ARDENT
ENVIRONMENTAL
GROUP, INC.

SOIL GAS SURVEY, SOIL SAMPLING, AND LIMITED HUMAN HEALTH RISK ASSESSMENT 14624 EAST NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA

PREPARED FOR:
Industry Urban-Development Agency
15625 East Stafford Street, Suite 200
Industry, California 91744

PREPARED BY:
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Corona, California 92882

January 10, 2011
Project No. 100260002

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Mr. Kevin Radecki
Industry Urban-Development Agency
15625 East Stafford Street, Suite 200
Industry, California 91744

Subject: Soil Gas Survey, Soil Sampling, and
Limited Human Health Risk Assessment
14624 East Nelson Avenue
City of Industry, California

Dear Mr. Radecki:

In accordance with our proposal and change order dated November 29, 2010 and December 21, 2010, Ardent Environmental Group, Inc. has completed a soil gas survey, soil sampling, and limited human health risk assessment for the subject property (site). The following report documents our findings and provides opinions, conclusions, and recommendations regarding the environmental status of the site. We appreciate the opportunity to be of service to you on this project.

Sincerely,
Ardent Environmental Group, Inc.

Connie Lizarraga
Staff Scientist

Paul A. Roberts, P.G., R.E.A. I/II
Principal Geologist

CCL/PAR/paw

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EXECUTIVE SUMMARY

Ardent Environmental Group, Inc. (Ardent) was retained by Richards Watson & Gershon, on behalf of their client, Industry Urban-Development Agency (Agency) to complete a soil gas survey, soil sampling, and a limited human health risk assessment (HHRA) at the property located at 14624 Nelson Avenue in the City of Industry, California (site). The subsurface investigation was recommended by Ardent Environmental Group, Inc. (Ardent) following completion of a draft Phase I Environmental Site Assessment (ESA) and Document Review dated November 29, 2010 for the site. The Agency is considering purchasing the property, demolishing the buildings, and preparing the site for redevelopment. Proposed development plans have not been finalized.

Based on the preliminary findings and as outlined in the draft Phase I ESA, the site was used for agricultural purposes from at least 1928 through the early-1980s. In 1982, the site was developed as a lumber yard (Scott-Caudill Lumber Company, aka Scott-Caudill Lumber & Plywood) and has continued to operate as a lumber yard since that time. The lumber yard has been used to store finished wood; very limited cutting and no wood planing or treating operations have been completed at the site. Some truck maintenance and fueling activities were historically conducted at the site. Historically, a fuel underground storage tank (UST) and area of oil-impacted soil were removed under the direction and oversight of regulatory agencies. As part of the Phase I ESA, Ardent reviewed the data associated with these possible issues and concurred with the regulatory agencies that no further work was needed.

Environmental concerns presented by Ardent in the draft Phase I ESA included surficial staining noted in the vicinity of a small hazardous materials storage bin and the possibility of petroleum hydrocarbon and polynuclear aromatics (PNAs)-impacted soil associated with the on-site railroad spurs. Based on these findings, Ardent recommended completing shallow soil sampling in the vicinity of these features.

In addition, the site is located within the San Gabriel Valley Groundwater Basin within the Puente Valley Operable Unit. Portions of the San Gabriel Valley Groundwater Basin have been listed on the National Priority List (NPL), or Superfund Site, due to the presences of volatile organic compounds (VOCs) in groundwater, namely trichloroethene (TCE) and tetrachloroethylene

(PCE). Groundwater has been reported at depths of approximately 58 feet below the ground surface (bgs). Current American Society for Testing and Materials (ASTM) standards require the evaluation of possible vapor intrusion into existing and planned buildings from known contaminants beneath the site. Based on this information, Ardent recommended completing a soil gas survey throughout the site to assess whether a health risk was present due to possible vapor intrusion. The following presents the results of the recommended soil gas survey, soil sampling and limited HHRA.

Soil Sampling - The recommended soil sampling investigations were performed. Laboratory results indicated no detectable to low concentrations of chemical constituents in soil samples analyzed, and therefore, there is a low likelihood that elevated concentrations of certain chemicals are present in the vicinity of the features investigated. Based on these results, the surficial staining associated with the small hazardous materials storage bin and the on-site railroad spurs would no longer be considered an environmental concern to the site. Ardent recommends no additional investigations in the vicinity of these features at this time.

Soil Gas Survey - The site was divided into a grid of approximately 8 equal sized lots. The soil gas survey included the placement of one soil gas point in each lot. Each point was installed at a depth of approximately 5 feet bgs. Although not considered an environmental concern, one of the points was placed in the vicinity of the former gasoline UST and one was placed in the vicinity of the previously excavated oil-impacted soil. One sample from each point was collected and analyzed for VOCs. The samples collected in the vicinity of the former UST and former oil-impacted soil were also analyzed for total petroleum hydrocarbons (TPH). With the exception of PCE, laboratory results indicated no detectable concentrations of TPH and no detectable to low concentrations of VOCs (namely benzene, ethylbenzene, and xylenes, well below or at the Cal-EPA guidelines referred to as the California Human Health Screening Level [CHHSL] values). Laboratory results of the soil gas survey indicated relatively consistent concentrations of PCE ranging from no detectable concentrations to 0.87 micrograms per liter (ug/l) throughout the site, with one exception. Laboratory results of sample SV-4 indicated concentrations of PCE at 3.5 ug/l. Excluding the results of SV-4, the concentrations of PCE in the remaining samples were

similar to those detected at an adjacent site (14700 Nelson Avenue) during a similar soil gas survey completed by Ardent for the Agency. Because of the more elevated concentration of PCE detected in SV-4, Ardent recommended completing an additional investigation in the vicinity of SV-4 to further assess whether this result was an anomaly or true value, and if possible, to further assess a potential source area of the elevated PCE concentration.

The further investigation included advancing five additional soil gas points adjacent to and within the vicinity of SV-4. PCE concentrations were generally similar (at 1.3 and 1.7 ug/l) in two sample points advanced next to SV-4; indicating that the initial results were not an anomaly. PCE within a sample point located further west of SV-4 indicated relatively similar concentrations (1.4 ug/l), while PCE in samples located further east and south of SV-4 indicated lower concentrations (0.84 and 0.88 ug/l, respectively, although still slightly above the CHHSL value). Based on the relatively low concentrations of PCE (with regards to environmental risk) and historical land use, there is a low likelihood, in our opinion, that PCE-impacted soil is present at the site. The source of the impacted-vapor is most likely due to off-site sources, such as off gassing from the regional impacted groundwater and/or a release from a close-by industrial facility. Based on the concentrations detected and historical land uses, there is a low likelihood that elevated concentrations of PCE are present in the soil at the site, and therefore, there is a low likelihood of an environmental concern. However, elevated concentrations of PCE-impacted soil vapor have been detected in the southwest portion of the site, and therefore, a possible health risk is present due to vapor intrusion into future on-site buildings. Ardent does not recommend remediation of the elevated soil vapor (e.g. through soil vapor extraction or excavation) because the impacted media is in a vapor form and the source is likely off-site. Because soil vapor continues to migrate until reaching equilibrium, soil vapor remediation would likely be temporary. Based on these results, Ardent recommends no additional investigations or remediation at this time.

It is our understanding that the Agency is considering combining the subject site with the property southeast of the site (14700 Nelson Avenue). As stated before, Ardent completed a soil gas survey and limited HHRA for the Agency on the adjacent land. Based on the results, no engineering controls were necessary for future buildings. Redevelopment of these properties will

most likely include constructing a commercial building on the off-site property and using the subject site as a parking lot or truck loading dock area. If structures are not proposed for the subject site, no human health risk is present. However, if buildings are proposed for the site additional evaluations might be necessary. Based on the information obtained herein and as shown on Figure 4, the area in and around sample point SV-4 is referred to as the "restricted land use area."

Because of the elevated vapor concentrations, there are two options available if future buildings are planned for the site. Additional work recommended below will depend on the proposed construction details and land uses with respect to the location of the restricted land use area. The following presents the two options available if future site construction is proposed.

1. **Proposed Building to be Located Away from the Restricted Land Use Area** – If a proposed building is planned to be constructed away from the southwest corner of the site, no engineering controls would likely be necessary. The human health risk assessment model uses sample results from soil gas points located beneath or within close proximity (within 100 feet) to the proposed building footprint. Therefore to enable construction without engineering controls, the building footprint would need to be located further than 100 feet from the elevated soil gas sample locations and outside the restricted land use area. Prior to construction, a more detailed HHRA should be prepared using site specific building details and geologic conditions to verify this assumption.

2. **Proposed Building to be Located Within the Restricted Land Use Area** - If the proposed plans include construction within or in close proximity to the restricted land use area, the HHRA model can be re-run using site specific building and geologic details. Depending on the proposed construction and land use, the results may or may not warrant engineering controls, such as the installation of a vapor barrier.

1 INTRODUCTION

Ardent Environmental Group, Inc. (Ardent) was retained by Richards Watson & Gershon, on behalf of their client, Industry Urban-Development Agency (Agency) to complete a soil gas survey, soil sampling, and a limited human health risk assessment (HHRA) at the property located at 14624 Nelson Avenue in the City of Industry, California (site; Figure 1). Work was conducted in accordance with the proposal and change order dated November 29, 2010 and December 21, 2010 between Richards Watson & Gershon and Ardent. The subsurface investigation was recommended by Ardent Environmental Group, Inc. (Ardent) following completion of a draft Phase I Environmental Site Assessment (ESA) and Document Review dated November 29, 2010 for the site. The Agency is considering purchasing the property, demolishing the buildings, and preparing the site for redevelopment. Proposed development plans have not been finalized. Following acquisition, it is our understanding that the Agency is considering consolidating the site with an adjacent property currently owned by the Agency (14600 Nelson Avenue, Figure 2). Prior to the purchase of this adjacent property, Ardent completed environmental studies including the preparation of a Phase I ESA, soil sampling, soil gas survey, and a limited HHRA. Based on these results, no environmental concerns were noted and future buildings would not need engineering controls for possible vapor intrusion.

2 BACKGROUND

Based on the preliminary findings and as outlined in the draft Phase I ESA, the site was used for agricultural purposes from at least 1928 through the early-1980s. In 1982, the site was developed as a lumber yard (Scott-Caudill Lumber Company, aka Scott-Caudill Lumber & Plywood) and has continued to operate as a lumber yard since that time. The lumber yard has been used to store finished wood; very limited cutting and no wood planing or treating operations have been completed at the site. Some truck maintenance and fueling activities were historically conducted at the site. Historically, a fuel underground storage tank (UST) and area of oil-impacted soil were removed under the direction and oversight of regulatory agencies. As part of the Phase I ESA, Ardent reviewed the data associated with these possible issues and concurred with the regulatory agencies that no further work was needed.

Environmental concerns presented by Ardent in the draft Phase I ESA included surficial staining noted in the vicinity of a small hazardous materials storage bin and the possibility of petroleum hydrocarbon and polynuclear aromatics (PNAs)-impacted soil associated with the on-site railroad spurs. Based on these findings, Ardent recommended completing shallow soil sampling in the vicinity of these features.

In addition, the site is located within the San Gabriel Valley Groundwater Basin within the Puente Valley Operable Unit (Figure 3). Portions of the San Gabriel Valley Groundwater Basin have been listed on the National Priority List (NPL), or Superfund Site, due to the presences of volatile organic compounds (VOCs) in groundwater, namely trichloroethene (TCE) and tetrachloroethylene (PCE). Groundwater has been reported at depths of approximately 58 feet below the ground surface (bgs). Current American Society for Testing and Materials (ASTM) standards require the evaluation of possible vapor intrusion into existing and planned buildings from known contaminants beneath the site. Based on this information, Ardent recommended completing a soil gas survey throughout the site to assess whether a health risk was present due to possible vapor intrusion.

3 OBJECTIVES

The objectives of the work completed were to assess whether a health risk was present due to possible vapor intrusion into future site buildings and whether elevated concentrations of petroleum hydrocarbons and PNAs were present in soil beneath the railroad spurs and/or in the vicinity of the hazardous materials storage bin. The objective of the further investigation was to assess whether concentrations of PCE in sample SV-4 was an anomaly, or to further assess a possible source area of the elevated PCE concentration.

