Prepared for

TDY Industries, Inc.
1000 Six PPG Place
Pittsburgh, Pennsylvania

SITE WIDE RISK ASSESSMENT

AIRPORT/FORMER TRA SITE

2701 NORTH HARBOR DRIVE
SAN DIEGO, CALIFORNIA

Prepared by

Cathy Villaroman

Cathy Villaroman, MS

Brian Hitchens, P.G. No. 7593

Geosyntec consultants

engineers | scientists | innovators

10875 Rancho Bernardo Road, Suite 200
San Diego, California 92127

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CERTIFICATION

I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Edgard Bertaut
Senior Environmental Manager
TDY Industries, Inc.

2-11-08
Date

1. INTRODUCTION

Geosyntec Consultants, Inc. (Geosyntec) has prepared this Risk Assessment for TDY Industries, Inc. ("TDY") in support of its effort to complete a focused Remedial Investigation and Feasibility Study of the 44-acre parcel located at 2701 North Harbor Drive in San Diego, California (**Figure 1-1**) ("Site") in response to Cleanup and Abatement Order #R9-2004-0258. This Report was prepared by Ms. Cathy Villaroman, and Mr. Brian Hitchens, P.G., C.Hg., and was reviewed by Ms. Ruth Custance and Mr. Robert Ettinger of Geosyntec in accordance with the peer review policy of the firm.

The lead agency providing oversight for this risk assessment is the San Diego Regional Water Quality Control Board (RWQCB-SD). The risk assessment followed guidelines set by the RWQCB-SD, the California Environmental Protection Agency's (Cal-EPA) Department of Toxic Substances and Control (DTSC), County of San Diego Department of Environmental Health (DEH), as well as by the Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA) and USEPA. It is presumed for purposes of this risk assessment that the Site will be used for commercial/light industrial uses some time in the future and that areas of the Site may be unpaved, and bare soil could be available for direct contact exposures. According to the current Site occupant, the San Diego County Regional Airport Authority (Airport), approximately 10 acres of the west side of the Site is proposed for interim use as a parking facility. The Port holds the Site land in trust for the State of California, so it is infeasible to obtain a deed restriction for the property. Also, because the land is tidelands, residential development is prohibited by law.

This Risk Assessment (RA) presents the approach and methodologies that were used to estimate potential human health risks associated with residual chemicals detected in soil, soil gas, and groundwater samples collected from the Site and from contiguous impacted areas. The area of concern evaluated in this RA during and after Site redevelopment is the entire 44-acre Site and certain adjacent areas (**Figure 1-2**).

1.1 Risk Assessment Approach

The overall approach that was used in this RA was based on United States Environmental Protection Agency (USEPA) and Cal-EPA guidance documents (USEPA, 1989; 1991; 1992; 1997; 2002; 2004ab; Cal-EPA 1997, 1999; 2005a). The RA is a predictive tool used to assess the potential human health risks associated with releases of Site-related chemicals. This information will be used in the remedial

decision-making process to determine if further action is warranted and to establish cleanup criteria.

The RA consists of five major components:

- **Data Review and Evaluation:** A review of available data collected from the Site and contiguous areas which defines the nature and extent of environmental impacts identified at the Site and contiguous impacted areas; the identification of chemicals of potential concern (COPCs) (defined as potentially hazardous chemicals associated with the Site that are present at concentrations higher than background levels); and the identification of potential data gaps.
- **Exposure Assessment:** An assessment of the magnitude, frequency, duration, and routes of potential human exposures to Site-related COPCs. The exposure assessment considers both current and likely future uses of the Site and adjacent areas, and is based on complete exposure pathways to actual or probable human receptors (i.e., general groups that could come in contact with COPCs). The exposure scenarios are summarized in the Conceptual Site Model (CSM), which includes the sources, affected media, release mechanisms, and exposure pathways for each identified receptor population. Onsite ecological exposures were not evaluated quantitatively as there are no known onsite ecological receptors. Offsite human and ecological exposures in Convair Lagoon and San Diego Bay from landslide impacts are evaluated in **Appendix A** of this RA using San Francisco Bay Environmental Screening Levels (ESLs).
- **Toxicity Assessment:** A presentation of available information to identify the nature and degree of toxicity and to characterize the dose-response relationship (the relationship between magnitude of exposure and magnitude of potential adverse health effects on each receptor) for each COPC.
- **Risk Characterization:** A synthesis of exposure and toxicity information to yield quantitative estimates of potential cancer risks and noncancer hazards to defined receptor populations.
- **Uncertainty Analysis:** Discussion of the uncertainties associated with each of the four previous steps to assist decision-makers in evaluating the RA results in the context of the assumptions and variability in the data used.

The RA addressed potential adverse impacts to construction and trench workers during construction and to future industrial/commercial workers and landscape workers. Land use in the immediate vicinity of the Site is characterized as urban commercial and urban light industrial; therefore, potential exposures to offsite residents were not considered. However, potential exposures to offsite industrial/commercial workers were quantitatively evaluated in this RA. Potential exposures to chemicals detected in shallow soils were evaluated for direct contact pathways as well as inhalation of volatile chemicals in outdoor air and fugitive dust. Additionally, the potential for volatile chemicals to migrate from subsurface soil and groundwater into above ground structures was evaluated for an industrial/commercial worker. Inhalation of volatiles and dermal contact with chemicals detected in groundwater were evaluated for construction and trench workers.

After identifying the COPCs for the Site and contiguous impacted areas in the Hazard Identification step (Section 3), a quantitative RA was conducted using realistic, Site-specific exposure parameter assumptions to yield an estimate of potential health risk (herein referred to as the Site-Specific RA). These Site-Specific exposure parameters are considered to be adequately conservative and are consistent with typical values recommended and approved by regulatory agencies, including DTSC. However, default exposure parameters presented in DTSC's memorandum entitled "Human and Ecological Risk Division (HERD) HHRA Note Number 1, Issue: Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Military Facilities" (Cal-EPA, 2005a) were also used to estimate potential risk for comparison and to provide risk managers with a range of risk results (herein referred to as the Default RA). Reasonable maximum exposure (RME) estimates of exposure were developed for the identified exposure scenarios. For RME estimates of exposure, reasonable conservative modeling assumptions (those which tend to overestimate exposure point concentrations) and upper-bound (or high) default values for most exposure parameters were used.

The southern boundary of the Site is situated approximately 250 feet from Convair Lagoon (San Diego Bay). Potential impacts to San Diego Bay from groundwater intrusion into the SWCS and direct migration through the subsurface are evaluated in **Appendix A** of this Site Wide RA. No quantitative onsite ecological RA has been prepared as no onsite ecological receptors were identified.

Impacted sediment within the Storm Water Conveyance Systems (SWCS) was addressed by a removal action in July – October 2006. During this removal action, all

sediment with known PCB results exceeding 1.0 mg/kg was removed from storm drains. The target level of 1.0 mg/kg is the approximate ambient PCB concentration for storm drain sediment in the vicinity of the Site, based on background concentrations collected from the Airport and the Marine Corps Recruiting Depot (MCRD) upgradient of the Site. Since this cleanout event, PCBs have been detected above 1.0 mg/kg within the 60-inch SWCS. An evaluation of potential risk from the sediment currently within the SWCS and soil adjacent to the SWCS is presented in Appendix A of this Site Wide RA.

1.2 Site Background Information

The Site is a 44-acre parcel at 2701 North Harbor Drive in San Diego, California. The Site is owned by the San Diego Unified Port District ("Port") and currently leased to the San Diego County Regional Airport Authority ("Airport"). **Figure 1-2** depicts the on- and offsite areas covered by this RA, including the Site, building numbers, and certain portions of surrounding properties. The Site is located adjacent to and south of the San Diego airport. The Site was originally tidelands of the San Diego Bay, which were filled with materials dredged from San Diego Bay from 1936 to 1939 during the creation of Lindbergh Field and the U.S. Coast Guard Station. The Site was initially owned by the City of San Diego as part of its airport operations. Ryan Aeronautical and later Teledyne Ryan Aeronautical leased and operated the Site beginning in or around 1939 until 1999. The westernmost portion of the Site was reportedly used by the City of San Diego for its operations in the period of the early 1940s. The Port subsequently received title for the property from the City of San Diego reportedly in the early 1960s.

Ryan Aeronautical and Teledyne Ryan Aeronautical manufactured aircraft and military planes for the U.S. Government from 1939 to 1999. The business and the majority of the assets of Ryan Aeronautical were sold in 1999 to Northrop Grumman. Operations at the Site ceased in 1999 and TDY returned possession of the property to the Port on November 1, 2002. The Port leased the Site to the Airport on October 11, 2005.

A detailed Site usage history was developed in a 2001 report prepared by PES Environmental, Inc., "*Environmental Assessment, Former Teledyne Ryan Aeronautical Site, 2701 North Harbor Drive, San Diego, California*" (hereinafter the PES Report). The activities described in that report are consistent with large scale manufacturing of aircraft and aeronautical equipment. As such, various chemicals of interest identified in Cleanup and Abatement Order No. R9-2004-0258 (hereinafter CAO 04-258) were utilized, namely PCBs, VOCs, and metals. Based on previous investigations conducted

at the Site, the soil and groundwater contain various organic and inorganic compounds above background levels.

1.3 Environmental Setting

1.3.1 Geology and Hydrogeology

The Site sits on artificial fill composed of silty-sand, silt, and clay, which overlies bay deposits and the Bay Point Formation. The Site is underlain at depth by an unknown thickness of the Pleistocene-aged Bay Point Formation and undifferentiated Eocene-age deposits. The Bay Point Formation consists of poorly consolidated, fine- to medium-grained pale brown, fossiliferous sandstone. The fill material used in this area was primarily derived from dredging San Diego Bay and includes bay deposits and Bay Point Formation materials (PES, 2001).

The Site is located approximately 250 feet north of the Convair Lagoon portion of San Diego Bay at an elevation of approximately 10 feet above mean sea level. This Site is within the Lindbergh Hydrographic Subarea in the San Diego Mesa Hydrographic Subunit of the Pueblo San Diego Hydrologic Unit and is heavily industrialized, and contains no major stream system. Any surface runoff is directed through a storm drain system that discharges into San Diego Bay.

A number of beneficial uses have been identified for the waters of the San Diego Bay, including industrial service supply, navigation, recreation, and commercial and sport fishing. These waters also support marine, saline water, and wildlife habitats, which include some rare and endangered species (PES, 2001).

Because of the poor quality of the aquifer due to saltwater intrusion, no beneficial uses have been identified by the RWQCB for the groundwater in the area of the Site. The depth to groundwater at the Site appears to range between approximately 5 to 8 feet below grade, with an average depth to groundwater of approximately 7 feet. The tidal influences from the nearby Bay likely causes a diurnal fluctuation in the depth to water. The direction of groundwater flow is generally south towards San Diego Bay (PES, 2001).

1.3.2 Surface Water

No permanent surface water bodies occur on or contiguous to the Site. The nearest surface water body is the Convair Lagoon portion of San Diego Bay located approximately 250 feet to the south of the Site.

1.4 Adjacent Properties

Industrial and commercial land uses predominate in the immediate vicinity of the Site. The San Diego Airport and its runways border the entire north side of the Site. A frontage road, a small parking lot, and a Coast Guard taxiway border the Site to the east. Another parking lot and Solar Turbines Corporation are located further east of the Site. The area immediately west of the Site houses the San Diego Airport Commuter Terminal, small aircraft parking, maintenance and service areas, a fuel dispensing terminal for aircraft fuel, and large aircraft washing facilities along with flight operations centers and food production facilities for passenger aircraft. North Harbor Drive borders the Site to the south. A parking lot, Convair Lagoon, and a U.S. Coast Guard Station are located directly across North Harbor Drive.

1.5 Risk Assessment Organization

The remainder of this RA is organized in the following sections:

- **Section 2** presents the data evaluation process;
- **Section 3** describes the hazard identification process, including the identification of chemicals of potential concern (COPCs) and methods for evaluating background concentrations of inorganic chemicals;
- **Section 4** describes the conceptual site model, and includes the identification of potential human receptors and the evaluation of possible exposure pathways;
- **Section 5** presents the methods for evaluation of analytical data and exposure point concentrations;
- **Section 6** presents the exposure assessment approach and the methods used to estimate human exposure via chemical intake;
- **Section 7** describes the approach for selecting chemical-specific toxicity values;

- **Section 8** describes the risk characterization process, including an uncertainty analysis, and proposed risk management criteria; and
- **Section 9** presents the references cited in this document.

1.6 Definitions

Terms used in this RA have specific meaning with respect to the Site or the processes described. The following are definitions of select terms:

1) The 2701 North Harbor Drive property will herein be referred to as the "Site."
2) A "chemical of potential concern" (COPC) is a potentially site-related chemical with data of sufficient quality for use in quantitative human health RA.
3) "Pristine conditions" are naturally occurring concentrations of chemicals in soils at locations unaffected by human activity (Cal-EPA, 1997).
4) "Ambient conditions" are concentrations of compounds in soils in the vicinity of a site that are unaffected by site-related activities. Ambient conditions are sometimes referred to as "local background" (Cal-EPA, 1997).
5) A "human receptor" is a hypothetical individual who may be exposed to compounds in the environment. Receptors are often identified by the behaviors that determine how or with what intensity they may be exposed, such as "workers" or "residential receptors".
6) An "exposure route" is a mechanism of uptake. Environmentally relevant exposure routes typically include inhalation, ingestion, and absorption through the skin.
7) An "exposure pathway" is defined by USEPA (1989) as consisting of four elements: (a) source and mechanism of chemical release; (b) a retention or transport mechanism through an environmental medium; (c) a point of potential contact with the impacted medium (i.e., an exposure point); and (d) an exposure route at the exposure point. If any of these elements is missing, the exposure pathway is considered "incomplete", and compound uptake via pathway would not occur.

8) An "exposure point concentration" (EPC) is the concentration of a COPC in a medium at the location where a receptor is assumed to make contact with that medium. Depending on the nature of the exposure, an EPC may be estimated at a specific point, or may be averaged about an "exposure area" (e.g., the soil surface), using the 95% upper confidence limit (UCL).

2. DATA EVALUATION

An initial step in the risk assessment (RA) process is an evaluation of available data to develop a data set for use in the RA and identify media-specific chemicals of potential concern (COPCs). This section discusses the data evaluation steps that were conducted for the RA. The methodology that was used to identify the COPCs for the Site and contiguous areas is presented in **Section 3**.

A variety of samples have been collected during several investigations (Haley & Aldrich [H&A] 2004; Geosyntec, 2002; Geosyntec, 2005; Geosyntec, 2006). Each sample collected may have been analyzed for a number of different chemicals, depending on the rationale for sample collection. However, not all chemicals detected may be attributable to an onsite release and not all of the data may be of acceptable quality. Previous and recent data collected were evaluated to determine which of the chemicals identified are likely to be Site-related and to assess whether the reported concentrations for these chemicals are of acceptable quality for use in the RA. Based on this assessment, all of the data collected from the H&A 2003 site characterization activities and assessments performed by Geosyntec in 2002, 2005, and 2006 were included in the RA. Some data from older studies has also been included in the RA, where it has not been superseded by more recent data. All included and excluded data points are presented in **Tables 1 and 2**, respectively, with point by point rationale for data exclusion, where warranted.

The rationale for excluding certain historical data points is presented below:

1) Some data related to historical UST removal or other soil removal activities were considered, but not included in the RA. Soil associated with these data have been removed and are no longer present at the site. Analytical data from samples from these excavated soils are not representative of current site conditions. The data set has been evaluated to confirm that confirmation samples were retained if the sample quality was considered adequate for use for RA purposes and newer data from the vicinity is not available.

2) Some historical data was labeled as soil data, but was in fact sediment data from storm drain systems, the subject material having since been removed.

3) Some data was labeled as soil data, but was in fact building material data, and was not pertinent to an analysis of a soil pathway.

4) Some historical soil and groundwater data has been superseded by more recent data obtained using more recent analytical methods.

Sample locations for soil, soil gas, and groundwater are presented on **Figures 2-1**, **2-2**, **and 2-3**, respectively. Additionally, the location, concentration, and depth of the maximum concentration of each detected COPC in soil, soil gas, and groundwater are presented in **Figures 2-4, 2-5, and 2-6**, respectively. **Figures 2-7 and 2-8** show the locations of included and excluded historical soil samples and groundwater samples, respectively. All available soil gas data was retained for evaluation in this RA.

The data evaluation was consistent with guidance provided by USEPA in their *Risk Assessment Guidance for Superfund* (1989) and in their *Guidance for Data Usability in Risk Assessments* (1992). The evaluation included:

- Evaluate the appropriateness of the analytical methods employed during the various site investigations in relation to the types of industrial processes and potential COPCs;
- Evaluate the quality of data with respect to sample quantification and detection limits;
- Examine laboratory qualifiers assigned to monitoring data and evaluate potential quality assurance/quality control problems; and
- Evaluate data with respect to blanks.

2.1 Evaluation of Analytical Methods

The analytical methodology used for data collection was assessed for appropriateness for use in the RA. Analytical results that are not specific for a particular compound, with the exception of TPH, or results of screening analytical methods (e.g., PID readings) were not utilized in this RA. The summary of analytical results and the methodology used are presented in **Tables 3 through 5** for soil matrix, soil gas, and groundwater, respectively.

2.2 Evaluation of Detection Limits

In some cases, the detection limit for a chemical may be greater than the corresponding standards, criteria, or concentrations derived from toxicity reference values; therefore, the chemical may be present at levels greater than these corresponding reference concentrations, which may result in undetected risk. In other cases, a particular detection limit may be significantly higher than positively detected values in other samples in a data set due to matrix interferences. Detection limits associated with the analytical data were reviewed before eliminating chemicals that were not detected. Chemicals that have not been detected in any medium were eliminated only after considering these cases and any other credible reasons why they may not have been detected. For example, if chemicals with similar fate and transport characteristics are detected frequently in soil, and only a small number of these chemicals are also detected frequently in groundwater, then the undetected chemicals may be present in the groundwater and additional assessment may need to be conducted to attempt to confirm their presence if the detection limits are too high. The minimum values reported and whether they are detections or detection limits are presented in **Tables 3 through 5** for soil matrix, soil gas, and groundwater, respectively.

2.3 Evaluation of Qualified Data

For analytical results, various qualifiers pertaining to the quality of the data are attached to certain data by either the laboratories conducting the analysis or by individuals conducting the data evaluation. All qualifiers were discussed prior to utilizing the chemical data for the RA. Sample results flagged with a "J" qualifier for organic compounds (i.e., the chemical has been identified, but the estimated concentration is below the contract required detection limit) and the "B" qualifier for inorganics (i.e., blank contamination was indicated in the sample) were included in the data set. These data were used as reported unless they have been re-qualified based on method blank results. "R" qualified data were rejected from the data set.

2.4 Evaluation of Blanks

If the blank contains detectable concentrations of common laboratory contaminants (acetone, 2-butanone, methylene chloride, toluene, and phthalate esters), the sample results will be considered as positive results only if the concentrations in the sample exceed 10 times the maximum amount detected in any blank. If the concentration of a common laboratory contaminant is less than 10 times the concentration detected in the

blank, then it will be concluded that the chemical was not detected in the particular sample above a quantitation limit equal to blank concentration. If all samples contain levels of a common laboratory contaminant that are less than 10 times the level of contamination noted in the blank, then the chemical will be eliminated from use in the RA. If the blank contains detectable concentrations of chemicals that are not common laboratory contaminants, then the above considerations apply; however, the sample concentrations are compared to five times the concentration detected in the blank.

3. HAZARD IDENTIFICATION

The hazard identification section of this RA entailed identifying chemicals that were evaluated further in the RA as COPCs. USEPA risk assessment guidance (1989) presents a methodology for identifying which detected chemicals should be included in a quantitative RA. These are defined by USEPA (1989) as chemicals potentially related to the site whose data are of sufficient quality for use in a quantitative RA. USEPA guidance states that the list of chemicals should include all chemicals that were:

1) Positively detected in at least one sample;
2) Detected above levels of the same chemicals found in associated blank samples;
3) Tentatively identified but may be associated with the Site based on historical information;
4) Transformation products of detected chemicals; and
5) Detected above naturally occurring levels (background).

As discussed in **Section 2**, the existing data collected from the Site and contiguous areas were evaluated in terms of quality and usability in a RA. All data determined to be of sufficient quality were carried forward into the COPC selection process described below.

The COPC screening process for inorganic compounds includes a comparison to Site background, with only those compounds exceeding background being selected as COPCs. For organic compounds, all organic chemicals positively detected in at least one sample were included as COPCs. Statistical summaries for soil matrix, soil gas, and groundwater collected onsite and within contiguous areas are presented in **Tables 6 through 8a**, respectively. A statistical summary for groundwater data collected offsite is presented in Table 8b.

3.1 Evaluation of Total Petroleum Hydrocarbons

The approach developed by the Massachusetts Department of Environmental Protection (MADEP) for assessing the hazard from total petroleum hydrocarbon (TPH) exposure was used to evaluate potential hazard from exposure to TPH compounds. With this

conservative approach, there is a concern regarding "double counting" the potential health hazard from exposures particularly to the aromatic hydrocarbons.

Several representative constituents of the aromatic fraction of TPH, namely the BTEX compounds, as well as cumene and trimethylbenzene are discussed in the Massachusetts Department of Environmental Protection Guidance "*Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of the MADEP VPH/EPH Approach, Policy #WSC-02-411*" (MADEP, 2002). These aromatic constituents of TPH have been analyzed for in several hundred samples collected throughout the Site and contiguous areas.

Although extensive analysis has been conducted for VOCs and PAHs (the aromatic constituents of TPH), both aromatic and aliphatic hydrocarbon fractions of TPH were evaluated in this RA. Based on MADEP guidance and DTSC recommendation, TPH analyzed in samples collected from the Site and contiguous areas was segregated in the following manner (see **Table 6** for TPH in soil matrix and **Tables 8a,b** for TPH in groundwater):

TPH Fraction Ranges for Risk Calculations	TPH Fraction Ranges as Analyzed
TPH - aliphatic; C5-C8	TPH (C5-C12)
TPH - aliphatic; C9-C18	TPH (C10-C12); TPH (C13-C15); TPH (C16-C22)
TPH - aliphatic; C≥19	TPH (C23-C32); TPH (C32+)
TPH - aromatic; C5-C8	TPH (C5-C12)
TPH - aromatic; C9-C18	TPH (C10-C12); TPH (C13-C15); TPH (C16-C22)
TPH - aromatic; C≥19	TPH (C23-C32); TPH (C32+)

Several historical samples were collected with undifferentiated carbon ranges; however, these samples have been superseded by fractionated TPH results, and have not been used in this RA.

3.2 Background Metals Comparison

An evaluation of the analytical data was conducted to assess which inorganic chemicals should be considered as COPCs. Site-specific background metals concentrations were derived from existing Site data following the two-tiered approach described in the Cal-EPA DTSC (1997) guidance document entitled "*Selecting Inorganic Constituents as Potential Chemicals of Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities*". USEPA and DTSC define background levels of metals as including both pristine conditions (e.g., natural geological composition; at locations unaffected by human activity) and ambient conditions (i.e., chemical concentrations in the vicinity of the Site but are unaffected by site-related activity; local background). Therefore, background levels of metals could include metals from both natural and anthropogenic sources.

The existing Site-specific dataset for soil contains between 408 and 431 analytical results for each metal, 161 results for total cyanide, and 159 results for amenable cyanide in soil samples collected across the Site. The existing Site-specific dataset for groundwater contains between 121 and 127 analytical results for each metal, and 19 results each for total cyanide, and amenable cyanide in groundwater samples collected across the Site. All soil and groundwater samples analyzed for inorganics were considered in the derivation of Site-specific background concentrations.

The background comparison methodology followed a weight-of-evidence approach consistent with Cal-EPA guidance (1997). The Site data was evaluated to determine if more than one population can be discriminated, (e.g. an ambient population and a Site-impacted population), using methods described in Cal-EPA guidance (1997). If data from the Site demonstrated the presence of two or more populations, this in itself provided evidence for impacts above ambient conditions (i.e., the lower population is considered local background). The statistical method for this approach is described below.

The objective of the Cal-EPA approach is to determine for each inorganic compound whether ambient and non-ambient concentrations can be distinguished. An initial screening was conducted on the soil and groundwater sample populations to determine whether the datasets contained sufficient values greater than the detection limit (at least 10% of samples and at least 10 samples for each constituent). The statistical analysis was only performed for those compounds that passed the initial screening.

The Cal-EPA document (1997) recommends a "weight of evidence" approach where three indicators of whether background is exceeded are considered. The three criteria consist of: 1) the degree to which the site data distributions are fit by a lognormal or normal distribution, assessed using either the Shapiro-Wilk or D'Agostino goodness-of-fit test; 2) a graphical assessment (construction and review of histograms, box-and-whisker percentile plots, and normal quantile plots of concentrations and log-transformed concentrations of each constituent in each media) to identify breaks or nonlinearity indicative of more than a single population and to estimate the maximum concentration associated with the background population; and 3) the skewness of the data as indicated by the coefficient of variation (standard deviation/average) and the data range. The statistical analysis was run using a replacement value of ½ times the reporting detection limit (½ DL) for the non-detect values. Finally, a comparison of the Site-specific maximum background concentrations in soil with published maximum background values for these same metals in California and Western U.S. soils was conducted (**Appendix B**).

Chemicals detected at least once at concentrations above their respective background levels were selected as COPCs and were further evaluated in the RA. Metals detected at least once in soil at concentrations greater than the maximum background level identified in **Appendix B** were selected as COPCs, as indicated in **Table 6**. Metals detected at least once in groundwater at concentrations greater than the maximum background level identified in **Appendix B** were selected as COPCs, as indicated in **Tables 8a,b.**

3.3 Historical Detections of Light Non-Aqueous Phase Liquids

Although light non-aqueous phase liquid (LNAPL) has been historically detected in the vicinity of Area D, Building 158, and Building 142, this data was typically related to UST investigations which have since been closed. More recent data from these areas has not indicated the continued presence of LNAPL.

- Building 158 had identified free product in one hydroprobe sample in 2003. A confirmatory probe was advanced during RI/FS investigations in 2006, and no free product was detected at that time.
- Free product has historically been detected in the vicinity of gasoline USTs near Building 142. These tanks have been removed and the LUST case is closed. An immeasurable trace of LNAPL was observed in one

Building 142 well in 2005, but has not been observed in any measurements since.

- Area D had trace free product (0.01') identified in 2005, before a fire main break in the area. No product has been measured in this area since that time.

4. CONCEPTUAL SITE MODEL

The Conceptual Site Model (CSM) identifies potential chemical sources, release mechanisms, transport media, routes of chemical migration through the environment, exposure media, and potential receptors. A RA considers the current and the anticipated future use of a site when developing a CSM. Receptors that may currently or in the future be potentially exposed to site-related chemicals are then also identified to help assess the likelihood and extent of their potential exposures.

A general CSM for this RA was developed based on current and anticipated future use of the Site and adjacent areas. The general CSM was constructed based on a review of the available site information regarding the environmental setting and chemical distribution in environmental media. The general CSM, presented in **Figure 4-1**, represents the current understanding of the sources of COPCs, the means by which they are released and transported within and among media, and the exposure pathways and routes by which they may contact human receptors. Because the Airport Authority currently operates the site and contiguous impacted areas, and these areas are likely to be redeveloped in the future as a whole, impacts have been evaluated for each receptor considering all available data, both onsite and on immediately contiguous impacted areas. Potential vapor risk to offsite industrial/commercial workers was evaluated using offsite groundwater data, where soil gas data was not available.

For completeness, potential Recreator/Fisher and Aquatic Organisms in Convair Lagoon are retained as potential receptors in the CSM; however, these exposure pathways will be evaluated in a subsequent Convair Lagoon Risk Assessment. The Least Tern was specifically not included in the CSM. There does not appear to be a complete pathway for these receptors as their nesting area is upwind/crosswind to the dominant wind direction at the Site (blowing from the west-northwest) and the Least Turn does not ingest soil to aid in digestion. While this pathway is likely incomplete, it will be included in an ecological risk assessment for qualitative evaluation.

Sediment and groundwater pathways related to landslide impacts to Convair Lagoon and the SWCS are addressed in **Appendix A** of this RA. **Appendix A** details the additional data that was collected, the potential groundwater and sediment exposure pathways, the receptors evaluated, and the screening criteria used. Potential transport and exposure pathways include:

Groundwater/Seep:

- Migration of impacted groundwater in the shallow/deep interval from the site to San Diego Bay (discharge to surface water and/or pore water);
- Migration of impacted groundwater from the site to the SWCS backfill material followed by discharge into San Diego Bay;
- Migration of impacted groundwater from the site to the SWCS (i.e. seeps) followed by discharge into San Diego Bay.

Soil/Sediment

- Migration of impacted soil/sediment from the surface of the site to the SWCS followed by discharge into San Diego Bay;
- Migration of impacted storm drain backfill material to the SWCS followed by discharge into San Diego Bay; and
- Migration of impacted sediment currently within the SWCS followed by discharge into San Diego Bay.
- Construction/maintenance workers exposure to impacted sediment within the SWCS.

The major components of the CSM are discussed below.

4.1 Constituent Characteristics and Potential Exposure Routes

Potential exposure to chemicals in soil and groundwater is partly dependent on the type of chemicals that are present and the respective exposure media. Potential exposure routes to be considered include both direct and indirect contact with soil and groundwater. If volatile chemicals are detected in soil, indirect exposures from vapors migrating from the subsurface may occur. If metals or semi-volatile organic compounds (SVOCs) are detected, the direct contact routes of exposure, such as incidental ingestion or dermal contact, are the most potentially relevant.

The primary chemicals detected at the Site and contiguous areas are PCBs, SVOCs, metals, and volatile organic compounds (VOCs). As a result, both indirect and direct exposure routes were considered.

4.2 Selection of Receptors

The current land use is industrial, but the proposed future land use for the Site and contiguous areas are light industrial/commercial; therefore, the future receptors of concern that were evaluated in this RA consist of (1) an industrial/commercial worker, (2) a landscaper, (3) trench worker, and (4) a construction worker. Potential exposures to current workers on the Site and on contiguous impacted areas were also evaluated in a Targeted Risk Assessment. This specific evaluation is presented in more detail in **Appendix C**. The receptors and exposure pathways selected for evaluation in this RA were based on these considerations and are discussed in more detail below.

