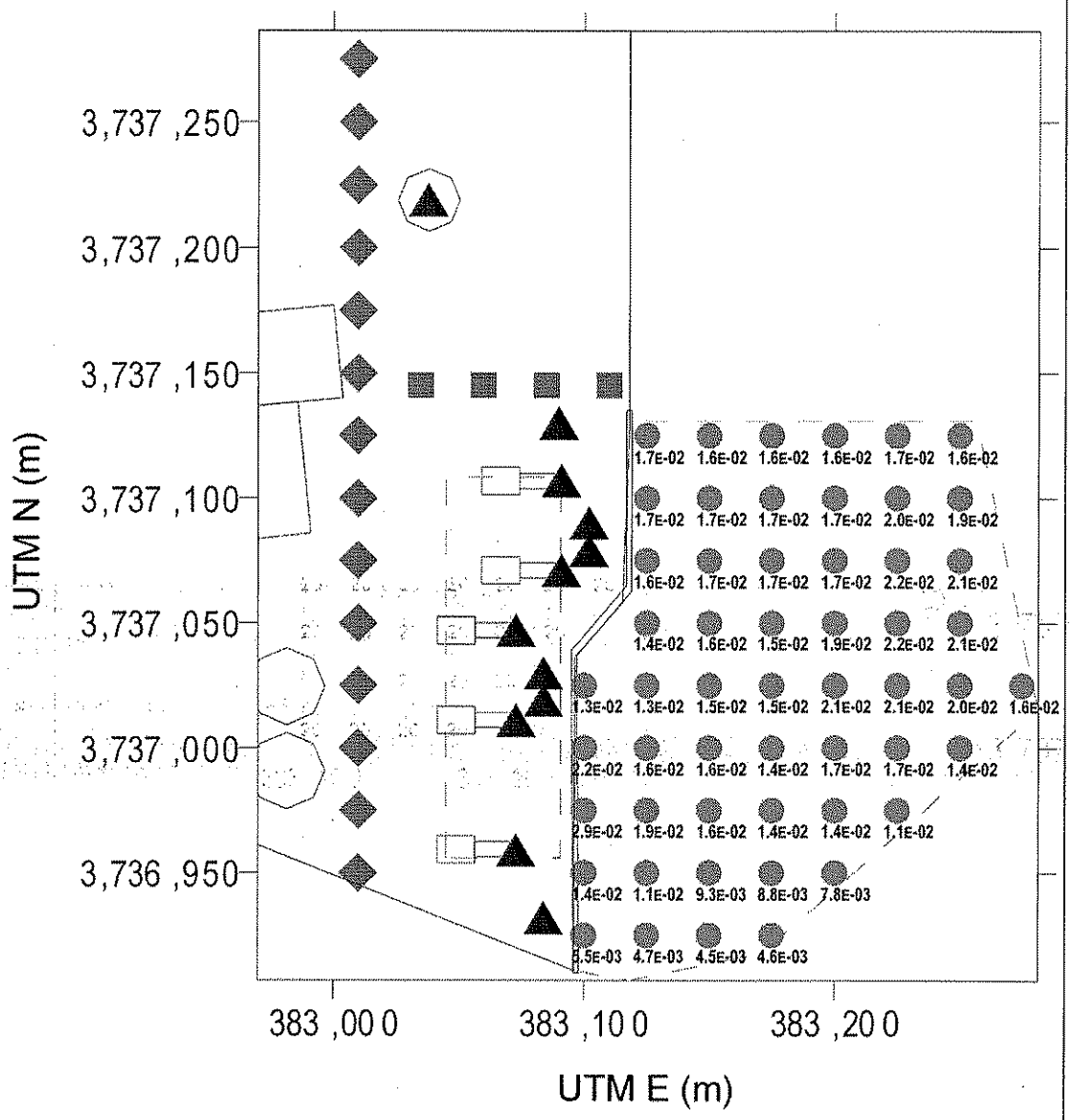

Figure 8 – Chronic Hazard Index for the Scenario 2004 with New Model, (New Elevation), Step 2