4 SOIL GAS SURVEY AND LIMITED RISK ASSESSMENT

The initial soil gas survey was completed on December 14, 2010 and consisted of advancing 8 soil gas probes (designated SV-1 through SV-8) throughout the site to a depth of approximately 5 feet bgs (Figure 4). Each sample point was placed within a soil boring drilled to a depth of approximately 5 feet bgs using direct push equipment. NyloFlow tubing was installed within each

soil boring and a sand pack was placed around each sample point. The remaining soil boring was filled with hydrated granular bentonite. A vapor sample was collected at each point. As discussed below, elevated concentrations of PCE were detected in one sample (SV-4). To further assess whether this result was an anomaly or not, and/or to further assess a possible source, Ardent completed an additional soil gas survey in the vicinity of SV-4. This survey included the advancement of five additional points (designated SV-9 through SV-13) to depths of approximately 5 feet bgs (Figure 5). Following completion of both investigations, the data collected were compared to the Cal-EPA California Human Health Screening Level (CHHSL) values and further evaluated using EPA approved models as part of a limited HHRA. The soil gas survey was completed in general accordance with Regional Water Quality Control Board, Los Angeles Region (RWQCB) and Department of Toxic Substances Control (DTSC) guidelines. Laboratory reports are provided in Appendix A.

4.1 Initial Soil Gas Sampling

The initial soil gas survey was completed to further assess possible VOC vapor concentrations associated with the regional groundwater plume. To accomplish this task, the site was divided into a grid of approximately 8 equal sized lots measuring approximately 180 feet in the east-west direction and approximately 110 feet in the north-south direction. The soil gas survey included the placement of one soil gas point in each lot (Figure 4). Each point was installed at a depth of approximately 5 feet bgs. Although not considered an environmental concern, one of the points (SV-1) was placed in the vicinity of the former gasoline UST and one (SV-5) was placed in the vicinity of the previously excavated oil-impacted soil. Other points were generally placed in the center of each lot, although some were moved based on site access. One sample from each point was collected and analyzed for VOCs. The samples collected in the vicinity of the former UST and former oil-impacted soil were also analyzed for total petroleum hydrocarbons (TPH). With the exception of PCE, laboratory results indicated no detectable concentrations of TPH and no detectable to low concentrations of VOCs (namely benzene, ethylbenzene, and xylenes, well below or at the CHHSL values). Laboratory results of the initial soil gas survey indicated relatively consistent concentrations of

PCE ranging from no detectable concentrations to 0.87 micrograms per liter (ug/l) throughout the site, with one exception. Laboratory results of sample SV-4 indicated concentrations of PCE at 3.5 ug/l. Excluding the results of SV-4, the concentrations of PCE in the remaining samples were similar to those detected at an adjacent site (14700 Nelson Avenue) during a similar soil gas survey completed by Ardent for the Agency.

Because of the more elevated concentration of PCE detected in SV-4, Ardent recommended completing an additional investigation in the vicinity of SV-4 to further assess whether this result was an anomaly or true value, and if possible, to further assess a potential source area of the elevated PCE concentration.

4.2 Additional Soil Gas Sampling

The further investigation included advancing five additional soil gas points adjacent to and within the vicinity of SV-4 (designated SV-9 through SV-13 on Figure 5). PCE concentrations were generally similar (at 1.3 and 1.7 ug/l) in two sample points advanced next to SV-4; indicating that the initial results were not an anomaly. PCE within a sample point located further west of SV-4 indicated relatively similar concentrations (1.4 ug/l), while PCE in samples located further east and south of SV-4 indicated lower concentrations (0.84 and 0.88 ug/l, respectively, although still slightly above the CHHSL value).

Overall, the concentrations of PCE detected throughout the site were considered low based on an environmental risk. Soil gas surveys are sometimes used as a screening technique to discover areas of unknown environmental concern; similar to the investigations completed by Ardent in the southwest portion of the site. During these types of investigations, soil gas concentrations indicating possible VOC-impacted soil are typically magnitudes higher in the areas of VOC-impacted soil. For example, during the well investigation program (WIP) investigations completed in the late-1980s and early-1990 to assess possible releases from suspected facilities, the RWQCB would require additional soil assessments when concentrations of soil gas VOCs exceeded 100 ug/l. Based on the relatively low concentrations of PCE (with regards to environmental risk), the fact that there has been no reported use of

PCE at the site, and due to the historical land use as a lumber yard, there is a low likelihood, in our opinion, that PCE-impacted soil is present at the site due to current or historical land uses. The source of the impacted-vapor is most likely due to off-site sources, such as off-gassing from the regional impacted groundwater and/or a release from a close-by industrial facility. Due to the low concentrations of PCE in soil gas, there is a low likelihood, in our opinion, that elevated concentrations of PCE are present in the soil at the site due to an off-site source, and therefore, there is a low likelihood of an environmental concern. However, some of the PCE concentrations have exceeded the CHHSL values for possible vapor intrusion risk. Based on these concentrations, Ardent completed a limited HHRA using individual chemicals of concern and a cumulative risk from all chemicals detected at the site.

4.3 Limited HHRA

Following completion of a soil gas survey, Ardent compares the results to CHHSL values. If one constituent is detected and the concentrations are at or below the CHHSL values, no further work or engineering controls are necessary. However, if one or more constituents are detected and are below or above the CHHSL values, then a screening level HHRA should be conducted.

The screening level HHRA (aka limited HHRA) is completed for each individual constituent to obtain the cancer risk and non-cancer hazard index (HI). These data are then used to assess the cumulative risk of all constituents detected. If the results show the cumulative cancer risk being less than 1 in 1 million and the HI less than 1, no further work or engineering controls are necessary. If the cumulative cancer risk is greater than 1 in 1 million or the HI is greater than 1, additional work is necessary. As per the DTSC guidelines, the initial screening HHRA is based on a non-restricted land use (residential scenario and very conservative), using the soil gas concentrations detected, but also using default values for the remaining variables.

If the initial screening HHRA does not "pass," the DTSC model can be altered by inputting specific construction and site condition details. This would be completed for a restricted land use scenario (commercial use and less conservative). To complete the restricted land use scenario, specific building and geologic details must be obtained and used in the model. This type of HHRA is typically completed under the direction and oversight of a lead regulatory agency (e.g. typically the DTSC). If the results show the cumulative cancer risk less than 1 in 1 million and the HI less than 1, then no further work or engineering controls are needed. If the results show the cumulative cancer risk greater than 1 in 1 million and less than 1 in 10,000, it might be concluded that no further work or engineering controls are necessary based on site use, however, the ultimate decision is up to the regulatory agency. At this point, the regulatory agency might warrant additional investigations (i.e. obtain more data), remediation, and/or indicate that engineering controls are necessary, or might concur that no further work is necessary. If the cumulative cancer risk is greater than 1 in 10,000, remediation and engineering controls are typically warranted.

The limited HHRA completed during this investigation was consistent with the DTSC guidelines on vapor intrusion. The HHRA was performed using the EPA-developed, DTSC-modified Johnson & Ettinger soil gas model. The model calculates the lifetime health risk to humans exposed to site chemicals as they volatilize from the subsurface into the indoor air of structures. The excess lifetime cancer risk is the likelihood of the number of people out of an equally exposed population that would contract cancer if exposed continuously to a specific concentration of a chemical over an assumed lifetime of 70 years.

The chemicals detected during the soil gas survey (referred to herein as the chemicals of potential concern [COPC]) included benzene, ethylbenzene, xylenes, and PCE. Of these, benzene, ethylbenzene, and PCE are potential human carcinogens (cancer-causing substances). Xylenes are also toxic (causing adverse health effects), but are not considered carcinogens.

As per the DTSC guidelines, the model was run with the input chemical concentration as the only variable, with all other variables set to default, which is the normal setting for an initial,

very conservative, screening level evaluation. The risk calculations were initially performed to obtain the cancer risk and the non-cancer HI for each individual chemical. These data were used to calculate the cumulative risk of all chemicals detected at the site based on an unrestricted land use (DTSC standards for screening level HHRAs).

Benzene was only detected in one of the 13 sample locations (SV-1, near a former gasoline UST) at a concentration of 0.12 µg/l. PCE was detected in 11 of the 13 locations sampled at concentrations ranging from 0.22 µg/l to 3.5 µg/l. PCE was not detected in SV-1 or SV-7 above the laboratory reporting limit of 0.1 µg/l. Ethylbenzene and xylenes were detected at concentrations of 1.4 and 3.88 µg/l, respectively, at location SV-7 (the remaining sample points indicated no detectable concentrations of these chemicals). For statistical analyses, non-detect values were substituted with half the reporting limit. The following presents the risk calculations for each individual chemical that was detected and for the cumulative risk of all chemicals detected at the site. Calculations are included as Appendix B.

PCE

Results of statistical analysis of the PCE concentration data set suggest that the maximum concentration of 3.5 µg/l is a potential outlier. This observation is further supported by the fact that the PCE concentration in a co-located sample (SV-9) was reported at 1.3 µg/l, which is more consistent with PCE concentrations in other samples collected in this portion of the site. When the 3.5 µg/l data point is excluded, the data set fits a normal distribution; and when the 3.5 µg/l data point is included, the data set does not fit a normal distribution, but fits gamma and log normal distributions.

The 95% upper confidence limit of the mean (95 UCL) was calculated to represent the average PCE concentration that may migrate from the subsurface into the indoor air of future buildings resulting in potential risk to future receptors in the buildings. The 95 UCL for the data set excluding the 3.5 µg/l data point was calculated as 0.984 µg/l (Student's t 95 UCL for a normal distribution). The 95 UCL for the data set including the 3.5 µg/l was calculated as 1.65 µg/l (Approximate Gamma 95 UCL for a gamma distribution).

The lifetime excess cancer risk from exposure to a PCE concentration of 0.984 µg/l (excluding the 3.5 µg/l) was calculated as 1.9×10^{-6}, which is 1 in 526,315 people (which is greater than the ratio of 1 in 1 million). The non-cancer HI was calculated as 0.022. The cancer risk from exposure to a PCE concentration of 1.65 µg/l (including the 3.5 µg/l data point) was calculated as 1 in 312,500 (also greater than the ratio of 1 in 1 million) and the HI was 0.037. Based on these calculations, a potential health risk from PCE is present.

Benzene

Since only one of the 13 locations had a detected concentration of benzene (0.12 µg/l), the data set is heavily left-skewed. The 95 UCL value adjusted for skewness was calculated as 0.07 µg/l. The corresponding risk was calculated as 7.7×10^{-7} (1 in 1,300,000, which is less than the ratio of 1 in 1,000,000) and the HI was 0.002. Based on the individual detection of benzene, no significant health risk is present.

Ethylbenzene

Similar to benzene, the ethylbenzene data set was heavily left-skewed as it was detected in only one out of 13 samples (at a concentration of 1.4 µg/l). The 95 UCL value adjusted for skewness was calculated as 0.5 µg/l. The corresponding risk was calculated as 4.4×10^{-7} (1 in 2,300,000, which is less than the ratio of 1 in 1,000,000) and the HI was 0.0004. Based on the individual detection of ethylbenzene, no significant health risk is present.

Xylenes

Similar to benzene and ethylbenzene, the m & p-xylenes and o-xylene data sets were also heavily left-skewed as they were detected in only one out of 13 samples (at concentrations of 3.2 and 0.68 µg/l, respectively). The 95 UCL values adjusted for skewness were calculated as 1.5 and 0.35 µg/l. Xylenes are not carcinogenic and therefore the cancer risk was not calculated for these chemicals. The corresponding HI was calculated as 0.01 and 0.003, respectively. Based on the individual detection of xylenes, no significant health risk is present.

Cumulative Risk of All Chemicals Detected

The information obtained during the calculation of the health risk levels of individual COPC was used to evaluate the cumulative risk of the chemicals detected. Although the individual risk from exposure to benzene, ethylbenzene, and xylenes were less than 1 in 1 million, the PCE concentrations, regardless of whether the 3.5 µg/l data point was included or not, had cancer risk values greater than 1 in 1 million. The cumulative risk from all chemicals is calculated for consideration of risk to a receptor population.

The initial evaluation included all PCE concentrations except the value obtained from SV-4 of 3.5 ug/l. Based on this evaluation and as shown below, the cumulative risk was calculated as 3.11×10^{-6} (1 in 320,000), which is greater than the ratio of 1 in 1 million.

Chemical	Cancer Risk	Hazard Index
PCE	1.90E-06	2.20E-02
Benzene	7.70E-07	2.10E-03
Ethylbenzene	4.40E-07	4.10E-04
m & p-Xylenes	N/A	1.20E-02
o-Xylene	N/A	3.10E-03
Cumulative	3.11E-06	3.96E-02

As shown on Table 1 and previously discussed, elevated concentrations of PCE in soil vapor were detected in the southwestern portion of the property (in and around sample point SV-4). If these PCE concentrations were eliminated from the equation, along with the individual benzene detected in the northwestern portion of the site, the cumulative risk would be lower.