4.2.1 Current Receptors

Onsite and Offsite Industrial/Commercial Worker

Since industrial and commercial land uses predominate in the immediate vicinity of the Site, the potential exists for vapor migration into indoor air from chemicals detected in groundwater. Therefore, potential indoor air exposures to current onsite and offsite workers located in specific areas of the Site and contiguous impacted areas were quantitatively evaluated in **Appendix C**. Specific exposure and model input parameters for these receptors are presented in **Appendix C**.

4.2.2 Receptors – During Construction Activities

Construction Worker

Construction workers will likely be involved in grading and excavation for footings and utility lines when the Site and contiguous areas are redeveloped. Due to the depth of typical footings and utilities, as well as the depth to groundwater at the Site, it was assumed that construction workers can be exposed to chemicals in the top 8 feet of soil. It was assumed that a worker will be working 8 hours each day, 5 days per week for 50 weeks in one year. Additionally, because groundwater in the area is relatively shallow, it was assumed that the construction worker may be exposed to impacted groundwater. The Site-Specific and Default exposure parameters for a construction worker are presented in **Table 9**.

Trench Worker

Trench workers may be involved if excavation takes place during construction of foundations, utility lines, or pipelines when the area is redeveloped. Similar to a construction worker, a trench worker was assumed to be exposed to chemicals in the top 8 feet of soil and in shallow groundwater. Trench workers were assumed to be exposed to COPCs for 8 hours each day, 5 days per week for 6 weeks during a one year exposure duration, resulting in an exposure frequency of 30 days per year. The Site-Specific and Default exposure parameters for a trench worker are presented in **Table 10**.

4.2.3 Receptors - After Site Redevelopment

Industrial/Commercial Worker

Potential use of the property under a commercial designation may include offices, retail, warehouse, and light manufacturing. It is anticipated that the majority of the Site will be covered by pavement and buildings if the Site and contiguous areas are redeveloped for commercial use, which reduces the potential for direct exposure to soils. The potential exists for vapor migration into indoor air from chemicals detected in soil, soil gas and groundwater, so potential indoor air exposures to future workers at the Site and contiguous areas were quantitatively evaluated in this RA. Potential vapor migration to indoor air for offsite Industrial/Commercial Workers were evaluated using offsite groundwater data where soil gas data was not available. It was assumed that the future industrial/commercial worker will be working for 8 hours each day, 5 days per week for 50 weeks for 25 years. The Site-Specific and Default exposure parameters for an industrial/commercial worker after redevelopment are presented in **Table 11**.

Landscaper

It is anticipated that the majority of the Site will be covered by pavement and buildings if the Site and contiguous areas are redeveloped for commercial land use, which reduces the potential for exposures to soils. However, exposures may occur during landscaping activities; therefore, potential exposures to a future landscaper working at the Site and contiguous areas were evaluated in this RA. Landscapers are not expected to contact groundwater directly; therefore, this pathway would only be complete if significant vapors were migrating from groundwater through the vadose zone into outdoor air. Due to the dilution effect of outdoor air, this pathway is considered insignificant and is not evaluated quantitatively.

It was assumed that the landscaper will be working for 8 hours each day, once a week for 25 years. The Site-Specific and Default exposure parameters for a landscaper after redevelopment are presented in **Table 12**.

Potential Future Hotel Guest

Future land use for the Site and contiguous areas may perhaps be commercial in nature with several types of proposed development including offices, hotel, and retail areas. If the Site or contiguous areas are redeveloped for hotel use, then hotel guests (both adult and children) may potentially become exposed to residual impacts. However, potential guests are expected to reside at the hotel for only brief periods of time. In contrast, a hotel employee would have a significantly longer exposure frequency and duration than hotel guests (both adults and children) who spend a minimal amount of time at the same hotel. Therefore, potential exposures to hotel guests were not quantitatively evaluated in this RA because these exposures are expected to be considerably less than for the industrial/commercial worker exposure scenario, who could be working onsite daily for 25 years.

4.3 Selection of Exposure Pathways

An exposure pathway describes a specific environmental pathway by which an individual (receptor) can be exposed to COPCs present at or originating from a source. The following five elements comprise a complete exposure pathway:

- A source of chemical;
- A mechanism of chemical release to the environment;
- An environmental transport medium (e.g., soil or air);
- A point of potential human contact with the medium; and
- A means of entry (i.e., intake route) into the body (e.g., ingestion).

There must be a complete exposure pathway from the source of chemicals in the environment (i.e., from soil, air, or groundwater) to human receptors in order for chemical intake to occur. If all exposure pathways are incomplete for human receptors, no chemical intake occurs and hence, no human health effects are associated with site-related COPCs. Potential pathways examined for completeness include:

- Incidental ingestion of COPCs in soil;
- Contact with soil or groundwater and absorption of COPCs through the skin;
- Inhalation of dust generated from soil;
- Inhalation of vapors emanating from soil and groundwater into outdoor air; and
- Inhalation of vapors emanating from soil gas and groundwater into indoor air.

Given the characteristics of the COPCs and conditions at the Site and adjacent areas, several exposure pathways may be potentially complete. The CSM, as presented in **Figure 4-1**, depicts potential exposure pathways and a determination as to their completeness. Potentially complete exposure pathways are described in more detail below.

Incomplete exposure pathways are those pathways in which constituent intakes are considered to be nonexistent. Insignificant exposure pathways are those pathways in which constituent intakes are considered to be relatively insignificant in comparison to other exposure pathways. USEPA guidance defines an insignificant pathway as one that has an exposure estimated to be two or more orders of magnitude less than by other pathways (for the same receptor); a pathway is also considered insignificant if the risks are much less for that pathway, or if the likelihood of exposure by that pathway is very small (USEPA, 1989). Potential exposure pathways that are significant are indicated as being complete and potential exposure pathways that may occur under certain site conditions are indicated as being potentially complete.

Potential exposures were considered for soil, soil gas and groundwater. No public groundwater supply wells are located on or within one mile of the Site. The high natural TDS and chloride content of the groundwater makes this water unsuitable for use; therefore, ingestion of groundwater via potable water use from beneath the Site is unlikely. However, indirect exposures, via inhalation of indoor air vapors emanating from groundwater, were considered in this RA for those areas where overlying soil gas data were not available. Where soil gas data were available overlying impacted groundwater, these data were used to evaluate the potential for vapor intrusion of chemicals from groundwater. In addition, construction and trench worker exposure to groundwater may occur during excavation activities. Potential impacts to San Diego Bay were not evaluated in this RA, but they will be addressed in a separate evaluation.

Food-related pathways such as beef, poultry, eggs, and milk were not considered because the subject property is located in a commercial/light industrial area.

4.3.1 Direct Exposure to COPCs in Soil

Future industrial/commercial workers and landscapers can potentially come into contact with chemicals in soils via dermal absorption and incidental ingestion after redevelopment. Although direct contact exposures to soil are likely to be infrequent or non-existent due to future hardscape and landscaping at the Site and adjacent areas, to be conservative, these pathways were evaluated for industrial/commercial workers and landscapers in this RA. During construction, construction workers and trench workers can also come in contact with chemicals in soils via these pathways. Therefore, these pathways were evaluated for these workers.

4.3.2 Direct Exposure to COPCs in Groundwater

Construction workers and trench workers can potentially come into contact with chemicals in shallow groundwater via dermal absorption for a short exposure period during excavation activities. These receptors are unlikely to have extensive dermal contact with groundwater for any extended period of time especially since dewatering will likely take place in any construction related scenario in which groundwater would be encountered. Landscapers are not expected to contact groundwater directly as they would likely be working only with very shallow soils when tending to plants/shrubs and would therefore not have access to groundwater which occurs at deeper depths.

4.3.3 Inhalation of COPCs in Airborne Dust

COPCs, such as SVOCs and metals, can adhere to soil particles; thus, exposure to these COPCs may occur via inhalation of fugitive dust. During construction, the construction worker and trench worker has the greater potential for becoming exposed to dust generated during redevelopment activities. After redevelopment, much of the land surface is likely to be covered with buildings, asphalt or landscaping thus minimizing any generation of fugitive dust. However, exposures may occur during landscaping activities; therefore, potential inhalation exposures to fugitive dust for a future landscaper working at the Site and adjacent areas were evaluated in the RA. This pathway was also evaluated for future industrial/commercial workers, although the presence of hardscape may preclude potential exposures.

4.3.4 Inhalation of Vapors in Indoor and Outdoor Air

VOCs were detected in soil, soil gas and groundwater samples collected at the Site and at contiguous areas of the Site. Because these compounds are volatile, humans could potentially be exposed to vapors migrating through the soil to the surface. During construction activities, construction and trench workers may be exposed to vapors volatilizing from the subsurface to the outdoor air. However, potential exposure to outdoor air vapors is considered insignificant due to the large amount of ambient air dilution that likely occurs. Although this pathway is considered potentially incomplete, it was further evaluated in this RA. Commercial workers and landscapers are not expected to be exposed to significant amounts of groundwater to outdoor air vapors due to ambient air dilution; therefore, this was not evaluated further in this RA.

Since industrial and commercial land uses predominate in the immediate vicinity of the Site, the potential exists for vapor migration into indoor air from chemicals detected in the subsurface environment. After redevelopment, future industrial/commercial workers may come in contact with vapors migrating from subsurface to indoor air. These potential exposures were evaluated in this RA using soil gas data. The use of soil gas data addresses potential sources of VOCs in shallow soil. Additionally, potential indoor air exposures to current offsite workers were quantitatively evaluated using groundwater data collected offsite (**Table 8b**).

Based on information provided to TDY by the Airport Authority, two currently unoccupied commercial buildings immediately to the west of 2701 North Harbor Drive (site) are scheduled to be occupied by industrial/commercial workers in mid-summer 2007. A Targeted RA was prepared to present the evaluation of the groundwater-to-indoor air and the soil gas-to indoor air exposure pathways for these workers. Additionally, indoor air exposures were evaluated for the current onsite security guard and the San Park Harbor Drive parking attendant. Onsite and offsite data used for this evaluation include groundwater and soil gas samples collected in the vicinity of these structures. The Targeted RA is presented in detail in **Appendix C** of this report.

4.3.5 Summary of Selected Exposure Pathways

The CSM (**Figure 4-1**) presents a summary of the exposure pathways for each receptor that was evaluated in this RA. The following table summarizes the receptor groups, exposure medium and exposure pathways that were quantitatively evaluated in this RA.

Receptor Population	Exposure Medium	Potentially Complete Exposure Pathway
Current Industrial/Commercial Worker (see Appendix C)	Groundwater (data adjacent to existing structures)	• Indoor Air Vapor Inhalation
	Soil Gas (data adjacent to existing structures)	• Indoor Air Vapor Inhalation
Construction Worker	Shallow Soil	• Incidental Ingestion • Dermal Contact • Outdoor Fugitive Dust Inhalation • Outdoor Air Vapor Inhalation
	Groundwater	• Dermal Contact • Outdoor Air Vapor Inhalation
Trench Worker	Shallow Soil	• Incidental Ingestion • Dermal Contact • Outdoor Fugitive Dust Inhalation • Outdoor Air Vapor Inhalation
	Groundwater	• Dermal Contact • Outdoor Air Vapor Inhalation
Industrial/Commercial Worker	Shallow Soil	• Incidental Ingestion • Dermal Contact • Outdoor Fugitive Dust Inhalation • Outdoor Air Vapor Inhalation
	Groundwater (offsite only)	• Indoor Air Vapor Inhalation
	Soil Gas	• Indoor Air Vapor Inhalation
Landscaper	Shallow Soil	• Incidental Ingestion • Dermal Contact • Outdoor Fugitive Dust Inhalation • Outdoor Air Vapor Inhalation

5. EXPOSURE POINT CONCENTRATIONS

Exposure point concentrations (EPCs) are the concentrations of chemicals in environmental media to which receptors may be exposed through defined exposure pathways considered complete or potentially complete in the CSM (**Figure 4-1**). Maximum detected EPCs were used in this RA for each of the following environmental media:

- shallow soil (less than 8 feet bgs, the depth to groundwater);
- soil gas; and,
- groundwater

Evaluating data collected from shallow soils (less than 8 feet bgs) accounts for potential future exposure to the subsurface soils if the Site and adjacent areas become reconfigured and deeper soils are brought to the surface and made available for direct contact exposures (e.g., via incidental ingestion, dermal contact) and outdoor air inhalation of fugitive dust and vapors. While individuals are unlikely to have direct contact with impacted soil at depths greater than 8 feet bgs, the potential does exist for VOCs to migrate from beneath the subsurface. Therefore, soil gas and groundwater samples were used to evaluate the indoor air inhalation pathways. Groundwater samples were also used to evaluate exposures (via dermal contact and outdoor vapor inhalation) during construction and trench worker activities.

Depending on the nature of the exposure, an EPC may be estimated at a specific point, or may be averaged about an exposure area, using the 95% UCL. In this RA, EPCs were characterized by using the data maximum. In future evaluations of post-remedial risk, EPCs may be characterized using the 95% UCL.

5.1 EPCs for Fugitive Dust Air Pathway

Chemicals at the Site and contiguous areas may become airborne due to fugitive dust emissions. Inorganic compounds (e.g., SVOCs and metals) can adhere to soil particles then become airborne due to wind erosion, which could generate dust containing COPCs during construction. Exposure to these chemicals may then occur via inhalation of airborne fugitive dust. Inhalation exposure to non-volatile compounds is typically minor in fugitive dust when compared to direct ingestion exposure (USEPA, 2002). Nevertheless, a relationship can be estimated between the chemical concentration in soil

and the corresponding concentration in air (secondary media) attributable to fugitive dust emissions from soil.

Potential exposure to airborne dust is estimated using a particulate emission factor (PEF) that relates the concentration of soil constituent to the concentration of dust particles in air. The PEF represents an annual average emission rate based on wind erosion. The PEF equation can be found in Section 4.2.3 (Equation 4-5: Derivation of the PEF) of the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2002). The emissions part of the PEF equation is based on the "unlimited reservoir" model developed to estimate PM_{10} emissions (particulate matter less than 10 micrometers in diameter [PM_{10}]) due to wind erosion (Cowherd et al., 1985).

5.1.1 Commercial Worker and Landscaper Scenarios

The PEF was derived using the following equation for the commercial worker and landscaper scenarios (USEPA, 2002):

$$PEF_{commW,landscaper} = \frac{(Q/C \times 3600)}{[(0.036 \times (1 - G) \times (U_m/U_t)^3 \times F_x]}$$

Where:

PEF	=	particulate emission factor cubic meters per kilogram (m^3/kg)
Q/C	=	inverse of mean concentration at center of source (g/m^2-s per kg/m^3)
G	=	fraction of vegetative or other cover (0.5, unitless)
U_m	=	mean annual wind speed (3.13 m/s, average wind speed for San Diego, [NCDC, 2006]))
U_t	=	equivalent threshold value of wind speed at 7 meters (11.32 m/s, USEPA 2002 default)
F_x	=	function dependent on U_m/U_t derived using Cowherd et al. (1985) (0.194 unitless, USEPA 2002 default)
0.036	=	respirable fraction (g/m^2-hr)

The dispersion part of the PEF equation includes a dispersion coefficient (Q/C) in units of grams per square meter-second per kilogram per cubic meter (g/m^2-s per kg/m^3). The

Q/C term was generated using the Industrial Source Complex model and varies depending on the source area, city, and climatic zone. This term accounts for the dispersion of particulate matter, once emitted and was estimated using the following equation (USEPA, 2002):

$$(Q/C) = A \times \exp\left[\frac{(\ln A_{SITE} - B)^2}{C}\right]$$

Where:

A_{SITE} = areal extent of soil impact (8.5 acres); and
A = constant = 11.911, based on air dispersion modeling (USEPA, 2002)
B = constant = 18.4385 (USEPA, 2002)
C = constant = 209.7845 (USEPA, 2002)

The areal extent of shallow soil impacts was estimated at approximately 8.5 acres and was used as the area of concern for the Site, A_{SITE} (**Figure 5-1**). The 8.5-acre estimate of the areal extent of shallow soil impacts is based upon the contours developed for the Site Characterization Report. These contours indicate where metals are interpreted to be above background concentrations and where VOCs are interpreted to be above non-detect in soil from 0-5 and 5-10 feet below ground surface. These contours were generated based on the approach described in the RWQCB site characterization work plan comment letter of 9 March 2005 which states "For example, in drawing contaminant contour lines, it is generally acceptable to estimate the location at which nondetectable concentrations in groundwater may be found based on the distribution of detectable impacts surrounding a source area (without necessarily finding nondetectable concentrations)." Although many of these concentrations were drawn based upon professional judgment taking into account observed trends in surrounding shallow soil, a three dimensional kriging package (EVS) was used to spot-check several data sets to compare these interpolations against a computer generated numerical model. The location and spatial extent of the compared contours were very similar (+/- 10%), lending confidence to the accuracy of the estimated contours.

The area within the contours was summed to calculate the area which could potentially contribute to impacted fugitive dust or vapor emissions. The resultant 8.5 acres conservatively assumes all Site buildings and pavement have been removed.

The coefficients A, B, and C are for the Los Angeles area and are published in the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2002). A Q/C value of 42.25 g/m^2-s per kg/m^3 was estimated as the inverse of the mean concentration at the center of an 8.5-acre source. The PEF for the commercial worker and landscaper was estimated at $2.06\times10^{+9}$ m^3/kg.

Using chemical soil concentrations and the estimated PEF, outdoor air concentrations were estimated as follows:

$$C_{oa} = \frac{C_s}{PEF}$$

Where:

C_{oa} = concentration of COPC in outdoor air (mg/m^3)
C_s = concentration of COPC in soil (mg/kg)
PEF = particulate emission factor (mg/kg per mg/m^3, or m^3/kg)

Derivation of the commercial worker and landscaper PEF is presented in **Table 13**.

5.1.2 Trench Worker Scenario

Fugitive dust can also be generated during trenching for utility/pipeline repair activities. The PEF equation for a trench worker differs from a commercial worker due to the assumption of 0% vegetative coverage and the shorter duration of potential exposure. The PEF for a trench worker was derived using the following equation (USEPA, 2002):

$$PEF_{trenchW} = \frac{(Q/C_{sr} \times 3600\ s/hr)}{[(0.036\times(1-G)\times(U_m/U_t)^3\times F_x]}$$

Where:

Q/C_{sr} = inverse of 1-hr average concentration at the center of the square particulate emission source (Equation E-19 in USEPA 2002)
G = fraction of vegetative or other cover (0, unitless)

The sub-chronic Q/C_{sr} term of the equation accounts for the dispersion of particulate matter, once emitted and was estimated using the following equation (USEPA, 2002):

$$(Q/C)_{sr} = A \times \exp\left[\frac{(\ln A_{SITE} - B)^2}{C}\right]$$

Where:

A_{SITE} = areal extent of soil impacts (8.5 acres);
A = constant = 12.9351, based on air dispersion modeling (USEPA, 2002)
B = constant; default = 5.7383 (USEPA, 2002)
C = constant; default = 71.7711 (USEPA, 2002)

The areal extent of site soil impacts (approximately 8.5 acres) was used as the area of concern for the Site, A_{SITE} (**Figure 5-1**). The coefficients A, B, and C are published in the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (see Equation E-19 in USEPA, 2002). A Q/C_{sr} value of 15.49 g/m^2-s per kg/m^3 was estimated as the inverse of the mean concentration at the center of an 8.5-acre square source. The 0% coverage assumes that the 8.5-acre area is essentially exposed where bare soil is available for contact. The PEF for the trench worker was estimated at $3.78 \times 10^{+8}$ m^3/kg.

Derivation of the trench worker PEF is presented in **Table 13**.

5.1.3 Construction Worker Scenario

Fugitive dust can also be generated during the use of heavy equipment such as graders and backhoes during property redevelopment. Due to the proximity of the Site to the airport, elevated dust levels will not be allowed on the construction site. Therefore,

required mitigation measures must be employed to minimize airborne dust concentrations. The PEF equation for a construction worker differed due to the duration and type of anticipated construction activities, as well as the assumption of 0% vegetative coverage. As a conservative exposure assumption in this RA, a maximum allowable dust concentration of 250 μg/m^3, which is five times the South Coast Air Quality Management District (SCAQMD) fugitive dust standard of 50 μg/m^3, was assumed over an exposure duration of 250 days. This five-fold factor of safety was applied as a conservative approach to account for dispersion between the construction area and the property line, which is in close proximity to an airport.

As defined in **Section 5.1.1**, the PEF for the dust-inhalation exposure pathway is defined as the ratio of the chemical concentration in outdoor air to the chemical concentration in soil:

$$PEF = \frac{C_s}{C_{oa}}$$

The PEF is related to the concentration of particulate matter (dust) in air:

$$PEF = {}^{1}\!/\!_{CD}$$

Where:

CD = concentration of dust in air (kg/m^3)

The dust concentration resulting from excavation, dumping, hauling, and other soil-handling activities during the 250 days of construction activity was assumed to equal 250 μg/m^3 or 2.5×10^{-7} kg/m^3, based on a maximum allowable concentration of dust in air of 50 μg/m^3 recommended by the South Coast Air Quality Management District, with a five fold factor of safety applied.

$$CD = 2.5\times10^{-7}\,kg/m^3$$

The estimated PEF value of $4.0\times10^{+6}$ m^3/kg for a construction worker was incorporated into the estimation of COPC intake. Using chemical soil concentrations and the estimated PEF, outdoor air concentrations were estimated as follows:

$$C_{oa} = \frac{C_s}{PEF}$$

Derivation of the construction worker PEF is presented in **Table 13**.

5.2 EPCs for Vapor Emissions from Soil to Outdoor Air Pathway

VOCs were detected in soil at the Site and contiguous impacted areas. Because these compounds are volatile, individuals could potentially be exposed to vapors migrating through the soil to the surface. Outdoor vapor concentrations are typically negligible considering the significant quantity of ambient air diluting the vapor emissions. Although this pathway is considered potentially insignificant, it was further evaluated in this RA.

Potential migration of vapors from soil to outdoor air was estimated using the volatilization factor (Equation 4-8: *Derivation of the VF*), as presented in Section 4.2.3 of the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2002). The VF was used in this RA to estimate outdoor inhalation exposures for construction workers, trench workers, future industrial/commercial workers, and landscapers.

To ensure that the VF model is applicable to constituent concentrations in soil at the Site and adjacent areas, a soil saturation limit (C_{sat}) was estimated for each VOC. The equation for determining C_{sat} (the equilibrium partitioning equation) is presented in the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2002) along with the following discussion of its significance. The following equation was used to estimate the chemical-specific C_{sat}:

$$C_{sat} = \left(\frac{S}{Pb}\right)\times\left(K_{oc}f_{oc}Pb\right)+\left(\theta_w\right)+\left(H'\theta_a\right)$$

Where:

S	=	chemical specific solubility (mg/L)
Pb	=	dry soil bulk density (LS default = 1.62 g/cm^3)
K_{oc}	=	chemical-specific soil organic carbon partition coefficient (cm^3/g)
f_{oc}	=	fraction organic carbon in soil (LS default = 0.002 g/g)
H′	=	chemical-specific Henry's law coefficient (unitless)
θ_w	=	water-filled soil porosity (LS default = 0.076 cm^3-water/cm^3-soil)
θ_a	=	air-filled soil porosity (LS default = 0.314 cm^3-air/cm^3-soil)

C_{sat} is the point at which nonaqueous phase liquid (NAPL) is present in the sample. "C_{sat} represents an upper-bound on the applicability of the VF model, because compounds exceeding C_{sat} may be present in free phase, which would violate a key principle of the model (i.e., that Henry's Law applies)." C_{sat} values were estimated using the same site-specific soil properties data. The maximum detected VOC concentrations were compared to chemical-specific C_{sat} concentrations before they were used in the estimation of potential risk. If the maximum detected concentration exceeds C_{sat}, then the EPC was estimated using the C_{sat} concentration (see **Table 14**).

The derivation of chemical-specific C_{sat} is presented in **Table 14**. Tetrachloroethene was the only COPC whose maximum detected soil concentration (220 mg/kg) was greater than its C_{sat} of 100 mg/kg; therefore, its C_{sat} was used as the EPC for the soil to outdoor air pathway (**Table 14**). The maximum detected concentrations of all other VOCs were used as the EPCs to evaluate the soil to outdoor air pathway and are summarized in **Tables 6 and 14**.

5.2.1 Commercial Worker and Landscaper Scenarios

Chemical-specific VFs were derived using the following equation for the commercial worker and landscaper scenarios (USEPA, 2002):

$$VF = \frac{Q/C \times \left(10^{-4}\ \frac{m^2}{cm^2}\right) \times (3.14 \times D_A \times T)^{1/2}}{(2 \times Pb \times D_A)}$$

Where:

Q/C = inverse of mean concentration at center of source (42.25 g/m^2-s per kg/m^3)
D_A = chemical-specific apparent diffusivity (cm^2/s)
T = exposure interval (25 years = $7.88\times10^{+8}$ sec)
Pb = dry soil bulk density (LS default = 1.62 g/cm^3)

And where:

$$D_A = \frac{\left(\frac{D_{air}\,\theta_a^{3.33}}{\theta_T^{\,2}}\right) + \left(\frac{D_{water}\,\theta_w^{3.33}}{H'\,\theta^2}\right)}{Pb\times Koc\times foc + \theta_w + \theta_a\times H'}$$

Where:

D_{air} = chemical-specific vapor diffusion coefficient in air (cm^2/s)
D_{water} = chemical-specific molecular diffusion coefficient in water (cm^2/s)
θ_a = air-filled soil porosity (LS default = 0.314 cm^3-air/cm^3-soil)
θ_w = water-filled soil porosity (LS default = 0.076 cm^3-water/cm^3-soil)
θ_T = total soil porosity (LS default = 0.390 cm^3-air/cm^3-soil)
H′ = chemical-specific Henry's law coefficient (unitless)
Pb = dry soil bulk density (LS default = 1.62 g/cm^3)
K_{oc} = chemical-specific soil organic carbon partition coefficient (cm^3/g)
f_{oc} = fraction organic carbon in soil (LS default = 0.002 g/g)

Default soil physical properties based on the assumption of loamy-sand (LS) were used in the above equation. These default values are presented in the DTSC version of the J&E model spreadsheet for that soil type. This soil type was identified by reviewing the numerous soil borings logs from the Site. It was also consistent with the RWQCB recommendations and was derived from a DTSC-approved source used for vapor intrusion evaluations.

The inverse of the ratio of the geometric mean air concentration to the volatilization flux at center of a square source (g/m^2-s per kg/m^3) was estimated using the same equation and variables as for the PEF in **Section 5.1.1**. A Q/C value of 42.25 g/m^2-s per kg/m^3 was used to estimate chemical-specific VFs. Chemical-specific VFs were used in the risk calculations for all VOCs detected in vadose zone soil. The derivation of chemical-specific VFs is presented in **Table 13**. Using chemical soil concentrations and the estimated chemical-specific VFs, outdoor air concentrations were estimated as follows:

$$C_{oa} = \frac{C_s}{VF}$$

5.2.2 Trench Worker Scenario

For the trench worker scenario, VOC emissions into a trench and subsequent mixing in air were estimated using the volatilization factor for transport of chemicals from soil to outdoor air from Table X.3.4, of the American Society for Testing and Materials (ASTM) *Standard Guide for Provisional Risk-Based Corrective Action* (ASTM, 1998). A conservative wind speed of 0.313 meters per second was assumed based on 1/10 of the average wind speed for the San Diego area (NCDC, 2006). This speed represents the reduced airflow expected in a shallow trench. Conservative assumptions regarding the size of the trench were also used (assumed area of two side-walls and bottom area of trench was approximately of $2.0\times10^{+5}$ cm^2, average length and depth of trench of 2 meters and 1 meter, respectively). It was conservatively assumed that an average of the length and width of a trench will be perpendicular to the wind direction. The chemical-specific $VF_{ss,amb}$ for trench worker exposures was derived using the following equation (ASTM, 1998):

$$VF_{ss,amb} = Pb/DF_{amb} \times \left[\frac{(4 \times D_{eff} \times H')}{(3.14 \times T \times K_{sw} \times Pb)} \right]^{1/2}$$

Where:

$VF_{ss,amb}$= volatilization factor, surficial soils to ambient air (g-soil/cm^3-air)
DF_{amb} = dispersion factor for ambient air (cm/s)
D_{eff} = effective diffusion coefficient for vadose-zone soils (cm^2/s)

H' = chemical-specific Henry's law coefficient (unitless)
T = averaging time for surface emission vapor flux (1 year = $3.15\times10^{+7}$ s)
K_{sw} = total soil concentration to pore water concentration ratio (cm^3-water/g-soil)
Pb = dry soil bulk density (LS default = 1.62 g/cm^3)

And where:

$$D_{eff} = \left[\frac{\left(D_{air}\,\theta_a^{3.33}\right)}{\left(\theta_T^{2}\right)}\right] + \left[\frac{\left(D_{water}\,\theta_w^{3.33}\right)}{\left(H'\,\theta_T^{2}\right)}\right]$$

$$K_{sw} = \frac{\theta_w + \left(\theta_a\,H'\right) + \left(Pb\,Kd\right)}{Pb}$$

Where:

K_d = soil-water partition coefficient (cm^3/g) = $f_{oc} \times K_{oc}$

$$DF_{amb} = \frac{\left(U_{air} \times W \times H'\right)}{A}$$

Where:

U_{air} = ambient air velocity in mixing zone (31.3 cm/s)
W = width of source-zone area (200 cm; average of length [300 cm] and width [100 cm] of trench)
H = mixing zone height (458 cm)
A = source-zone area ($2.0\times10^{+5}$ cm^2)

The derivation of chemical-specific VFs for the trench worker is presented in **Table 13**.

