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Project No. 100260002

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

Dear Jim:

This letter presents a summary of the Soil Gas Survey, Soil Sampling, and Limited Health Risk Assessment completed at the property located at 14624 Nelson Avenue in the City of Industry, California ("site" or "subject site"). The work presented herein 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. 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. Richards Watson & Gershon retained Ardent on behalf of their client, Industry Urban Development Agency (Agency). The Agency is considering purchasing the property, demolishing the on-site structures, and preparing the site for future redevelopment. Proposed development plans have not been finalized. Ardent is in the process of completing a detailed documentation report that will present the procedures used and the results of the work summarized herein.

Based on our preliminary findings and as outlined in our 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. Groundwater is reported at a depth of approximately 58 feet below the ground surface (bgs) and flows in a northwesterly direction. Based on the results of the Phase I ESA, three areas of possible environmental concern were noted.

- **Surficial Staining** - A small hazardous materials storage bin is located along the southeastern property line. Waste oil generated during truck maintenance activities is stored in the shed. Some surficial staining was noted on the asphalt next to the bin.
- **Railroad Spurs** - Two railroad spurs are located on the southern portion of the site. It has been our experience that ballast materials beneath railroad spurs sometimes contain petroleum hydrocarbons and polynuclear aromatics (PNAs). Based on this information, the railroad spurs would be considered an environmental concern to the site.
- **Possible Vapor Intrusion** - The site is located within the San Gabriel Valley Groundwater Basin. Portions of the San Gabriel Valley Groundwater Basin have been listed on the National Priority List (NPL), or Superfund Site. The site is located within the Puente Valley Operable Unit of the San Gabriel Valley Groundwater Basin which has been impacted with volatile organic compounds (VOCs), namely the chlorinated solvents trichloroethene (TCE) and tetrachloroethylene (PCE), which were historically used by the commercial and industrial facilities located in this area. Based on our review of groundwater plume maps provided by the United States Environmental Protection Agency (EPA or USEPA), groundwater beneath the site has been impacted with chlorinated solvents. On behalf of the EPA, the Regional Water Quality Control Board, Los Angeles Region (RWQCB) has investigated the site as part of their Well Investigation Program (WIP) and determined that there is a low likelihood that the site has contributed to the regional issue. Based on this information, the RWQCB and EPA issued no further action (NFA) letters for the site. Due to the type of business operation (i.e., lumber yard) and our review of chemical use information obtained during this assessment, there is a low likelihood that historical or current site activities have contributed to the regional groundwater issues. However, due to the possible groundwater contamination beneath the site and based on the American Society for Testing and Materials (ASTM) standards, the site would be considered a potential health risk to future occupants due to vapor intrusion from possible off-gassing of the impacted groundwater.

Based on these conclusions, Ardent recommended completing a soil gas survey and limited soil sampling. The objectives of the work 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 results of the soil gas survey were to be compared to Cal-EPA's California Human Health Screening Levels (CHHSLs). If elevated concentrations were discovered, a limited human health risk assessment would be completed to further evaluate whether a possible human health risk was present. If necessary, future buildings could be constructed with engineering controls to limit vapor intrusion. The following presents a summary of the findings and recommendations for further work, if necessary.

### **Soil Sampling**

One soil boring was advanced to a depth of approximately 5 feet bgs in the vicinity of the surficial staining associated with the hazardous materials storage bin. Four soil borings were drilled within the railroad spurs to a depth of approximately 3 feet bgs (i.e. into native soil beneath the railroad ballast materials). Soil samples collected at 3 feet bgs from borings drilled within the railroad spurs were analyzed for total petroleum hydrocarbons carbon chain C<sub>10</sub>-C<sub>32</sub> (TPHcc) and PNAs. The soil sample collected at 5 feet bgs within the boring drilled in the vicinity of the surficial staining was analyzed for TPHcc. Laboratory results indicated no detectable to low concentrations of constituents analyzed. Based on these results, these features would no longer be considered an environmental concern to the site.

### **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 the 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 some of the concentrations of PCE exceeded the preliminary screening levels presented in CHHSLs, Ardent completed a limited human health risk assessment using State-approved models. Based on the results and due to the elevated concentrations of PCE detected in SV-4, the concentrations did not "pass" using a commercial land use criteria. Based on these results, 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 duplicated (at 1.3 and 1.7 ug/l) in two sample points advanced next to SV-4; indicating that the 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 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 encroaching onto the southwestern corner of the site (referred to herein as the "impacted soil gas area"), 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.

Because of the elevated vapor concentrations, there are two options available for future building construction, depending on the proposed construction details and land uses with respect to the location of the impacted soil gas area. 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 human health risk assessment for the Agency on the adjacent land. Based on the results, no engineering controls were necessary for future buildings. The following presents the two options available for future site construction.

1. **Proposed Building to be Located Away from the Impacted Soil Gas Area** – If the building is planned to be constructed away from the southwest corner of the site, no engineering controls would 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 impacted soil gas area.

2. **Proposed Building to be Located Within the Impacted Soil Gas Area** - If the proposed plans include construction within or in close proximity to the elevated soil gas concentrations, the human health risk assessment model can be re-run using site specific building 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.

If you have any questions or comments regarding this letter, please call the undersigned at your convenience.

Sincerely,  
**Ardent Environmental Group, Inc.**



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

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