To further assess this scenario, the model was re-run to exclude areas with relatively higher concentrations of PCE (i.e. samples SV-3, SV-4 and SV-9 through SV-13, all located in the southwestern portion of the site) such that the maximum concentration of the remaining area was 0.43 µg/l. The evaluation also eliminated the benzene concentration noted in sample SV-1. The resulting excess cancer risk from exposure to a maximum concentration of

0.43 µg/l of PCE is 8.4×10^{-7}, which is approximately 1 in 1.2 million, less than the acceptable value of 1 in 1 million. The HI from exposure to this concentration is 0.004. The cumulative risk using these values, as shown in the table below, is 1 in 800,000 (approaching 1 in 1 million) indicating acceptable risk.

Chemical	Cancer Risk	Hazard Index
PCE	8.40E-07	3.50E-03
Ethylbenzene	4.40E-07	4.10E-04
m,p-Xylene	N/A	1.20E-02
o-Xylene	N/A	3.10E-03
Cumulative	1.28E-06	1.90E-02

It is our understanding that the Agency is considering combining the subject site with the property southeast of the site (14700 Nelson Avenue). As stated before, Ardent completed a soil gas survey and limited HHRA for the Agency on the adjacent land. Based on the results, no engineering controls were necessary for future buildings. Redevelopment of these properties will likely include constructing a commercial building on the off-site property and using the subject site as a parking lot and/or truck loading dock area. If structures are not proposed for the subject site, no human health risk is present. However, if buildings are proposed for the site additional evaluations might be necessary. Based on the information obtained herein and as shown on Figure 4, the area in and around sample point SV-4 is referred to as the "restricted land use area."

Based on the elevated concentrations of PCE-impacted soil vapor detected in the southwestern corner of the site, a possible health risk is present due to vapor intrusion into future onsite buildings in this area of the site. Ardent does not recommend remediation of the elevated soil vapor (e.g. through soil vapor extraction or excavation) because the impacted media is in a vapor form and the source is likely off-site. Because soil vapor continues to migrate until reaching equilibrium, soil vapor remediation would likely be temporary. Based on these results, Ardent recommends no additional investigations or remediation at this time.

Because of the elevated PCE vapor concentrations in the southwest corner of the site, there are two options available if future buildings are planned for the site. Additional work recommended below will depend on the proposed construction details and land uses with respect to the location of the restricted land use area. The following presents the two options available if future site construction is proposed.

1. **Proposed Building to be Located Away from the Restricted Land Use Area** – If a proposed building is planned to be constructed away from the southwest corner of the site, no engineering controls would likely be necessary. The human health risk assessment model uses sample results from soil gas points located beneath or within close proximity (within 100 feet) to the proposed building footprint. Therefore to enable construction without engineering controls, the building footprint would need to be located further than 100 feet from the elevated soil gas sample locations and outside the restricted land use area. Prior to construction, a more detailed HHRA should be prepared using site specific building details and geologic conditions to verify this assumption.

2. **Proposed Building to be Located Within the Restricted Land Use Area** - If the proposed plans include construction within or in close proximity to the restricted land use area, the HHRA model can be re-run using site specific building and geologic details. Depending on the proposed construction and land use, the results may or may not warrant engineering controls, such as the installation of a vapor barrier.

5 SOIL SAMPLING

The soil sampling investigation included drilling 5 soil borings (designated SB-1 through SB-5) to depths up to 5 feet bgs in selected areas of the site (Figure 4). The drilling activities were conducted on December 14, 2010 using direct push equipment. Soil samples were collected from each boring as shown on the boring logs (see Appendix C) for field screening and/or chemical analyses. In general, soil lithology consisted of silty fine sand. Soil samples were screened in the field for possible staining, odors, or elevated photoionization detector (PID) readings. No stained, odorous, or elevated PID readings were noted. Laboratory reports are presented in Appendix A and boring logs are presented in Appendix C.

Soil borings SB-1 through SB-4 were drilled within the old and new railroad spurs to depths of approximately 3 feet bgs (below the railroad ballast). Soil samples collected at this depth were analyzed for total petroleum hydrocarbons carbon chain C_{10}-C_{32} (TPHcc) and PNAs in general accordance with EPA Method Nos. 8015 (modified) and 8270C, respectively. Soil boring SB-5

was drilled to a depth of approximately 5 feet bgs within the surficial staining area adjacent to the hazardous materials storage bin (Figure 4). A soil sample collected at this depth was analyzed for TPHcc in general accordance with EPA Method No. 8015 (modified). As presented on Table 2, no detectable concentrations of TPHcc and/or PNAs were reported.

6 CONCLUSIONS AND RECOMMENDATIONS

Based on the preliminary findings and as outlined in the draft Phase I ESA, the site was used for agricultural purposes from at least 1928 through the early-1980s. In 1982, the site was developed as a lumber yard (Scott-Caudill Lumber Company, aka Scott-Caudill Lumber & Plywood) and has continued to operate as a lumber yard since that time. The lumber yard has been used to store finished wood; very limited cutting and no wood planing or treating operations have been completed at the site. Some truck maintenance and fueling activities were historically conducted at the site. Historically, a fuel UST and area of oil-impacted soil were removed under the direction and oversight of regulatory agencies. As part of the Phase I ESA, Ardent reviewed the data associated with these possible issues and concurred with the regulatory agencies that no further work was needed.

Environmental concerns presented by Ardent in the draft Phase I ESA included surficial staining noted in the vicinity of a small hazardous materials storage bin and the possibility of petroleum hydrocarbon and PNA-impacted soil associated with the on-site railroad spurs. Based on these findings, Ardent recommended completing shallow soil sampling in the vicinity of these features.

In addition, the site is located within the San Gabriel Valley Groundwater Basin within the Puente Valley Operable Unit. Portions of the San Gabriel Valley Groundwater Basin have been listed on the NPL, or Superfund Site, due to the presences of VOCs in groundwater, namely TCE and PCE. Groundwater has been reported at depths of approximately 58 feet bgs. Current ASTM standards require the evaluation of possible vapor intrusion into existing and planned buildings from known contaminants beneath the site. Based on this information, Ardent recommended completing a soil gas survey throughout the site to assess whether a health risk was present due

to possible vapor intrusion. The following presents the results of the recommended soil gas survey, soil sampling and limited HHRA.

Soil Sampling - The recommended soil sampling investigations were performed. Laboratory results indicated no detectable to low concentrations of chemical constituents in soil samples analyzed, and therefore, there is a low likelihood that elevated concentrations of certain chemicals are present in the vicinity of the features investigated. Based on these results, the surficial staining associated with the small hazardous materials storage bin and the on-site railroad spurs would no longer be considered an environmental concern to the site. Ardent recommends no additional investigations in the vicinity of these features at this time.

Soil Gas Survey - The site was divided into a grid of approximately 8 equal sized lots. The soil gas survey included the placement of one soil gas point in each lot. Each point was installed at a depth of approximately 5 feet bgs. Although not considered an environmental concern, one of the points was placed in the vicinity of the former gasoline UST and one was placed in the vicinity of the previously excavated oil-impacted soil. One sample from each point was collected and analyzed for VOCs. The samples collected in the vicinity of the former UST and former oil-impacted soil were also analyzed for TPH. With the exception of PCE, laboratory results indicated no detectable concentrations of TPH and no detectable to low concentrations of VOCs (namely benzene, ethylbenzene, and xylenes, well below or at the Cal-EPA guidelines referred to as the CHHSL values). Laboratory results of the soil gas survey indicated relatively consistent concentrations of PCE ranging from no detectable concentrations to 0.87 ug/l throughout the site, with one exception. Laboratory results of sample SV-4 indicated concentrations of PCE at 3.5 ug/l. Excluding the results of SV-4, the concentrations of PCE in the remaining samples were similar to those detected at an adjacent site (14700 Nelson Avenue) during a similar soil gas survey completed by Ardent for the Agency. Because of the more elevated concentration of PCE detected in SV-4, Ardent recommended completing an additional investigation in the vicinity of SV-4 to further assess whether this result was an anomaly or true value, and if possible, to further assess a potential source area of the elevated PCE concentration.

The further investigation included advancing five additional soil gas points adjacent to and within the vicinity of SV-4. PCE concentrations were generally similar (at 1.3 and 1.7 ug/l) in two sample points advanced next to SV-4; indicating that the initial results were not an anomaly. PCE within a sample point located further west of SV-4 indicated relatively similar concentrations (1.4 ug/l), while PCE in samples located further east and south of SV-4 indicated lower concentrations (0.84 and 0.88 ug/l, respectively, although still slightly above the CHHSL value). Based on the relatively low concentrations of PCE (with regards to environmental risk) and historical land use, there is a low likelihood, in our opinion, that PCE-impacted soil is present at the site. The source of the impacted-vapor is most likely due to off-site sources, such as off-gassing from the regional impacted groundwater and/or a release from a close-by industrial facility. Based on the concentrations detected and historical land uses, there is a low likelihood that elevated concentrations of PCE are present in the soil at the site, and therefore, there is a low likelihood of an environmental concern. However, elevated concentrations of PCE-impacted soil vapor have been detected in the southwestern portion of the site, and therefore, a possible health risk is present due to vapor intrusion into future on-site buildings. Ardent does not recommend remediation of the elevated soil vapor (e.g. through soil vapor extraction or excavation) because the impacted media is in a vapor form and the source is likely off-site. Because soil vapor continues to migrate until reaching equilibrium, soil vapor remediation would likely be temporary. Based on these results, Ardent recommends no additional investigations or remediation at this time.

It is our understanding that the Agency is considering combining the subject site with the property southeast of the site (14700 Nelson Avenue). As stated before, Ardent completed a soil gas survey and limited HHRA for the Agency on the adjacent land. Based on the results, no engineering controls were necessary for future buildings. Redevelopment of these properties will most likely include constructing a commercial building on the off-site property and using the subject site as a parking lot or truck loading dock area. If structures are not proposed for the subject site, no human health risk is present. However, if buildings are proposed for the site additional evaluations might be necessary. Based on the information obtained herein and as

shown on Figure 4, the area in and around sample point SV-4 is referred to as the "restricted land use area."

Because of the elevated vapor concentrations, there are two options available if future buildings are planned for the site. Additional work recommended below will depend on the proposed construction details and land uses with respect to the location of the restricted land use area. The following presents the two options available if future site construction is proposed.

1. **Proposed Building to be Located Away from the Restricted Land Use Area** – If a proposed building is planned to be constructed away from the southwest corner of the site, no engineering controls would likely be necessary. The human health risk assessment model uses sample results from soil gas points located beneath or within close proximity (within 100 feet) to the proposed building footprint. Therefore to enable construction without engineering controls, the building footprint would need to be located further than 100 feet from the elevated soil gas sample locations and outside the restricted land use area. Prior to construction, a more detailed HHRA should be prepared using site specific building and geologic details to verify this assumption.

2. **Proposed Building to be Located Within the Restricted Land Use Area** - If the proposed plans include construction within or in close proximity to the restricted land use area, the HHRA model can be re-run using site specific building and geologic details. Depending on the proposed construction and land use, the results may or may not warrant engineering controls, such as the installation of a vapor barrier.

7 REFERENCES

Ardent Environmental Group, Inc. (Ardent), 2010, Draft Phase I Environmental Site Assessment and Document Review, 14624 Nelson Avenue, City of Industry, California: Report prepared for Industry Urban-Development Agency, City of Industry, California, dated November 29.

California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC), 2005, Interim Final for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, revised February 7.

Johnson, P. C, and R. A. Ettinger, 1991. Heuristic model for predicting the intrusion rate of contaminant vapors in buildings.

Regional Water Quality Control Board, Los Angeles Region (RWQCB), 1996, Interim Site Assessment & Cleanup Guidebook, dated May.

United States Environmental Protection Agency (EPA), 2002, Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance). Office of Solid Waste and Emergency Response (OSWER), dated November 29.