5.2.3 Construction Worker Scenario

For the construction worker scenario, a Q/C_{sa} value of 8.64 g/m^2-s per kg/m^3 was estimated as the inverse of the mean concentration at the center of an 8.5-acre square source using Equation E-15 in the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2002):

$$(Q/C)_{sa} = A \cdot \exp\left[\frac{(\ln A_{SITE} - B)^2}{C}\right]$$

Where:

Q/C_{sa}	=	inverse of 1-hour average air concentration at center of square volatile emission source (8.64 g/m^2-s per kg/m^3)
A_{SITE}	=	areal extent of soil impact (8.5 acres); and
A	=	constant; default = 2.4538 (USEPA, 2002)
B	=	constant; default = 17.566 (USEPA, 2002)
C	=	constant; default = 189.0426 (USEPA, 2002)

The value of Q/C_{sa} must be corrected for the averaging time represented by the duration of construction. USEPA (2002) derived the following equation for estimating the dispersion correction factor for averaging times less than one year:

$$F_D = 0.1852 + \frac{5.3537}{t_c} + \frac{-9.6318}{t_c^{\,2}}$$

Where:

F_D	=	dispersion correction factor (unitless)
t_c	=	duration of construction (8hr/day × 250 days/year = 2000 hrs)

Subsequently, chemical-specific VFs for construction worker exposures were derived using the following equation (USEPA, 2002):

$$VF_{constW} = Q/C_{sa} \times 1/F_D \times \frac{\left(10^{-4}\ \frac{m^2}{cm^2}\right) \times (3.14 \times D_A \times T)^{1/2}}{(2 \times Pb \times D_A)}$$

Where:

VF_{constW} = volatilization factor, surficial soils to ambient air (g-soil/cm^3-air)
D_A = chemical-specific apparent diffusivity (cm^2/s)
T = averaging time for surface emission vapor flux (1 year = $3.15 \times 10^{+7}$ s)
Pb = dry soil bulk density (LS default = 1.62 g/cm^3)

The derivation of chemical-specific VFs for the construction worker is presented in **Table 13**.

5.3 EPCs for Vapor Emissions from Groundwater to Outdoor Air Pathway

Exposure concentrations for the emissions from groundwater during construction and trenching activities (e.g., installation of subsurface utilities that will intercept groundwater) were calculated using the mass transfer equation for estimating volatilization from surface impoundments (USEPA, 1995a) with a box model to estimate mixing in the breathing zone. The emission rate from groundwater in the bottom of an excavation was estimated using the following equation:

$$ER = A_{Exc} \times C_{GW} \times K \times CF$$

Where:

ER = chemical emission rate from groundwater (mg/s)
A_{Exc} = area of the excavation, (m^2). Assume 3 meters long by 1 meter wide.
C_{GW} = chemical concentration in groundwater (mg/L)
K = chemical-specific overall mass transfer coefficient (cm/s)
CF = units conversion factor (10 L/cm/m^2)

The overall mass transfer coefficient was estimated by:

$$\frac{1}{K} = \frac{1}{k_l} + \frac{1}{k_g}\frac{RT}{H}$$

Where:

k_l = liquid-phase mass transfer coefficient (cm/s)
k_g = gas-phase mass transfer coefficient (cm/s)
R = ideal gas constant, 8.2E-5 atm-m^3/(mol ºK)
T = liquid temperature (290 ºK)
H = chemical-specific Henry's law coefficient (atm-m^3/mol)

The liquid-phase mass transfer coefficient was estimated by:

$$k_l = \left(\frac{MW_{O2}}{MW_i}\right)^{0.5} \times \left(\frac{T}{298}\right) \times k_{lo2}$$

Where:

MW_{O2} = molecular weight of oxygen (32 g/mol)
MW_i = molecular weight of the constituent (g/mol)
k_{lo2} = liquid-phase mass transfer coefficient for oxygen (0.002 cm/s)

The gas-phase mass transfer coefficient was estimated by:

$$k_g = \left(\frac{MW_{H2O}}{MW_i}\right)^{0.335} \times \left(\frac{T}{298}\right)^{1.005} \times k_{gH2O}$$

Where:

MW_{H2O}= molecular weight of water (18 g/mol)
k_{gH2O} = gas-phase mass transfer coefficient for water vapor (0.833 cm/s)

COPC concentrations in the breathing zone were estimated using the following equation:

$$C_{a-gw} = \frac{ER}{U_m \times W \times H}$$

Where:

C_{a-gw} = concentration in air (mg/m^3)
U_m = mean annual wind speed (0.313 m/s, assumed 1/10 of the average wind speed for San Diego [NCDC, 2006], to represent the reduced airflow expected in a shallow trench)
W = width of the excavation perpendicular to the wind direction (m, professional judgment, assume average of length [3 m] and width [1 m] of trench = 2 meters for utility trench)
H = breathing zone height above the bottom of the excavation (2 m)

An average of the length and width of a trench is conservatively assumed for the width of the excavation perpendicular to the wind direction (W). The derivation of groundwater to outdoor air concentrations, C_{a-gw}, is presented in **Table 15**. Please note that, as the groundwater concentration increases, the soil gas concentration also increases until the solubility limit is reached. At this point, the groundwater and soil gas concentrations cannot increase any further because concentrations greater than this are not physically possible. Therefore, this pathway is limited to the chemical-specific solubility limit. In other words, the solubility limit was used as the EPC if the maximum detected VOC concentration in groundwater was greater than the chemical-specific solubility (see **Tables 8a,b and 14**).

5.4 EPCs for Vapor Emissions into Indoor Air Pathway

The potential exists for VOCs to volatilize from the subsurface into indoor air. This pathway was evaluated using the Johnson and Ettinger (J&E, 1991 and Cal-EPA, 2005b) subsurface vapor intrusion model to estimate potential migration of subsurface vapors into indoor air. The J&E computer spreadsheet model is public domain software that is freely available at the USEPA internet website. The model accounts for the diffusion of chemicals through the subsurface, the advection of chemicals through soil

and concrete slabs due to pressure differentials between the soil and buildings, and the mixing in indoor air caused by heating and ventilation systems.

The J&E vapor intrusion model may be applied using soil matrix, soil gas or groundwater concentration data. Soil gas and groundwater data were used in this model evaluation. For chemicals that are detected in both media, the potential exists for over-representing the flux to indoor air. In other words, chemicals volatilizing from groundwater may contribute to the shallow soil gas volatilization potential. Soil gas data are typically the preferred medium from which to evaluate the vapor intrusion pathway. For potential onsite indoor air exposures, soil gas data were used, as there is sufficient soil gas data across the Site. For offsite workers, groundwater data collected offsite were used to evaluate their exposures as no offsite soil gas data are available. Additionally, a Targeted RA was prepared to present the evaluation of the groundwater-to-indoor air and the soil gas-to indoor air exposure pathways for workers who will be occupying the Sky Chef buildings immediately to the west of the site. Indoor air exposures were also evaluated for the current onsite security guard and the San Park Harbor Drive parking attendant. Onsite and offsite data used for this evaluation include groundwater and soil gas samples collected in the immediate vicinity of these structures (see **Appendix C** for a detailed evaluation).

For the soil gas-to-indoor air pathway, the maximum soil gas EPC and a sampling depth of 3 feet (91.5 cm) were used in the J&E model. For the groundwater-to-indoor air pathway for offsite industrial/commercial workers, the maximum offsite groundwater EPC and the average depth to groundwater of 7 feet bgs were used in the J&E model. For the Targeted RA (**Appendix C**), maximum soil gas and groundwater EPCs detected in the vicinity of current structures were used in the model. Chemical concentrations decrease offsite and are nondetect in areas where buildings are currently occupied (**Figure 5-1**). Default soil physical properties based on the assumption of loamy-sand (LS) were used in the model. These default values for loamy-sand soil type are presented in the DTSC version of the J&E model spreadsheet. This soil type was identified by reviewing the numerous soil borings logs from the Site. An average building size of 25,000 square foot based on observation of surrounding land use was used in the model for future industrial/commercial workers.

The input parameters used in the J&E model to evaluate the indoor air pathway are presented in **Table 16**. The predicted indoor air concentrations from the model were used as EPCs in the estimation of potential risk and hazard, as presented in **Appendix D**

for the Site-Specific RA and in **Appendix E** for the Default RA. The J&E model spreadsheets including the model inputs, intermediate calculations, and predicted indoor air concentrations for industrial/commercial workers are presented in **Appendix F** for soil gas and offsite groundwater. The J&E model spreadsheets were used only to estimate indoor air concentrations and not to estimate potential risk. The approach used to estimate potential risk for the vapor intrusion pathway is described in **Section 6**.

6. EXPOSURE ASSESSMENT

In the exposure assessment, estimates of exposure or chemical intake are calculated based on assumptions regarding exposure pathways and exposure parameters. The primary routes of potential human exposure to chemicals detected at the Site and adjacent areas include ingestion, dermal contact, inhalation of fugitive dust and inhalation of vapors in indoor and outdoor air.

The end product of the exposure assessment is a measure of chemical intake as an average daily dose (ADD) that integrates the exposure parameters for the receptors of concern (e.g., contact rates, exposure frequency, and duration) with the exposure point concentration for the media of concern. Theses ADDs are then used in conjunction with chemical-specific toxicity values (e.g., reference doses and cancer slope factors) to arrive at an estimate of potential health risks.

6.1 Estimating Chemical Intake

The exposure assessment quantifies the magnitude, frequency, and duration of chemical intake (daily intake) by receptor populations. ADD or "Lifetime Average Daily Dose" (LADD) of COPCS for each exposure pathway is estimated. ADDs and LADDs are calculated using guidelines in the Risk Assessment Guidance for Superfund (USEPA, 1989), Exposure Factors Handbook (USEPA, 1997), site-specific information, and professional judgment, as appropriate.

Daily intakes are estimated as being either ADDS or LADDs, depending on whether the chemical under consideration is a carcinogen or a noncarcinogen: LADDs are estimated for carcinogens and ADDs are estimated for noncarcinogens (USEPA, 1989). They differ primarily in the length of time over which the effects of the chemical are assumed to be averaged (see below).

ADDs and LADDs are expressed as the amount of a substance taken into the body per unit body weight per time, or mg/kg-day. The LADD is averaged over a lifetime (70 years) for carcinogens, and the ADD is averaged over the expected exposure duration for noncarcinogens. The duration of exposure is assumed to vary depending on whether exposure occurs to a working population or residential population. LADDs and ADDs are estimated from the concentration of the chemical at the exposure point, the exposure frequency (i.e., number of times during a week or year), the exposure duration (i.e., the

number of days, weeks, or years the exposure persists), and the physical characteristics of the receptor (such as body weight).

USEPA (1989) recommends the LADDs for carcinogens and ADDs for noncarcinogens be estimated for both average and RME conditions. LADDs and ADDs under RME conditions are calculated by combining exposure factors so that the result is the maximum exposure that is reasonably expected to occur (USEPA, 1989). RMEs are intended to place conservative upper bounds on the potential risks, meaning that each risk estimate is unlikely to be underestimated, but it may very well be overestimated. The RME for a given pathway is derived in this assessment by combining the upper-bound estimate of the concentration for each chemical (maximum detection) with reasonable maximum values describing the extent, frequency, and duration of exposure (USEPA, 1989).

6.2 Estimation of Summary Intake Factors

The intake factor is a value that combines the site-specific and receptor-specific assumptions for a given exposure pathway and is expressed as the amount of media (e.g., soil) taken into the body per unit concentration of chemical in the media. Multiplying the intake factor by the selected EPC yields the ADD or LADD (mg/kg-day) for that receptor population and exposure pathway. The following is a generic equation used to estimate the daily dose:

$$\text{ADD/LADD (mg/kg - day)} = \text{Selected EPC} \times \text{Summary Intake Factor}$$

Separate intake factors are estimated for each complete exposure pathway. The values and assumptions used to estimate each intake factor are dependent on the exposure pathway and receptor population being evaluated. A more detailed description of the values used for the intake calculations is presented below. The Site-Specific and Default exposure assumptions that were used in this RA are summarized in **Tables 9 through 12**.

6.2.1 Incidental Soil Ingestion

The rate of soil ingestion is based on the amount of soil an individual inadvertently swallows in a given day from all sources. Exposure to COPCs, via incidental ingestion of soil, is estimated using the following variables: (1) the rate of ingestion; (2) the

fraction of ingested soil that is impacted; and (3) the frequency and duration of exposure. Individuals may ingest soil through incidental contact of the mouth with hands and clothing. To estimate the LADDs and ADDs of COPCs (units of mg/kg-day) via incidental ingestion of soil, the following equation was used:

$$\text{ADD/LADD} = \frac{C_s \times IR_s \times ABS \times EF \times ED \times CF}{BW \times AT}$$

Where:

C_s = chemical concentration in soil (mg/kg)
IR_s = ingestion rate of soil (mg/day)
ABS = percent absorption (assumed to be 100 percent)
EF = exposure frequency (days/year)
ED = exposure duration (years)
CF = conversion factor for soil (10^{-6} kg/mg)
BW = body weight (kg)
AT = averaging time (days)
cancer effects: 70 years x 365 days = 25,550 days
noncancer effects: ED x 365 days

The Site-Specific and Default exposure parameters that were used to estimate intake of COPCs via incidental soil ingestion are provided in **Tables 9 through 12** for construction workers, trench workers, industrial/commercial workers, and landscapers, respectively.

6.2.2 Dermal Contact with Soil

COPCs in soil may come into contact with skin, and then become absorbed across the skin into the bloodstream. The amount of absorption into the body depends upon the amount of soil in contact with the skin, COPC concentrations in soil, the skin surface area exposed, and the potential for the chemical to be absorbed across the skin. To estimate the steady-state dose absorbed across the skin, the following equation was used:

$$\text{ADD/LADD} = \frac{C_s \times SA \times SAF \times EF \times ED \times CF \times DAF}{BW \times AT}$$

Where:

SA	=	skin surface area exposed to soil per day (cm^2/day)
SAF	=	soil-skin adherence factor (mg/cm^2)
CF	=	conversion factor (10^{-6} kg/mg)
DAF	=	dermal absorption factor (unitless, chemical-specific)

For the skin surface area for construction workers and industrial/commercial workers, a value of 3,300 cm^2/day (limited to the head, neck, hands, and forearms) was used for evaluating the Site-specific dermal contact pathway. This value is the typical USEPA default value for an industrial/commercial scenario (USEPA 2002 and 2004) and assumes that the worker is wearing a short-sleeved shirt, long pants, and shoes. For confirmation, three local construction and demolition contractors were contacted to determine standards of practice that would be in place for standard construction worker personal protective equipment (PPE) and apparel. The results of this survey indicated that workers are required to wear long pants and at least short sleeve shirts as an industry standard. These responses are summarized below.

Response 1: "Yes, our minimum requirement for on-site workers include those clothing items (I believe short-sleeved shirts maybe allowed for certain project sites), along with a hard hat, safety goggles, steel-tip boots & reflective vest. Coveralls and or tyvek suits may be required based on customer or Site/Plant Safety protocol."

Response 2: "Long pants, long or short sleeved shirt,(no tank tops), high top boots, hard hat, safety glasses, hearing protection as required, and gloves as required."

Response 3: "We require our employees to wear long pant, shirts with at short sleeves, and steel toed boots, safety glasses and ear plugs and of course hardhats, this is an industry standard."

A skin surface area of 5,700 cm^2/day was adopted as the Site-Specific skin surface area for the landscaper to account for their potential to wear shorts. For the trench worker, a Site-Specific skin surface area of 5,800 cm^2/day was used. This value is consistent with

the original exposure parameters agreed upon with DTSC representatives in preparation of the Western Area RI/FS work plan.

The default skin surface area of 5,700 cm^2/day for all receptor groups was also used in the Default RA for comparison to the Site-Specific RA. The Site-Specific and Default exposure parameters that were used to estimate intake of COPCs via dermal contact with soil are provided in **Tables 9 through 12** for construction workers, trench workers, industrial/commercial workers, and landscapers, respectively.

6.2.3 Dermal Contact with Groundwater

Construction workers may come into contact with COPCs in exposed groundwater during excavation activities. The amount of absorption into the body depends upon the amount of groundwater in contact with the skin, COPC concentrations in groundwater, the skin surface area exposed, and the potential for the chemical to be absorbed across the skin. To estimate the steady state dose absorbed across the skin, the following equation was used:

$$\text{ADD/LADD} = \frac{C_{gw} \times SA \times Kp \times EF \times ED \times ET \times CF}{BW \times AT}$$

Where:

C_{gw} = chemical concentration in groundwater (mg/L)
SA = skin surface area exposed to groundwater (cm^2)
Kp = chemical-specific water permeability constants (cm/hour; USEPA 2004a)
ET = exposure time (hours/day)
CF = conversion factor (10^{-3} L/cm^3)

The Site-Specific and Default exposure parameters that were used to estimate COPC intake via dermal contact with groundwater are provided in **Tables 9 and 10** for a construction worker and trench worker, respectively. The chemical-specific water permeability constants, Kp, are presented in **Table 17**.

6.2.4 Outdoor Inhalation of Vapors and Fugitive Dust from Soil

Inhalation of vapors and fugitive dust-containing COPCs in outdoor air is a consideration for soil exposures. The potential dose for inhalation of vapors and fugitive dust was estimated using the following equation:

$$\text{ADD/LADD} = \frac{C_a \times IR_a \times ABS \times EF \times ED}{BW \times AT}$$

Where:

C_a = chemical concentration in air (mg/m^3)
IR_a = inhalation rate (m^3/day)
ABS = percent absorption (assumed to be 100 percent)

For the outdoor air pathway, COPC concentrations in soil were either divided by a particulate emission factor (PEF) for non-VOCs, or by a volatilization factor (VF) for VOCs, to arrive at an outdoor air concentration (C_a) in mg/m^3. Use of the PEFs and VFs in the risk calculations is described in **Sections 5. 1** and **5.2**.

The Site-Specific and Default exposure parameters that were used to estimate intake of COPCs via inhalation are provided in **Tables 9 through 12** for construction workers, trench workers, industrial/commercial workers, and landscapers, respectively.

6.2.5 Outdoor Inhalation of Vapors from Groundwater

Inhalation of vapors in outdoor air emanating from groundwater is a consideration for construction workers and trench workers potentially exposed to groundwater during excavation or pipeline repair activities. The potential dose for outdoor inhalation of groundwater vapors was estimated using the following equation:

$$\text{ADD/LADD} = \frac{C_{a\text{-}gw} \times IR_a \times EF \times ED}{BW \times AT}$$

Where:

$C_{a\text{-}gw}$ = estimated outdoor air concentration from groundwater (mg/m^3)

Derivation of the groundwater-to-outdoor air concentrations ($C_{a\text{-}gw}$) was discussed in **Section 5.3**, with the resulting EPCs summarized in **Table 15**. The Site-Specific and Default exposure parameters that were used to estimate COPC intake via inhalation of outdoor air vapors from groundwater are provided in **Tables 9 and 10** for a construction worker and trench worker, respectively.

6.2.6 Indoor Inhalation of Vapors

Inhalation of indoor air vapors is a consideration for soil vapor and groundwater exposures. For the indoor air pathway, model-predicted indoor air concentrations (C_a) from soil gas or groundwater (see **Section 5.0**) were used in the following intake equation:

$$\text{ADD/LADD} = \frac{C_a \times IR_a \times EF \times ED}{BW \times AT}$$

Where:

C_a = predicted indoor air concentration from soil gas or groundwater (mg/m^3)

The Site-Specific and Default exposure parameters that were used to estimate COPC intake for offsite industrial/commercial workers using offsite groundwater data are provided in **Table 11**. The same exposure parameters were used to estimate intake for onsite industrial/commercial workers via indoor inhalation of vapors from soil gas. The evaluation of indoor air exposures for the current onsite security guard and the San Park Harbor Drive parking attendant, as well as for the workers who will be occupying the Sky Chef buildings later this year are presented in detail in **Appendix C**.

7. TOXICITY ASSESSMENT

The toxicity assessment characterizes the relationship between the magnitude of exposure to a COPC and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in RAs, adverse health effects are classified into two broad categories: noncarcinogens and carcinogens. Toxicity criteria are generally developed based on the threshold approach for noncancer effects and the non-threshold approach for cancer effects.

For carcinogens, it is assumed that there is no level of exposure that does not have a finite possibility of causing cancer (i.e., there is no threshold dose for cancer effects). That is, a single exposure of a carcinogen may, at any level, result in an increased probability of developing cancer. For chemicals exhibiting noncancer effects, it is believed that organisms have protective mechanisms that must be overcome before the toxic endpoint results (i.e., there is a threshold dose for these effects). For example, if a large number of cells perform the same or similar functions, it would be necessary for significant damage or depletion of these cells to occur before a toxic effect could be seen. As a result, a range of exposures exists from zero to some finite value that can be tolerated by the organism with essentially no chance of expression of adverse effects (USEPA, 1989). Some chemicals may elicit both cancer and noncancer effects.

The key dose-response criteria are unit risk factors (URFs) for estimating excess cancer risks from exposure to carcinogens and reference concentrations (RfCs) for estimating hazard from exposure to noncarcinogens. In addition, Cal-EPA has developed chronic Reference Exposure Levels for noncancancer effects, which were used in place of RfCs, if available. In this evaluation, chronic toxicity criteria were selected (in order of preference) from the following sources: 1) Cal-EPA OEHHA Toxicity Criteria Database, online (2007); 2) USEPA's (2007) Integrated Risk Information System (IRIS) as referenced in USEPA Region IX Preliminary Remedial Goals (PRG) table (USEPA, 2004b); 3) USEPA (1997) Health Effects Assessment Summary Tables (HEAST), as referenced in the Region IX PRG table (USEPA, 2004b); or 4) USEPA NCEA Superfund Health Risk Technical Support Center, as referenced in the USEPA PRG table (2004b).

7.1 Toxicity Criteria for Potential Carcinogens

Potential cancer effects resulting from human exposure to chemicals are generally estimated quantitatively using oral cancer slope factors (CSFs) or inhalation unit risk factors (URFs). Oral CSFs are expressed in units of $(mg/kg\text{-}day)^{-1}$. To characterize potential cancer risks from inhalation, URFs were converted when needed from units of $(\mu g/m^3)^{-1}$ to units of $(mg/kg\text{-}day)^{-1}$ by assuming an individual inhales at a rate of 20 cubic meter per day, and has an average body weight of 70 kg and absorption is equivalent by either route (USEPA, 1989).

Oral and inhalation CSFs are derived by Cal-EPA and USEPA from the results of chronic animal bioassays, human epidemiological studies, or both. Animal bioassays are usually conducted at dose levels that are much higher than those likely to be produced by human exposure to environmental media. These high dose levels are used to detect possible adverse effects in the relatively small test populations used in the studies.

Because humans are generally exposed at lower doses, the data are extrapolated using mathematical models. Most commonly, the linearized multistage model is used to estimate the largest possible linear slope (95UCL) at low extrapolated doses that is consistent with the data. The 95UCL slope of the dose-response curve is subjected to various adjustments, and an interspecies scaling factor is usually applied to derive a CSF for humans. Dose-response data derived from human epidemiological studies are fitted to dose-time-response curves on an ad hoc basis.

Conservative (i.e., health protective) assumptions are generally applied, and the models are believed to provide rough estimates of the upper limits on potential carcinogenic potency. The actual risks associated with exposure to a potential carcinogen and quantitatively evaluated on the basis of its CSF are not likely to exceed the risks estimated and may be much lower or even zero.

CSFs that are available for the COPCs that are classified as carcinogens were presented in the toxicity criteria table. When available, Cal-EPA CSFs were also identified. At the present time, Cal-EPA and USEPA have only developed CSFs for the oral and inhalation routes of exposure. In the absence of values specific to the dermal route, the oral factors were used for the dermal toxicity factors.

The CSFs used in this RA are presented in **Table 17**.

7.2 Toxicity Criteria for Potential Noncarcinogens

Potential noncancer effects resulting from human exposure to chemicals are estimated quantitatively using chronic reference doses (RfDs) for ingested chemicals and reference concentrations (RfCs) for inhaled chemicals. As was the case for the CSFs, RfDs and RfCs are only available for oral and inhalation exposures. In the absence of criteria specific to the dermal exposure pathway, the oral RfDs were used to evaluate the dermal route of exposure.

These toxicity values are developed by the USEPA RfD/RfC workgroup on the basis of a wide array of noncancer health effects. The RfD, expressed in units of milligrams of chemical intake per kilogram of body weight per day (mg/kg-day), is an estimate of the maximum human exposure level that can be present without an appreciable risk of deleterious effects during a designated time. The RfC is expressed in units of milligrams of chemical per cubic meter of air (mg/m^3) and is an estimate of the maximum air concentration that can be present without an appreciable risk of deleterious effects. RfCs assume a human body weight of 70 kilograms and an inhalation rate of 20 m^3/day.

RfDs and RfCs are usually derived from either human studies involving workplace exposures or from animal studies, and are adjusted using generic uncertainty factors. The RfD and RfC provide benchmarks against which human intakes of chemicals resulting from exposure to impacted environmental media are compared. Chronic Reference Exposure Levels (RELs) for inhalation exposure have been developed by Cal-EPA for the Air Toxics Hot Spots program. When available, these values were used in this RA.

The RfDs and RELs used in this RA are presented in **Table 17**.

7.3 Dermal Toxicity Criteria

As indicated previously, USEPA has developed CSFs and RfDs only for inhalation and ingestion (intake) exposures. There are no available toxicity values for evaluating dermal (uptake) exposures. In the absence of dermal criteria, oral CSFs and RfDs were used to evaluate dermal exposures.

7.4 Toxicity Criteria for Total Petroleum Hydrocarbons

The approach developed by the Massachusetts Department of Environmental Protection (MADEP, 2002) for assessing the hazard from TPH exposure was used to evaluate potential hazard from exposure to TPH compounds. Although several hundred samples collected throughout the Site and adjacent areas have been analyzed for VOCs and PAHs (the aromatic constituents of TPH), both aromatic and aliphatic hydrocarbon fractions of TPH were evaluated in this RA. Consistent with California DTSC recommendations, both aromatic and aliphatic hydrocarbon toxicity values were used and are presented in **Table 17**.

8. RISK CHARACTERIZATION

Risk characterization integrates the results of the toxicity assessment (**Section 7**) and the exposure assessment (**Section 6**) to estimate potential cancer risks and adverse noncancer health effects associated with exposure to chemicals detected at the Site and adjacent areas. This integration provides quantitative estimates of risk and noncancer hazard that are then compared to acceptable standards.

The process of risk assessment is an iterative process where site, receptor, and chemical-specific data are used when available. When specific data are not available, conservative, i.e., health protective, assumptions are utilized. The use of repeated, conservative assumptions can lead to overly conservative estimations of risk, but certainly provides an upper-bound estimate of the actual risk. Thus, for any site, the estimated risk level reflects an upper-bound estimate of the most probable risk. The most probable risk is likely to be much less, perhaps as low as zero, and probably not measurable in the potentially exposed population.

8.1 Risk Management Criteria

Various demarcations of acceptable risk have been established by regulatory agencies. The USEPA has established acceptable levels of risk at Superfund sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP; 40 CFR 300) indicates that lifetime incremental cancer risks posed by a site should not exceed a range of one in one million (1×10^{-6}) to one hundred in one million (1×10^{-4}) and noncarcinogenic chemicals should not be present at levels expected to cause adverse health effects (i.e., a Hazard Index (HI) greater than unity, 1.0). The California Hazardous Substances Account Act (HSAA) incorporates the NCP by reference, and thus also incorporates the acceptable risk range set forth in the NCP. The Resource Conservation and Recovery Act (RCRA) Corrective Action program incorporates this same range of potential health risks as the "acceptable risk range" for determining whether corrective action is warranted at RCRA facilities and for closure purposes. The Safe Drinking Water and Toxic Enforcement Act of 1986 (California's Proposition 65) regulates chemical exposures to the general population and is based on an acceptable risk level of 1×10^{-5}.

Thus, generally excess cumulative cancer risks in the range of 1×10^{-6} to 1×10^{-4} are considered to be acceptable with excess cancer risks less than 10^{-6} considered insignificant. These ranges of acceptable risk are in contrast to the background risk of

Americans in the general population developing cancer. The background risk is approximately one chance in three (0.33 or 3.3 x 10^{-1}) for every American of eventually developing some form of cancer (ACS, 2006).

To understand the significance of the risk and hazard estimates presented in the risk characterization, it is critical to establish the risk management criteria that will be used for comparison. The risk management criteria presented in this RA focus on numerical standards that were compared to the RA results (excess cancer risk estimates and noncancer hazard indices). It is acknowledged that additional risk management considerations such as technical feasibility, economic, social, political and legal factors may be part of the final risk management decision. The results of the risk characterization are really the starting point for risk management considerations for a site (USEPA, 1995b).

It is anticipated that the results of the RA will be used to address two questions:

1) Is further evaluation or remedial action required?
2) If action is required, to what extent is remediation required?

A cumulative risk of 1 x 10^{-5} and noncancer hazard index of 1 is proposed as the risk-management criteria consistent with local and state governmental approaches to managing industrial/commercial land uses.

8.2 Risk Characterization for Potential Cancer Effects

Excess cancer risks are expressed as the upper-bound, increased likelihood of an individual developing cancer as a result of exposure to a particular chemical. For example, a cancer risk of 1 x 10^{-4} refers to an upper-bound increased chance of one in ten thousand of developing cancer over a lifetime.

In the risk characterization step of the RA, excess cancer risk is estimated by multiplying the LADD by the chemical-specific cancer slope factor or CSF. The following equation was used to estimate the excess cancer risk per each COPC:

$$\text{Excess Cancer Risk} = \text{LADD} \times \text{CSF}$$

The chemical-specific excess cancer risks were then summed to yield a cumulative cancer risk, which was compared to the USEPA acceptable risk range of 1 x 10^{-6} to 1 x 10^{-4} and to DTSC's acceptable target risk goal of 1 x 10^{-5} for commercial receptors.

8.3 Risk Characterization for Potential Noncancer Effects

The potential for noncancer effects due to exposure to a particular chemical is expressed as the hazard quotient (HQ). Chemical-specific hazard quotients are estimated by calculating the ratio of the ADD to the corresponding chronic reference dose (RfD) for noncancer effects. The following equation was used to estimate the hazard quotient:

$$\text{Hazard Quotient} = \frac{\text{ADD}}{\text{RfD}}$$

The chemical-specific hazard quotients were then summed to form a cumulative hazard index (HI), which was compared to an acceptable hazard level of one (1). For multiple chemical exposures, the total HI might exceed 1 even if no single chemical intake exceeds its RfD. If the cumulative HI is less than the benchmark level of one (1), cumulative exposures to the COPCs at the Site are judged unlikely to result in adverse noncancer health effects. If the sum is greater than 1, a more detailed and critical evaluation of potential noncancer health hazards may be warranted. Such additional evaluation considers the specific target organ(s) affected and mechanism(s) of action of the COPCs.