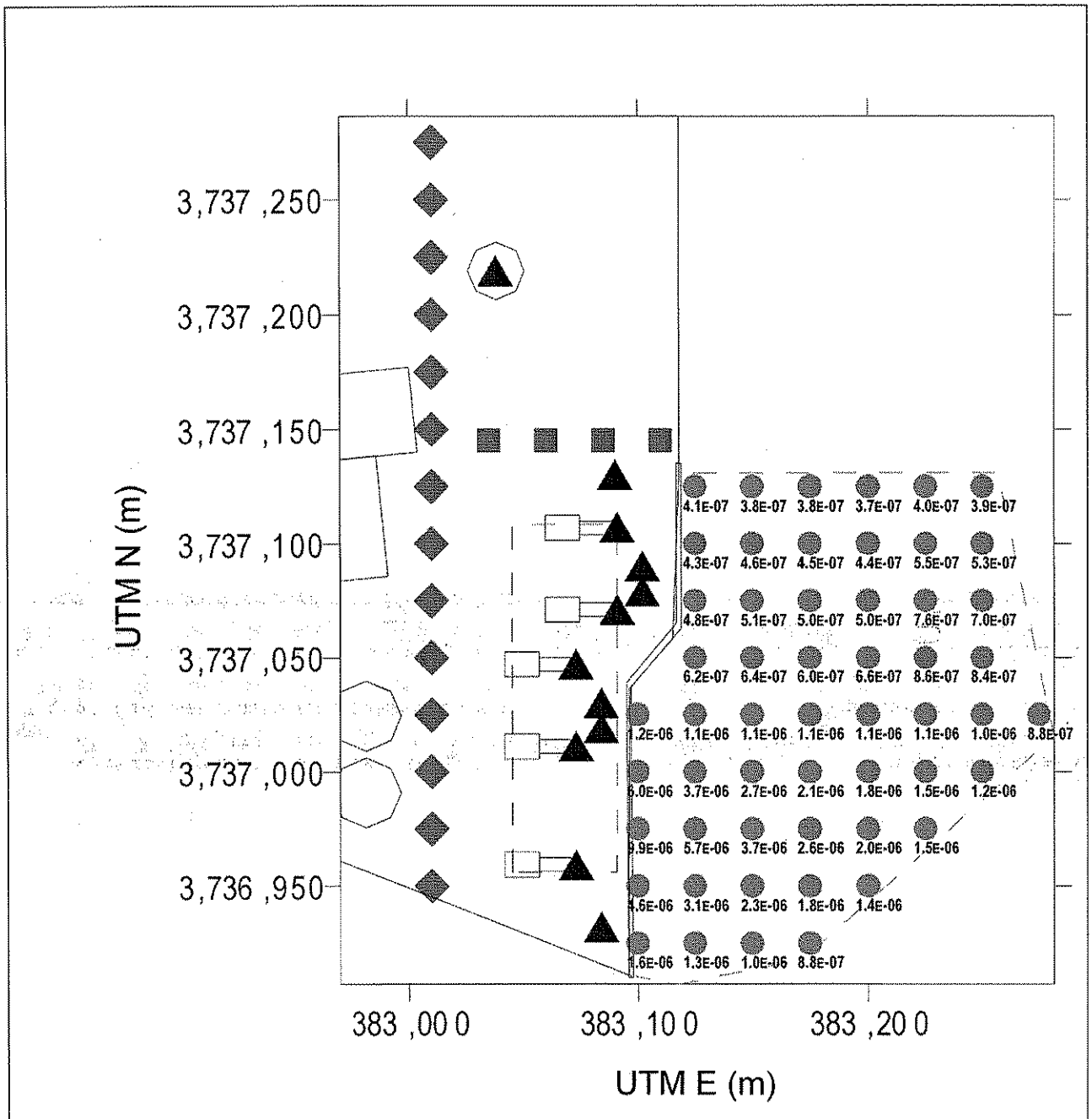

Figure 9 – Carcinogenic risk (70-yr risk) for the Scenario 2004 with New Model (New Elevation), Step 2