TABLE 1 - SUMMARY OF SOIL GAS RESULTS

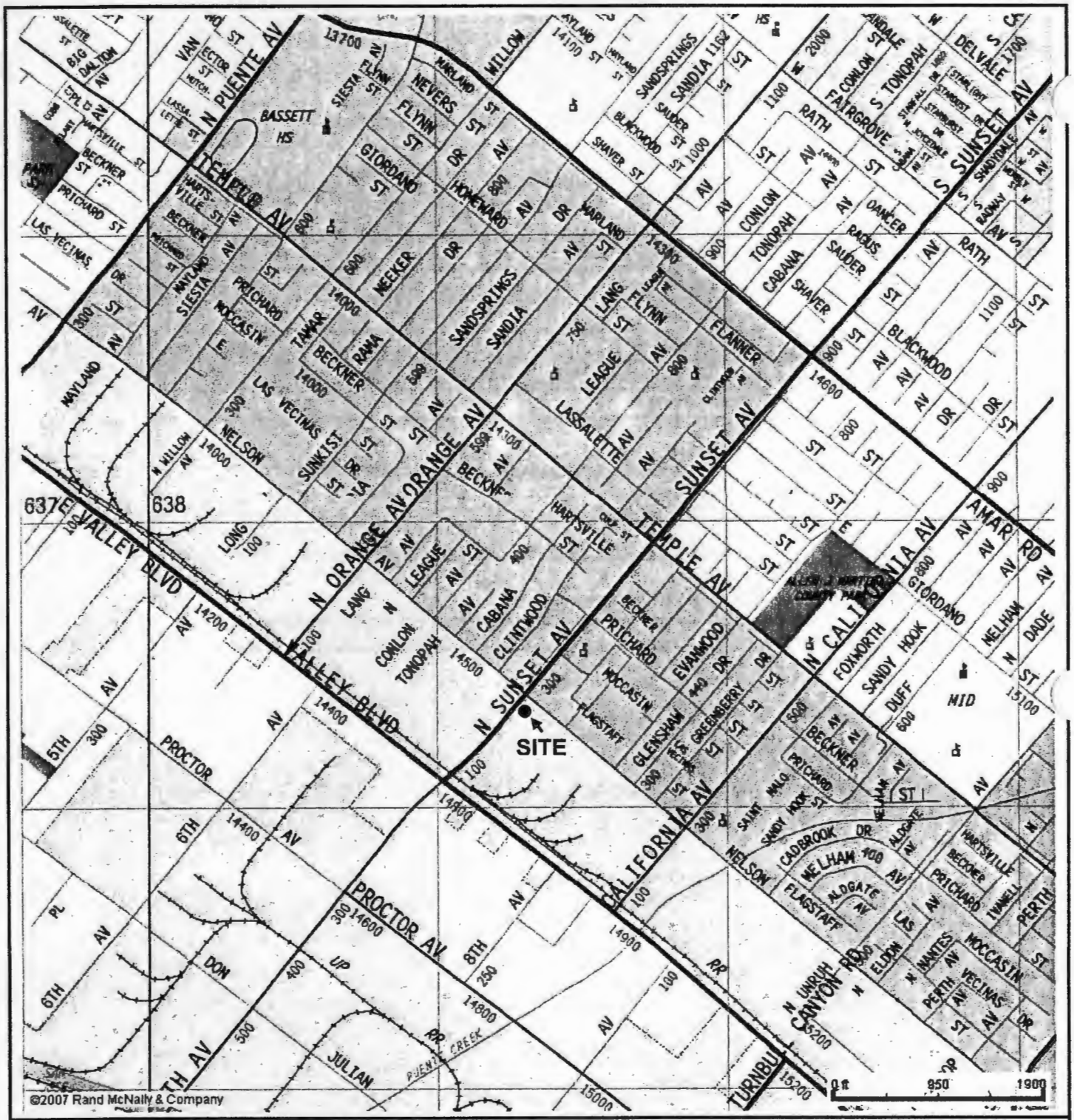
Soil Gas Points	Location/Rationale	Depth (ft bgs)	Date Sampled	TPH (ug/L)	VOCs (ug/L)				
					Benzene	PCE	Ethylbenzene	Xylenes	All Other
SV-1	Within site grid and next to a former gasoline UST	5 1PV	12/14/2010	ND<200	**0.12**	ND<0.1	ND<0.5	ND<0.5	ND<0.5 to 10
		5 3PV	12/14/2010	ND<200	**0.12**	ND<0.1	ND<0.5	ND<0.5	ND<0.5 to 10
		5 7PV	12/14/2010	ND<200	**0.1**	ND<0.1	ND<0.5	ND<0.5	ND<0.5 to 10
SV-2	Within site grid, regional groundwater issue	5	12/14/2010	---	ND<0.1	**0.37**	ND<0.5	ND<0.5	ND<0.5 to 10
		5 DUP	12/14/2010	---	ND<0.1	**0.36**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-3	Within site grid, regional groundwater issue	5	12/14/2010	---	ND<0.1	**0.87**	ND<0.5	ND<0.5	ND<0.5 to 10
SG-4	Within site grid, regional groundwater issue	5	12/14/2010	---	ND<0.1	**3.5**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-5	Within site grid and in the vicinity of the excavated oil-impacted soil	5	12/14/2010	ND<200	ND<0.1	**0.22**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-6	Within site grid, regional groundwater issue	5	12/14/2010	---	ND<0.1	ND<0.1	ND<0.5	ND<0.5	ND<0.5 to 10
SV-7	Within site grid, regional groundwater issue	5	12/14/2010	---	ND<0.1	**0.43**	1.4	3.88	ND<0.5 to 10
SV-8	Within site grid, regional groundwater issue	5	12/14/2010	---	ND<0.1	**0.25**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-9	Adjacent to SV-4 (1 foot west) to verify results	5	12/27/2010	---	ND<0.1	**1.3**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-10	Adjacent to SV-4 (6 feet west) to verify results	5	12/27/2010	---	ND<0.1	**1.7**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-11	West of SV-4 (46 feet) to assess the extent or possible source	5	12/27/2010	---	ND<0.1	**1.4**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-12	South of SV-4 (58 feet) to assess the extent or possible source	5	12/27/2010	---	ND<0.1	**0.67**	ND<0.5	ND<0.5	ND<0.5 to 10
		5 DUP	12/27/2010	---	ND<0.1	**0.88**	ND<0.5	ND<0.5	ND<0.5 to 10
SV-13	East of SV-4 (53 feet) to assess the extent or possible source	5	12/27/2010	---	ND<0.1	**0.84**	ND<0.5	ND<0.5	ND<0.5 to 10
CHHSL for Commercial Land Use					0.12	0.603	NA	879-887	Various

Notes:
ft bgs - feet below the ground surface
ug/l - micrograms per liter
VOCs - volatile organic compounds analyzed in general accordance with EPA Method No. 8260B
TPH C_5-C_{11} - total petroleum hydrocarbon analyzed in general accordance with EPA Method No. 8260B
PCE - tetrachlorethylene
PV - purge volume
DUP - Duplicate sample
ND - no detectable concentration above the laboratory detection limit
--- - not analyzed
UST - underground storage tank
NA - not available
CHHSL - Cal-EPA California Human Health Screening Level

TABLE 2 - SUMMARY OF SOIL SAMPLE RESULTS

Soil Boring	Rationale	Depth (ft bgs)	TPH (mg/kg)			PNA (mg/kg)
			TPHg C_{10}-C_{12}	TPHd C_{13}-C_{22}	TPHo C_{23}-C_{32}	
SB-1	Older Railroad Spur	3	ND<10	ND<10	ND<10	ND<0.3 to 1
SB-2	Newer Railroad Spur	3	ND<10	ND<10	**43**	ND<0.3 to 1
SB-3	Older Railroad Spur	3	ND<10	ND<10	ND<10	ND<0.3 to 1
SB-4	Older Railroad Spur	3	ND<10	ND<10	ND<10	ND<0.3 to 1
SB-5	Hazardous Materials Storage Bin	5	ND<10	ND<10	ND<10	ND<0.3 to 1
RWQCB Guidelines			500	1,000	10,000	Various

Notes:
ft bgs - feet below the ground surface
TPH - total petroleum hydrocarbons analyzed in general accordance with EPA Method No. 8015 (modified)
TPHg - total petroleum hydrocarbons as gasoline
TPHd - total petroleum hydrocarbons as diesel fuel
TPHo - total petroleum hydrocarbons as oil
PNA - polynuclear aromatics analyzed in general accordance with EPA Method No. 8270C
mg/kg - milligrams per kilograms
ND - no detectable concentration above the laboratory detection limit
RWQCB Guidelines - Regional Water Quality Control Board, Los Angeles Region, Interim Site Assessment & Cleanup Guidebook, dated May 1996



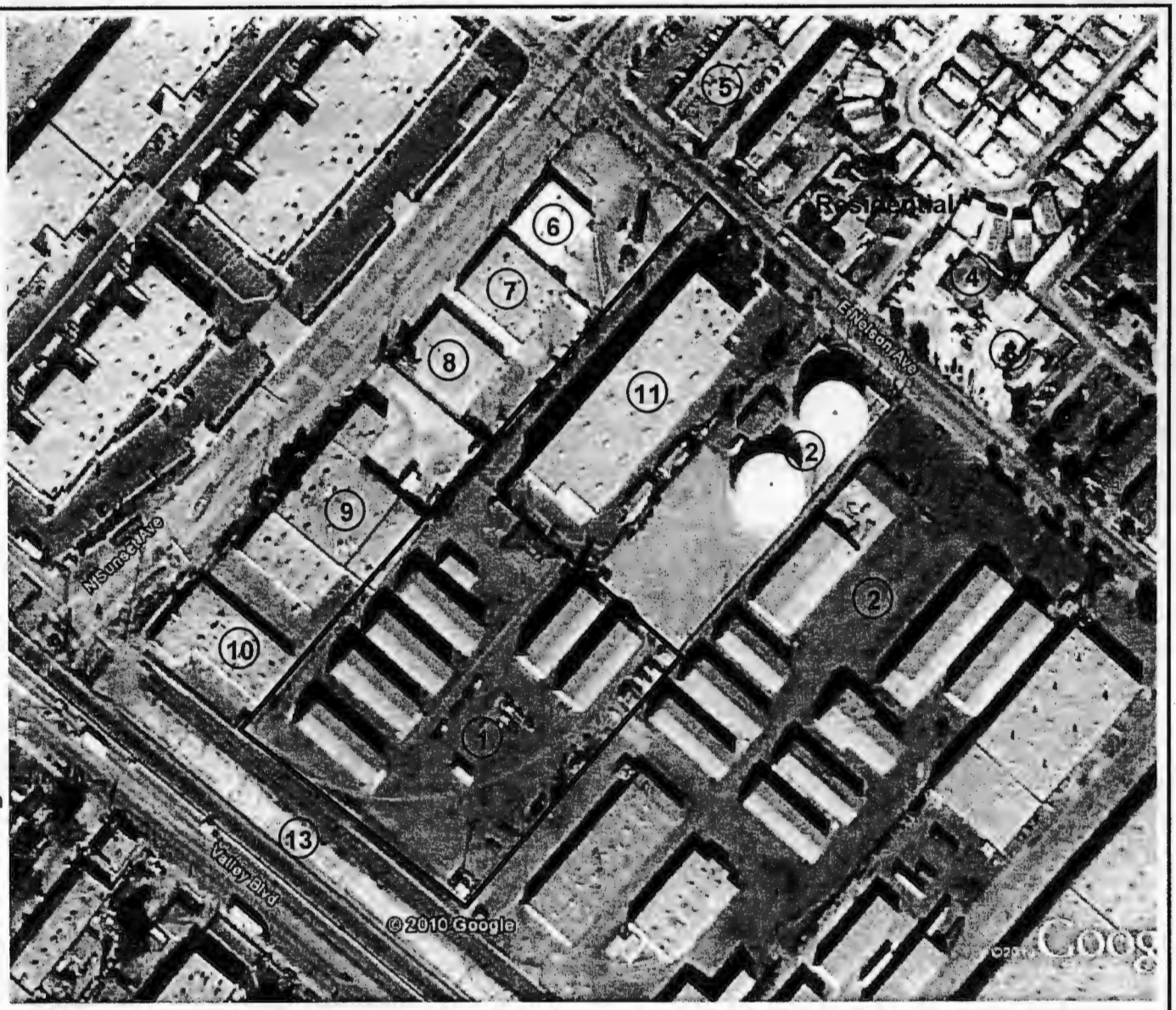
REFERENCE: 2007 RAND MCNALLY DIGITAL EDITION FOR LOS ANGELES/ORANGE COUNTY, STREET GUIDE AND DIRECTORY

N

NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100260001	**SITE LOCATION MAP**	FIGURE 1
	DATE 11/10	14624 E. NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	

1. Site
2. Vacant Lumber Yard (14700 E. Nelson Avenue)
3. Lomax Fellowship Hall (14709 E. Nelson Avenue)
4. Calvary Apostolic Church (14655 E. Nelson Avenue)
5. Shopping Center (306 Sunset Avenue) (El Gallo Market, Liquor Store, Mariscos Marlin)
6. Vanode (236 N. Sunset Avenue)
7. TC Spoilers (228 N. Sunset Sunset Avenue)
8. General Supplies Inc (220 N. Sunset Avenue)
9. Stoughton Printing (130 N. Sunset Avenue)
10. Amel Compressor (114 N. Sunset Avenue)
11. Nafta Shoes, Inc. (14632 E. Nelson Avenue)
12. San Gabriel Valley Water Pumping and Water Storage (14650 E. Nelson Avenue)
13. Alameda Corridor – East Construction Authority Project