8.4 Results of the Risk Characterization

The chemical-specific potential cancer risk and hazard index estimates are presented in **Tables 18** through **22** for each of the receptor groups and exposure pathways discussed in **Section 4**. The summary of Site-Specific and Default cumulative risk and hazard for each exposure scenario is presented in **Table 23**. The J&E vapor intrusion model spreadsheets are presented in **Appendix F** for the industrial/commercial worker exposure scenario. The detailed risk calculations for the direct contact, outdoor and indoor inhalation pathways are presented in **Appendix D** for the Site-Specific RA and in **Appendix E** for the Default RA. Detailed evaluation of potential indoor air exposures to current onsite (the security guard and the San Park Harbor Drive parking attendant) and offsite (Sky Chef building) workers are presented in **Appendix C** using soil gas and groundwater data collected within the vicinity of the existing structures.

The results of the Targeted RA, as well as the J&E model spreadsheets for these current onsite and offsite workers, are presented in **Appendix C**.

The following table summarizes the receptor groups, exposure medium and exposure pathways quantitatively evaluated in this RA and the estimated cumulative excess cancer risk and noncancer hazard using the Site-Specific exposure parameters.

COPCs	Site-Specific RA			
	Cancer RIsk	Noncancer Hazard[a]	Noncancer Hazard $TPH_{aliphatic}$	Noncancer Hazard $TPH_{aromatic}$
Offsite Industrial/Commercial Worker				
Groundwater-to-Indoor Air =	3E-02	3E+01	--	--
Construction Worker				
Total Risk Across Soil (0-8' bgs)[b] =	2E-04	8E+01	1E+00	8E+00
Dermal Contact with Groundwater =	8E-03	2E+02	4E+00	4E-01
Groundwater-to-Outdoor Air =	7E-04	9E+01	--	--
Trench Worker				
Total Risk Across Soil (0-8' bgs)[b] =	6E-06	4E+00	6E-02	3E-01
Dermal Contact with Groundwater =	2E-03	5E+01	8E-01	8E-02
Groundwater-to-Outdoor Air =	1E-04	1E+01	--	--
Industrial/Commercial Worker				
Total Risk Across Soil (0-8' bgs)[b] =	9E-04	2E+01	4E-01	2E+00
Soil Gas-to-Indoor Air =	1E-02	4E+01	--	--
Landscaper				
Total Risk Across Soil (0-8' bgs)[b] =	6E-04	2E+01	3E-01	2E+00

Notes:
"--" not applicable
[a] Cumulative noncancer hazard excludes aliphatic and aromatic TPH fractions
[b] Soil pathways include: incidental soil ingestion, dermal contact, and outdoor inhalation of particulates/vapors

The following table summarizes the cumulative excess cancer risk and noncancer hazard using the Default exposure parameters.

COPCs	Default RA			
	Cancer Risk	Noncancer Hazard[a]	Noncancer Hazard $TPH_{aliphatic}$	Noncancer Hazard $TPH_{aromatic}$
Offsite Industrial/Commercial Worker				
Groundwater-to-Indoor Air =	3E-02	3E+01	--	--
Construction Worker				
Total Risk Across Soil (0-8' bgs)[b] =	3E-04	2E+02	3E+00	2E+01
Dermal Contact with Groundwater =	1E-02	4E+02	7E+00	7E-01
Groundwater-to-Outdoor Air =	9E-04	1E+02	--	--
Trench Worker				
Total Risk Across Soil (0-8' bgs)[b] =	3E-05	2E+01	4E-01	2E+00
Dermal Contact with Groundwater =	2E-03	5E+01	8E-01	8E-02
Groundwater-to-Outdoor Air =	1E-04	1E+01	--	--
Industrial/Commercial Worker				
Total Risk Across Soil (0-8' bgs)[b] =	2E-03	4E+01	8E-01	4E+00
Soil Gas-to-Indoor Air =	1E-02	4E+01	--	--
Landscaper				
Total Risk Across Soil (0-8' bgs)[b] =	1E-03	3E+01	6E-01	3E+00

Notes:
"--" not applicable
[a] Cumulative noncancer hazard excludes aliphatic and aromatic TPH fractions
[b] Soil pathways include: incidental soil ingestion, dermal contact, and outdoor inhalation of particulates/vapors

8.5 Uncertainty Analysis

The methodology used in this RA is consistent with RWQCB, USEPA and Cal-EPA risk assessment guidance. However, the procedures used in any quantitative RA are conditional estimates given the many assumptions that must be made about exposure and toxicity. Major sources of uncertainty in risk assessment include (1) natural variability (e.g., differences in body weight or sensitivity in a group of people); (2) incomplete knowledge of basic physical, chemical and biological processes (e.g., the affinity of a chemical for soil, degradation rates); (3) model assumptions used to estimate key inputs (e.g., exposure, dose response models, fate and transport models); and (4) measurement error primarily with respect to sampling and laboratory analysis.

Site-specific factors, which this assessment incorporates, decrease uncertainty, although uncertainty may persist in even the most site-specific RAs due to the inherent uncertainty in the process. However, because the assumptions used tend to be health-protective and conservative in nature, the estimated risks are likely to exceed the most probable risk posed to potential receptors at the Site and contiguous impacted areas.

Some of the most significant site-specific elements affecting uncertainty for this RA include:

- The maximum concentration detected in each media was used in the RA. The actual COPC concentrations the receptors would be exposed to will be on average significantly less. Also, the maximum soil concentration may be lower following excavation required for development. In addition, it was assumed that chemical concentrations remain constant over the duration of exposure. No abiotic or biotic degradation mechanisms, which reduce the concentrations of COPCs over time, are assumed to occur. This general assumption of steady-state conditions also applies to sources and chemical release mechanisms and likely results in a conservative estimation of long-term exposure concentrations.
- The direct contact pathways assumed bare soil is available for contact; however, when accounting for the proposed land-use (commercial/light industrial), much of the soil will likely be covered with asphalt pavement, buildings, landscaping, and hardscape.
- For exposures via outdoor air inhalation, the outdoor air flux model assumes that the VOC is present at the surface and that construction workers will come into contact via outdoor air inhalation.
- Based on a request from DTSC, TPH impacts have been independently evaluated for potential risk. Because many components of TPH are additionally characterized by chemical-specific analyses also included in this RA, the potential risk associated with many aromatic TPH compounds may be "double counted" resulting in an additionally conservative estimate of potential risk.

While conservative assumptions were used for the vapor intrusion modeling included in this assessment, there are some model sensitivities that are worth noting:

- If areas of the Site and contiguous impacted areas are excavated and then backfilled with non-native soils, the soil properties used in the model calculations may not be appropriate. Changes in soil porosity and soil moisture content will impact the vapor intrusion calculations for all media evaluated (soil gas and groundwater). Additionally, changes in the estimated capillary fringe thickness will influence the calculations for the groundwater to indoor air scenario.
- Variation in the assumed source depth will also influence the vapor intrusion calculations. The soil gas sample depth was used in the vapor intrusion calculations for the soil gas-to-indoor air pathway in the RA.

In summary, many aspects of the human health RA contain sources of uncertainty. Conservative simplifying assumptions are made so that health risks can be estimated quantitatively. Because the exact amount of uncertainty cannot be quantified, the RA is intended to overestimate rather than underestimate probable risk.

8.6 Post-Remediation Risk Evaluation Approach

To confirm the effectiveness of the remediation, a post-remediation RA will be conducted. The post-remediation RA will use post-remediation soil, groundwater, and soil gas sample data from each AOC, as well as existing data from nearby unremediated areas, as appropriate. The Site-specific exposure parameters as well as toxicity criteria presented in this RA will be applied during the post-remediation RA, with one modification. A PCB oral slope factor of 5 was utilized in the preparation of this RA. The post remediation RA and all future RAs will adopt the DTSC recommended PCB slope factor of 2.

During the remediation phase, interim area-specific post-remediation risk evaluations will be performed sequentially for each AOC using the 95% UCL concentration for each chemical. The exposure areas for estimating the 95% UCL will be the AOCs defined in the RI/FS. However, the AOC will be subdivided if the size of the AOC exceeds 25,000 square feet (the dimensions of a typical commercial building that may be built on the property). Buildings in use on adjacent parcels (e.g., current private jet facilities north of the runway) provide the basis of this typical dimension. As remedial actions are completed in each area and media, risk evaluations will be performed to evaluate potential post-remediation risk in the targeted media. For soil, these area-specific risk evaluations will be performed after each excavation is completed. During Site demolition, additional areas of potential environmental concern may be identified.

These areas will be characterized by additional sampling, as necessary. If remedial actions are required, the area will be included in the area-specific post-remediation interim risk evaluations described above and the post-remediation Site wide RA described below.

Groundwater risk evaluations will follow as in-situ remedial actions are being completed. After the risk goals (1×10^{-5} cancer risk and Hazard Index of 1) for soil and groundwater have been met in a given area, building demolition is complete, a soil gas survey will be performed. Soil gas samples will be collected after steady state conditions have been attained. The time to reach steady state will be estimated using the methods described in Johnson et al., 1999. The resulting data will be used for the vapor intrusion risk evaluation because soil gas data provides a direct measurement of the chemical concentration that may migrate into indoor air.

When remediation is deemed complete, a final post-remediation site-wide RA will be prepared. The final post-remediation RA will compile the confirmation sample results from the AOC remediation areas and the relevant Site characterization sample results into a comprehensive Site wide post-remediation dataset for soil, groundwater and soil gas. Site wide post-remediation risks for each media and receptor will be calculated using Site wide 95% UCL chemical concentrations. To address cumulative risks across media for the construction worker and trench worker (who may be exposed to soil and groundwater simultaneously), soil and groundwater risks will be summed. All other potential risks will be presented separately for each media.

While Site wide risks may be acceptable, due to the size of the Site and data distribution, there may be localized areas of impacts with chemical concentrations much greater than surrounding areas. To address this concern, a review of the Site data will be conducted. The constituent specific data distributions will be evaluated with regard to the 95% UCL to identify any outliers (results exceeding 3 times the 95% UCL). If these outliers represent a chemical specific risk exceeding 1×10^{-6} or a noncancer hazard index of 0.1, a location specific cumulative risk evaluation will be performed as described below.

If a specific location on the Site is identified with potentially elevated concentrations, this area will be evaluated with an area-specific post-remediation RA consistent with the approach applied to the AOCs. An area of 25,000 square feet, placed and centered over the specific location, will be used to calculate area-specific 95% UCL concentrations. If cumulative risks in the area are greater than the target risk goal of 1 x

10^{-5} or a noncancer hazard index of 1, further evaluation will be conducted. This may consist of collecting additional data or remedial action.

Should additional on or off site remedial measures be required to address potential impacts to Convair Lagoon, an evaluation of the post-remediation risk to human health and the environment in Convair Lagoon will be performed to document the efficacy of the mitigation measures. This evaluation will be added as an Appendix to the post-remediation RA.

9. CONCLUSIONS

Geosyntec Consultants prepared this Human Health Risk Assessment (RA) to evaluate potential redevelopment and post redevelopment exposures to chemicals present in soil, soil gas, and groundwater at the Site and contiguous impacted areas. The RA was prepared to provide information on the cleanup and control measures that may be needed.

The chemicals of potential concern identified include inorganics, PCBs, SVOCs, and VOCs. Potential exposure scenarios that were considered include inhalation of indoor air and outdoor air vapors, inhalation of particulates, dermal contact with groundwater, and exposure via direct contact to soils.

The results of the RA indicate that VOCs are the primary risk drivers (e.g., tetrachloroethene, trichloroethene, vinyl chloride) that could pose an unacceptable health risk to future users of the Site and contiguous impacted areas.

Potential cumulative cancer and noncancer hazard estimates exceeded target health goals using the maximum detected concentrations for all three media. The results of the RA indicate that site cleanup, engineering controls and/or institutional controls may be necessary during and after redevelopment.

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TABLES

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
T-34	Soil	7/14/2005	7	8015M
T-34	Soil	7/14/2005	7	8260B
B131-MW5	Soil	7/21/2005	7	8015M
0102-U1-01	Soil	6/27/2003	7	CATFH
0102-U1-01	Soil	6/27/2003	7	SW8260
T-40	Soil	7/13/2005	6.5	8015M
T-40	Soil	7/13/2005	6.5	8260B
T-39	Soil	7/13/2005	6.5	8015M
T-39	Soil	7/13/2005	6.5	8260B
T-26	Soil	7/13/2005	6.5	8015M
T-26	Soil	7/13/2005	6.5	8260B
T-19	Soil	6/30/2005	6.5	8015M
T-19	Soil	6/30/2005	6.5	8260B
0130-V2-12	Soil	6/27/2003	6.5	CATFH
0130-V2-12	Soil	6/27/2003	6.5	SW6010
0130-V2-12	Soil	6/27/2003	6.5	SW7196
0130-V2-12	Soil	6/27/2003	6.5	SW7471
0130-V2-12	Soil	6/27/2003	6.5	SW8082
0130-V2-12	Soil	6/27/2003	6.5	SW8260
0130-V2-12	Soil	6/27/2003	6.5	SW8270
0130-V2-12	Soil	6/27/2003	6.5	SW8310
0130-V2-01	Soil	6/27/2003	6.5	CATFH
0130-V2-01	Soil	6/27/2003	6.5	SW6010
0130-V2-01	Soil	6/27/2003	6.5	SW7196
0130-V2-01	Soil	6/27/2003	6.5	SW7471
0130-V2-01	Soil	6/27/2003	6.5	SW8082
0130-V2-01	Soil	6/27/2003	6.5	SW8260
0130-V2-01	Soil	6/27/2003	6.5	SW8270
0130-V2-01	Soil	6/27/2003	6.5	SW8310
0120-39-02	Soil	7/11/2003	6.5	SW8260B
T-50	Soil	10/12/2006	6	SW8260
T-48-6B	Soil	4/13/2006	6	8015B
T-47-GT	Soil	4/13/2006	6	8015B
T-31	Soil	7/1/2005	6	8015M
T-31	Soil	7/1/2005	6	8260B
T-14	Soil	6/30/2005	6	8015M
T-14	Soil	6/30/2005	6	8260B
B120-MW6	Soil	7/21/2005	6	8015M
TR-5VP	Soil	5/16/1986	5	EPA 8015 M
T-53	Soil	10/17/2006	5	SW8015
T-53	Soil	10/17/2006	5	SW8260
T-52	Soil	10/17/2006	5	SW8015
T-52	Soil	10/17/2006	5	SW8260
T-51	Soil	10/12/2006	5	SW8015
T-51	Soil	10/12/2006	5	SW8260
T-50	Soil	10/12/2006	5	SW8015
SS0S-02-01	Soil	6/13/2003	5	CATFH
SS0S-02-01	Soil	6/13/2003	5	SW7196
SS0S-02-01	Soil	6/13/2003	5	SW8260
SDGE-01-01	Soil	6/17/2003	5	SW8082
PARK-OA-10	Soil	8/21/2003	5	SW6010
PARK-OA-10	Soil	8/21/2003	5	SW7471
0TC4-03-01	Soil	6/16/2003	5	SW8082
0EXA-01-01	Soil	6/9/2003	5	SW8082
0532-01-01	Soil	6/9/2003	5	SW8082
0513-08-07	Soil	8/19/2003	5	SW6010
0513-08-07	Soil	8/19/2003	5	SW7471
0513-08-06	Soil	8/19/2003	5	SW6010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0513-08-06	Soil	8/19/2003	5	SW7471
0513-06-05	Soil	6/6/2003	5	CATFH
0513-06-05	Soil	6/6/2003	5	SW8260
0513-06-04	Soil	6/6/2003	5	CATFH
0513-06-04	Soil	6/6/2003	5	SW8260
0513-06-03	Soil	6/6/2003	5	CATFH
0513-06-03	Soil	6/6/2003	5	SW8260
0513-06-02	Soil	6/6/2003	5	CATFH
0513-06-02	Soil	6/6/2003	5	SW8260
0513-06-01	Soil	6/6/2003	5	CATFH
0513-06-01	Soil	6/6/2003	5	SW8260
0513-04-01	Soil	6/6/2003	5	CATFH
0513-04-01	Soil	6/6/2003	5	SW8260
0242-03-40	Soil	8/19/2003	5	SW6010
0242-03-40	Soil	8/19/2003	5	SW7471
0242-03-39	Soil	8/19/2003	5	SW6010
0242-03-39	Soil	8/19/2003	5	SW7471
0242-03-36	Soil	7/10/2003	5	SW8260B
0242-03-35	Soil	7/10/2003	5	SW8260B
0242-03-34	Soil	7/10/2003	5	SW8260B
0242-03-33	Soil	7/10/2003	5	SW8260B
0242-03-32	Soil	7/10/2003	5	SW8260B
0242-03-31	Soil	7/10/2003	5	SW8260B
0242-03-30	Soil	6/27/2003	5	SW8260
0242-03-29	Soil	6/27/2003	5	SW8260
0242-03-28	Soil	6/24/2003	5	SW8260
0242-03-27	Soil	6/25/2003	5	SW8260
0242-03-26	Soil	6/25/2003	5	SW8260
0242-03-25	Soil	6/25/2003	5	SW8260
0242-03-24	Soil	6/25/2003	5	SW8260
0242-03-23	Soil	6/25/2003	5	SW8260
0242-03-04	Soil	6/5/2003	5	CATFH
0242-03-04	Soil	6/5/2003	5	SW8260
0242-03-03	Soil	6/5/2003	5	CATFH
0242-03-03	Soil	6/5/2003	5	SW8260
0242-03-02	Soil	6/5/2003	5	CATFH
0242-03-02	Soil	6/5/2003	5	SW8260
0242-03-01	Soil	6/5/2003	5	CATFH
0242-03-01	Soil	6/5/2003	5	SW8260
0236-01-02	Soil	8/26/2003	5	CATFH
0236-01-02	Soil	8/26/2003	5	SW6010
0236-01-02	Soil	8/26/2003	5	SW7471
0236-01-01	Soil	6/17/2003	5	SW8082
0228-OA-01	Soil	6/25/2003	5	CATFH
0228-OA-01	Soil	6/25/2003	5	SW6010
0228-OA-01	Soil	6/25/2003	5	SW7196
0228-OA-01	Soil	6/25/2003	5	SW7471
0228-OA-01	Soil	6/25/2003	5	SW8260
0228-02-05	Soil	8/21/2003	5	CATFH
0228-02-05	Soil	8/21/2003	5	SW6010
0228-02-05	Soil	8/21/2003	5	SW7471
0228-02-04	Soil	8/21/2003	5	CATFH
0228-02-04	Soil	8/21/2003	5	SW6010
0228-02-04	Soil	8/21/2003	5	SW7471
0228-02-03	Soil	6/13/2003	5	CATFH
0228-02-03	Soil	6/13/2003	5	SW7196
0228-02-03	Soil	6/13/2003	5	SW8260
0228-02-02	Soil	6/13/2003	5	CATFH

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0228-02-02	Soil	6/13/2003	5	SW7196
0228-02-02	Soil	6/13/2003	5	SW8260
0228-02-01	Soil	6/13/2003	5	CATFH
0228-02-01	Soil	6/13/2003	5	EPA 314.0
0228-02-01	Soil	6/13/2003	5	SW7196
0228-02-01	Soil	6/13/2003	5	SW8260
0228-01-06	Soil	8/21/2003	5	CATFH
0228-01-06	Soil	8/21/2003	5	SW6010
0228-01-06	Soil	8/21/2003	5	SW7471
0228-01-05	Soil	8/21/2003	5	SW6010
0228-01-05	Soil	8/21/2003	5	SW7471
0228-01-05	Soil	8/21/2003	5	SW8260
0228-01-03	Soil	6/13/2003	5	EPA 314.0
0228-01-02	Soil	6/13/2003	5	EPA 314.0
0228-01-01	Soil	6/13/2003	5	EPA 314.0
0183-04-04	Soil	8/26/2003	5	SW6010
0183-04-04	Soil	8/26/2003	5	SW7471
0183-04-03	Soil	8/26/2003	5	SW6010
0183-04-03	Soil	8/26/2003	5	SW7471
0183-04-02	Soil	8/26/2003	5	SW6010
0183-04-02	Soil	8/26/2003	5	SW7471
0183-04-01	Soil	6/16/2003	5	CATFH
0183-04-01	Soil	6/16/2003	5	SW8260
0180-02-01	Soil	6/17/2003	5	CATFH
0180-02-01	Soil	6/17/2003	5	SW8260
0180-01-01	Soil	6/17/2003	5	CATFH
0167-01-06	Soil	8/22/2003	5	SW6010
0167-01-06	Soil	8/22/2003	5	SW7471
0166-02-11	Soil	8/26/2003	5	CATFH
0166-02-11	Soil	8/26/2003	5	SW8260
0166-02-10	Soil	8/22/2003	5	SW8260
0166-02-10	Soil	8/22/2003	5	SW8270
0166-02-09	Soil	8/22/2003	5	CATFH
0166-02-09	Soil	8/22/2003	5	SW8260
0166-02-08	Soil	8/22/2003	5	SW8260
0166-02-07	Soil	8/22/2003	5	SW8260
0166-02-06	Soil	8/22/2003	5	SW8260
0166-02-06	Soil	8/22/2003	5	SW8270
0166-02-05	Soil	8/22/2003	5	SW8260
0166-01-07	Soil	8/22/2003	5	SW8260
0166-01-07	Soil	8/22/2003	5	SW8270
0166-01-06	Soil	8/22/2003	5	SW6010
0166-01-06	Soil	8/22/2003	5	SW7471
0166-01-06	Soil	8/22/2003	5	SW8260
0166-01-05	Soil	8/22/2003	5	SW8260
0161-03-07	Soil	6/16/2003	5	CATFH
0161-03-07	Soil	6/16/2003	5	SW7196
0161-03-07	Soil	6/16/2003	5	SW8260
0161-03-06	Soil	6/16/2003	5	CATFH
0161-03-06	Soil	6/16/2003	5	SW7196
0161-03-06	Soil	6/16/2003	5	SW8260
0161-03-05	Soil	6/16/2003	5	CATFH
0161-03-05	Soil	6/16/2003	5	SW7196
0161-03-05	Soil	6/16/2003	5	SW8260
0161-03-04	Soil	6/16/2003	5	CATFH
0161-03-04	Soil	6/16/2003	5	SW7196
0161-03-04	Soil	6/16/2003	5	SW8260
0161-03-03	Soil	6/18/2003	5	CATFH

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0161-03-03	Soil	6/18/2003	5	SW7196
0161-03-03	Soil	6/18/2003	5	SW8260
0161-03-02	Soil	6/16/2003	5	CATFH
0161-03-02	Soil	6/16/2003	5	SW7196
0161-03-02	Soil	6/16/2003	5	SW8260
0161-03-01	Soil	6/16/2003	5	CATFH
0161-03-01	Soil	6/16/2003	5	SW7196
0161-03-01	Soil	6/16/2003	5	SW8260
0161-02-05	Soil	8/22/2003	5	CATFH
0161-02-04	Soil	6/18/2003	5	CATFH
0161-02-04	Soil	6/18/2003	5	SW7196
0161-02-04	Soil	6/18/2003	5	SW8260
0161-02-03	Soil	6/17/2003	5	CATFH
0161-02-03	Soil	6/17/2003	5	SW7196
0161-02-03	Soil	6/17/2003	5	SW8260
0161-02-02	Soil	6/16/2003	5	CATFH
0161-02-02	Soil	6/16/2003	5	SW7196
0161-02-02	Soil	6/16/2003	5	SW8260
0161-02-01	Soil	6/16/2003	5	CATFH
0161-02-01	Soil	6/16/2003	5	SW7196
0161-02-01	Soil	6/16/2003	5	SW8260
0161-02-01	Soil	6/16/2003	5	SW8310
0159-01-01	Soil	6/10/2003	5	CATFH
0159-01-01	Soil	6/10/2003	5	SW8260
0158-01-10	Soil	8/20/2003	5	CATFH
0158-01-09	Soil	8/22/2003	5	SW6010
0158-01-09	Soil	8/22/2003	5	SW7196
0158-01-09	Soil	8/22/2003	5	SW7471
0158-01-08	Soil	8/20/2003	5	SW6010
0158-01-08	Soil	8/20/2003	5	SW7196
0158-01-08	Soil	8/20/2003	5	SW7471
0158-01-07	Soil	8/22/2003	5	SW6010
0158-01-07	Soil	8/22/2003	5	SW7196
0158-01-07	Soil	8/22/2003	5	SW7471
0158-01-06	Soil	8/20/2003	5	SW6010
0158-01-06	Soil	8/20/2003	5	SW7196
0158-01-06	Soil	8/20/2003	5	SW7471
0157-02-02	Soil	6/9/2003	5	SW8082
0157-02-01	Soil	6/16/2003	5	SW8082
0157-01-01	Soil	6/16/2003	5	SW8082
0156-12-03	Soil	6/6/2003	5	CATFH
0156-12-03	Soil	6/6/2003	5	SW8260
0156-12-02	Soil	6/6/2003	5	CATFH
0156-12-02	Soil	6/6/2003	5	SW8260
0156-12-01	Soil	6/6/2003	5	CATFH
0156-12-01	Soil	6/6/2003	5	SW8260
0156-09-01	Soil	6/9/2003	5	SW8082
0156-08-04	Soil	6/6/2003	5	CATFH
0156-08-03	Soil	6/6/2003	5	CATFH
0156-08-02	Soil	6/6/2003	5	CATFH
0156-08-01	Soil	6/6/2003	5	CATFH
0156-07-02	Soil	8/19/2003	5	CATFH
0156-03-05	Soil	8/19/2003	5	SW6010
0156-03-05	Soil	8/19/2003	5	SW7471
0156-03-05	Soil	8/19/2003	5	SW8270
0156-01-01	Soil	6/6/2003	5	CATFH
0153-02-01	Soil	6/10/2003	5	SW8082
0152-03-01	Soil	6/9/2003	5	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0152-02-04	Soil	8/19/2003	5	CATFH
0152-02-03	Soil	8/19/2003	5	CATFH
0152-02-02	Soil	8/19/2003	5	CATFH
0152-01-05	Soil	8/19/2003	5	CATFH
0152-01-04	Soil	8/19/2003	5	CATFH
0152-01-03	Soil	8/19/2003	5	CATFH
0150-02-01	Soil	6/10/2003	5	SW8082
0147-03-01	Soil	6/10/2003	5	SW8082
0146-04-04	Soil	8/20/2003	5	SW8260
0146-01-03	Soil	6/10/2003	5	SW8082
0146-01-02	Soil	6/10/2003	5	SW8082
0146-01-01	Soil	6/10/2003	5	SW8082
0142-04-02	Soil	8/20/2003	5	CATFH
0142-04-01	Soil	6/9/2003	5	CATFH
0142-04-01	Soil	6/9/2003	5	SW8260
0142-03-01	Soil	6/9/2003	5	CATFH
0142-03-01	Soil	6/9/2003	5	SW8260
0142-02-01	Soil	6/17/2003	5	CATFH
0142-02-01	Soil	6/17/2003	5	SW8260
0140-05-01	Soil	6/10/2003	5	CATFH
0140-04-01	Soil	6/17/2003	5	CATFH
0140-04-01	Soil	6/17/2003	5	SW8260
0140-03-03	Soil	6/17/2003	5	CATFH
0140-03-03	Soil	6/17/2003	5	SW8260
0140-01-04	Soil	8/20/2003	5	CATFH
0140-01-04	Soil	8/20/2003	5	SW7196
0140-01-03	Soil	8/20/2003	5	CATFH
0140-01-03	Soil	8/20/2003	5	SW7196
0131-07-08	Soil	6/24/2003	5	SW8260
0131-07-07	Soil	6/24/2003	5	SW8260
0131-07-06	Soil	6/25/2003	5	SW8260
0131-07-05	Soil	6/27/2003	5	SW8260
0131-07-03	Soil	6/5/2003	5	SW8082
0131-07-02	Soil	6/5/2003	5	SW8082
0131-07-01	Soil	6/5/2003	5	SW8082
0131-06-01	Soil	6/5/2003	5	SW8082
0130-V2-05	Soil	6/27/2003	5	CATFH
0130-V2-05	Soil	6/27/2003	5	SW7196
0130-V2-05	Soil	6/27/2003	5	SW8082
0130-V2-05	Soil	6/27/2003	5	SW8260
0130-V2-02	Soil	6/27/2003	5	CATFH
0130-V2-02	Soil	6/27/2003	5	SW7196
0130-V2-02	Soil	6/27/2003	5	SW8082
0130-V2-02	Soil	6/27/2003	5	SW8260
0130-V1-12	Soil	6/27/2003	5	CATFH
0130-V1-12	Soil	6/27/2003	5	SW6010
0130-V1-12	Soil	6/27/2003	5	SW7196
0130-V1-12	Soil	6/27/2003	5	SW7471
0130-V1-12	Soil	6/27/2003	5	SW8082
0130-V1-12	Soil	6/27/2003	5	SW8260
0130-V1-12	Soil	6/27/2003	5	SW8270
0130-V1-12	Soil	6/27/2003	5	SW8310
0130-V1-01	Soil	6/27/2003	5	CATFH
0130-V1-01	Soil	6/27/2003	5	SW6010
0130-V1-01	Soil	6/27/2003	5	SW7196
0130-V1-01	Soil	6/27/2003	5	SW7471
0130-V1-01	Soil	6/27/2003	5	SW8082
0130-V1-01	Soil	6/27/2003	5	SW8260