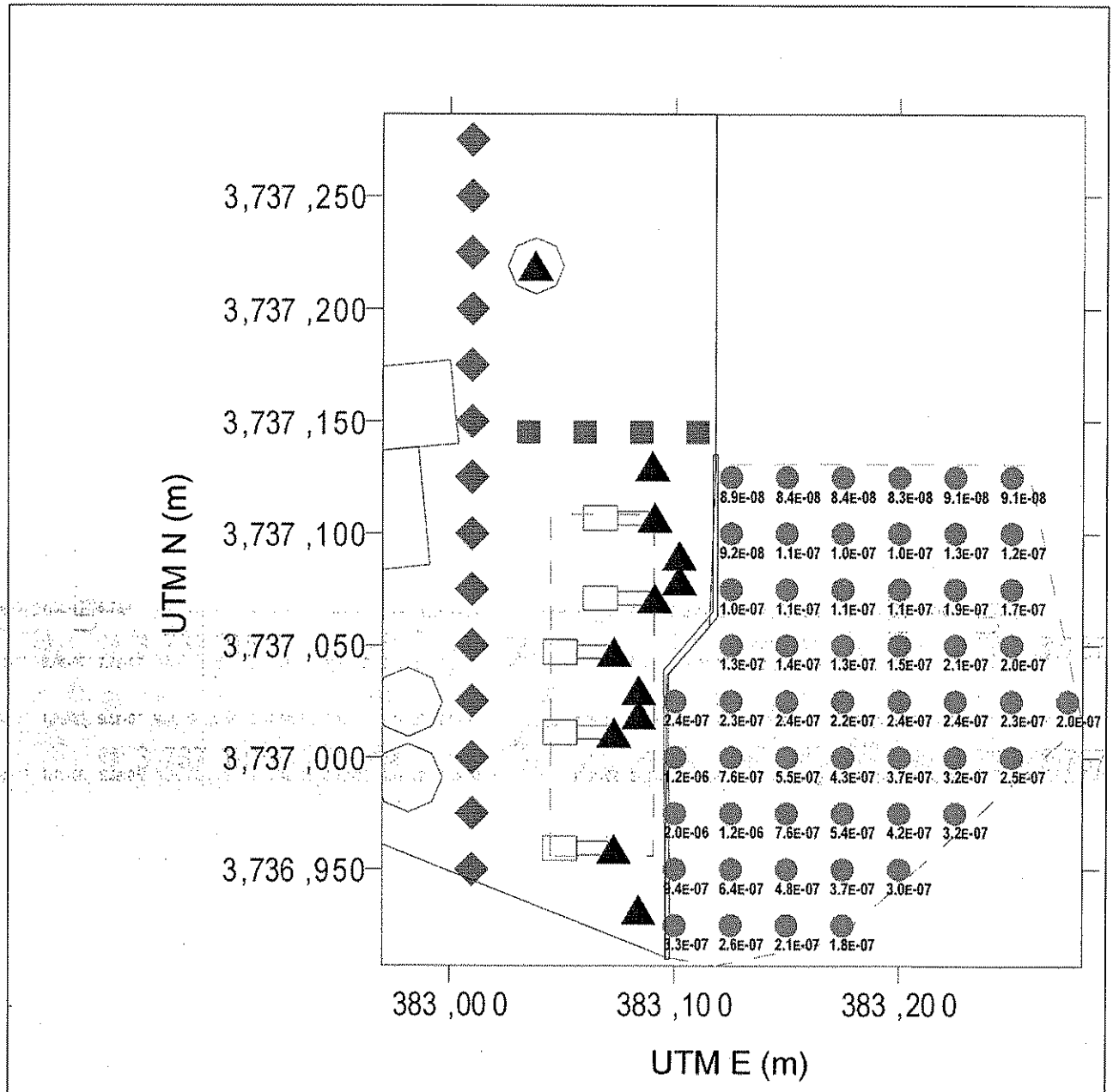

Figure 10 – Carcinogenic risk (9-yr risk) for the Scenario 2004 with New Model (New Elevation), Step 2

APPENDIX A

DRAFT HARBOR GENEARTING STATION HEALTH RISK ASSESSMENT

(Document No. 10081-003-001, ENSR, August 31, 2004)

Assignment

Environmental Services - Hazardous Substances

Priority B

A = Due < 1 month
B = Due < 3 months
C = Ongoing > 3 months
D = Inactive

Task Order No. 310 - McCullough Switching Station, One Tra

Due Date 12/1/2008

Request Date 7/25/2008

Assigned To Dave Geere

Name Asghar Mohajer

Facility McCullough Switching Station

Business Unit or Organization Bulk Power

Type of Request Waste Disposal

Phone # (213) 367-2394

Job: Task Order No. 310 - McCullough Switching Station, One Transformer and Two Reactors for Dismantling and Metals Recovery

Action Taken: Received three bids from Clean Harbors, Veolia, and Ocean Blue. Clean Harbors provided a total credit for $131,000. The work was awarded to Clean Harbors and started on 9/22/08. Work is completed. Received credit check from Clean Harbors.

Final Resolution Date

Time Spent 0 Hour(s)

WO Number

bc: James H. Caldwell Jr.
Mark J. Sedlacek
Dat Quach
Leila Barker
FileNET-ES0050

January 29, 2009

Dr. Ralph G. Appy
Director of Environmental Management
Los Angeles Harbor Department
425 South Palos Verdes Street
San Pedro, CA 90731

Dear Dr. Appy:

Subject: Wilmington Waterfront Development Project (Project)
Comments on Draft Environmental Impact Report (DEIR) from the
Los Angeles Department of Water and Power (LADWP)

Thank you for the opportunity to comment on the Project. Chapter 3 of the DEIR, Section 3.2.4.3.2 "Operation Impacts", Subsection AQ-7, states that "...LADWP elected to perform a subsequent Health Risk Analysis to account for various design features of the proposed Project that were not well defined in the 2004 study. Results are expected from LADWP in late 2008 or early 2009."

The updated Health Risk Assessment is attached. It quantifies the potential health risks to human receptors in the proposed park from emissions sources operating in the adjacent Harbor Generating Station. Please use it to update the health risk indices in Subsection AQ-7.

If you have any questions, please call me at (213) 367-0403.

Sincerely,

Mark J Sedlacek
Director of Environmental Services

BMM:sc BMM
Enclosure
c/enc: Jan Green-Rebstock, Los Angeles Harbor Department
Bruce M. Moore, LADWP