Legend

——— Site Boundary

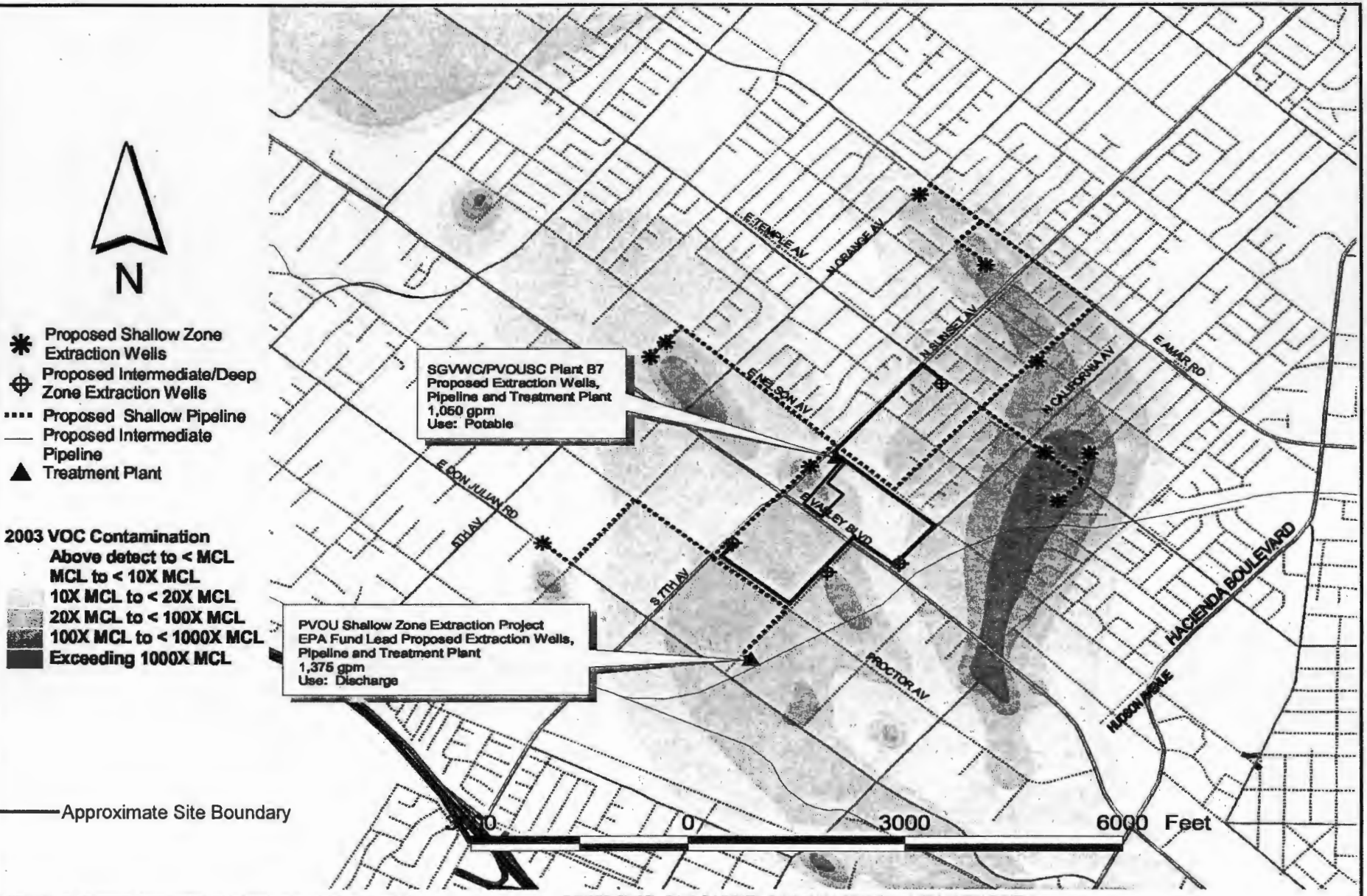
N

NO SCALE

NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

REFERENCE: 2010 GOOGLE EARTH

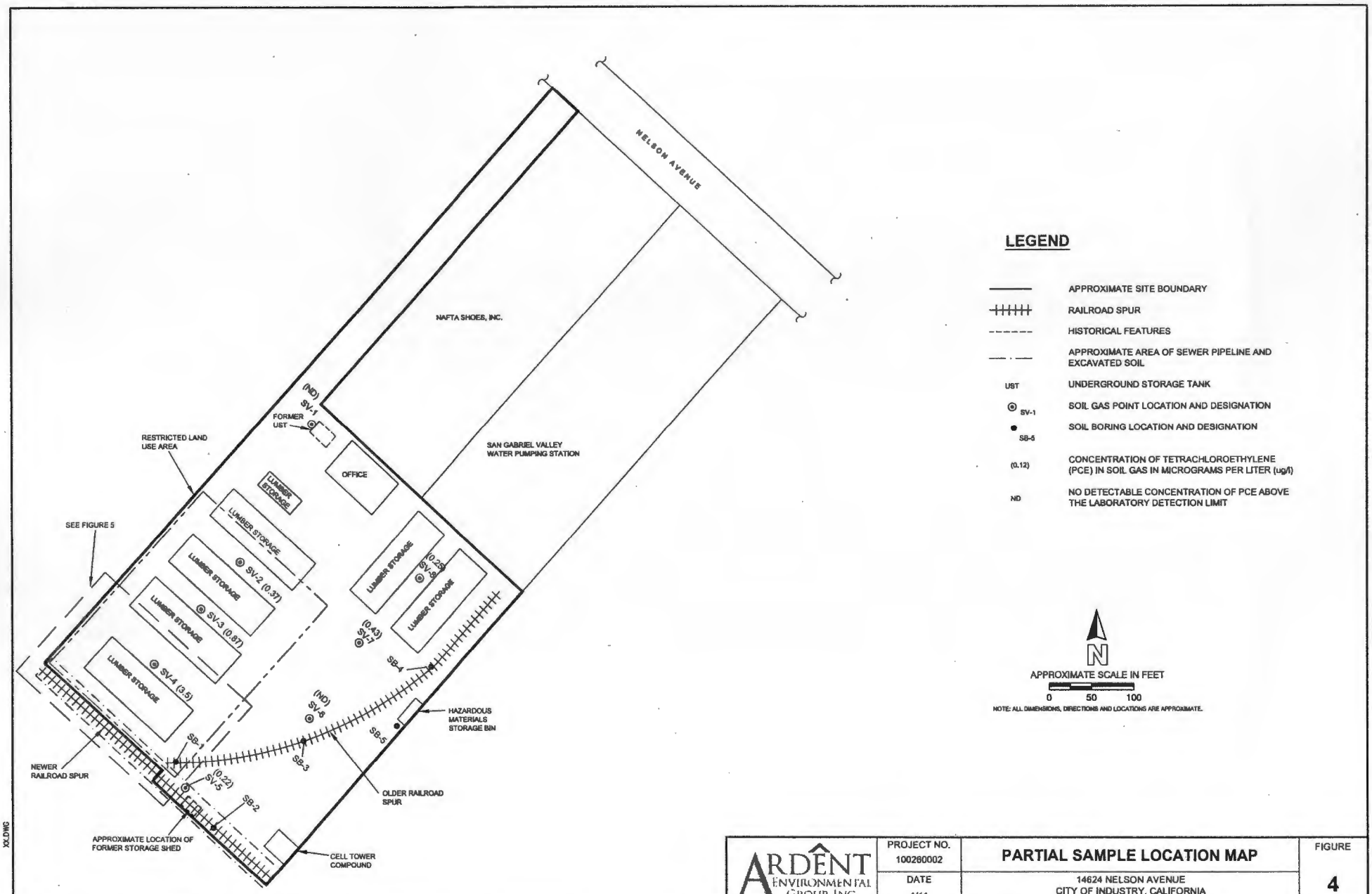
ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100260001	**SITE VICINITY MAP**	FIGURE 2
	DATE 11/10	14624 E. NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	



NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

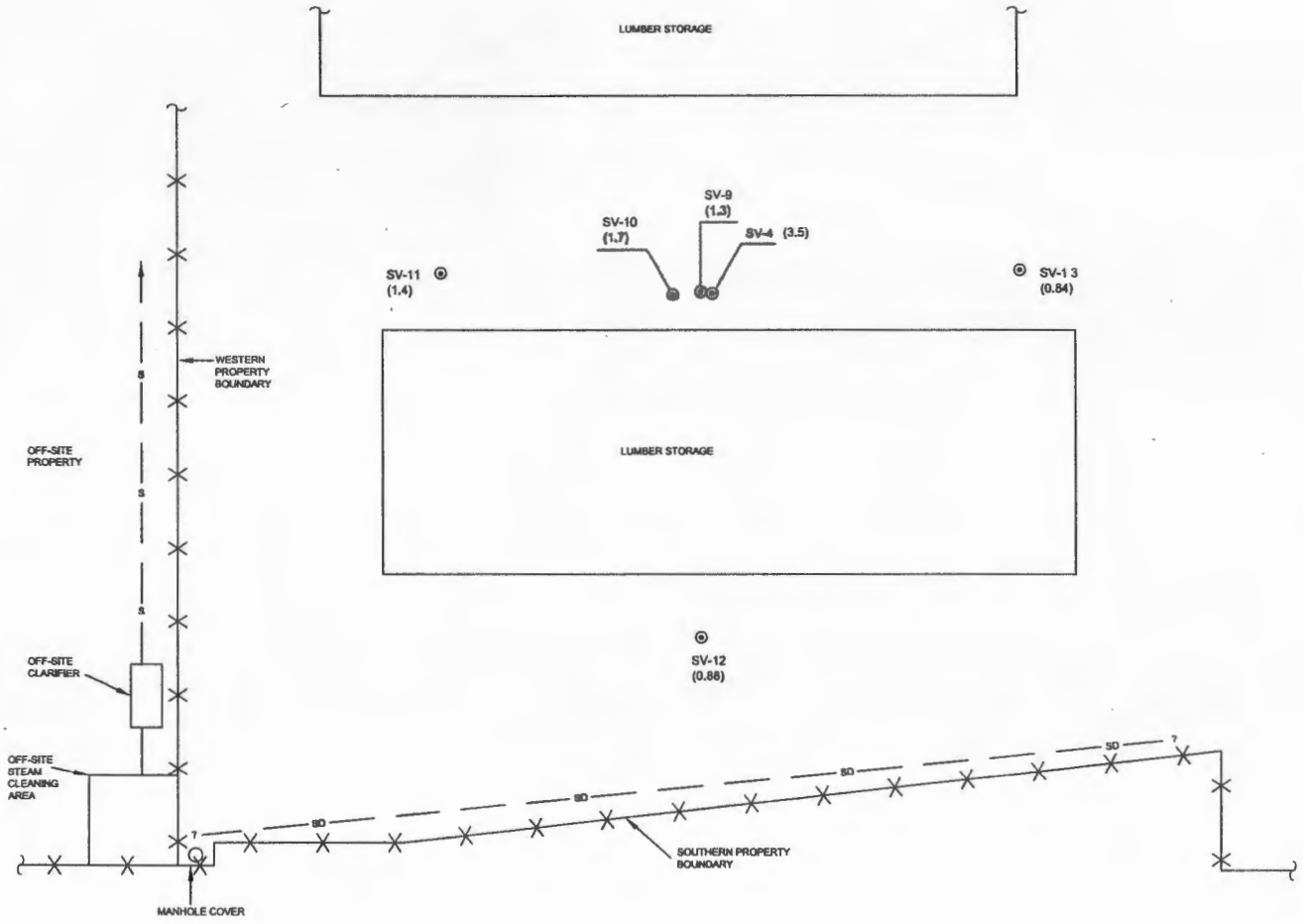
REFERENCE: SAN GABRIEL BASIN WATER QUALITY AUTHORITY

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100260002	PORTIONS OF THE PUENTE VALLEY OPERABLE UNIT	FIGURE 3
	DATE 1/11	14624 EAST NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	



XX.DWG

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100260002	PARTIAL SAMPLE LOCATION MAP	FIGURE 4
	DATE 1/11	14624 NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	



LEGEND

- CHAIN-LINK FENCE
- SD — APPROXIMATE LOCATION OF UNDERGROUND STORM DRAIN PIPELINE
- S — APPROXIMATE LOCATION OF UNDERGROUND SEWER PIPELINE
- SV-13 — SOIL GAS POINT LOCATION AND DESIGNATION
- (0.87) — CONCENTRATION OF TETRACHLOROETHYLENE (PCE) IN SOIL GAS IN MICROGRAMS PER LITER (ug/l)

N

APPROXIMATE SCALE IN FEET

0 10 20

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100260004	**SAMPLE LOCATION MAP, SOUTHWEST PORTION OF THE SITE**	FIGURE 5
	DATE 1/11	14624 NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	

APPENDIX A

LABORATORY REPORTS

SunStar Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

20 December 2010

Paul Roberts
Ardent Enviromental Group, Inc.
1141 Pomona Road, Suite E
Corona, CA 92882

RE: Scott Lumber

Enclosed are the results of analyses for samples received by the laboratory on 12/14/10 14:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

John Shepler
Laboratory Director

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1-3	T001455-01	Soil	12/14/10 08:15	12/14/10 14:15
SB-2-3	T001455-02	Soil	12/14/10 08:00	12/14/10 14:15
SB-3-3	T001455-03	Soil	12/14/10 08:38	12/14/10 14:15
SB-4-3	T001455-04	Soil	12/14/10 08:49	12/14/10 14:15
SB-5-5	T001455-05	Soil	12/14/10 08:58	12/14/10 14:15

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.