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Location	Matrix	DateSampled	Depth	Method
0130-V1-01	Soil	6/27/2003	5	SW8270
0130-V1-01	Soil	6/27/2003	5	SW8310
0129-01-03	Soil	6/17/2003	5	SW8082
0129-01-02	Soil	6/17/2003	5	SW8082
0129-01-01	Soil	6/18/2003	5	SW8082
0128-02-03	Soil	8/28/2003	5	SW6010
0128-02-03	Soil	8/28/2003	5	SW7471
0128-02-03	Soil	8/28/2003	5	SW8260
0126-02-01	Soil	6/13/2003	5	EPA 314.0
0126-01-03	Soil	6/13/2003	5	EPA 314.0
0126-01-02	Soil	6/18/2003	5	EPA 314.0
0125-01-02	Soil	6/13/2003	5	SW8082
0125-01-01	Soil	6/13/2003	5	SW8082
0120-OA-32	Soil	8/27/2003	5	CATFH
0120-OA-32	Soil	8/27/2003	5	SW6010
0120-OA-32	Soil	8/27/2003	5	SW7471
0120-OA-31	Soil	8/27/2003	5	CATFH
0120-OA-31	Soil	8/27/2003	5	SW6010
0120-OA-31	Soil	8/27/2003	5	SW7471
0120-OA-30	Soil	8/27/2003	5	CATFH
0120-OA-30	Soil	8/27/2003	5	SW6010
0120-OA-30	Soil	8/27/2003	5	SW7471
0120-39-12	Soil	8/26/2003	5	CATFH
0120-39-12	Soil	8/26/2003	5	SW6010
0120-39-12	Soil	8/26/2003	5	SW7471
0120-39-12	Soil	8/26/2003	5	SW8260
0120-39-11	Soil	8/27/2003	5	SW8082
0120-39-10	Soil	8/27/2003	5	SW8082
0120-39-09	Soil	7/9/2003	5	SW8082
0120-39-08	Soil	7/9/2003	5	SW8082
0120-39-08	Soil	7/9/2003	5	SW8260
0120-39-07	Soil	7/9/2003	5	SW8082
0120-39-06	Soil	7/9/2003	5	SW8082
0120-39-06	Soil	7/9/2003	5	SW8260
0120-39-05	Soil	7/9/2003	5	SW8082
0120-39-05	Soil	7/9/2003	5	SW8260
0120-39-04	Soil	7/9/2003	5	SW8082
0120-39-04	Soil	7/9/2003	5	SW8260
0120-39-03	Soil	7/9/2003	5	SW8082
0120-39-03	Soil	7/9/2003	5	SW8260
0120-37-01	Soil	6/12/2003	5	SW8260
0120-36-04	Soil	8/27/2003	5	CATFH
0120-36-04	Soil	8/27/2003	5	SW8260
0120-35-04	Soil	8/21/2003	5	CATFH
0120-35-03	Soil	8/21/2003	5	CATFH
0120-35-02	Soil	6/11/2003	5	SW8082
0120-35-01	Soil	6/11/2003	5	SW8082
0120-34-01	Soil	6/12/2003	5	SW8082
0120-30-01	Soil	6/12/2003	5	SW8082
0120-28-02	Soil	8/21/2003	5	SW6010
0120-28-02	Soil	8/21/2003	5	SW7471
0120-27-01	Soil	6/12/2003	5	SW8082
0120-26-01	Soil	6/11/2003	5	SW8082
0120-25-03	Soil	8/28/2003	5	CATFH
0120-25-03	Soil	8/28/2003	5	SW6010
0120-25-03	Soil	8/28/2003	5	SW7471
0120-21-06	Soil	7/9/2003	5	SW8260
0120-21-05	Soil	7/9/2003	5	SW8260

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Location	Matrix	DateSampled	Depth	Method
0120-21-04	Soil	6/12/2003	5	SW7196
0120-21-04	Soil	6/12/2003	5	SW8260
0120-12-07	Soil	8/27/2003	5	SW7196
0120-12-06	Soil	6/12/2003	5	CATFH
0120-12-06	Soil	6/12/2003	5	SW7196
0120-12-06	Soil	6/12/2003	5	SW8260
0120-12-05	Soil	6/12/2003	5	CATFH
0120-12-05	Soil	6/12/2003	5	SW7196
0120-12-05	Soil	6/12/2003	5	SW8260
0120-12-04	Soil	6/12/2003	5	CATFH
0120-12-04	Soil	6/12/2003	5	SW7196
0120-12-04	Soil	6/12/2003	5	SW8260
0120-12-03	Soil	6/12/2003	5	CATFH
0120-12-03	Soil	6/12/2003	5	SW7196
0120-12-03	Soil	6/12/2003	5	SW8260
0120-12-02	Soil	6/12/2003	5	CATFH
0120-12-02	Soil	6/12/2003	5	SW7196
0120-12-02	Soil	6/12/2003	5	SW8260
0120-12-01	Soil	6/12/2003	5	CATFH
0120-12-01	Soil	6/12/2003	5	SW7196
0120-12-01	Soil	6/12/2003	5	SW8082
0120-12-01	Soil	6/12/2003	5	SW8260
0120-04-06	Soil	8/28/2003	5	SW7196
0120-04-05	Soil	8/27/2003	5	SW6010
0120-04-05	Soil	8/27/2003	5	SW7471
0120-04-04	Soil	8/27/2003	5	SW6010
0120-04-04	Soil	8/27/2003	5	SW7471
0120-03-03	Soil	8/26/2003	5	CATFH
0120-03-03	Soil	8/26/2003	5	SW6010
0120-03-03	Soil	8/26/2003	5	SW7196
0120-03-03	Soil	8/26/2003	5	SW7471
0120-03-03	Soil	8/26/2003	5	SW8260
0120-03-02	Soil	6/11/2003	5	CATFH
0120-03-02	Soil	6/11/2003	5	SW7196
0120-03-02	Soil	6/11/2003	5	SW8260
0120-03-01	Soil	6/11/2003	5	CATFH
0120-03-01	Soil	6/11/2003	5	SW7196
0120-03-01	Soil	6/11/2003	5	SW8260
0120-02-05	Soil	8/21/2003	5	SW6010
0120-02-05	Soil	8/21/2003	5	SW7471
0120-02-05	Soil	8/22/2003	5	SW6010
0120-02-05	Soil	8/22/2003	5	SW7471
0120-02-04	Soil	6/11/2003	5	CATFH
0120-02-04	Soil	6/11/2003	5	SW7196
0120-02-04	Soil	6/11/2003	5	SW8260
0120-02-03	Soil	6/11/2003	5	CATFH
0120-02-03	Soil	6/11/2003	5	SW7196
0120-02-03	Soil	6/11/2003	5	SW8260
0120-02-02	Soil	6/11/2003	5	CATFH
0120-02-02	Soil	6/11/2003	5	SW7196
0120-02-02	Soil	6/11/2003	5	SW8260
0120-02-01	Soil	6/11/2003	5	CATFH
0120-02-01	Soil	6/11/2003	5	SW7196
0120-02-01	Soil	6/11/2003	5	SW8260
0120-01-07	Soil	8/21/2003	5	SW7196
0120-01-06	Soil	8/27/2003	5	SW6010
0120-01-06	Soil	8/27/2003	5	SW7196
0120-01-06	Soil	8/27/2003	5	SW7471

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Location	Matrix	DateSampled	Depth	Method
0115-04-01	Soil	6/13/2003	5	EPA 314.0
0105-05-04	Soil	8/20/2003	5	CATFH
0105-05-03	Soil	8/20/2003	5	CATFH
0105-05-02	Soil	8/20/2003	5	CATFH
0105-05-01	Soil	6/19/2003	5	CATFH
0105-05-01	Soil	6/19/2003	5	SW7196
0105-05-01	Soil	6/19/2003	5	SW8260
0105-01-02	Soil	6/17/2003	5	CATFH
0105-01-02	Soil	6/17/2003	5	SW7196
0105-01-02	Soil	6/17/2003	5	SW8260
0105-01-01	Soil	6/17/2003	5	CATFH
0105-01-01	Soil	6/17/2003	5	SW7196
0105-01-01	Soil	6/17/2003	5	SW8260
0102-03-01	Soil	6/10/2003	5	SW8082
0102-02-01	Soil	6/18/2003	5	SW8082
0102-01-02	Soil	8/21/2003	5	CATFH
0130-V2-03	Soil	6/27/2003	4.5	CATFH
0130-V2-03	Soil	6/27/2003	4.5	SW7196
0130-V2-03	Soil	6/27/2003	4.5	SW8082
0130-V2-03	Soil	6/27/2003	4.5	SW8260
0130-V1-05	Soil	6/27/2003	4.5	CATFH
0130-V1-05	Soil	6/27/2003	4.5	SW7196
0130-V1-05	Soil	6/27/2003	4.5	SW8082
0130-V1-05	Soil	6/27/2003	4.5	SW8260
0130-V2-04	Soil	6/27/2003	4	CATFH
0130-V2-04	Soil	6/27/2003	4	SW7196
0130-V2-04	Soil	6/27/2003	4	SW8082
0130-V2-04	Soil	6/27/2003	4	SW8260
0130-V1-03	Soil	6/27/2003	4	CATFH
0130-V1-03	Soil	6/27/2003	4	SW7196
0130-V1-03	Soil	6/27/2003	4	SW8082
0130-V1-03	Soil	6/27/2003	4	SW8260
0130-V2-07	Soil	6/27/2003	3.5	CATFH
0130-V2-07	Soil	6/27/2003	3.5	SW7196
0130-V2-07	Soil	6/27/2003	3.5	SW8082
0130-V2-07	Soil	6/27/2003	3.5	SW8260
0130-V1-07	Soil	6/27/2003	3.5	CATFH
0130-V1-07	Soil	6/27/2003	3.5	SW7196
0130-V1-07	Soil	6/27/2003	3.5	SW8082
0130-V1-07	Soil	6/27/2003	3.5	SW8260
0130-V1-04	Soil	6/27/2003	3.5	CATFH
0130-V1-04	Soil	6/27/2003	3.5	SW7196
0130-V1-04	Soil	6/27/2003	3.5	SW8082
0130-V1-04	Soil	6/27/2003	3.5	SW8260
0130-V1-02	Soil	6/27/2003	3.5	CATFH
0130-V1-02	Soil	6/27/2003	3.5	SW7196
0130-V1-02	Soil	6/27/2003	3.5	SW8082
0130-V1-02	Soil	6/27/2003	3.5	SW8260
SS0S-01-02	Soil	6/18/2003	3	CATFH
SS0S-01-02	Soil	6/18/2003	3	SW7196
SS0S-01-02	Soil	6/18/2003	3	SW8260
SS0S-01-02	Soil	6/18/2003	3	SW8310
SS0S-01-02	Soil	6/18/2003	3	SW9010
SS0S-01-01	Soil	6/18/2003	3	CATFH
SS0S-01-01	Soil	6/18/2003	3	SW7196
SS0S-01-01	Soil	6/18/2003	3	SW8260
SS0S-01-01	Soil	6/18/2003	3	SW9010
SDGE-01-01	Soil	6/17/2003	3	CATFH

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Location	Matrix	DateSampled	Depth	Method
PARK-OA-10	Soil	8/21/2003	3	SW6010
PARK-OA-10	Soil	8/21/2003	3	SW7471
PARK-0A-09	Soil	7/2/2003	3	CATFH
PARK-0A-09	Soil	7/2/2003	3	SW6010
PARK-0A-09	Soil	7/2/2003	3	SW7196
PARK-0A-09	Soil	7/2/2003	3	SW7471
PARK-0A-09	Soil	7/2/2003	3	SW8260
PARK-0A-08	Soil	7/2/2003	3	CATFH
PARK-0A-08	Soil	7/2/2003	3	SW6010
PARK-0A-08	Soil	7/2/2003	3	SW7196
PARK-0A-08	Soil	7/2/2003	3	SW7471
PARK-0A-08	Soil	7/2/2003	3	SW8260
0TC4-03-01	Soil	6/16/2003	3	CATFH
0TC4-03-01	Soil	6/16/2003	3	EPA 314.0
0TC4-03-01	Soil	6/16/2003	3	SW8260
0TC4-02-01	Soil	6/9/2003	3	CATFH
0TC4-02-01	Soil	6/9/2003	3	EPA 314.0
0TC4-02-01	Soil	6/9/2003	3	SW8260
0TC4-01-01	Soil	6/9/2003	3	CATFH
0TC4-01-01	Soil	6/9/2003	3	SW8260
0TC4-01-01	Soil	6/9/2003	3	SW8310
0EXA-02-01	Soil	6/9/2003	3	CATFH
0EXA-02-01	Soil	6/9/2003	3	SW9010
0EXA-01-01C	Soil	6/27/2003	3	SW8082
0EXA-01-01B	Soil	6/27/2003	3	SW8082
0EXA-01-01A	Soil	6/27/2003	3	SW8082
0EXA-01-01	Soil	6/9/2003	3	CATFH
0EXA-01-01	Soil	6/9/2003	3	SW9010
0532-01-01	Soil	6/9/2003	3	CATFH
0532-01-01	Soil	6/9/2003	3	SW8260
0513-08-07	Soil	8/19/2003	3	SW6010
0513-08-07	Soil	8/19/2003	3	SW7471
0513-08-06	Soil	8/19/2003	3	SW6010
0513-08-06	Soil	8/19/2003	3	SW7471
0513-06-05	Soil	6/6/2003	3	CATFH
0513-06-05	Soil	6/6/2003	3	SW6010
0513-06-05	Soil	6/6/2003	3	SW7471
0513-06-05	Soil	6/6/2003	3	SW8082
0513-05-01	Soil	6/6/2003	3	CATFH
0513-05-01	Soil	6/6/2003	3	SW8260
0513-04-01	Soil	6/6/2003	3	CATFH
0513-04-01	Soil	6/6/2003	3	SW6010
0513-04-01	Soil	6/6/2003	3	SW7471
0513-04-01	Soil	6/6/2003	3	SW8082
0513-04-01	Soil	6/6/2003	3	SW8260
0513-03-01	Soil	6/6/2003	3	CATFH
0513-03-01	Soil	6/6/2003	3	SW8260
0513-02-01	Soil	6/6/2003	3	CATFH
0513-02-01	Soil	6/6/2003	3	SW8260
0513-01-01	Soil	6/6/2003	3	CATFH
0513-01-01	Soil	6/6/2003	3	SW8260
0254-01-01	Soil	6/17/2003	3	CATFH
0242-03-40	Soil	8/19/2003	3	SW6010
0242-03-40	Soil	8/19/2003	3	SW7471
0242-03-39	Soil	8/19/2003	3	SW6010
0242-03-39	Soil	8/19/2003	3	SW7471
0242-03-36	Soil	7/10/2003	3	SW8260B
0242-03-35	Soil	7/10/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0242-03-34	Soil	7/10/2003	3	SW8260B
0242-03-33	Soil	7/10/2003	3	SW8260B
0242-03-32	Soil	7/10/2003	3	SW8260B
0242-03-31	Soil	7/10/2003	3	SW8260B
0242-03-30	Soil	6/27/2003	3	SW8260
0242-03-29	Soil	6/27/2003	3	SW8260
0242-03-28	Soil	6/24/2003	3	SW8260
0242-03-27	Soil	6/25/2003	3	SW8260
0242-03-26	Soil	6/25/2003	3	SW8260
0242-03-25	Soil	6/25/2003	3	SW8260
0242-03-24	Soil	6/25/2003	3	SW8260
0242-03-23	Soil	6/25/2003	3	SW8260
0242-02-01	Soil	6/5/2003	3	CATFH
0242-02-01	Soil	6/5/2003	3	SW8260
0242-01-01	Soil	6/5/2003	3	CATFH
0242-01-01	Soil	6/5/2003	3	SW8260
0236-01-02	Soil	8/26/2003	3	CATFH
0236-01-02	Soil	8/26/2003	3	SW6010
0236-01-02	Soil	8/26/2003	3	SW7471
0236-01-01	Soil	6/17/2003	3	CATFH
0228-02-05	Soil	8/21/2003	3	CATFH
0228-02-05	Soil	8/21/2003	3	SW6010
0228-02-05	Soil	8/21/2003	3	SW7471
0228-02-04	Soil	8/21/2003	3	CATFH
0228-02-04	Soil	8/21/2003	3	SW6010
0228-02-04	Soil	8/21/2003	3	SW7471
0228-02-03	Soil	6/13/2003	3	CATFH
0228-02-03	Soil	6/13/2003	3	EPA 314.0
0228-02-03	Soil	6/13/2003	3	SW6010
0228-02-03	Soil	6/13/2003	3	SW7196
0228-02-03	Soil	6/13/2003	3	SW7471
0228-02-03	Soil	6/13/2003	3	SW8082
0228-02-03	Soil	6/13/2003	3	SW8260
0228-02-03	Soil	6/13/2003	3	SW8270
0228-02-03	Soil	6/13/2003	3	SW8310
0228-02-03	Soil	6/13/2003	3	SW9010
0228-02-02	Soil	6/13/2003	3	CATFH
0228-02-02	Soil	6/13/2003	3	EPA 314.0
0228-02-02	Soil	6/13/2003	3	SW6010
0228-02-02	Soil	6/13/2003	3	SW7196
0228-02-02	Soil	6/13/2003	3	SW7471
0228-02-02	Soil	6/13/2003	3	SW8082
0228-02-02	Soil	6/13/2003	3	SW8260
0228-02-02	Soil	6/13/2003	3	SW8270
0228-02-02	Soil	6/13/2003	3	SW8310
0228-02-02	Soil	6/13/2003	3	SW9010
0228-02-01	Soil	6/13/2003	3	CATFH
0228-02-01	Soil	6/13/2003	3	EPA 314.0
0228-02-01	Soil	6/13/2003	3	SW6010
0228-02-01	Soil	6/13/2003	3	SW7196
0228-02-01	Soil	6/13/2003	3	SW7471
0228-02-01	Soil	6/13/2003	3	SW8082
0228-02-01	Soil	6/13/2003	3	SW8260
0228-02-01	Soil	6/13/2003	3	SW8270
0228-02-01	Soil	6/13/2003	3	SW8310
0228-02-01	Soil	6/13/2003	3	SW9010
0228-01-06	Soil	8/21/2003	3	CATFH
0228-01-06	Soil	8/21/2003	3	SW6010

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0228-01-06	Soil	8/21/2003	3	SW7471
0228-01-05	Soil	8/21/2003	3	SW6010
0228-01-05	Soil	8/21/2003	3	SW7471
0228-01-05	Soil	8/21/2003	3	SW8260
0222-01-01	Soil	6/13/2003	3	CATFH
0222-01-01	Soil	6/13/2003	3	SW7196
0222-01-01	Soil	6/13/2003	3	SW8260
0222-01-01	Soil	6/13/2003	3	SW9010
0183-04-04	Soil	8/26/2003	3	SW6010
0183-04-04	Soil	8/26/2003	3	SW7471
0183-04-03	Soil	8/26/2003	3	SW6010
0183-04-03	Soil	8/26/2003	3	SW7471
0183-04-02	Soil	8/26/2003	3	SW6010
0183-04-02	Soil	8/26/2003	3	SW7471
0183-04-01	Soil	6/16/2003	3	CATFH
0183-04-01	Soil	6/16/2003	3	SW8260
0183-04-01	Soil	6/16/2003	3	SW8310
0183-03-01	Soil	6/16/2003	3	CATFH
0183-03-01	Soil	6/16/2003	3	SW8260
0183-02-01	Soil	6/16/2003	3	CATFH
0183-02-01	Soil	6/16/2003	3	SW8260
0183-02-01	Soil	6/16/2003	3	SW8310
0183-01-01	Soil	6/16/2003	3	CATFH
0183-01-01	Soil	6/16/2003	3	SW8260
0181-OA-06	Soil	7/2/2003	3	CATFH
0181-OA-06	Soil	7/2/2003	3	SW6010
0181-OA-06	Soil	7/2/2003	3	SW7196
0181-OA-06	Soil	7/2/2003	3	SW7471
0181-OA-06	Soil	7/2/2003	3	SW8260
0180-02-01	Soil	6/17/2003	3	CATFH
0180-02-01	Soil	6/17/2003	3	SW8260
0180-02-01	Soil	6/17/2003	3	SW8310
0180-01-01	Soil	6/17/2003	3	CATFH
0180-01-01	Soil	6/17/2003	3	SW8310
0169-02-01	Soil	6/16/2003	3	CATFH
0169-01-01	Soil	6/16/2003	3	CATFH
0169-01-01	Soil	6/16/2003	3	SW8260
0167-01-06	Soil	8/22/2003	3	SW6010
0167-01-06	Soil	8/22/2003	3	SW7471
0167-01-05	Soil	6/13/2003	3	CATFH
0167-01-05	Soil	6/13/2003	3	SW8260
0167-01-05	Soil	6/13/2003	3	SW8310
0167-01-04	Soil	6/13/2003	3	CATFH
0167-01-04	Soil	6/13/2003	3	SW8260
0167-01-03	Soil	6/13/2003	3	CATFH
0167-01-03	Soil	6/13/2003	3	SW8260
0167-01-02	Soil	6/13/2003	3	CATFH
0167-01-02	Soil	6/13/2003	3	SW8260
0167-01-02	Soil	6/13/2003	3	SW8310
0167-01-01	Soil	6/13/2003	3	CATFH
0167-01-01	Soil	6/13/2003	3	SW8260
0166-02-11	Soil	8/26/2003	3	CATFH
0166-02-11	Soil	8/26/2003	3	SW8260
0166-02-10	Soil	8/22/2003	3	SW8260
0166-02-10	Soil	8/22/2003	3	SW8270
0166-02-09	Soil	8/22/2003	3	CATFH
0166-02-09	Soil	8/22/2003	3	SW8260
0166-02-08	Soil	8/22/2003	3	SW8260

Table 1
Data Points Included in Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0166-02-07	Soil	8/22/2003	3	SW8260
0166-02-06	Soil	8/22/2003	3	SW8260
0166-02-06	Soil	8/22/2003	3	SW8270
0166-02-05	Soil	8/22/2003	3	SW8260
0166-02-04	Soil	6/18/2003	3	CATFH
0166-02-04	Soil	6/18/2003	3	SW8260
0166-02-03	Soil	6/18/2003	3	CATFH
0166-02-03	Soil	6/18/2003	3	SW8260
0166-02-02	Soil	6/16/2003	3	CATFH
0166-02-02	Soil	6/16/2003	3	SW8260
0166-02-01	Soil	6/16/2003	3	CATFH
0166-02-01	Soil	6/16/2003	3	SW8260
0166-01-07	Soil	8/22/2003	3	SW8260
0166-01-07	Soil	8/22/2003	3	SW8270
0166-01-06	Soil	8/22/2003	3	SW6010
0166-01-06	Soil	8/22/2003	3	SW7471
0166-01-06	Soil	8/22/2003	3	SW8260
0166-01-05	Soil	8/22/2003	3	SW8260
0166-01-04	Soil	6/13/2003	3	CATFH
0166-01-04	Soil	6/13/2003	3	SW8260
0166-01-02	Soil	6/13/2003	3	CATFH
0166-01-02	Soil	6/13/2003	3	SW8260
0166-01-01	Soil	6/18/2003	3	CATFH
0166-01-01	Soil	6/18/2003	3	SW8260
0161-04-02	Soil	6/16/2003	3	CATFH
0161-04-02	Soil	6/16/2003	3	SW8260
0161-04-01	Soil	6/16/2003	3	CATFH
0161-04-01	Soil	6/16/2003	3	SW8260
0161-03-07	Soil	6/16/2003	3	CATFH
0161-03-07	Soil	6/16/2003	3	SW7196
0161-03-07	Soil	6/16/2003	3	SW8082
0161-03-07	Soil	6/16/2003	3	SW8260
0161-03-07	Soil	6/16/2003	3	SW8270
0161-03-07	Soil	6/16/2003	3	SW8310
0161-03-07	Soil	6/16/2003	3	SW9010
0161-03-06	Soil	6/16/2003	3	CATFH
0161-03-06	Soil	6/16/2003	3	SW7196
0161-03-06	Soil	6/16/2003	3	SW8082
0161-03-06	Soil	6/16/2003	3	SW8260
0161-03-06	Soil	6/16/2003	3	SW8270
0161-03-06	Soil	6/16/2003	3	SW8310
0161-03-06	Soil	6/16/2003	3	SW9010
0161-03-05	Soil	6/16/2003	3	CATFH
0161-03-05	Soil	6/16/2003	3	SW7196
0161-03-05	Soil	6/16/2003	3	SW8082
0161-03-05	Soil	6/16/2003	3	SW8260
0161-03-05	Soil	6/16/2003	3	SW8270
0161-03-05	Soil	6/16/2003	3	SW8310
0161-03-05	Soil	6/16/2003	3	SW9010
0161-03-04	Soil	6/16/2003	3	CATFH
0161-03-04	Soil	6/16/2003	3	SW7196
0161-03-04	Soil	6/16/2003	3	SW8082
0161-03-04	Soil	6/16/2003	3	SW8260
0161-03-04	Soil	6/16/2003	3	SW8270
0161-03-04	Soil	6/16/2003	3	SW8310
0161-03-04	Soil	6/16/2003	3	SW9010
0161-03-03	Soil	6/18/2003	3	CATFH
0161-03-03	Soil	6/18/2003	3	SW7196

Table 1
Data Points Included in Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0161-03-03	Soil	6/18/2003	3	SW8082
0161-03-03	Soil	6/18/2003	3	SW8260
0161-03-03	Soil	6/18/2003	3	SW8270
0161-03-03	Soil	6/18/2003	3	SW8310
0161-03-03	Soil	6/18/2003	3	SW9010
0161-03-02	Soil	6/16/2003	3	CATFH
0161-03-02	Soil	6/16/2003	3	SW7196
0161-03-02	Soil	6/16/2003	3	SW8082
0161-03-02	Soil	6/16/2003	3	SW8260
0161-03-02	Soil	6/16/2003	3	SW8270
0161-03-02	Soil	6/16/2003	3	SW8310
0161-03-02	Soil	6/16/2003	3	SW9010
0161-03-01	Soil	6/16/2003	3	CATFH
0161-03-01	Soil	6/16/2003	3	SW7196
0161-03-01	Soil	6/16/2003	3	SW8082
0161-03-01	Soil	6/16/2003	3	SW8260
0161-03-01	Soil	6/16/2003	3	SW8270
0161-03-01	Soil	6/16/2003	3	SW8310
0161-03-01	Soil	6/16/2003	3	SW9010
0161-02-05	Soil	8/22/2003	3	CATFH
0161-02-04	Soil	6/18/2003	3	CATFH
0161-02-04	Soil	6/18/2003	3	SW7196
0161-02-04	Soil	6/18/2003	3	SW8260
0161-02-04	Soil	6/18/2003	3	SW8310
0161-02-03	Soil	6/17/2003	3	CATFH
0161-02-03	Soil	6/17/2003	3	SW7196
0161-02-03	Soil	6/17/2003	3	SW8260
0161-02-02	Soil	6/16/2003	3	CATFH
0161-02-02	Soil	6/16/2003	3	SW7196
0161-02-02	Soil	6/16/2003	3	SW8260
0161-02-01	Soil	6/16/2003	3	CATFH
0161-02-01	Soil	6/16/2003	3	SW7196
0161-02-01	Soil	6/16/2003	3	SW8260
0161-01-01	Soil	6/18/2003	3	CATFH
0161-01-01	Soil	6/18/2003	3	SW8260
0160-02-01	Soil	6/16/2003	3	CATFH
0160-02-01	Soil	6/16/2003	3	SW8260
0160-01-01	Soil	6/16/2003	3	CATFH
0160-01-01	Soil	6/16/2003	3	SW8260
0159-02-02	Soil	6/10/2003	3	CATFH
0159-02-02	Soil	6/10/2003	3	SW8260
0159-02-02	Soil	6/10/2003	3	SW8310
0159-02-01	Soil	6/10/2003	3	CATFH
0159-02-01	Soil	6/10/2003	3	SW8260
0159-01-01	Soil	6/10/2003	3	CATFH
0159-01-01	Soil	6/10/2003	3	SW6010
0159-01-01	Soil	6/10/2003	3	SW7471
0159-01-01	Soil	6/10/2003	3	SW8260
0158-OA-01	Soil	6/23/2003	3	CATFH
0158-OA-01	Soil	6/23/2003	3	SW6010
0158-OA-01	Soil	6/23/2003	3	SW7196
0158-OA-01	Soil	6/23/2003	3	SW7471
0158-OA-01	Soil	6/23/2003	3	SW8260
0158-02-02	Soil	6/16/2003	3	CATFH
0158-02-02	Soil	6/16/2003	3	SW6010
0158-02-02	Soil	6/16/2003	3	SW7471
0158-02-02	Soil	6/16/2003	3	SW8260
0158-02-01	Soil	6/16/2003	3	CATFH

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0158-02-01	Soil	6/16/2003	3	SW8260
0158-01-10	Soil	8/20/2003	3	CATFH
0158-01-09	Soil	8/22/2003	3	SW6010
0158-01-09	Soil	8/22/2003	3	SW7196
0158-01-09	Soil	8/22/2003	3	SW7471
0158-01-08	Soil	8/20/2003	3	SW6010
0158-01-08	Soil	8/20/2003	3	SW7196
0158-01-08	Soil	8/20/2003	3	SW7471
0158-01-07	Soil	8/22/2003	3	SW6010
0158-01-07	Soil	8/22/2003	3	SW7196
0158-01-07	Soil	8/22/2003	3	SW7471
0158-01-06	Soil	8/20/2003	3	SW6010
0158-01-06	Soil	8/20/2003	3	SW7196
0158-01-06	Soil	8/20/2003	3	SW7471
0158-01-05	Soil	6/25/2003	3	CATFH
0158-01-05	Soil	6/25/2003	3	SW7196
0158-01-05	Soil	6/25/2003	3	SW8260
0158-01-05	Soil	6/25/2003	3	SW9010
0158-01-04	Soil	6/24/2003	3	CATFH
0158-01-04	Soil	6/24/2003	3	SW6010
0158-01-04	Soil	6/24/2003	3	SW7196
0158-01-04	Soil	6/24/2003	3	SW7471
0158-01-04	Soil	6/24/2003	3	SW8260
0158-01-03	Soil	6/18/2003	3	CATFH
0158-01-03	Soil	6/18/2003	3	SW7196
0158-01-03	Soil	6/18/2003	3	SW8260
0158-01-03	Soil	6/18/2003	3	SW9010
0158-01-02	Soil	6/18/2003	3	CATFH
0158-01-02	Soil	6/18/2003	3	SW7196
0158-01-02	Soil	6/18/2003	3	SW8260
0158-01-02	Soil	6/18/2003	3	SW9010
0158-01-01	Soil	6/18/2003	3	CATFH
0158-01-01	Soil	6/18/2003	3	SW7196
0158-01-01	Soil	6/18/2003	3	SW8260
0158-01-01	Soil	6/18/2003	3	SW9010
0157-03-01	Soil	6/16/2003	3	CATFH
0157-03-01	Soil	6/16/2003	3	EPA 314.0
0157-03-01	Soil	6/16/2003	3	SW8260
0157-02-02	Soil	6/9/2003	3	CATFH
0157-02-01	Soil	6/16/2003	3	CATFH
0157-01-01	Soil	6/16/2003	3	CATFH
0157-01-01	Soil	6/16/2003	3	SW8310
0156-12-03	Soil	6/6/2003	3	CATFH
0156-12-03	Soil	6/6/2003	3	SW8260
0156-12-02	Soil	6/6/2003	3	CATFH
0156-12-02	Soil	6/6/2003	3	SW8260
0156-12-01	Soil	6/6/2003	3	CATFH
0156-12-01	Soil	6/6/2003	3	SW8260
0156-11-01	Soil	6/17/2003	3	CATFH
0156-11-01	Soil	6/17/2003	3	SW8310
0156-10-01	Soil	6/9/2003	3	CATFH
0156-10-01	Soil	6/9/2003	3	SW8260
0156-10-01	Soil	6/9/2003	3	SW8310
0156-09-01	Soil	6/9/2003	3	CATFH
0156-09-01	Soil	6/9/2003	3	SW8310
0156-08-05B	Soil	6/27/2003	3	CATFH
0156-08-05B	Soil	6/27/2003	3	SW8082
0156-08-05A	Soil	6/27/2003	3	CATFH