John Shepler, Laboratory Director

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Dri
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

SB-1-3
T001455-01 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015C									
C10-C12	ND	10	mg/kg	1	0121406	12/14/10	12/20/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C23-C32	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*113 %*	*65-135*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									
Acenaphthene	ND	300	ug/kg	1	0121314	12/14/10	12/16/10	EPA 8270C	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		*51.4 %*	*14.3-83.1*		"	"	"	"	
Surrogate: Phenol-d6		*55.4 %*	*12-95.6*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*69.5 %*	*21.3-119*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*68.6 %*	*32.4-102*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*74.4 %*	*18.1-101*		"	"	"	"	
Surrogate: Terphenyl-dl4		*84.8 %*	*29.1-130*		"	"	"	"	

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

SB-2-3
T001455-02 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015C									
C10-C12	ND	10	mg/kg	1	0121406	12/14/10	12/20/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C23-C32	**43**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*119 %*	*65-135*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									
Acenaphthene	ND	300	ug/kg	1	0121314	12/14/10	12/16/10	EPA 8270C	
Pyrene	ND	300	"	"	"	"	"	"	
cenaphthylene	ND	300	"	"	"	"	"	"	
nthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		*42.3 %*	*14.3-83.1*		"	"	"	"	
Surrogate: Phenol-d6		*54.7 %*	*12-95.6*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*63.4 %*	*21.3-119*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*66.0 %*	*32.4-102*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*72.9 %*	*18.1-101*		"	"	"	"	
Surrogate: Terphenyl-dl4		*75.2 %*	*29.1-130*		"	"	"	"	

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.

John Shepler, Laboratory Director

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

SB-3-3

T001455-03 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015C									
C10-C12	ND	10	mg/kg	1	0121406	12/14/10	12/20/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C23-C32	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*117 %*	*65-135*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									
Acenaphthene	ND	300	ug/kg	1	0121314	12/14/10	12/16/10	EPA 8270C	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		*53.3 %*	*14.3-83.1*		"	"	"	"	
Surrogate: Phenol-d6		*52.7 %*	*12-95.6*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*68.6 %*	*21.3-119*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*70.2 %*	*32.4-102*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*84.7 %*	*18.1-101*		"	"	"	"	
Surrogate: Terphenyl-dl4		*88.0 %*	*29.1-130*		"	"	"	"	

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

SB-4-3
T001455-04 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015C									
C10-C12	ND	10	mg/kg	1	0121406	12/14/10	12/20/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C23-C32	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*141 %*	*65-135*		"	"	"	"	*S-04*
Semivolatile Organic Compounds by EPA Method 8270C									
Acenaphthene	ND	300	ug/kg	1	0121314	12/14/10	12/16/10	EPA 8270C	
Pyrene	ND	300	"	"	"	"	"	"	
cenaphthylene	ND	300	"	"	"	"	"	"	
anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		*38.9 %*	*14.3-83.1*		"	"	"	"	
Surrogate: Phenol-d6		*48.4 %*	*12-95.6*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*54.7 %*	*21.3-119*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*55.2 %*	*32.4-102*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*62.5 %*	*18.1-101*		"	"	"	"	
Surrogate: Terphenyl-dl4		*66.9 %*	*29.1-130*		"	"	"	"	

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

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Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

SB-5-5

T001455-05 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015C									
C10-C12	ND	10	mg/kg	1	0121406	12/14/10	12/20/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C23-C32	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*116 %*	*65-135*		"	"	"	"	

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

Extractable Petroleum Hydrocarbons by 8015C - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0121406 - EPA 3550B GC										
Blank (0121406-BLK1)				Prepared: 12/14/10 Analyzed: 12/20/10						
C10-C12	ND	10	mg/kg							
C13-22	ND	10	"							
C23-C32	ND	10	"							
Surrogate: p-Terphenyl	*112*		"	*100*		*112*	*65-135*			
LCS (0121406-BS1)				Prepared: 12/14/10 Analyzed: 12/20/10						
C13-22	470	10	mg/kg				75-125			
Surrogate: p-Terphenyl	*112*		"	*100*		*112*	*65-135*			
Matrix Spike (0121406-MS1)	**Source: T001455-05**			Prepared: 12/14/10 Analyzed: 12/20/10						
C13-22	430	10	mg/kg		ND		75-125			
Surrogate: p-Terphenyl	*110*		"	*100*		*110*	*65-135*			
Matrix Spike Dup (0121406-MSD1)	**Source: T001455-05**			Prepared: 12/14/10 Analyzed: 12/20/10						
C13-22	420	10	mg/kg		ND		75-125	2.47	20	
Surrogate: p-Terphenyl	*113*		"	*100*		*113*	*65-135*			

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

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Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0121314 - EPA 3510C GCMS/ECD										
Blank (0121314-BLK1)				Prepared: 12/13/10 Analyzed: 12/16/10						
Acenaphthene	ND	300	ug/kg							
Pyrene	ND	300	"							
Acenaphthylene	ND	300	"							
Anthracene	ND	300	"							
Benzo (a) anthracene	ND	300	"							
Benzo (b) fluoranthene	ND	300	"							
Benzo (k) fluoranthene	ND	300	"							
Benzo (g,h,i) perylene	ND	1000	"							
Benzo (a) pyrene	ND	300	"							
Chrysene	ND	300	"							
Dibenz (a,h) anthracene	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Naphthalene	ND	300	"							
Phenanthrene	ND	300	"							
Surrogate: 2-Fluorophenol	*790*		"	*1670*		*47.4*	*14.3-83.1*			
Surrogate: Phenol-d6	*731*		"	*1670*		*43.9*	*12-95.6*			
Surrogate: Nitrobenzene-d5	*957*		"	*1670*		*57.4*	*21.3-119*			
Surrogate: 2-Fluorobiphenyl	*944*		"	*1670*		*56.6*	*32.4-102*			
Surrogate: 2,4,6-Tribromophenol	*1090*		"	*1670*		*65.1*	*18.1-101*			
Surrogate: Terphenyl-dl4	*1130*		"	*1670*		*68.0*	*29.1-130*			
LCS (0121314-BS1)				Prepared: 12/13/10 Analyzed: 12/16/10						
Acenaphthene	1330	300	ug/kg	1670		79.9	38.9-79.4			QM-Hi
Pyrene	1130	300	"	1670		67.8	25-85.2			
Surrogate: 2-Fluorophenol	*890*		"	*1670*		*53.4*	*14.3-83.1*			
Surrogate: Phenol-d6	*945*		"	*1670*		*56.7*	*12-95.6*			
Surrogate: Nitrobenzene-d5	*1090*		"	*1670*		*65.2*	*21.3-119*			
Surrogate: 2-Fluorobiphenyl	*1180*		"	*1670*		*70.6*	*32.4-102*			
Surrogate: 2,4,6-Tribromophenol	*1390*		"	*1670*		*83.2*	*18.1-101*			
Surrogate: Terphenyl-dl4	*1340*		"	*1670*		*80.3*	*29.1-130*			

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0121314 - EPA 3510C GCMS/ECD										
LCS Dup (0121314-BSD1)				Prepared: 12/13/10 Analyzed: 12/16/10						
Acenaphthene	1320	300	ug/kg	1670		79.5	38.9-79.4	0.527	31	QM-Hi
Pyrene	1180	300	"	1670		70.9	25-85.2	4.56	31	
Surrogate: 2-Fluorophenol	*857*		"	*1670*		*51.4*	*14.3-83.1*			
Surrogate: Phenol-d6	*962*		"	*1670*		*57.7*	*12-95.6*			
Surrogate: Nitrobenzene-d5	*1120*		"	*1670*		*67.2*	*21.3-119*			
Surrogate: 2-Fluorobiphenyl	*1180*		"	*1670*		*70.9*	*32.4-102*			
Surrogate: 2,4,6-Tribromophenol	*1410*		"	*1670*		*84.4*	*18.1-101*			
Surrogate: Terphenyl-dl4	*1390*		"	*1670*		*83.6*	*29.1-130*			

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Ardent Enviromental Group, Inc.	Project: Scott Lumber	
1141 Pomona Road, Suite E	Project Number: 100260002	**Reported:**
Corona CA, 92882	Project Manager: Paul Roberts	12/20/10 16:48

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-Hi	Spike recovery was high for specified analyte. Data was accepted because samples associated with batch were non detect for analyte in question.
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.

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John Shepler, Laboratory Director

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Ardent Environmental Group
Address: 1141 Pomona Rd Suite E Corona 92882
Phone: 951 736 5334 Fax: 951 736 7560
Project Manager: Paul Roberts (PRoberts@ArdentEnv.com)

Date: 12-14-10 Page: 1 Of 1
Project Name: Scott Lumber
Collector: Connie L. Client Project #: 1002600002
Batch #: T001455 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	8015 TPHc C10-C32	8270 C PNAs			Laboratory ID #	Comments/Preservative	Total # of containers
SB-1-3	12-14-10	8:15	soil	tube										X	X			01	* Results by Monday Dec. 20	1
SB-2-3		8:00												X	X			02		1
SB-3-3		8:38												X	X			03		1
SB-4-3		8:49												X	X			04		1
SB-5-3		8:58												X	X			05		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Paul Roberts	12/14/10 2:15	Daniel Chang	12/14/10 14:15
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers	5
Chain of Custody seals Y/N/NA	NA
Seals intact? Y/N/NA	NA
Received good condition/cold	8.7

Turn around time: 12/20/10

Notes

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

COC 100321

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

SAMPLE RECEIVING REVIEW SHEET

BATCH # T001455

Client Name: ARDENT Project: SCOTT LUMBER

Received by: DANIEL Date/Time Received: 12-14-10 14:15

Delivered by : ☒ Client ☐ SunStar Courier ☐ GSO ☐ FedEx ☐ Other _____

Total number of coolers received 0 **Temp criteria = 6°C > 0°C (no frozen containers)**

Temperature: cooler #1 8.9 °C +/- the CF (- 0.2°C) = 8.7 °C corrected temperature

cooler #2 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

cooler #3 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.	☒Yes	☐No*	☐N/A
Custody Seals Intact on Cooler/Sample	☐Yes	☐No*	☒N/A
Sample Containers Intact	☒Yes	☐No*	
Sample labels match COC ID's	☒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 RC 12-14-10

Comments:

_____

_____

_____

_____

H&P Mobile Geochemistry Inc.

21 December 2010

Mr. Paul Roberts
Ardent Environmental Group
1141 Pamona Road, Suite E
Corona, CA 92882

H&P Project: ARD121410-SB1
Client Project: 100260002 / 14624 E. Nelson Ave.

Dear Client:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 14-Dec-10 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal
Laboratory Director

Mobile Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-1-5', 1PV, P111cc	E012075-01	Vapor	14-Dec-10	14-Dec-10
SV-1-5', 3PV, P333cc	E012075-02	Vapor	14-Dec-10	14-Dec-10
SV-1-5', 7PV, P777cc	E012075-03	Vapor	14-Dec-10	14-Dec-10
SV-2-5', P111cc	E012075-04	Vapor	14-Dec-10	14-Dec-10
SV-2-5' Dup, P161cc	E012075-05	Vapor	14-Dec-10	14-Dec-10
SV-3-5', P111cc	E012075-06	Vapor	14-Dec-10	14-Dec-10
SV-4-5', P111cc	E012075-07	Vapor	14-Dec-10	14-Dec-10
SV-5-5', P111cc	E012075-08	Vapor	14-Dec-10	14-Dec-10
SV-6-5', P111cc	E012075-09	Vapor	14-Dec-10	14-Dec-10
SV-7-5', P111cc	E012075-10	Vapor	14-Dec-10	14-Dec-10
SV-8-5', P111cc	E012075-11	Vapor	14-Dec-10	14-Dec-10

H&P Mobile Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-1-5', 1PV, P111cc (E012075-01) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	**0.12**	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*89.3 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*92.3 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*118 %*		*75-125*	"	"	"	"	

H&P Mobile Geochemistry Inc.

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Carlsbad, CA 92010
760-804-9678 Phone
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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-1-5', 3PV, P333cc (E012075-02) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	**0.12**	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*95.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*96.0 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*114 %*		*75-125*	"	"	"	"	

H&P Mobile Geochemistry Inc.

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-1-5', 7PV, P777cc (E012075-03) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	**0.10**	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*94.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*94.5 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*114 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-2-5', P111cc (E012075-04) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.37**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*94.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*97.1 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*114 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-2-5' Dup, P161cc (E012075-05) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.36**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.2 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*97.6 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-3-5', P111cc (E012075-06) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.87**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*91.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*91.8 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-4-5', P111cc (E012075-07) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**3.5**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*93.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*96.5 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-5-5', P111cc (E012075-08) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.22**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*92.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*93.8 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-6-5', P111cc (E012075-09) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
·ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*95.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*112 %*		*75-125*	"	"	"	"	

H&P Mobile Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-7-5', P111cc (E012075-10) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.43**	0.10	"	"	"	"	"	"	
Ethylbenzene	**1.4**	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	**3.2**	0.50	"	"	"	"	"	"	
o-Xylene	**0.68**	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*95.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*96.8 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-8-5', P111cc (E012075-11) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
rans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.25**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*94.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*93.5 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*		*75-125*	"	"	"	"	

H&P Mobile Geochemistry Inc.

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

TPH by MS

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-1-5', 1PV, P111cc (E012075-01) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
Gasoline (C5-C11)	ND	200	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	DHS LUFT/8260B	
SV-1-5', 3PV, P333cc (E012075-02) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
Gasoline (C5-C11)	ND	200	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	DHS LUFT/8260B	
SV-1-5', 7PV, P777cc (E012075-03) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
Gasoline (C5-C11)	ND	200	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	DHS LUFT/8260B	
SV-5-5', P111cc (E012075-08) Vapor Sampled: 14-Dec-10 Received: 14-Dec-10									
Gasoline (C5-C11)	ND	200	ug/l	0.05	EL01401	14-Dec-10	14-Dec-10	DHS LUFT/8260B	

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

Volatile Organic Compounds by EPA Method 8260B Modified - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EL01401 - EPA 5030										
Blank (EL01401-BLK1)				Prepared & Analyzed: 14-Dec-10						
1,1-Difluoroethane (LCC)	ND	10	ug/l							
Dichlorodifluoromethane (F12)	ND	0.50	"							
Vinyl chloride	ND	0.05	"							
Chloroethane	ND	0.50	"							
Trichlorofluoromethane (F11)	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	"							
'ethylene chloride (Dichloromethane)	ND	0.50	"							
,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"							
trans-1,2-Dichloroethene	ND	0.50	"							
1,1-Dichloroethane	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	"							
Chloroform	ND	0.10	"							
1,1,1-Trichloroethane	ND	0.50	"							
Carbon tetrachloride	ND	0.10	"							
1,2-Dichloroethane (EDC)	ND	0.10	"							
Benzene	ND	0.10	"							
Trichloroethene	ND	0.10	"							
Toluene	ND	1.0	"							
1,1,2-Trichloroethane	ND	0.50	"							
Tetrachloroethene	ND	0.10	"							
Ethylbenzene	ND	0.50	"							
1,1,1,2-Tetrachloroethane	ND	0.50	"							
m,p-Xylene	ND	0.50	"							
o-Xylene	ND	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							
Surrogate: Dibromofluoromethane	*2.45*		"	*2.50*		*97.9*	*75-125*			
Surrogate: Toluene-d8	*2.42*		"	*2.50*		*96.7*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2.72*		"	*2.50*		*109*	*75-125*			

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

TPH by MS - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EL01401 - EPA 5030										
Blank (EL01401-BLK1)				Prepared & Analyzed: 14-Dec-10						
Gasoline (C5-C11)	ND	200	ug/l							

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Ardent Environmental Group	Project: ARD121410-SB1	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	21-Dec-10 10:58

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

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15

This certification applies to samples analyzed in summa canisters.

Chain of Custody Record

Mobile Geochemistry Inc.

☐ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804 9159

☒ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 12-14-10

H&P Project #: ARD121410-SB1

Outside Lab:

Client: Ardent Environmental Group, Inc.

Address: 1141 Ramona Road Suite E, Corona, CA. 92882

Email: proberts@ardentenv.com, CLizarraga@ardentenv.com

Collector: C. Smith

Client Project #: 100260002

Location: 14624 E. Nelson Ave.

Phone: 951-736-5334 Fax:

Page: 1 of 2

Project Contact: Paul Roberts

Turn around time: Field

Geotracker EDF: Yes ☐ No ☑

Global ID:

Excel EDD: Yes ☐ No ☑

Sample Receipt
Intact: ☐ Yes ☑ No
Seal Intact: ☐ Yes ☐ No ☑ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: N/A

Special Instructions:

Lab Work Order # EO12075 / EL01401

	Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	SOIL/GW: 8260B Full List	SOIL/GW: 8260B ☐ BTEX/OXY ☐ TPH gas	SOIL/GW: 8015M TPH ☐ g ☐ d ☐ ext	SOIL/GW: 418.1 TRPH	SOIL VAPOR/AIR ANALYSIS: VOC's: Full List ☐ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: VOC's: Short List/DTSC ☒ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	SOIL VAPOR/AIR ANALYSIS: Naphthalene ☐ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: Oxygenates ☐ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: TPHv gas ☒ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: Ketones ☐ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: Other ____ ☐ 8260B ☐ TO-15	SOIL VAPOR/AIR ANALYSIS: Leak Check Compound ☒ 1, 1 DFA ☐ OTHER	SOIL VAPOR/AIR ANALYSIS: Methane	SOIL VAPOR/AIR ANALYSIS: Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2
1	SV-1-5'-1PV		P111cc	837	12/14/10	Vapor	Glass syringe	1						X				X			X		
2	SV-1-5'-3PV		P333cc	839				1						X				X			X		
3	SV-1-5'-7PV		P777cc	844				1						X				X			X		
4	SV-2-5'		P111cc	940				1						X							X		
5	SV-2-5' Dup		P116cc	941				1						X							X		
6	SV-3-5'		P111cc	944				1						X							X		
7	SV-4-5'		P111cc	1030				1						X							X		
8	SV-5-5'		P111cc	1033				1						X				X			X		
9	SV-6-5'		P111cc	10.37				1						X							X		
10	SV-7-5'		P111cc	1117				1						X							X		

Relinquished by: (Signature) Cecile Lizarraga	(company) Ardent Env. 12-14-10	Received by: (Signature)	(company) H&P Mobile	Date: 12-14-10	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date	Time:

*Signature authorization to proceed with analysis and acceptance of condition on back.

Sample disposal in ☐ Disposal ☐ Return to client ☐ Pickup

Chain of Custody Record

H&P Mobile Geochemistry Inc.

☐ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☒ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 12-14-10
H&P Project #: ARD1214 10-SD1
Outside Lab:

Client: Ardent Environmental Group, Inc.
Address: 1141 Ramona Rd. Suite E, Corona, CA. 92882
Email: proberts@ardentenv.com, CLizarraga@ardentenv.com
Collector: C. Smith
Client Project #: 100260002
Location: 14624 E. Nelson Ave.
Phone: 951-736-5334 Fax:
Page 2 of 2
Project Contact: Paul Roberts
Turn around time: Field

Geotracker EDF: Yes ☐ No ☑
Global ID:
Excel EDD: Yes ☐ No ☑

Sample Receipt
Intact: ☐ Yes ☑ No
Seal Intact: ☐ Yes ☐ No ☑ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: N/A

Special Instructions:

Lab Work Order # EO1207S / EL0401

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	BTEX/OXY ☐ TPH gas	8260B	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☐ TO-15	VOC's: Short List/DTSC ☒ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☒ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2
								SOIL/GW					SOIL VAPOR/AIR ANALYSIS										
4 SV-8-5'		Alice	1130	12-14-10	Vapor	Glass syringe	1							X							X		

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Connie Lizarraga 12-14-10	Ardent Environmental	Angela Rico	H&P Mobile	12-14-10	
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time

Signature constitutes authorization to proceed with analysis and acceptance of condition on back

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

H&P Mobile Geochemistry Inc.

03 January 2011

Mr. Paul Roberts
Ardent Environmental Group
1141 Pamona Road, Suite E
Corona, CA 92882

H&P Project: ARD122710-SB2
Client Project: 100260002 / 14624 E. Nelson Ave.

Dear Client:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 27-Dec-10 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV9-5', P111cc	E012114-01	Vapor	27-Dec-10	27-Dec-10
SV10-5', P111cc	E012114-02	Vapor	27-Dec-10	27-Dec-10
SV11-5', P111cc	E012114-03	Vapor	27-Dec-10	27-Dec-10
SV12-5', P111cc	E012114-04	Vapor	27-Dec-10	27-Dec-10
SV12-5' Dup, P161cc	E012114-05	Vapor	27-Dec-10	27-Dec-10
SV13-5', P111cc	E012114-06	Vapor	27-Dec-10	27-Dec-10

H&P Mobile Geochemistry Inc.

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV9-5', P111cc (E012114-01) Vapor Sampled: 27-Dec-10 Received: 27-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL02701	27-Dec-10	27-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**1.3**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*106 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*96.3 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.2 %*		*75-125*	"	"	"	"	

H&P Mobile Geochemistry Inc.

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV10-5', P111cc (E012114-02) Vapor Sampled: 27-Dec-10 Received: 27-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL02701	27-Dec-10	27-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**1.7**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*107 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*95.8 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.7 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV11-5', P111cc (E012114-03) Vapor Sampled: 27-Dec-10 Received: 27-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL02701	27-Dec-10	27-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**1.4**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*108 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*95.3 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.9 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV12-5', P111cc (E012114-04) Vapor	**Sampled: 27-Dec-10**	**Received: 27-Dec-10**							
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL02701	27-Dec-10	27-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.67**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*108 %*		*75-125*		"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*104 %*		*75-125*		"	"	"	
Surrogate: Toluene-d8		*96.3 %*		*75-125*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.2 %*		*75-125*		"	"	"	

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV12-5' Dup, P161cc (E012114-05) Vapor Sampled: 27-Dec-10 Received: 27-Dec-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL02701	27-Dec-10	27-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.88**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*111 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*96.5 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.4 %*		*75-125*	"	"	"	"	

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV13-5', P111cc (E012114-06) Vapor	**Sampled: 27-Dec-10**	**Received: 27-Dec-10**							
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EL02701	27-Dec-10	27-Dec-10	EPA 8260B	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	**0.84**	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*93.2 %*	*75-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.6 %*	*75-125*		"	"	"	"	

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

Volatile Organic Compounds by EPA Method 8260B Modified - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EL02701 - EPA 5030										
Blank (EL02701-BLK1)				Prepared & Analyzed: 27-Dec-10						
1,1-Difluoroethane (LCC)	ND	10	ug/l							
Dichlorodifluoromethane (F12)	ND	0.50	"							
Vinyl chloride	ND	0.05	"							
Chloroethane	ND	0.50	"							
Trichlorofluoromethane (F11)	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	"							
Methylene chloride (Dichloromethane)	ND	0.50	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"							
trans-1,2-Dichloroethene	ND	0.50	"							
1,1-Dichloroethane	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	"							
Chloroform	ND	0.10	"							
1,1,1-Trichloroethane	ND	0.50	"							
Carbon tetrachloride	ND	0.10	"							
1,2-Dichloroethane (EDC)	ND	0.10	"							
Benzene	ND	0.10	"							
Trichloroethene	ND	0.10	"							
Toluene	ND	1.0	"							
1,1,2-Trichloroethane	ND	0.50	"							
Tetrachloroethene	ND	0.10	"							
Ethylbenzene	ND	0.50	"							
1,1,1,2-Tetrachloroethane	ND	0.50	"							
m,p-Xylene	ND	0.50	"							
o-Xylene	ND	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							
Surrogate: Dibromofluoromethane	*2.71*		"	*2.50*		*108*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2.80*		"	*2.50*		*112*	*75-125*			
Surrogate: Toluene-d8	*2.39*		"	*2.50*		*95.7*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2.44*		"	*2.50*		*97.5*	*75-125*			

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Ardent Environmental Group	Project: ARD122710-SB2	
1141 Pamona Road, Suite E	Project Number: 100260002 / 14624 E. Nelson Ave.	Reported:
Corona, CA 92882	Project Manager: Mr. Paul Roberts	03-Jan-11 09:30

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

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15

This certification applies to samples analyzed in summa canisters.