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0156-08-05A	Soil	6/27/2003	3	SW8082
0156-08-05	Soil	6/6/2003	3	CATFH
0156-08-05	Soil	6/6/2003	3	SW8260
0156-08-04	Soil	6/6/2003	3	CATFH
0156-08-04	Soil	6/6/2003	3	SW8260
0156-08-03	Soil	6/6/2003	3	CATFH
0156-08-03	Soil	6/6/2003	3	SW8260
0156-08-02	Soil	6/6/2003	3	CATFH
0156-08-02	Soil	6/6/2003	3	SW8260
0156-08-01	Soil	6/6/2003	3	CATFH
0156-08-01	Soil	6/6/2003	3	SW8260
0156-07-02	Soil	8/19/2003	3	CATFH
0156-07-01	Soil	6/6/2003	3	CATFH
0156-07-01	Soil	6/6/2003	3	SW8260
0156-06-01	Soil	6/6/2003	3	CATFH
0156-06-01	Soil	6/6/2003	3	SW8260
0156-06-01	Soil	6/27/2003	3	CATFH
0156-05-01	Soil	6/6/2003	3	CATFH
0156-05-01	Soil	6/6/2003	3	SW8260
0156-04-01	Soil	6/6/2003	3	CATFH
0156-04-01	Soil	6/6/2003	3	SW8260
0156-03-05	Soil	8/19/2003	3	SW6010
0156-03-05	Soil	8/19/2003	3	SW7471
0156-03-05	Soil	8/19/2003	3	SW8270
0156-03-04	Soil	6/23/2003	3	CATFH
0156-03-04	Soil	6/23/2003	3	SW6010
0156-03-04	Soil	6/23/2003	3	SW7196
0156-03-04	Soil	6/23/2003	3	SW7471
0156-03-04	Soil	6/23/2003	3	SW8260
0156-03-03	Soil	6/6/2003	3	CATFH
0156-03-03	Soil	6/6/2003	3	SW7196
0156-03-03	Soil	6/6/2003	3	SW8260
0156-03-03	Soil	6/6/2003	3	SW9010
0156-03-02	Soil	6/6/2003	3	CATFH
0156-03-02	Soil	6/6/2003	3	SW7196
0156-03-02	Soil	6/6/2003	3	SW8260
0156-03-02	Soil	6/6/2003	3	SW9010
0156-03-01	Soil	6/6/2003	3	CATFH
0156-03-01	Soil	6/6/2003	3	SW7196
0156-03-01	Soil	6/6/2003	3	SW8260
0156-03-01	Soil	6/6/2003	3	SW9010
0156-02-01	Soil	6/6/2003	3	CATFH
0156-02-01	Soil	6/6/2003	3	SW8260
0156-01-01	Soil	6/6/2003	3	CATFH
0153-02-01	Soil	6/10/2003	3	CATFH
0153-02-01	Soil	6/10/2003	3	SW8260
0153-01-01	Soil	6/10/2003	3	CATFH
0153-01-01	Soil	6/10/2003	3	SW8260
0152-05-01	Soil	6/19/2003	3	CATFH
0152-04-01	Soil	6/16/2003	3	CATFH
0152-03-01	Soil	6/9/2003	3	CATFH
0152-02-04	Soil	8/19/2003	3	CATFH
0152-02-03	Soil	8/19/2003	3	CATFH
0152-02-02	Soil	8/19/2003	3	CATFH
0152-02-01	Soil	6/9/2003	3	CATFH
0152-02-01	Soil	6/9/2003	3	SW8260
0152-01-05	Soil	8/19/2003	3	CATFH
0152-01-04	Soil	8/19/2003	3	CATFH

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0152-01-03	Soil	8/19/2003	3	CATFH
0152-01-02	Soil	6/9/2003	3	CATFH
0152-01-02	Soil	6/9/2003	3	SW8260
0150-CC-01	Soil	6/25/2003	3	CATFH
0150-02-01	Soil	6/10/2003	3	CATFH
0147-03-01	Soil	6/10/2003	3	CATFH
0147-02-01	Soil	6/17/2003	3	CATFH
0146-OA-02	Soil	6/25/2003	3	CATFH
0146-OA-02	Soil	6/25/2003	3	SW6010
0146-OA-02	Soil	6/25/2003	3	SW7196
0146-OA-02	Soil	6/25/2003	3	SW7471
0146-OA-02	Soil	6/25/2003	3	SW8260
0146A-02-01	Soil	6/16/2003	3	CATFH
0146A-02-01	Soil	6/16/2003	3	SW8260
0146A-01-01	Soil	6/16/2003	3	CATFH
0146A-01-01	Soil	6/16/2003	3	SW8260
0146-04-04	Soil	8/20/2003	3	SW8260
0146-04-02	Soil	6/10/2003	3	CATFH
0146-04-01	Soil	6/10/2003	3	CATFH
0146-04-01	Soil	6/10/2003	3	SW8310
0146-03-01	Soil	6/10/2003	3	CATFH
0146-03-01	Soil	6/10/2003	3	SW8260
0146-03-01	Soil	6/10/2003	3	SW8310
0146-02-01	Soil	6/10/2003	3	CATFH
0146-01-03	Soil	6/10/2003	3	CATFH
0146-01-03	Soil	6/10/2003	3	SW8310
0146-01-02	Soil	6/10/2003	3	CATFH
0146-01-01	Soil	6/10/2003	3	CATFH
0146-01-01	Soil	6/10/2003	3	SW8310
0145-04-01	Soil	6/20/2003	3	CATFH
0145-04-01	Soil	6/20/2003	3	EPA 314.0
0145-04-01	Soil	6/20/2003	3	SW8260
0145-03-01	Soil	6/9/2003	3	CATFH
0145-03-01	Soil	6/9/2003	3	EPA 314.0
0145-03-01	Soil	6/9/2003	3	SW8260
0145-02-01	Soil	6/9/2003	3	CATFH
0145-01-01	Soil	6/9/2003	3	CATFH
0145-01-01	Soil	6/9/2003	3	SW8260
0145-01-01	Soil	6/9/2003	3	SW8310
0144-OA-01	Soil	6/24/2003	3	CATFH
0144-OA-01	Soil	6/24/2003	3	SW6010
0144-OA-01	Soil	6/24/2003	3	SW7196
0144-OA-01	Soil	6/24/2003	3	SW7471
0144-OA-01	Soil	6/24/2003	3	SW8260
0144-01-01	Soil	6/18/2003	3	CATFH
0144-01-01	Soil	6/18/2003	3	EPA 314.0
0144-01-01	Soil	6/18/2003	3	SW8260
0142-05-01	Soil	6/9/2003	3	CATFH
0142-05-01	Soil	6/9/2003	3	SW8260
0142-04-02	Soil	8/20/2003	3	CATFH
0142-04-01	Soil	6/9/2003	3	CATFH
0142-04-01	Soil	6/9/2003	3	SW8260
0142-03-01	Soil	6/9/2003	3	CATFH
0142-03-01	Soil	6/9/2003	3	SW8260
0142-02-01	Soil	6/17/2003	3	CATFH
0142-02-01	Soil	6/17/2003	3	SW8260
0140-05-01	Soil	6/10/2003	3	CATFH
0140-04-01	Soil	6/17/2003	3	CATFH

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Location	Matrix	DateSampled	Depth	Method
0140-04-01	Soil	6/17/2003	3	SW6010
0140-04-01	Soil	6/17/2003	3	SW7471
0140-04-01	Soil	6/17/2003	3	SW8082
0140-04-01	Soil	6/17/2003	3	SW8260
0140-03-04	Soil	6/17/2003	3	CATFH
0140-03-04	Soil	6/17/2003	3	SW8260
0140-03-03	Soil	6/17/2003	3	CATFH
0140-03-03	Soil	6/17/2003	3	SW6010
0140-03-03	Soil	6/17/2003	3	SW7471
0140-03-03	Soil	6/17/2003	3	SW8082
0140-03-03	Soil	6/17/2003	3	SW8260
0140-02-02	Soil	6/10/2003	3	CATFH
0140-02-02	Soil	6/10/2003	3	SW8260
0140-02-01	Soil	6/10/2003	3	CATFH
0140-02-01	Soil	6/10/2003	3	SW8260
0140-01-04	Soil	8/20/2003	3	CATFH
0140-01-04	Soil	8/20/2003	3	SW7196
0140-01-03	Soil	8/20/2003	3	CATFH
0140-01-03	Soil	8/20/2003	3	SW7196
0140-01-02	Soil	6/10/2003	3	CATFH
0140-01-02	Soil	6/10/2003	3	SW7196
0140-01-02	Soil	6/10/2003	3	SW8260
0140-01-02	Soil	6/10/2003	3	SW9010
0140-01-01	Soil	6/10/2003	3	CATFH
0140-01-01	Soil	6/10/2003	3	SW7196
0140-01-01	Soil	6/10/2003	3	SW8260
0140-01-01	Soil	6/10/2003	3	SW9010
0131-09-01	Soil	6/6/2003	3	CATFH
0131-09-01	Soil	6/6/2003	3	SW8260
0131-08-01	Soil	6/5/2003	3	SW8260
0131-07-08	Soil	6/24/2003	3	SW8260
0131-07-07	Soil	6/24/2003	3	SW8260
0131-07-06	Soil	6/25/2003	3	SW8260
0131-07-05	Soil	6/27/2003	3	SW8260
0131-07-03	Soil	6/5/2003	3	CATFH
0131-07-03	Soil	6/5/2003	3	SW8260
0131-07-02	Soil	6/5/2003	3	CATFH
0131-07-02	Soil	6/5/2003	3	SW8260
0131-07-01	Soil	6/5/2003	3	CATFH
0131-07-01	Soil	6/5/2003	3	SW8260
0131-06-01	Soil	6/5/2003	3	CATFH
0131-06-01	Soil	6/5/2003	3	SW8260
0131-05-01	Soil	6/5/2003	3	SW8260
0131-04-01	Soil	6/5/2003	3	CATFH
0131-04-01	Soil	6/5/2003	3	SW8260
0131-03-01	Soil	6/5/2003	3	CATFH
0131-03-01	Soil	6/5/2003	3	SW8260
0131-02-01	Soil	6/5/2003	3	CATFH
0131-02-01	Soil	6/5/2003	3	SW8260
0130-V2-11	Soil	6/27/2003	3	CATFH
0130-V2-11	Soil	6/27/2003	3	SW7196
0130-V2-11	Soil	6/27/2003	3	SW8082
0130-V2-11	Soil	6/27/2003	3	SW8260
0130-V2-10	Soil	6/27/2003	3	CATFH
0130-V2-10	Soil	6/27/2003	3	SW7196
0130-V2-10	Soil	6/27/2003	3	SW8082
0130-V2-10	Soil	6/27/2003	3	SW8260
0130-V2-09	Soil	6/27/2003	3	CATFH

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Location	Matrix	DateSampled	Depth	Method
0130-V2-09	Soil	6/27/2003	3	SW7196
0130-V2-09	Soil	6/27/2003	3	SW8082
0130-V2-09	Soil	6/27/2003	3	SW8260
0130-V2-08	Soil	6/27/2003	3	CATFH
0130-V2-08	Soil	6/27/2003	3	SW7196
0130-V2-08	Soil	6/27/2003	3	SW8082
0130-V2-08	Soil	6/27/2003	3	SW8260
0130-V1-11	Soil	6/27/2003	3	CATFH
0130-V1-11	Soil	6/27/2003	3	SW7196
0130-V1-11	Soil	6/27/2003	3	SW8082
0130-V1-11	Soil	6/27/2003	3	SW8260
0130-V1-10	Soil	6/27/2003	3	CATFH
0130-V1-10	Soil	6/27/2003	3	SW7196
0130-V1-10	Soil	6/27/2003	3	SW8082
0130-V1-10	Soil	6/27/2003	3	SW8260
0130-V1-09	Soil	6/27/2003	3	CATFH
0130-V1-09	Soil	6/27/2003	3	SW7196
0130-V1-09	Soil	6/27/2003	3	SW8082
0130-V1-09	Soil	6/27/2003	3	SW8260
0130-V1-08	Soil	6/27/2003	3	CATFH
0130-V1-08	Soil	6/27/2003	3	SW7196
0130-V1-08	Soil	6/27/2003	3	SW8082
0130-V1-08	Soil	6/27/2003	3	SW8260
0130-OA-02	Soil	7/1/2003	3	CATFH
0130-OA-02	Soil	7/1/2003	3	SW6010
0130-OA-02	Soil	7/1/2003	3	SW7196
0130-OA-02	Soil	7/1/2003	3	SW7471
0130-OA-02	Soil	7/1/2003	3	SW8260
0130-06-04	Soil	6/13/2003	3	CATFH
0130-06-04	Soil	6/13/2003	3	SW7196
0130-06-04	Soil	6/13/2003	3	SW8260
0130-06-04	Soil	6/13/2003	3	SW8310
0130-06-04	Soil	6/13/2003	3	SW9010
0130-06-03	Soil	6/13/2003	3	CATFH
0130-06-03	Soil	6/13/2003	3	EPA 314.0
0130-06-03	Soil	6/13/2003	3	SW7196
0130-06-03	Soil	6/13/2003	3	SW8260
0130-06-03	Soil	6/13/2003	3	SW9010
0130-06-02	Soil	6/13/2003	3	CATFH
0130-06-02	Soil	6/13/2003	3	EPA 314.0
0130-06-02	Soil	6/13/2003	3	SW7196
0130-06-02	Soil	6/13/2003	3	SW8260
0130-06-02	Soil	6/13/2003	3	SW9010
0130-06-01	Soil	6/13/2003	3	CATFH
0130-06-01	Soil	6/13/2003	3	EPA 314.0
0130-06-01	Soil	6/13/2003	3	SW7196
0130-06-01	Soil	6/13/2003	3	SW8260
0130-06-01	Soil	6/13/2003	3	SW9010
0130-05-01	Soil	6/13/2003	3	SW8260
0130-04-01	Soil	6/13/2003	3	CATFH
0130-04-01	Soil	6/13/2003	3	SW7196
0130-04-01	Soil	6/13/2003	3	SW8260
0130-04-01	Soil	6/13/2003	3	SW9010
0130-03-01	Soil	6/13/2003	3	CATFH
0130-03-01	Soil	6/13/2003	3	SW7196
0130-03-01	Soil	6/13/2003	3	SW8260
0130-03-01	Soil	6/13/2003	3	SW9010
0130-02-02	Soil	6/18/2003	3	CATFH

Table 1
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Location	Matrix	DateSampled	Depth	Method
0130-02-02	Soil	6/18/2003	3	EPA 314.0
0130-02-02	Soil	6/18/2003	3	SW7196
0130-02-02	Soil	6/18/2003	3	SW8260
0130-02-02	Soil	6/18/2003	3	SW8270
0130-02-02	Soil	6/18/2003	3	SW9010
0130-02-01	Soil	6/18/2003	3	CATFH
0130-02-01	Soil	6/18/2003	3	EPA 314.0
0130-02-01	Soil	6/18/2003	3	SW7196
0130-02-01	Soil	6/18/2003	3	SW8260
0130-02-01	Soil	6/18/2003	3	SW8270
0130-02-01	Soil	6/18/2003	3	SW9010
0129-02-01	Soil	6/18/2003	3	CATFH
0129-02-01	Soil	6/18/2003	3	SW8260
0129-01-03	Soil	6/17/2003	3	CATFH
0129-01-03	Soil	6/17/2003	3	SW7196
0129-01-03	Soil	6/17/2003	3	SW8260
0129-01-03	Soil	6/17/2003	3	SW9010
0129-01-02	Soil	6/17/2003	3	CATFH
0129-01-02	Soil	6/17/2003	3	SW7196
0129-01-02	Soil	6/17/2003	3	SW8260
0129-01-02	Soil	6/17/2003	3	SW9010
0129-01-01	Soil	6/18/2003	3	CATFH
0129-01-01	Soil	6/18/2003	3	SW7196
0129-01-01	Soil	6/18/2003	3	SW8260
0129-01-01	Soil	6/18/2003	3	SW9010
0128-02-02	Soil	6/13/2003	3	CATFH
0128-02-02	Soil	6/13/2003	3	SW6010
0128-02-02	Soil	6/13/2003	3	SW7196
0128-02-02	Soil	6/13/2003	3	SW7471
0128-02-02	Soil	6/13/2003	3	SW8260
0128-02-02	Soil	6/13/2003	3	SW9010
0128-02-01	Soil	6/13/2003	3	CATFH
0128-02-01	Soil	6/13/2003	3	SW6010
0128-02-01	Soil	6/13/2003	3	SW7196
0128-02-01	Soil	6/13/2003	3	SW7471
0128-02-01	Soil	6/13/2003	3	SW8260
0128-02-01	Soil	6/13/2003	3	SW9010
0128-01-01	Soil	6/13/2003	3	CATFH
0128-01-01	Soil	6/13/2003	3	SW8260
0127-02-01	Soil	6/17/2003	3	CATFH
0127-01-01	Soil	6/17/2003	3	CATFH
0127-01-01	Soil	6/17/2003	3	SW8260
0126-OA-02	Soil	6/24/2003	3	CATFH
0126-OA-02	Soil	6/24/2003	3	SW6010
0126-OA-02	Soil	6/24/2003	3	SW7196
0126-OA-02	Soil	6/24/2003	3	SW7471
0126-OA-02	Soil	6/24/2003	3	SW8260
0126-03-02	Soil	6/13/2003	3	CATFH
0126-03-02	Soil	6/13/2003	3	SW8260
0126-03-01	Soil	6/13/2003	3	CATFH
0126-03-01	Soil	6/13/2003	3	SW8260
0126-02-01	Soil	6/13/2003	3	CATFH
0126-02-01	Soil	6/13/2003	3	EPA 314.0
0126-02-01	Soil	6/13/2003	3	SW7196
0126-02-01	Soil	6/13/2003	3	SW8260
0126-02-01	Soil	6/13/2003	3	SW9010
0126-01-03	Soil	6/13/2003	3	CATFH
0126-01-03	Soil	6/13/2003	3	EPA 314.0

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Data Points Included in Risk Assessment
Site Wide Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0126-01-03	Soil	6/13/2003	3	SW8260
0126-01-02	Soil	6/18/2003	3	CATFH
0126-01-02	Soil	6/18/2003	3	EPA 314.0
0126-01-02	Soil	6/18/2003	3	SW8260
0126-01-01	Soil	6/18/2003	3	CATFH
0126-01-01	Soil	6/18/2003	3	SW8260
0126-01-01	Soil	6/18/2003	3	SW8310
0125-02-02	Soil	6/18/2003	3	CATFH
0125-02-02	Soil	6/18/2003	3	SW8260
0125-02-01	Soil	6/18/2003	3	CATFH
0125-02-01	Soil	6/18/2003	3	SW8260
0125-01-02	Soil	6/13/2003	3	CATFH
0125-01-02	Soil	6/13/2003	3	SW8260
0125-01-01	Soil	6/13/2003	3	CATFH
0125-01-01	Soil	6/13/2003	3	SW8260
0123-02-01	Soil	6/13/2003	3	CATFH
0123-01-01	Soil	6/13/2003	3	CATFH
0123-01-01	Soil	6/13/2003	3	SW8310
0121-OA-11	Soil	6/26/2003	3	CATFH
0121-OA-11	Soil	6/26/2003	3	SW6010
0121-OA-11	Soil	6/26/2003	3	SW7196
0121-OA-11	Soil	6/26/2003	3	SW7471
0121-OA-11	Soil	6/26/2003	3	SW8260
0121-OA-04	Soil	6/17/2003	3	CATFH
0121-OA-04	Soil	6/17/2003	3	SW8260
0121-OA-03	Soil	6/17/2003	3	CATFH
0121-OA-03	Soil	6/17/2003	3	SW8260
0121-OA-03	Soil	6/17/2003	3	SW8310
0120-OA-32	Soil	8/27/2003	3	CATFH
0120-OA-32	Soil	8/27/2003	3	SW6010
0120-OA-32	Soil	8/27/2003	3	SW7471
0120-OA-31	Soil	8/27/2003	3	CATFH
0120-OA-31	Soil	8/27/2003	3	SW6010
0120-OA-31	Soil	8/27/2003	3	SW7471
0120-OA-30	Soil	8/27/2003	3	CATFH
0120-OA-30	Soil	8/27/2003	3	SW6010
0120-OA-30	Soil	8/27/2003	3	SW7471
0120-OA-29	Soil	6/30/2003	3	CATFH
0120-OA-29	Soil	6/30/2003	3	SW6010
0120-OA-29	Soil	6/30/2003	3	SW7196
0120-OA-29	Soil	6/30/2003	3	SW7471
0120-OA-29	Soil	6/30/2003	3	SW8260
0120-OA-28	Soil	6/26/2003	3	CATFH
0120-OA-28	Soil	6/26/2003	3	SW6010
0120-OA-28	Soil	6/26/2003	3	SW7196
0120-OA-28	Soil	6/26/2003	3	SW7471
0120-OA-28	Soil	6/26/2003	3	SW8260
0120-39-12	Soil	8/26/2003	3	CATFH
0120-39-12	Soil	8/26/2003	3	SW6010
0120-39-12	Soil	8/26/2003	3	SW7471
0120-39-12	Soil	8/26/2003	3	SW8260
0120-39-11	Soil	8/27/2003	3	SW8082
0120-39-10	Soil	8/27/2003	3	SW8082
0120-39-09	Soil	7/9/2003	3	SW8082
0120-39-09	Soil	7/9/2003	3	SW8260
0120-39-08	Soil	7/9/2003	3	SW8082
0120-39-08	Soil	7/9/2003	3	SW8260
0120-39-07	Soil	7/9/2003	3	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0120-39-07	Soil	7/9/2003	3	SW8260
0120-39-06	Soil	7/9/2003	3	SW8082
0120-39-06	Soil	7/9/2003	3	SW8260
0120-39-05	Soil	7/9/2003	3	SW8082
0120-39-05	Soil	7/9/2003	3	SW8260
0120-39-04	Soil	7/9/2003	3	SW8082
0120-39-04	Soil	7/9/2003	3	SW8260
0120-39-03	Soil	7/9/2003	3	SW8082
0120-39-03	Soil	7/9/2003	3	SW8260
0120-39-02	Soil	7/11/2003	3	SW8082
0120-39-02	Soil	7/11/2003	3	SW8260B
0120-38-01	Soil	6/12/2003	3	CATFH
0120-38-01	Soil	6/12/2003	3	SW8310
0120-37-01	Soil	6/12/2003	3	SW8260
0120-36-04	Soil	8/27/2003	3	CATFH
0120-36-04	Soil	8/27/2003	3	SW8260
0120-36-02	Soil	6/12/2003	3	CATFH
0120-36-02	Soil	6/12/2003	3	SW7196
0120-36-02	Soil	6/12/2003	3	SW8260
0120-36-02	Soil	6/12/2003	3	SW9010
0120-36-01	Soil	6/12/2003	3	CATFH
0120-36-01	Soil	6/12/2003	3	SW7196
0120-36-01	Soil	6/12/2003	3	SW8260
0120-36-01	Soil	6/12/2003	3	SW9010
0120-35-04	Soil	8/21/2003	3	CATFH
0120-35-03	Soil	8/21/2003	3	CATFH
0120-35-02	Soil	6/11/2003	3	CATFH
0120-35-01	Soil	6/11/2003	3	CATFH
0120-34-01	Soil	6/12/2003	3	CATFH
0120-33-02	Soil	6/13/2003	3	CATFH
0120-33-02	Soil	6/13/2003	3	SW8260
0120-33-01	Soil	6/12/2003	3	CATFH
0120-33-01	Soil	6/12/2003	3	SW8082
0120-33-01	Soil	6/12/2003	3	SW8260
0120-32-01	Soil	6/12/2003	3	CATFH
0120-30-01	Soil	6/12/2003	3	CATFH
0120-29-01	Soil	6/12/2003	3	CATFH
0120-28-02	Soil	8/21/2003	3	CATFH
0120-28-02	Soil	8/21/2003	3	SW6010
0120-28-02	Soil	8/21/2003	3	SW7471
0120-28-01	Soil	6/12/2003	3	CATFH
0120-27-01	Soil	6/12/2003	3	CATFH
0120-26-01	Soil	6/11/2003	3	CATFH
0120-25-03	Soil	8/28/2003	3	CATFH
0120-25-03	Soil	8/28/2003	3	SW6010
0120-25-03	Soil	8/28/2003	3	SW7471
0120-25-02	Soil	6/12/2003	3	CATFH
0120-25-02	Soil	6/12/2003	3	SW8260
0120-25-01	Soil	6/12/2003	3	CATFH
0120-25-01	Soil	6/12/2003	3	SW8260
0120-24-01	Soil	6/12/2003	3	CATFH
0120-24-01	Soil	6/12/2003	3	SW7196
0120-24-01	Soil	6/12/2003	3	SW8260
0120-23-01	Soil	6/12/2003	3	CATFH
0120-23-01	Soil	6/12/2003	3	SW8260
0120-21-06	Soil	7/9/2003	3	SW8260
0120-21-05	Soil	6/26/2003	3	CATFH
0120-21-05	Soil	6/26/2003	3	SW6010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-21-05	Soil	6/26/2003	3	SW7196
0120-21-05	Soil	6/26/2003	3	SW7471
0120-21-05	Soil	6/26/2003	3	SW8260
0120-21-05	Soil	7/9/2003	3	SW8260
0120-21-04	Soil	6/12/2003	3	SW7196
0120-21-04	Soil	6/12/2003	3	SW8260
0120-21-04	Soil	6/12/2003	3	SW9010
0120-21-03	Soil	6/12/2003	3	CATFH
0120-21-03	Soil	6/12/2003	3	SW7196
0120-21-03	Soil	6/12/2003	3	SW8260
0120-21-03	Soil	6/12/2003	3	SW9010
0120-21-02	Soil	6/12/2003	3	SW7196
0120-21-02	Soil	6/12/2003	3	SW8260
0120-21-02	Soil	6/12/2003	3	SW9010
0120-21-01	Soil	6/12/2003	3	SW7196
0120-21-01	Soil	6/12/2003	3	SW8260
0120-21-01	Soil	6/12/2003	3	SW9010
0120-20-01	Soil	6/12/2003	3	CATFH
0120-20-01	Soil	6/12/2003	3	SW7196
0120-20-01	Soil	6/12/2003	3	SW8260
0120-20-01	Soil	6/12/2003	3	SW9010
0120-19-02	Soil	6/12/2003	3	SW7196
0120-19-02	Soil	6/12/2003	3	SW8260
0120-19-01	Soil	6/12/2003	3	SW7196
0120-19-01	Soil	6/12/2003	3	SW8260
0120-18-03	Soil	6/12/2003	3	SW8260
0120-18-02	Soil	6/12/2003	3	SW8260
0120-18-01	Soil	6/12/2003	3	SW8260
0120-17-01	Soil	6/12/2003	3	CATFH
0120-17-01	Soil	6/12/2003	3	SW8260
0120-16-01	Soil	6/12/2003	3	CATFH
0120-16-01	Soil	6/12/2003	3	SW8260
0120-15-01	Soil	6/12/2003	3	CATFH
0120-14-01	Soil	6/12/2003	3	CATFH
0120-14-01	Soil	6/12/2003	3	SW8260
0120-12-07	Soil	8/27/2003	3	SW7196
0120-12-05	Soil	6/12/2003	3	CATFH
0120-12-05	Soil	6/12/2003	3	SW6010
0120-12-05	Soil	6/12/2003	3	SW7471
0120-12-05	Soil	6/12/2003	3	SW8082
0120-12-05	Soil	6/12/2003	3	SW8260
0120-12-05	Soil	6/12/2003	3	SW8270
0120-12-05	Soil	6/12/2003	3	SW8310
0120-12-02	Soil	6/12/2003	3	CATFH
0120-12-02	Soil	6/12/2003	3	SW6010
0120-12-02	Soil	6/12/2003	3	SW7471
0120-12-02	Soil	6/12/2003	3	SW8082
0120-12-02	Soil	6/12/2003	3	SW8260
0120-12-02	Soil	6/12/2003	3	SW8270
0120-12-02	Soil	6/12/2003	3	SW8310
0120-12-01	Soil	6/12/2003	3	CATFH
0120-12-01	Soil	6/12/2003	3	SW6010
0120-12-01	Soil	6/12/2003	3	SW7196
0120-12-01	Soil	6/12/2003	3	SW7471
0120-12-01	Soil	6/12/2003	3	SW8082
0120-12-01	Soil	6/12/2003	3	SW8260
0120-12-01	Soil	6/12/2003	3	SW8270
0120-12-01	Soil	6/12/2003	3	SW9010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-11-01	Soil	6/17/2003	3	CATFH
0120-10-01	Soil	6/12/2003	3	SW6010
0120-10-01	Soil	6/12/2003	3	SW7471
0120-10-01	Soil	6/12/2003	3	SW8260
0120-09-01	Soil	6/11/2003	3	SW8260
0120-08-01	Soil	6/11/2003	3	CATFH
0120-08-01	Soil	6/11/2003	3	SW8082
0120-08-01	Soil	6/11/2003	3	SW8260
0120-07-01	Soil	6/11/2003	3	SW9010
0120-06-04	Soil	6/11/2003	3	CATFH
0120-06-04	Soil	6/11/2003	3	SW8260
0120-06-04	Soil	6/11/2003	3	SW8270
0120-06-03	Soil	6/11/2003	3	CATFH
0120-06-03	Soil	6/11/2003	3	SW8260
0120-06-03	Soil	6/11/2003	3	SW8270
0120-06-02	Soil	6/11/2003	3	CATFH
0120-06-02	Soil	6/11/2003	3	SW8260
0120-06-02	Soil	6/11/2003	3	SW8270
0120-06-01	Soil	6/11/2003	3	CATFH
0120-06-01	Soil	6/11/2003	3	SW8260
0120-06-01	Soil	6/11/2003	3	SW8270
0120-04-06	Soil	8/28/2003	3	SW7196
0120-04-05	Soil	8/27/2003	3	SW6010
0120-04-05	Soil	8/27/2003	3	SW7471
0120-04-04	Soil	8/27/2003	3	SW6010
0120-04-04	Soil	8/27/2003	3	SW7471
0120-04-03	Soil	6/11/2003	3	SW7196
0120-04-03	Soil	6/11/2003	3	SW8260
0120-04-03	Soil	6/11/2003	3	SW9010
0120-04-02	Soil	6/11/2003	3	SW7196
0120-04-02	Soil	6/11/2003	3	SW8260
0120-04-02	Soil	6/11/2003	3	SW9010
0120-04-01	Soil	6/11/2003	3	SW7196
0120-04-01	Soil	6/11/2003	3	SW8260
0120-04-01	Soil	6/11/2003	3	SW9010
0120-03-03	Soil	8/26/2003	3	SW6010
0120-03-03	Soil	8/26/2003	3	SW7196
0120-03-03	Soil	8/26/2003	3	SW7471
0120-03-02	Soil	6/11/2003	3	CATFH
0120-03-02	Soil	6/11/2003	3	SW6010
0120-03-02	Soil	6/11/2003	3	SW7196
0120-03-02	Soil	6/11/2003	3	SW7471
0120-03-02	Soil	6/11/2003	3	SW8260
0120-03-02	Soil	6/11/2003	3	SW8310
0120-03-01	Soil	6/11/2003	3	CATFH
0120-03-01	Soil	6/11/2003	3	SW6010
0120-03-01	Soil	6/11/2003	3	SW7196
0120-03-01	Soil	6/11/2003	3	SW7471
0120-03-01	Soil	6/11/2003	3	SW8260
0120-03-01	Soil	6/11/2003	3	SW8310
0120-02-05	Soil	8/21/2003	3	SW6010
0120-02-05	Soil	8/21/2003	3	SW7471
0120-02-05	Soil	8/22/2003	3	SW6010
0120-02-05	Soil	8/22/2003	3	SW7471
0120-02-04	Soil	6/11/2003	3	CATFH
0120-02-04	Soil	6/11/2003	3	SW6010
0120-02-04	Soil	6/11/2003	3	SW7196
0120-02-04	Soil	6/11/2003	3	SW7471