Chain of Custody Record

H&P Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 12/27/10
H&P Project #: ARD122710-SB2
Outside Lab:

Client: Ardent Environmental Group Inc.
Address: 1141 Ramona Road Suite E
Corona, CA 92882
Email:
Collector: Dave Bride
Client Project #: 100260002
Location: 14624 E. Nelson Ave. City of Industry, CA
Phone: 951-736-5334 Fax:
Page 1 of 1
Project Contact: Paul Roberts
Turn around time: on-site

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☐ No ☐

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☐ No ☒ N/A
Temperature: 30°C

Special Instructions:

Lab Work Order # E012414

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☐ TO-15	VOC's: Short List/DTSC ☒ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☒ 1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO2 ☐ O2 ☐ N2
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS										
SV9-5'	SV9	111cc	0903	12/27/10	Vapor	Glass Syringe	1						X							X		
SV10-5'	SV10	111cc	0944				1															
SV11-5'	SV11	111cc	1041				1															
SV12-5'	SV12	111cc	1059				1															
SV12-5' Dup	SV12	116cc	1100				1															
SV13-5'	SV13	111cc	1127				1															

Relinquished by: (Signature) Paul Roberts (company) Ardent Env. Group
Received by: (Signature) Dave Bride (company) H&P Date 12/27/10 Time 1212
Relinquished by: (Signature) (company)
Received by: (Signature) (company) Date Time
Relinquished by: (Signature) (company)
Received by (Signature) (company) Date: Time:

*Signature of ... s authorization to proceed with analysis and acceptance of condition on back.

Sample disposal: ☐ Disposal ☐ Return to client ☐ Pickup

APPENDIX B

RISK ASSESSMENT DOCUMENTATION

SG-SCREEN
PA Version 2.0; 04/

Réset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

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
127184	9.84E+02			Tetrachloroethylene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	9.84E+02	3.39E+04

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} ($atm-m^3/mol$)	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)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	5.62E-03	137.4

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)	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., $C_{building}$ ($\mu g/m^3$)
15	9.84E+02	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	8.09E-04	7.96E-01

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.9E-06	2.2E-02

MESSAGE SUMMARY BELOW:

END

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

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
127184	1.65E+03			Tetrachloroethylene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	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 $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	1.65E+03	3.39E+04

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} ($atm-m^3/mol$)	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)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	5.62E-03	137.4

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)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe') (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.65E+03	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	8.09E-04	1.34E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
3.2E-06	3.7E-02

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

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
71432	7.00E+01			Benzene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
8.80E-02	9.80E-06	5.54E-03	25	7,342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	7.00E+01	3.39E+04

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} ($atm-m^3/mol$)	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)
1.00E+06	5.00E-03	15	7,977	5.29E-03	2.17E-01	1.80E-04	6.86E-03	137.4

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)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe') (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	7.00E+01	1.25	8.33E+01	6.86E-03	5.00E+03	3.50E+10	9.22E-04	6.45E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.9E-05	3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
7.7E-07	2.1E-03

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	Soil Gas Concentration Data: ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
100414	5.11E+02			Ethylbenzene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	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 $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.50E-02	7.80E-06	7.86E-03	25	8,501	409.34	617.20	2.5E-06	1.0E+00	106.17

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	5.11E+02	3.39E+04

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)	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)
1.00E+06	5.00E-03	15	9,994	7.43E-03	3.05E-01	1.80E-04	5.85E-03	137.4

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)	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., $C_{building}$ ($\mu g/m^3$)
15	5.11E+02	1.25	8.33E+01	5.85E-03	5.00E+03	2.36E+12	8.32E-04	4.25E-01

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.5E-06	1.0E+00

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
4.4E-07	4.1E-04

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

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
106423	1.47E+03			p-Xylene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.69E-02	8.44E-06	7.64E-03	25	8,525	411.52	616.20	0.0E+00	1.0E-01	106.17

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	1.47E+03	3.39E+04

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)	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)
1.00E+06	5.00E-03	15	10,083	7.22E-03	2.96E-01	1.80E-04	6.00E-03	137.4

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)	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., $C_{building}$ ($\mu g/m^3$)
15	1.47E+03	1.25	8.33E+01	6.00E-03	5.00E+03	1.17E+12	8.45E-04	1.24E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.0E-01

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.2E-02

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

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
95476	3.48E+02			o-Xylene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	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 $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
8.70E-02	1.00E-05	5.18E-03	25	8,661	417.60	630.30	0.0E+00	1.0E-01	106.17

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	3.48E+02	3.39E+04

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)	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)
1.00E+06	5.00E-03	15	10,245	4.88E-03	2.00E-01	1.80E-04	6.79E-03	137.4

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)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe') (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	3.48E+02	1.25	8.33E+01	6.79E-03	5.00E+03	4.63E+10	9.15E-04	3.18E-01

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.0E-01

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	3.1E-03

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

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
127184	4.30E+02			Tetrachloroethylene

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 (°C)	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	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	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)
	1.5	0.43	0.15	5

MORE ↓

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)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET

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)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	4.30E+02	3.39E+04

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)	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)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	5.62E-03	137.4

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)	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., $C_{building}$ ($\mu g/m^3$)
15	4.30E+02	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	8.09E-04	3.48E-01

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
8.4E-07	9.5E-03

MESSAGE SUMMARY BELOW:

END

APPENDIX C

BORING LOGS

ARDENT
ENVIRONMENTAL GROUP INC.

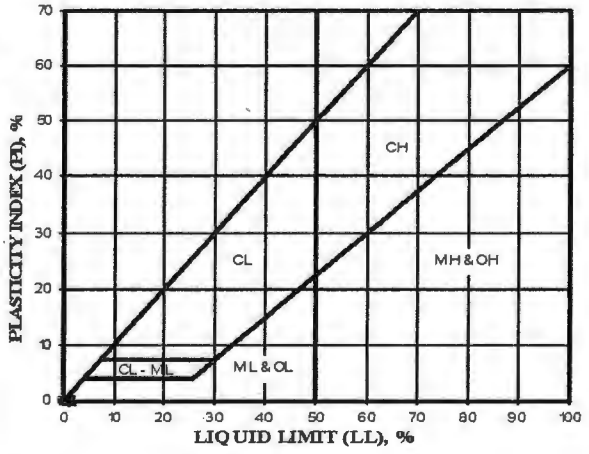
U.S.C.S. METHOD OF SOIL CLASSIFICATION

MAJOR DIVISIONS		SYMBOL		TYPICAL NAMES
COARSE-GRAINED SOILS (More than 1/2 of soil > No. 200 sieve size)	GRAVELS (More than 1/2 of coarse fraction > No. 4 sieve size)		GW	Well graded gravels or gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction < No. 4 sieve size)		SW	Well graded sands or gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (More than 1/2 of soil < No. 200 sieve size)	SILTS & CLAYS Liquid limit < 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fined sands or clayey silts
			CL	Inorganic clays of low to medium plasticity gravelly clays, sandy clays, silty clays, lean
			OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS Liquid limit > 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils

GRAIN SIZE CHART

CLASSIFICATION	RANGE OF GRAIN SIZE	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL Coarse Fine	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 73.2 to 19.1 19.1 to 4.76
SAND Coarse Medium Fine	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.075 4.76 to 2.00 2.00 to 0.420 0.420 to 0.075
Silt & Clay	Below No. 200	Below 0.075

PLASTICITY



BORING LOG EXPLANATION SHEET

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/ FOOT	SAMPLE ID	ORGANIC VAPORS (ppm)	SYMBOL	CLASSIFICATION U.S.C.C.	
0								Bulk sample.
								Modified split-barrel drive sampler.
								No recovery with modified split-barrel drive sampler.
								Continuous Push 1.75-inch I.D. sampler.
								No recovery with a continuous push sampler.
5			XX/XX					Continuous push 0.75-inch I.D. sampler.
10								
							SM	ALLUVIUM: Solid line denotes formation change.
								Dashed line denotes unit change.
15								♀ Seepage.
								Groundwater encountered during drilling.
								Groundwater measured after drilling.
20								The total depth line is a solid line that is drawn at the bottom of the boring

ARDENT
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BORING LOG

EXPLANATION OF BORING LOG SYMBOLS

PROJECT NO.	DATE	FIGURE

ARDENT ENVIRONMENTAL GROUP, INC.
Ardent Environmental Group Inc.
1141 Pomona Road Suite E
Corona, California 92882
Telephone: 951-736-5334
Fax: 951-736-7560

BORING NUMBER SB-1

CLIENT Industry Urban-Development Agency
PROJECT NAME
PROJECT NUMBER 100260002
PROJECT LOCATION 14624 East Nelson Avenue, City of Industry
DATE STARTED 12/14/10 **COMPLETED** 12/14/10
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING —
LOGGED BY CL **CHECKED BY** PAR
AT END OF DRILLING —
NOTES
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.50 Asphalt
	SB-1-3	PID = <1	SM		(SM) Moderate yellowish brown (10YR 5/4), moist, silty, fine SAND. 3.00

No odors or staining noted in sample.
Bottom of borehole at 3.0 feet.

ARDENT ENVIRONMENTAL GROUP, INC.
Ardent Environmental Group Inc.
1141 Pomona Road Suite E
Corona, California 92882
Telephone: 951-736-5334
Fax: 951-736-7560

BORING NUMBER SB-2

CLIENT Industry Urban-Development Agency
PROJECT NAME
PROJECT NUMBER 100260002
PROJECT LOCATION 14624 East Nelson Avenue, City of Industry
DATE STARTED 12/14/10 **COMPLETED** 12/14/10
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING —
LOGGED BY CL **CHECKED BY** PAR
AT END OF DRILLING —
NOTES
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
				0.50	Asphalt
	SB-2-3	PID = <1	SM	3.00	(SM) Dark yellowish brown (10YR 4/2), moist, silty fine SAND with trace pieces of concrete and fine gravel, fill material.

No odor or staining noted in sample.
Bottom of borehole at 3.0 feet.

ARDENT ENVIRONMENTAL GROUP, INC.
Ardent Environmental Group Inc.
1141 Pomona Road Suite E
Corona, California 92882
Telephone: 951-736-5334
Fax: 951-736-7560

BORING NUMBER SB-3

CLIENT Industry Urban-Development Agency
PROJECT NAME
PROJECT NUMBER 100260002
PROJECT LOCATION 14624 East Nelson Avenue, City of Industry
DATE STARTED 12/14/10 **COMPLETED** 12/14/10
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING —
LOGGED BY CL **CHECKED BY** PAR
AT END OF DRILLING —
NOTES
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.50 Asphalt
	SB-3-3	PID = <1	SM		(SM) Moderate yellowish brown (10YR 5/4), moist, silty fine SAND. 3.00

No odors or staining noted in sample.
Bottom of borehole at 3.0 feet.

ARDENT ENVIRONMENTAL GROUP, INC.
Ardent Environmental Group Inc.
1141 Pomona Road Suite E
Corona, California 92882
Telephone: 951-736-5334
Fax: 951-736-7560

BORING NUMBER SB-4

CLIENT Industry Urban-Development Agency
PROJECT NAME
PROJECT NUMBER 100260002
PROJECT LOCATION 14624 East Nelson Avenue, City of Industry
DATE STARTED 12/14/10 **COMPLETED** 12/14/10
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING —
LOGGED BY CL **CHECKED BY** PAR
AT END OF DRILLING —
NOTES
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.50 Asphalt
	SB-4-3	PID = <1	SM		(SM) Moderate yellowish brown (1oYR 5/4), moist, silty fine SAND. 3.00

No odors or staining noted in sample.
Bottom of borehole at 3.0 feet.

ARDENT ENVIRONMENTAL GROUP, INC.
Ardent Environmental Group Inc.
1141 Pomona Road Suite E
Corona, California 92882
Telephone: 951-736-5334
Fax: 951-736-7560

BORING NUMBER SB-5

CLIENT Industry Urban-Development Agency
PROJECT NAME
PROJECT NUMBER 100260002
PROJECT LOCATION 14624 East Nelson Avenue, City of Industry
DATE STARTED 12/14/10 **COMPLETED** 12/14/10
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING —
LOGGED BY CL **CHECKED BY** PAR
AT END OF DRILLING —
NOTES
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.50 Asphalt
			SM		(SM) Moderate yellowish brown (10YR 5/4), moist, silty fine SAND.
5	SB-5-5	PID = <1			5.00 No odor or staining noted in sample. Bottom of borehole at 5.0 feet.