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0120-02-04	Soil	6/11/2003	3	SW8260
0120-02-04	Soil	6/11/2003	3	SW9010
0120-02-03	Soil	8/28/2003	3	CATFH
0120-02-03	Soil	8/28/2003	3	SW6010
0120-02-03	Soil	8/28/2003	3	SW7196
0120-02-03	Soil	8/28/2003	3	SW7471
0120-02-03	Soil	8/28/2003	3	SW8260
0120-02-03	Soil	8/28/2003	3	SW9010
0120-02-02	Soil	6/11/2003	3	CATFH
0120-02-02	Soil	6/11/2003	3	SW6010
0120-02-02	Soil	6/11/2003	3	SW7196
0120-02-02	Soil	6/11/2003	3	SW7471
0120-02-02	Soil	6/11/2003	3	SW8260
0120-02-02	Soil	6/11/2003	3	SW9010
0120-02-01	Soil	6/11/2003	3	CATFH
0120-02-01	Soil	6/11/2003	3	SW6010
0120-02-01	Soil	6/11/2003	3	SW7196
0120-02-01	Soil	6/11/2003	3	SW7471
0120-02-01	Soil	6/11/2003	3	SW8260
0120-02-01	Soil	6/11/2003	3	SW9010
0120-01-07	Soil	8/21/2003	3	SW7196
0120-01-06	Soil	8/27/2003	3	SW6010
0120-01-06	Soil	8/27/2003	3	SW7196
0120-01-06	Soil	8/27/2003	3	SW7471
0120-01-05	Soil	6/11/2003	3	CATFH
0120-01-05	Soil	6/11/2003	3	SW7196
0120-01-05	Soil	6/11/2003	3	SW8260
0120-01-05	Soil	6/11/2003	3	SW9010
0120-01-04	Soil	6/11/2003	3	CATFH
0120-01-04	Soil	6/11/2003	3	SW7196
0120-01-04	Soil	6/11/2003	3	SW8260
0120-01-04	Soil	6/11/2003	3	SW9010
0120-01-03	Soil	6/11/2003	3	CATFH
0120-01-03	Soil	6/11/2003	3	SW7196
0120-01-03	Soil	6/11/2003	3	SW8260
0120-01-03	Soil	6/11/2003	3	SW9010
0120-01-02	Soil	6/11/2003	3	CATFH
0120-01-02	Soil	6/11/2003	3	SW7196
0120-01-02	Soil	6/11/2003	3	SW8260
0120-01-02	Soil	6/11/2003	3	SW9010
0120-01-01	Soil	6/11/2003	3	CATFH
0120-01-01	Soil	6/11/2003	3	SW7196
0120-01-01	Soil	6/11/2003	3	SW8260
0120-01-01	Soil	6/11/2003	3	SW9010
0115-04-01	Soil	6/13/2003	3	CATFH
0115-04-01	Soil	6/13/2003	3	EPA 314.0
0115-03-01	Soil	6/17/2003	3	CATFH
0115-02-01	Soil	6/19/2003	3	CATFH
0115-02-01	Soil	6/19/2003	3	SW8260
0115-01-01	Soil	6/10/2003	3	CATFH
0115-01-01	Soil	6/10/2003	3	SW8260
0112-01-01	Soil	6/13/2003	3	CATFH
0112-01-01	Soil	6/13/2003	3	SW8260
0111-01-02	Soil	6/18/2003	3	CATFH
0111-01-01	Soil	6/18/2003	3	CATFH
0105-05-04	Soil	8/20/2003	3	CATFH
0105-05-03	Soil	8/20/2003	3	CATFH
0105-05-02	Soil	8/20/2003	3	CATFH

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0105-05-01	Soil	6/19/2003	3	CATFH
0105-05-01	Soil	6/19/2003	3	SW6010
0105-05-01	Soil	6/19/2003	3	SW7196
0105-05-01	Soil	6/19/2003	3	SW7471
0105-05-01	Soil	6/19/2003	3	SW8082
0105-05-01	Soil	6/19/2003	3	SW8260
0105-05-01	Soil	6/19/2003	3	SW8270
0105-05-01	Soil	6/19/2003	3	SW8310
0105-05-01	Soil	6/19/2003	3	SW9010
0105-04-01A	Soil	6/25/2003	3	CATFH
0105-04-01A	Soil	6/25/2003	3	SW7196
0105-04-01A	Soil	6/25/2003	3	SW8260
0105-04-01A	Soil	6/25/2003	3	SW9010
0105-04-01	Soil	6/17/2003	3	CATFH
0105-04-01	Soil	6/17/2003	3	SW7196
0105-04-01	Soil	6/17/2003	3	SW8260
0105-04-01	Soil	6/17/2003	3	SW8310
0105-03-01	Soil	6/17/2003	3	CATFH
0105-03-01	Soil	6/17/2003	3	SW7196
0105-03-01	Soil	6/17/2003	3	SW8260
0105-03-01	Soil	6/17/2003	3	SW9010
0105-02-01	Soil	6/17/2003	3	CATFH
0105-02-01	Soil	6/17/2003	3	SW8260
0105-01-02	Soil	6/17/2003	3	CATFH
0105-01-02	Soil	6/17/2003	3	SW6010
0105-01-02	Soil	6/17/2003	3	SW7196
0105-01-02	Soil	6/17/2003	3	SW7471
0105-01-02	Soil	6/17/2003	3	SW8082
0105-01-02	Soil	6/17/2003	3	SW8260
0105-01-02	Soil	6/17/2003	3	SW8270
0105-01-02	Soil	6/17/2003	3	SW8310
0105-01-02	Soil	6/17/2003	3	SW9010
0105-01-01	Soil	6/17/2003	3	CATFH
0105-01-01	Soil	6/17/2003	3	SW6010
0105-01-01	Soil	6/17/2003	3	SW7196
0105-01-01	Soil	6/17/2003	3	SW7471
0105-01-01	Soil	6/17/2003	3	SW8082
0105-01-01	Soil	6/17/2003	3	SW8260
0105-01-01	Soil	6/17/2003	3	SW8270
0105-01-01	Soil	6/17/2003	3	SW8310
0105-01-01	Soil	6/17/2003	3	SW9010
0102-U1-04	Soil	6/30/2003	3	CATFH
0102-U1-04	Soil	6/30/2003	3	SW8260
0102-03-01	Soil	6/10/2003	3	CATFH
0102-02-01	Soil	6/18/2003	3	CATFH
0102-01-01	Soil	6/18/2003	3	CATFH
0102-01-01	Soil	6/18/2003	3	SW8310
0102-U1-05	Soil	6/30/2003	2.5	CATFH
0102-U1-05	Soil	6/30/2003	2.5	SW8260
0102-U1-05	Soil	6/30/2003	2.5	CATFH
0102-U1-05	Soil	6/30/2003	2.5	SW8260
0102-U1-02	Soil	6/30/2003	2.5	CATFH
0102-U1-02	Soil	6/30/2003	2.5	SW8260
0102-01-02	Soil	8/21/2003	2.5	CATFH
SS0S-02-01	Soil	6/13/2003	2	CATFH
SS0S-02-01	Soil	6/13/2003	2	SW6010
SS0S-02-01	Soil	6/13/2003	2	SW7196
SS0S-02-01	Soil	6/13/2003	2	SW7471

Table 1
Data Points Included in Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
SS0S-02-01	Soil	6/13/2003	2	SW8082
SS0S-02-01	Soil	6/13/2003	2	SW8260
SS0S-02-01	Soil	6/13/2003	2	SW8270
SS0S-02-01	Soil	6/13/2003	2	SW9010
0513-06-04	Soil	6/6/2003	2	CATFH
0513-06-04	Soil	6/6/2003	2	SW6010
0513-06-04	Soil	6/6/2003	2	SW7471
0513-06-04	Soil	6/6/2003	2	SW8082
0513-06-04	Soil	6/6/2003	2	SW8260
0513-06-03	Soil	6/6/2003	2	CATFH
0513-06-03	Soil	6/6/2003	2	SW6010
0513-06-03	Soil	6/6/2003	2	SW7471
0513-06-03	Soil	6/6/2003	2	SW8082
0513-06-03	Soil	6/6/2003	2	SW8260
0513-06-02	Soil	6/6/2003	2	CATFH
0513-06-02	Soil	6/6/2003	2	SW6010
0513-06-02	Soil	6/6/2003	2	SW7471
0513-06-02	Soil	6/6/2003	2	SW8082
0513-06-02	Soil	6/6/2003	2	SW8260
0513-06-01	Soil	6/6/2003	2	CATFH
0513-06-01	Soil	6/6/2003	2	SW6010
0513-06-01	Soil	6/6/2003	2	SW7471
0513-06-01	Soil	6/6/2003	2	SW8082
0513-06-01	Soil	6/6/2003	2	SW8260
0242-03-04	Soil	6/5/2003	2	CATFH
0242-03-04	Soil	6/5/2003	2	SW6010
0242-03-04	Soil	6/5/2003	2	SW7471
0242-03-04	Soil	6/5/2003	2	SW8082
0242-03-04	Soil	6/5/2003	2	SW8260
0242-03-04	Soil	6/5/2003	2	SW8270
0242-03-03	Soil	6/5/2003	2	CATFH
0242-03-03	Soil	6/5/2003	2	SW6010
0242-03-03	Soil	6/5/2003	2	SW7471
0242-03-03	Soil	6/5/2003	2	SW8082
0242-03-03	Soil	6/5/2003	2	SW8260
0242-03-03	Soil	6/5/2003	2	SW8270
0242-03-02	Soil	6/5/2003	2	CATFH
0242-03-02	Soil	6/5/2003	2	SW6010
0242-03-02	Soil	6/5/2003	2	SW7471
0242-03-02	Soil	6/5/2003	2	SW8082
0242-03-02	Soil	6/5/2003	2	SW8260
0242-03-02	Soil	6/5/2003	2	SW8270
0242-03-01	Soil	6/5/2003	2	CATFH
0242-03-01	Soil	6/5/2003	2	SW6010
0242-03-01	Soil	6/5/2003	2	SW7471
0242-03-01	Soil	6/5/2003	2	SW8082
0242-03-01	Soil	6/5/2003	2	SW8260
0242-03-01	Soil	6/5/2003	2	SW8270
0228-01-04	Soil	6/13/2003	2	CATFH
0228-01-04	Soil	6/13/2003	2	EPA 314.0
0228-01-04	Soil	6/13/2003	2	SW7196
0228-01-04	Soil	6/13/2003	2	SW8260
0228-01-04	Soil	6/13/2003	2	SW9010
0228-01-03	Soil	6/13/2003	2	CATFH
0228-01-03	Soil	6/13/2003	2	EPA 314.0
0228-01-03	Soil	6/13/2003	2	SW7196
0228-01-03	Soil	6/13/2003	2	SW8260
0228-01-03	Soil	6/13/2003	2	SW9010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0228-01-02	Soil	6/13/2003	2	CATFH
0228-01-02	Soil	6/13/2003	2	EPA 314.0
0228-01-02	Soil	6/13/2003	2	SW7196
0228-01-02	Soil	6/13/2003	2	SW8260
0228-01-02	Soil	6/13/2003	2	SW9010
0228-01-01	Soil	6/13/2003	2	CATFH
0228-01-01	Soil	6/13/2003	2	EPA 314.0
0228-01-01	Soil	6/13/2003	2	SW7196
0228-01-01	Soil	6/13/2003	2	SW8260
0228-01-01	Soil	6/13/2003	2	SW8310
0228-01-01	Soil	6/13/2003	2	SW9010
0147-02-02	Soil	6/16/2003	2	CATFH
0147-01-01	Soil	6/16/2003	2	CATFH
0147-01-01	Soil	6/16/2003	2	SW8260
0130-V2-06	Soil	6/27/2003	2	CATFH
0130-V2-06	Soil	6/27/2003	2	SW7196
0130-V2-06	Soil	6/27/2003	2	SW8082
0130-V2-06	Soil	6/27/2003	2	SW8260
0130-V2-02	Soil	6/30/2003	2	CATFH
0130-V2-02	Soil	6/30/2003	2	SW6010
0130-V2-02	Soil	6/30/2003	2	SW7196
0130-V2-02	Soil	6/30/2003	2	SW7471
0130-V2-02	Soil	6/30/2003	2	SW8082
0130-V2-02	Soil	6/30/2003	2	SW8260
0130-V2-02	Soil	6/30/2003	2	SW8270
0130-01-01	Soil	6/13/2003	2	CATFH
0130-01-01	Soil	6/13/2003	2	SW7196
0130-01-01	Soil	6/13/2003	2	SW8260
0130-01-01	Soil	6/13/2003	2	SW8310
0130-01-01	Soil	6/13/2003	2	SW9010
0120-12-06	Soil	6/12/2003	2	CATFH
0120-12-06	Soil	6/12/2003	2	SW6010
0120-12-06	Soil	6/12/2003	2	SW7196
0120-12-06	Soil	6/12/2003	2	SW7471
0120-12-06	Soil	6/12/2003	2	SW8082
0120-12-06	Soil	6/12/2003	2	SW8260
0120-12-06	Soil	6/12/2003	2	SW8270
0120-12-06	Soil	6/12/2003	2	SW8310
0120-12-06	Soil	6/12/2003	2	SW9010
0120-12-04	Soil	6/12/2003	2	CATFH
0120-12-04	Soil	6/12/2003	2	SW6010
0120-12-04	Soil	6/12/2003	2	SW7196
0120-12-04	Soil	6/12/2003	2	SW7471
0120-12-04	Soil	6/12/2003	2	SW8082
0120-12-04	Soil	6/12/2003	2	SW8260
0120-12-04	Soil	6/12/2003	2	SW8270
0120-12-04	Soil	6/12/2003	2	SW8310
0120-12-04	Soil	6/12/2003	2	SW9010
0120-12-03	Soil	6/12/2003	2	CATFH
0120-12-03	Soil	6/12/2003	2	SW6010
0120-12-03	Soil	6/12/2003	2	SW7196
0120-12-03	Soil	6/12/2003	2	SW7471
0120-12-03	Soil	6/12/2003	2	SW8082
0120-12-03	Soil	6/12/2003	2	SW8260
0120-12-03	Soil	6/12/2003	2	SW8270
0120-12-03	Soil	6/12/2003	2	SW8310
0120-12-03	Soil	6/12/2003	2	SW9010
0120-03-03	Soil	6/12/2003	2	CATFH

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-03-03	Soil	6/12/2003	2	SW6010
0120-03-03	Soil	6/12/2003	2	SW7196
0120-03-03	Soil	6/12/2003	2	SW7471
0120-03-03	Soil	6/12/2003	2	SW8260
0120-03-03	Soil	6/12/2003	2	SW8310
0130-V1-06	Soil	6/27/2003	1.5	CATFH
0130-V1-06	Soil	6/27/2003	1.5	SW7196
0130-V1-06	Soil	6/27/2003	1.5	SW8082
0130-V1-06	Soil	6/27/2003	1.5	SW8260
SS0S-02-01	Soil	6/13/2003	1	CATFH
SS0S-02-01	Soil	6/13/2003	1	SW6010
SS0S-02-01	Soil	6/13/2003	1	SW7196
SS0S-02-01	Soil	6/13/2003	1	SW7471
SS0S-02-01	Soil	6/13/2003	1	SW8082
SS0S-02-01	Soil	6/13/2003	1	SW8260
SS0S-02-01	Soil	6/13/2003	1	SW8270
SS0S-02-01	Soil	6/13/2003	1	SW8310
SS0S-02-01	Soil	6/13/2003	1	SW9010
SS0S-01-02	Soil	6/18/2003	1	CATFH
SS0S-01-02	Soil	6/18/2003	1	SW6010
SS0S-01-02	Soil	6/18/2003	1	SW7196
SS0S-01-02	Soil	6/18/2003	1	SW7471
SS0S-01-02	Soil	6/18/2003	1	SW8082
SS0S-01-02	Soil	6/18/2003	1	SW8260
SS0S-01-02	Soil	6/18/2003	1	SW8270
SS0S-01-02	Soil	6/18/2003	1	SW9010
SS0S-01-01	Soil	6/18/2003	1	CATFH
SS0S-01-01	Soil	6/18/2003	1	SW6010
SS0S-01-01	Soil	6/18/2003	1	SW7196
SS0S-01-01	Soil	6/18/2003	1	SW7471
SS0S-01-01	Soil	6/18/2003	1	SW8082
SS0S-01-01	Soil	6/18/2003	1	SW8260
SS0S-01-01	Soil	6/18/2003	1	SW8270
SS0S-01-01	Soil	6/18/2003	1	SW8310
SS0S-01-01	Soil	6/18/2003	1	SW9010
SDGE-01-01	Soil	6/17/2003	1	CATFH
SDGE-01-01	Soil	6/17/2003	1	SW8082
PARK-OA-10	Soil	8/21/2003	1	SW6010
PARK-OA-10	Soil	8/21/2003	1	SW7471
0TC4-03-01	Soil	6/16/2003	1	CATFH
0TC4-03-01	Soil	6/16/2003	1	EPA 314.0
0TC4-03-01	Soil	6/16/2003	1	SW8082
0TC4-03-01	Soil	6/16/2003	1	SW8260
0TC4-02-01	Soil	6/9/2003	1	CATFH
0TC4-02-01	Soil	6/9/2003	1	EPA 314.0
0TC4-02-01	Soil	6/9/2003	1	SW8082
0TC4-02-01	Soil	6/9/2003	1	SW8260
0TC4-01-01	Soil	6/9/2003	1	CATFH
0TC4-01-01	Soil	6/9/2003	1	SW8260
0EXA-0A-02	Soil	6/9/2003	1	CATFH
0EXA-0A-02	Soil	6/9/2003	1	SW8082
0EXA-0A-02	Soil	6/9/2003	1	SW8310
0EXA-0A-02	Soil	6/9/2003	1	SW8330
0EXA-0A-02	Soil	6/9/2003	1	SW9010
0EXA-01-01C	Soil	6/27/2003	1	SW8082
0EXA-01-01B	Soil	6/27/2003	1	SW8082
0EXA-01-01A	Soil	6/27/2003	1	SW8082
0EXA-01-01	Soil	6/9/2003	1	CATFH

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0EXA-01-01	Soil	6/9/2003	1	SW6010
0EXA-01-01	Soil	6/9/2003	1	SW7471
0EXA-01-01	Soil	6/9/2003	1	SW8082
0EXA-01-01	Soil	6/9/2003	1	SW8310
0EXA-01-01	Soil	6/9/2003	1	SW8330
0EXA-01-01	Soil	6/9/2003	1	SW9010
0532-01-01	Soil	6/9/2003	1	CATFH
0532-01-01	Soil	6/9/2003	1	SW8082
0532-01-01	Soil	6/9/2003	1	SW8260
0513-08-07	Soil	8/19/2003	1	SW6010
0513-08-07	Soil	8/19/2003	1	SW7471
0513-08-06	Soil	8/19/2003	1	SW6010
0513-08-06	Soil	8/19/2003	1	SW7471
0513-06-05	Soil	6/6/2003	1	CATFH
0513-06-05	Soil	6/6/2003	1	SW6010
0513-06-05	Soil	6/6/2003	1	SW7471
0513-06-05	Soil	6/6/2003	1	SW8082
0513-06-05	Soil	6/6/2003	1	SW8260
0513-06-04	Soil	6/6/2003	1	CATFH
0513-06-04	Soil	6/6/2003	1	SW6010
0513-06-04	Soil	6/6/2003	1	SW7471
0513-06-04	Soil	6/6/2003	1	SW8082
0513-06-04	Soil	6/6/2003	1	SW8260
0513-06-03	Soil	6/6/2003	1	CATFH
0513-06-03	Soil	6/6/2003	1	SW6010
0513-06-03	Soil	6/6/2003	1	SW7471
0513-06-03	Soil	6/6/2003	1	SW8082
0513-06-03	Soil	6/6/2003	1	SW8260
0513-06-02	Soil	6/6/2003	1	CATFH
0513-06-02	Soil	6/6/2003	1	SW6010
0513-06-02	Soil	6/6/2003	1	SW7471
0513-06-02	Soil	6/6/2003	1	SW8082
0513-06-02	Soil	6/6/2003	1	SW8260
0513-06-01	Soil	6/6/2003	1	CATFH
0513-06-01	Soil	6/6/2003	1	SW6010
0513-06-01	Soil	6/6/2003	1	SW7471
0513-06-01	Soil	6/6/2003	1	SW8082
0513-06-01	Soil	6/6/2003	1	SW8260
0513-05-01	Soil	6/6/2003	1	CATFH
0513-05-01	Soil	6/6/2003	1	SW6010
0513-05-01	Soil	6/6/2003	1	SW7471
0513-05-01	Soil	6/6/2003	1	SW8082
0513-05-01	Soil	6/6/2003	1	SW8260
0513-04-01	Soil	6/6/2003	1	CATFH
0513-04-01	Soil	6/6/2003	1	SW6010
0513-04-01	Soil	6/6/2003	1	SW7471
0513-04-01	Soil	6/6/2003	1	SW8082
0513-04-01	Soil	6/6/2003	1	SW8260
0513-03-01	Soil	6/6/2003	1	CATFH
0513-03-01	Soil	6/6/2003	1	SW6010
0513-03-01	Soil	6/6/2003	1	SW7471
0513-03-01	Soil	6/6/2003	1	SW8082
0513-03-01	Soil	6/6/2003	1	SW8260
0513-02-01	Soil	6/6/2003	1	CATFH
0513-02-01	Soil	6/6/2003	1	SW6010
0513-02-01	Soil	6/6/2003	1	SW7471
0513-02-01	Soil	6/6/2003	1	SW8082
0513-02-01	Soil	6/6/2003	1	SW8260

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0513-01-01	Soil	6/6/2003	1	CATFH
0513-01-01	Soil	6/6/2003	1	SW6010
0513-01-01	Soil	6/6/2003	1	SW7471
0513-01-01	Soil	6/6/2003	1	SW8082
0513-01-01	Soil	6/6/2003	1	SW8260
0254-01-01	Soil	6/17/2003	1	CATFH
0254-01-01	Soil	6/17/2003	1	SW8082
0254-01-01	Soil	6/17/2003	1	SW8310
0242-03-40	Soil	8/19/2003	1	SW6010
0242-03-40	Soil	8/19/2003	1	SW7471
0242-03-39	Soil	8/19/2003	1	SW6010
0242-03-39	Soil	8/19/2003	1	SW7471
0242-03-36	Soil	7/10/2003	1	SW8260B
0242-03-35	Soil	7/10/2003	1	SW8260B
0242-03-34	Soil	7/10/2003	1	SW8260B
0242-03-33	Soil	7/10/2003	1	SW8260B
0242-03-32	Soil	7/10/2003	1	SW8260B
0242-03-31	Soil	7/10/2003	1	SW8260B
0242-03-30	Soil	6/27/2003	1	SW8260
0242-03-29	Soil	6/27/2003	1	SW8260
0242-03-28	Soil	6/24/2003	1	SW8260
0242-03-27	Soil	6/25/2003	1	SW8260
0242-03-26	Soil	6/25/2003	1	SW8260
0242-03-25	Soil	6/25/2003	1	SW8260
0242-03-24	Soil	6/25/2003	1	SW8260
0242-03-23	Soil	6/25/2003	1	SW8260
0242-03-04	Soil	6/5/2003	1	CATFH
0242-03-04	Soil	6/5/2003	1	SW6010
0242-03-04	Soil	6/5/2003	1	SW7471
0242-03-04	Soil	6/5/2003	1	SW8082
0242-03-04	Soil	6/5/2003	1	SW8260
0242-03-04	Soil	6/5/2003	1	SW8270
0242-03-03	Soil	6/5/2003	1	CATFH
0242-03-03	Soil	6/5/2003	1	SW6010
0242-03-03	Soil	6/5/2003	1	SW7471
0242-03-03	Soil	6/5/2003	1	SW8082
0242-03-03	Soil	6/5/2003	1	SW8260
0242-03-03	Soil	6/5/2003	1	SW8270
0242-03-02	Soil	6/5/2003	1	CATFH
0242-03-02	Soil	6/5/2003	1	SW6010
0242-03-02	Soil	6/5/2003	1	SW7471
0242-03-02	Soil	6/5/2003	1	SW8082
0242-03-02	Soil	6/5/2003	1	SW8260
0242-03-02	Soil	6/5/2003	1	SW8270
0242-03-01	Soil	6/5/2003	1	CATFH
0242-03-01	Soil	6/5/2003	1	SW6010
0242-03-01	Soil	6/5/2003	1	SW7471
0242-03-01	Soil	6/5/2003	1	SW8082
0242-03-01	Soil	6/5/2003	1	SW8260
0242-03-01	Soil	6/5/2003	1	SW8270
0242-02-01	Soil	6/5/2003	1	CATFH
0242-02-01	Soil	6/5/2003	1	SW6010
0242-02-01	Soil	6/5/2003	1	SW7471
0242-02-01	Soil	6/5/2003	1	SW8082
0242-02-01	Soil	6/5/2003	1	SW8260
0242-01-01	Soil	6/5/2003	1	CATFH
0242-01-01	Soil	6/5/2003	1	SW8082
0242-01-01	Soil	6/5/2003	1	SW8260

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0236-01-02	Soil	8/26/2003	1	CATFH
0236-01-02	Soil	8/26/2003	1	SW6010
0236-01-02	Soil	8/26/2003	1	SW7471
0236-01-01	Soil	6/17/2003	1	CATFH
0236-01-01	Soil	6/17/2003	1	SW8082
0236-01-01	Soil	6/17/2003	1	SW8310
0228-02-05	Soil	8/21/2003	1	CATFH
0228-02-05	Soil	8/21/2003	1	SW6010
0228-02-05	Soil	8/21/2003	1	SW7471
0228-02-04	Soil	8/21/2003	1	CATFH
0228-02-04	Soil	8/21/2003	1	SW6010
0228-02-04	Soil	8/21/2003	1	SW7471
0228-02-03	Soil	6/13/2003	1	CATFH
0228-02-03	Soil	6/13/2003	1	EPA 314.0
0228-02-03	Soil	6/13/2003	1	SW6010
0228-02-03	Soil	6/13/2003	1	SW7196
0228-02-03	Soil	6/13/2003	1	SW7471
0228-02-03	Soil	6/13/2003	1	SW8082
0228-02-03	Soil	6/13/2003	1	SW8260
0228-02-03	Soil	6/13/2003	1	SW8270
0228-02-03	Soil	6/13/2003	1	SW8310
0228-02-03	Soil	6/13/2003	1	SW9010
0228-02-02	Soil	6/13/2003	1	CATFH
0228-02-02	Soil	6/13/2003	1	EPA 314.0
0228-02-02	Soil	6/13/2003	1	SW6010
0228-02-02	Soil	6/13/2003	1	SW7196
0228-02-02	Soil	6/13/2003	1	SW7471
0228-02-02	Soil	6/13/2003	1	SW8082
0228-02-02	Soil	6/13/2003	1	SW8260
0228-02-02	Soil	6/13/2003	1	SW8270
0228-02-02	Soil	6/13/2003	1	SW8310
0228-02-02	Soil	6/13/2003	1	SW9010
0228-02-01	Soil	6/13/2003	1	CATFH
0228-02-01	Soil	6/13/2003	1	EPA 314.0
0228-02-01	Soil	6/13/2003	1	SW6010
0228-02-01	Soil	6/13/2003	1	SW7196
0228-02-01	Soil	6/13/2003	1	SW7471
0228-02-01	Soil	6/13/2003	1	SW8082
0228-02-01	Soil	6/13/2003	1	SW8260
0228-02-01	Soil	6/13/2003	1	SW8270
0228-02-01	Soil	6/13/2003	1	SW8310
0228-02-01	Soil	6/13/2003	1	SW9010
0228-01-06	Soil	8/21/2003	1	CATFH
0228-01-06	Soil	8/21/2003	1	SW6010
0228-01-06	Soil	8/21/2003	1	SW7471
0228-01-05	Soil	8/21/2003	1	SW6010
0228-01-05	Soil	8/21/2003	1	SW7471
0228-01-05	Soil	8/21/2003	1	SW8260
0228-01-04	Soil	6/13/2003	1	CATFH
0228-01-04	Soil	6/13/2003	1	EPA 314.0
0228-01-04	Soil	6/13/2003	1	SW6010
0228-01-04	Soil	6/13/2003	1	SW7196
0228-01-04	Soil	6/13/2003	1	SW7471
0228-01-04	Soil	6/13/2003	1	SW8082
0228-01-04	Soil	6/13/2003	1	SW8260
0228-01-04	Soil	6/13/2003	1	SW8270
0228-01-04	Soil	6/13/2003	1	SW8310
0228-01-04	Soil	6/13/2003	1	SW9010

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0228-01-03	Soil	6/13/2003	1	CATFH
0228-01-03	Soil	6/13/2003	1	EPA 314.0
0228-01-03	Soil	6/13/2003	1	SW6010
0228-01-03	Soil	6/13/2003	1	SW7196
0228-01-03	Soil	6/13/2003	1	SW7471
0228-01-03	Soil	6/13/2003	1	SW8082
0228-01-03	Soil	6/13/2003	1	SW8260
0228-01-03	Soil	6/13/2003	1	SW8270
0228-01-03	Soil	6/13/2003	1	SW8310
0228-01-03	Soil	6/13/2003	1	SW9010
0228-01-02	Soil	6/13/2003	1	CATFH
0228-01-02	Soil	6/13/2003	1	EPA 314.0
0228-01-02	Soil	6/13/2003	1	SW6010
0228-01-02	Soil	6/13/2003	1	SW7196
0228-01-02	Soil	6/13/2003	1	SW7471
0228-01-02	Soil	6/13/2003	1	SW8082
0228-01-02	Soil	6/13/2003	1	SW8260
0228-01-02	Soil	6/13/2003	1	SW8270
0228-01-02	Soil	6/13/2003	1	SW8310
0228-01-02	Soil	6/13/2003	1	SW9010
0228-01-01	Soil	6/13/2003	1	CATFH
0228-01-01	Soil	6/13/2003	1	EPA 314.0
0228-01-01	Soil	6/13/2003	1	SW6010
0228-01-01	Soil	6/13/2003	1	SW7196
0228-01-01	Soil	6/13/2003	1	SW7471
0228-01-01	Soil	6/13/2003	1	SW8082
0228-01-01	Soil	6/13/2003	1	SW8260
0228-01-01	Soil	6/13/2003	1	SW8270
0228-01-01	Soil	6/13/2003	1	SW9010
0222-01-01	Soil	6/13/2003	1	CATFH
0222-01-01	Soil	6/13/2003	1	EPA 314.0
0222-01-01	Soil	6/13/2003	1	SW6010
0222-01-01	Soil	6/13/2003	1	SW7196
0222-01-01	Soil	6/13/2003	1	SW7471
0222-01-01	Soil	6/13/2003	1	SW8082
0222-01-01	Soil	6/13/2003	1	SW8260
0222-01-01	Soil	6/13/2003	1	SW8270
0222-01-01	Soil	6/13/2003	1	SW8310
0222-01-01	Soil	6/13/2003	1	SW9010
0183-04-04	Soil	8/26/2003	1	SW6010
0183-04-04	Soil	8/26/2003	1	SW7471
0183-04-03	Soil	8/26/2003	1	SW6010
0183-04-03	Soil	8/26/2003	1	SW7471
0183-04-02	Soil	8/26/2003	1	SW6010
0183-04-02	Soil	8/26/2003	1	SW7471
0183-04-01	Soil	6/16/2003	1	CATFH
0183-04-01	Soil	6/16/2003	1	SW6010
0183-04-01	Soil	6/16/2003	1	SW7471
0183-04-01	Soil	6/16/2003	1	SW8082
0183-04-01	Soil	6/16/2003	1	SW8260
0183-04-01	Soil	6/16/2003	1	SW8310
0183-03-01	Soil	6/16/2003	1	CATFH
0183-03-01	Soil	6/16/2003	1	SW6010
0183-03-01	Soil	6/16/2003	1	SW7471
0183-03-01	Soil	6/16/2003	1	SW8082
0183-03-01	Soil	6/16/2003	1	SW8260
0183-03-01	Soil	6/16/2003	1	SW8310
0183-02-01	Soil	6/16/2003	1	CATFH

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0183-02-01	Soil	6/16/2003	1	SW6010
0183-02-01	Soil	6/16/2003	1	SW7471
0183-02-01	Soil	6/16/2003	1	SW8082
0183-02-01	Soil	6/16/2003	1	SW8260
0183-01-01	Soil	6/16/2003	1	CATFH
0183-01-01	Soil	6/16/2003	1	SW8082
0183-01-01	Soil	6/16/2003	1	SW8260
0183-01-01	Soil	6/16/2003	1	SW8310
0180-02-01	Soil	6/17/2003	1	CATFH
0180-02-01	Soil	6/17/2003	1	SW8082
0180-02-01	Soil	6/17/2003	1	SW8260
0180-02-01	Soil	6/17/2003	1	SW8310
0180-01-01	Soil	6/17/2003	1	CATFH
0180-01-01	Soil	6/17/2003	1	SW8310
0169-02-01	Soil	6/16/2003	1	CATFH
0169-02-01	Soil	6/16/2003	1	SW6010
0169-02-01	Soil	6/16/2003	1	SW7471
0169-02-01	Soil	6/16/2003	1	SW8082
0169-02-01	Soil	6/16/2003	1	SW8310
0169-01-01	Soil	6/16/2003	1	CATFH
0169-01-01	Soil	6/16/2003	1	SW6010
0169-01-01	Soil	6/16/2003	1	SW7471
0169-01-01	Soil	6/16/2003	1	SW8082
0169-01-01	Soil	6/16/2003	1	SW8260
0169-01-01	Soil	6/16/2003	1	SW8310
0167-01-06	Soil	8/22/2003	1	SW6010
0167-01-06	Soil	8/22/2003	1	SW7471
0167-01-05	Soil	6/13/2003	1	CATFH
0167-01-05	Soil	6/13/2003	1	SW6010
0167-01-05	Soil	6/13/2003	1	SW7471
0167-01-05	Soil	6/13/2003	1	SW8082
0167-01-05	Soil	6/13/2003	1	SW8260
0167-01-04	Soil	6/13/2003	1	CATFH
0167-01-04	Soil	6/13/2003	1	SW6010
0167-01-04	Soil	6/13/2003	1	SW7471
0167-01-04	Soil	6/13/2003	1	SW8082
0167-01-04	Soil	6/13/2003	1	SW8260
0167-01-04	Soil	6/13/2003	1	SW8310
0167-01-03	Soil	6/13/2003	1	CATFH
0167-01-03	Soil	6/13/2003	1	SW6010
0167-01-03	Soil	6/13/2003	1	SW7471
0167-01-03	Soil	6/13/2003	1	SW8082
0167-01-03	Soil	6/13/2003	1	SW8260
0167-01-02	Soil	6/13/2003	1	CATFH
0167-01-02	Soil	6/13/2003	1	SW6010
0167-01-02	Soil	6/13/2003	1	SW7471
0167-01-02	Soil	6/13/2003	1	SW8082
0167-01-02	Soil	6/13/2003	1	SW8260
0167-01-01	Soil	6/13/2003	1	CATFH
0167-01-01	Soil	6/13/2003	1	SW6010
0167-01-01	Soil	6/13/2003	1	SW7471
0167-01-01	Soil	6/13/2003	1	SW8082
0167-01-01	Soil	6/13/2003	1	SW8260
0167-01-01	Soil	6/13/2003	1	SW8310
0166-02-11	Soil	8/26/2003	1	CATFH
0166-02-11	Soil	8/26/2003	1	SW8260
0166-02-10	Soil	8/22/2003	1	SW8260
0166-02-10	Soil	8/22/2003	1	SW8270

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0166-02-09	Soil	8/22/2003	1	CATFH
0166-02-09	Soil	8/22/2003	1	SW8260
0166-02-08	Soil	8/22/2003	1	SW8260
0166-02-07	Soil	8/22/2003	1	SW8260
0166-02-06	Soil	8/22/2003	1	SW8260
0166-02-06	Soil	8/22/2003	1	SW8270
0166-02-05	Soil	8/22/2003	1	SW8260
0166-02-04	Soil	6/18/2003	1	CATFH
0166-02-04	Soil	6/18/2003	1	SW8082
0166-02-04	Soil	6/18/2003	1	SW8260
0166-02-04	Soil	6/18/2003	1	SW8310
0166-02-03	Soil	6/18/2003	1	CATFH
0166-02-03	Soil	6/18/2003	1	SW8082
0166-02-03	Soil	6/18/2003	1	SW8260
0166-02-03	Soil	6/18/2003	1	SW8310
0166-02-02	Soil	6/16/2003	1	CATFH
0166-02-02	Soil	6/16/2003	1	SW8082
0166-02-02	Soil	6/16/2003	1	SW8260
0166-02-02	Soil	6/16/2003	1	SW8310
0166-02-01	Soil	6/16/2003	1	CATFH
0166-02-01	Soil	6/16/2003	1	SW8082
0166-02-01	Soil	6/16/2003	1	SW8260
0166-02-01	Soil	6/16/2003	1	SW8310
0166-01-07	Soil	8/22/2003	1	SW8260
0166-01-07	Soil	8/22/2003	1	SW8270
0166-01-06	Soil	8/22/2003	1	SW6010
0166-01-06	Soil	8/22/2003	1	SW7471
0166-01-06	Soil	8/22/2003	1	SW8260
0166-01-05	Soil	8/22/2003	1	SW8260
0166-01-04	Soil	6/13/2003	1	CATFH
0166-01-04	Soil	6/13/2003	1	SW8260
0166-01-03	Soil	6/13/2003	1	CATFH
0166-01-03	Soil	6/13/2003	1	SW8260
0166-01-02	Soil	6/13/2003	1	CATFH
0166-01-02	Soil	6/13/2003	1	SW8260
0166-01-01	Soil	6/18/2003	1	CATFH
0166-01-01	Soil	6/18/2003	1	SW8260
0166-01-01	Soil	6/18/2003	1	SW8310
0161-04-02	Soil	6/16/2003	1	CATFH
0161-04-02	Soil	6/16/2003	1	SW6010
0161-04-02	Soil	6/16/2003	1	SW7471
0161-04-02	Soil	6/16/2003	1	SW8082
0161-04-02	Soil	6/16/2003	1	SW8260
0161-04-02	Soil	6/16/2003	1	SW8310
0161-04-01	Soil	6/16/2003	1	CATFH
0161-04-01	Soil	6/16/2003	1	SW6010
0161-04-01	Soil	6/16/2003	1	SW7471
0161-04-01	Soil	6/16/2003	1	SW8082
0161-04-01	Soil	6/16/2003	1	SW8260
0161-03-07	Soil	6/16/2003	1	CATFH
0161-03-07	Soil	6/16/2003	1	SW6010
0161-03-07	Soil	6/16/2003	1	SW7196
0161-03-07	Soil	6/16/2003	1	SW7471
0161-03-07	Soil	6/16/2003	1	SW8082
0161-03-07	Soil	6/16/2003	1	SW8260
0161-03-07	Soil	6/16/2003	1	SW8270
0161-03-07	Soil	6/16/2003	1	SW8310
0161-03-07	Soil	6/16/2003	1	SW9010

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0161-03-06	Soil	6/16/2003	1	CATFH
0161-03-06	Soil	6/16/2003	1	SW6010
0161-03-06	Soil	6/16/2003	1	SW7196
0161-03-06	Soil	6/16/2003	1	SW7471
0161-03-06	Soil	6/16/2003	1	SW8082
0161-03-06	Soil	6/16/2003	1	SW8260
0161-03-06	Soil	6/16/2003	1	SW8270
0161-03-06	Soil	6/16/2003	1	SW8310
0161-03-06	Soil	6/16/2003	1	SW9010
0161-03-05	Soil	6/16/2003	1	CATFH
0161-03-05	Soil	6/16/2003	1	SW6010
0161-03-05	Soil	6/16/2003	1	SW7196
0161-03-05	Soil	6/16/2003	1	SW7471
0161-03-05	Soil	6/16/2003	1	SW8082
0161-03-05	Soil	6/16/2003	1	SW8260
0161-03-05	Soil	6/16/2003	1	SW8270
0161-03-05	Soil	6/16/2003	1	SW8310
0161-03-05	Soil	6/16/2003	1	SW9010
0161-03-04	Soil	6/16/2003	1	CATFH
0161-03-04	Soil	6/16/2003	1	SW6010
0161-03-04	Soil	6/16/2003	1	SW7196
0161-03-04	Soil	6/16/2003	1	SW7471
0161-03-04	Soil	6/16/2003	1	SW8082
0161-03-04	Soil	6/16/2003	1	SW8260
0161-03-04	Soil	6/16/2003	1	SW8270
0161-03-04	Soil	6/16/2003	1	SW8310
0161-03-04	Soil	6/16/2003	1	SW9010
0161-03-03	Soil	6/18/2003	1	CATFH
0161-03-03	Soil	6/18/2003	1	SW6010
0161-03-03	Soil	6/18/2003	1	SW7196
0161-03-03	Soil	6/18/2003	1	SW7471
0161-03-03	Soil	6/18/2003	1	SW8082
0161-03-03	Soil	6/18/2003	1	SW8260
0161-03-03	Soil	6/18/2003	1	SW8270
0161-03-03	Soil	6/18/2003	1	SW8310
0161-03-03	Soil	6/18/2003	1	SW9010
0161-03-02	Soil	6/16/2003	1	CATFH
0161-03-02	Soil	6/16/2003	1	SW6010
0161-03-02	Soil	6/16/2003	1	SW7196
0161-03-02	Soil	6/16/2003	1	SW7471
0161-03-02	Soil	6/16/2003	1	SW8082
0161-03-02	Soil	6/16/2003	1	SW8260
0161-03-02	Soil	6/16/2003	1	SW8270
0161-03-02	Soil	6/16/2003	1	SW8310
0161-03-02	Soil	6/16/2003	1	SW9010
0161-03-01	Soil	6/16/2003	1	CATFH
0161-03-01	Soil	6/16/2003	1	SW6010
0161-03-01	Soil	6/16/2003	1	SW7196
0161-03-01	Soil	6/16/2003	1	SW7471
0161-03-01	Soil	6/16/2003	1	SW8082
0161-03-01	Soil	6/16/2003	1	SW8260
0161-03-01	Soil	6/16/2003	1	SW8270
0161-03-01	Soil	6/16/2003	1	SW8310
0161-03-01	Soil	6/16/2003	1	SW9010
0161-02-05	Soil	8/22/2003	1	CATFH
0161-02-04	Soil	6/18/2003	1	CATFH
0161-02-04	Soil	6/18/2003	1	SW6010
0161-02-04	Soil	6/18/2003	1	SW7196

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0161-02-04	Soil	6/18/2003	1	SW7471
0161-02-04	Soil	6/18/2003	1	SW8082
0161-02-04	Soil	6/18/2003	1	SW8260
0161-02-04	Soil	6/18/2003	1	SW8270
0161-02-04	Soil	6/18/2003	1	SW9010
0161-02-03	Soil	6/17/2003	1	CATFH
0161-02-03	Soil	6/17/2003	1	SW6010
0161-02-03	Soil	6/17/2003	1	SW7196
0161-02-03	Soil	6/17/2003	1	SW7471
0161-02-03	Soil	6/17/2003	1	SW8082
0161-02-03	Soil	6/17/2003	1	SW8260
0161-02-03	Soil	6/17/2003	1	SW8270
0161-02-03	Soil	6/17/2003	1	SW8310
0161-02-03	Soil	6/17/2003	1	SW9010
0161-02-02	Soil	6/16/2003	1	CATFH
0161-02-02	Soil	6/16/2003	1	SW6010
0161-02-02	Soil	6/16/2003	1	SW7196
0161-02-02	Soil	6/16/2003	1	SW7471
0161-02-02	Soil	6/16/2003	1	SW8082
0161-02-02	Soil	6/16/2003	1	SW8260
0161-02-02	Soil	6/16/2003	1	SW8270
0161-02-02	Soil	6/16/2003	1	SW9010
0161-02-01	Soil	6/16/2003	1	CATFH
0161-02-01	Soil	6/16/2003	1	SW6010
0161-02-01	Soil	6/16/2003	1	SW7196
0161-02-01	Soil	6/16/2003	1	SW7471
0161-02-01	Soil	6/16/2003	1	SW8082
0161-02-01	Soil	6/16/2003	1	SW8260
0161-02-01	Soil	6/16/2003	1	SW8270
0161-02-01	Soil	6/16/2003	1	SW9010
0161-01-01	Soil	6/18/2003	1	CATFH
0161-01-01	Soil	6/18/2003	1	SW6010
0161-01-01	Soil	6/18/2003	1	SW7471
0161-01-01	Soil	6/18/2003	1	SW8082
0161-01-01	Soil	6/18/2003	1	SW8260
0160-02-01	Soil	6/16/2003	1	CATFH
0160-02-01	Soil	6/16/2003	1	SW6010
0160-02-01	Soil	6/16/2003	1	SW7471
0160-02-01	Soil	6/16/2003	1	SW8082
0160-02-01	Soil	6/16/2003	1	SW8260
0160-02-01	Soil	6/16/2003	1	SW8310
0160-01-01	Soil	6/16/2003	1	CATFH
0160-01-01	Soil	6/16/2003	1	SW8260
0159-02-02	Soil	6/10/2003	1	CATFH
0159-02-02	Soil	6/10/2003	1	SW6010
0159-02-02	Soil	6/10/2003	1	SW7471
0159-02-02	Soil	6/10/2003	1	SW8260
0159-02-01	Soil	6/10/2003	1	CATFH
0159-02-01	Soil	6/10/2003	1	SW6010
0159-02-01	Soil	6/10/2003	1	SW7471
0159-02-01	Soil	6/10/2003	1	SW8260
0159-02-01	Soil	6/10/2003	1	SW8310
0159-01-01	Soil	6/10/2003	1	CATFH
0159-01-01	Soil	6/10/2003	1	SW6010
0159-01-01	Soil	6/10/2003	1	SW7471
0159-01-01	Soil	6/10/2003	1	SW8260
0159-01-01	Soil	6/10/2003	1	SW8310
0158-02-02	Soil	6/16/2003	1	CATFH

Table 1
Data Points Included in Risk Assessment
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San Diego, California

Location	Matrix	DateSampled	Depth	Method
0158-02-02	Soil	6/16/2003	1	SW6010
0158-02-02	Soil	6/16/2003	1	SW7471
0158-02-02	Soil	6/16/2003	1	SW8082
0158-02-02	Soil	6/16/2003	1	SW8260
0158-02-01	Soil	6/16/2003	1	CATFH
0158-02-01	Soil	6/16/2003	1	SW6010
0158-02-01	Soil	6/16/2003	1	SW7471
0158-02-01	Soil	6/16/2003	1	SW8082
0158-02-01	Soil	6/16/2003	1	SW8260
0158-01-10	Soil	8/20/2003	1	CATFH
0158-01-09	Soil	8/22/2003	1	SW6010
0158-01-09	Soil	8/22/2003	1	SW7196
0158-01-09	Soil	8/22/2003	1	SW7471
0158-01-08	Soil	8/20/2003	1	SW6010
0158-01-08	Soil	8/20/2003	1	SW7196
0158-01-08	Soil	8/20/2003	1	SW7471
0158-01-07	Soil	8/22/2003	1	SW6010
0158-01-07	Soil	8/22/2003	1	SW7196
0158-01-07	Soil	8/22/2003	1	SW7471
0158-01-06	Soil	8/20/2003	1	SW6010
0158-01-06	Soil	8/20/2003	1	SW7196
0158-01-06	Soil	8/20/2003	1	SW7471
0158-01-05	Soil	6/25/2003	1	CATFH
0158-01-05	Soil	6/25/2003	1	SW6010
0158-01-05	Soil	6/25/2003	1	SW7196
0158-01-05	Soil	6/25/2003	1	SW7471
0158-01-05	Soil	6/25/2003	1	SW8260
0158-01-05	Soil	6/25/2003	1	SW9010
0158-01-03	Soil	6/18/2003	1	CATFH
0158-01-03	Soil	6/18/2003	1	SW6010
0158-01-03	Soil	6/18/2003	1	SW7196
0158-01-03	Soil	6/18/2003	1	SW7471
0158-01-03	Soil	6/18/2003	1	SW8260
0158-01-03	Soil	6/18/2003	1	SW9010
0158-01-02	Soil	6/18/2003	1	CATFH
0158-01-02	Soil	6/18/2003	1	SW6010
0158-01-02	Soil	6/18/2003	1	SW7196
0158-01-02	Soil	6/18/2003	1	SW7471
0158-01-02	Soil	6/18/2003	1	SW8260
0158-01-02	Soil	6/18/2003	1	SW9010
0158-01-01	Soil	6/18/2003	1	CATFH
0158-01-01	Soil	6/18/2003	1	SW6010
0158-01-01	Soil	6/18/2003	1	SW7196
0158-01-01	Soil	6/18/2003	1	SW7471
0158-01-01	Soil	6/18/2003	1	SW8260
0158-01-01	Soil	6/18/2003	1	SW9010
0157-03-01	Soil	6/16/2003	1	CATFH
0157-03-01	Soil	6/16/2003	1	EPA 314.0
0157-03-01	Soil	6/16/2003	1	SW8082
0157-03-01	Soil	6/16/2003	1	SW8260
0157-03-01	Soil	6/16/2003	1	SW8310
0157-02-02	Soil	6/9/2003	1	CATFH
0157-02-02	Soil	6/9/2003	1	SW8082
0157-02-01	Soil	6/16/2003	1	CATFH
0157-02-01	Soil	6/16/2003	1	SW8082
0157-02-01	Soil	6/16/2003	1	SW8310
0157-01-01	Soil	6/16/2003	1	CATFH
0157-01-01	Soil	6/16/2003	1	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0156-12-03	Soil	6/6/2003	1	CATFH
0156-12-03	Soil	6/6/2003	1	SW8260
0156-12-02	Soil	6/6/2003	1	CATFH
0156-12-02	Soil	6/6/2003	1	SW8260
0156-12-01	Soil	6/6/2003	1	CATFH
0156-12-01	Soil	6/6/2003	1	SW8260
0156-11-01	Soil	6/17/2003	1	CATFH
0156-10-01	Soil	6/9/2003	1	CATFH
0156-10-01	Soil	6/9/2003	1	SW8260
0156-09-01	Soil	6/9/2003	1	CATFH
0156-09-01	Soil	6/9/2003	1	SW8082
0156-08-05B	Soil	6/27/2003	1	CATFH
0156-08-05B	Soil	6/27/2003	1	SW8082
0156-08-05A	Soil	6/27/2003	1	CATFH
0156-08-05A	Soil	6/27/2003	1	SW8082
0156-08-05	Soil	6/6/2003	1	CATFH
0156-08-05	Soil	6/6/2003	1	SW6010
0156-08-05	Soil	6/6/2003	1	SW7471
0156-08-05	Soil	6/6/2003	1	SW8082
0156-08-05	Soil	6/6/2003	1	SW8260
0156-08-04	Soil	6/6/2003	1	CATFH
0156-08-04	Soil	6/6/2003	1	SW6010
0156-08-04	Soil	6/6/2003	1	SW7471
0156-08-04	Soil	6/6/2003	1	SW8082
0156-08-04	Soil	6/6/2003	1	SW8260
0156-08-03	Soil	6/6/2003	1	CATFH
0156-08-03	Soil	6/6/2003	1	SW6010
0156-08-03	Soil	6/6/2003	1	SW7471
0156-08-03	Soil	6/6/2003	1	SW8082
0156-08-03	Soil	6/6/2003	1	SW8260
0156-08-02	Soil	6/6/2003	1	CATFH
0156-08-02	Soil	6/6/2003	1	SW6010
0156-08-02	Soil	6/6/2003	1	SW7471
0156-08-02	Soil	6/6/2003	1	SW8082
0156-08-02	Soil	6/6/2003	1	SW8260
0156-08-01	Soil	6/6/2003	1	CATFH
0156-08-01	Soil	6/6/2003	1	SW6010
0156-08-01	Soil	6/6/2003	1	SW7471
0156-08-01	Soil	6/6/2003	1	SW8082
0156-08-01	Soil	6/6/2003	1	SW8260
0156-07-02	Soil	8/19/2003	1	CATFH
0156-07-01	Soil	6/6/2003	1	CATFH
0156-07-01	Soil	6/6/2003	1	SW8082
0156-07-01	Soil	6/6/2003	1	SW8260
0156-06-01	Soil	6/6/2003	1	CATFH
0156-06-01	Soil	6/6/2003	1	SW6010
0156-06-01	Soil	6/6/2003	1	SW7471
0156-06-01	Soil	6/6/2003	1	SW8082
0156-06-01	Soil	6/6/2003	1	SW8260
0156-06-01	Soil	6/27/2003	1	CATFH
0156-05-01	Soil	6/6/2003	1	CATFH
0156-05-01	Soil	6/6/2003	1	SW6010
0156-05-01	Soil	6/6/2003	1	SW7471
0156-05-01	Soil	6/6/2003	1	SW8082
0156-05-01	Soil	6/6/2003	1	SW8260
0156-04-01	Soil	6/6/2003	1	CATFH
0156-04-01	Soil	6/6/2003	1	SW6010
0156-04-01	Soil	6/6/2003	1	SW7471

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0156-04-01	Soil	6/6/2003	1	SW8082
0156-04-01	Soil	6/6/2003	1	SW8260
0156-03-05	Soil	8/19/2003	1	SW6010
0156-03-05	Soil	8/19/2003	1	SW7471
0156-03-05	Soil	8/19/2003	1	SW8270
0156-03-03	Soil	6/6/2003	1	CATFH
0156-03-03	Soil	6/6/2003	1	SW6010
0156-03-03	Soil	6/6/2003	1	SW7196
0156-03-03	Soil	6/6/2003	1	SW7471
0156-03-03	Soil	6/6/2003	1	SW8260
0156-03-03	Soil	6/6/2003	1	SW9010
0156-03-02	Soil	6/6/2003	1	CATFH
0156-03-02	Soil	6/6/2003	1	SW6010
0156-03-02	Soil	6/6/2003	1	SW7196
0156-03-02	Soil	6/6/2003	1	SW7471
0156-03-02	Soil	6/6/2003	1	SW8260
0156-03-02	Soil	6/6/2003	1	SW9010
0156-03-01	Soil	6/6/2003	1	CATFH
0156-03-01	Soil	6/6/2003	1	SW6010
0156-03-01	Soil	6/6/2003	1	SW7196
0156-03-01	Soil	6/6/2003	1	SW7471
0156-03-01	Soil	6/6/2003	1	SW8260
0156-03-01	Soil	6/6/2003	1	SW9010
0156-02-01	Soil	6/6/2003	1	CATFH
0156-02-01	Soil	6/6/2003	1	SW6010
0156-02-01	Soil	6/6/2003	1	SW7471
0156-02-01	Soil	6/6/2003	1	SW8082
0156-02-01	Soil	6/6/2003	1	SW8260
0156-01-01	Soil	6/6/2003	1	CATFH
0154-01-01	Soil	6/17/2003	1	SW6010
0154-01-01	Soil	6/17/2003	1	SW7471
0153-02-01	Soil	6/10/2003	1	CATFH
0153-02-01	Soil	6/10/2003	1	SW6010
0153-02-01	Soil	6/10/2003	1	SW7471
0153-02-01	Soil	6/10/2003	1	SW8082
0153-02-01	Soil	6/10/2003	1	SW8260
0153-01-01	Soil	6/10/2003	1	CATFH
0153-01-01	Soil	6/10/2003	1	SW6010
0153-01-01	Soil	6/10/2003	1	SW7471
0153-01-01	Soil	6/10/2003	1	SW8082
0153-01-01	Soil	6/10/2003	1	SW8260
0152-05-01	Soil	6/19/2003	1	CATFH
0152-05-01	Soil	6/19/2003	1	SW8082
0152-05-01	Soil	6/19/2003	1	SW8310
0152-04-01	Soil	6/16/2003	1	CATFH
0152-04-01	Soil	6/16/2003	1	SW8082
0152-04-01	Soil	6/16/2003	1	SW8310
0152-03-01	Soil	6/9/2003	1	CATFH
0152-03-01	Soil	6/9/2003	1	SW8082
0152-03-01	Soil	6/9/2003	1	SW8310
0152-02-04	Soil	8/19/2003	1	CATFH
0152-02-03	Soil	8/19/2003	1	CATFH
0152-02-02	Soil	8/19/2003	1	CATFH
0152-02-01	Soil	6/9/2003	1	CATFH
0152-02-01	Soil	6/9/2003	1	SW8082
0152-02-01	Soil	6/9/2003	1	SW8260
0152-02-01	Soil	6/9/2003	1	SW8310
0152-01-05	Soil	8/19/2003	1	CATFH

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Location	Matrix	DateSampled	Depth	Method
0152-01-04	Soil	8/19/2003	1	CATFH
0152-01-03	Soil	8/19/2003	1	CATFH
0152-01-02	Soil	6/9/2003	1	CATFH
0152-01-02	Soil	6/9/2003	1	SW6010
0152-01-02	Soil	6/9/2003	1	SW7471
0152-01-02	Soil	6/9/2003	1	SW8082
0152-01-02	Soil	6/9/2003	1	SW8260
0150-CC-01	Soil	6/25/2003	1	CATFH
0150-CC-01	Soil	6/25/2003	1	SW8082
0150-CC-01	Soil	6/25/2003	1	SW8310
0150-02-01	Soil	6/10/2003	1	CATFH
0150-02-01	Soil	6/10/2003	1	SW8082
0149-01-01	Soil	6/18/2003	1	SW6010
0149-01-01	Soil	6/18/2003	1	SW7471
0147-03-01	Soil	6/10/2003	1	CATFH
0147-03-01	Soil	6/10/2003	1	SW8082
0147-03-01	Soil	6/10/2003	1	SW8310
0147-02-02	Soil	6/16/2003	1	CATFH
0147-02-02	Soil	6/16/2003	1	SW8310
0147-02-01	Soil	6/17/2003	1	CATFH
0147-02-01	Soil	6/17/2003	1	SW8310
0147-01-01	Soil	6/16/2003	1	CATFH
0147-01-01	Soil	6/16/2003	1	SW8082
0147-01-01	Soil	6/16/2003	1	SW8260
0146A-03-01	Soil	6/16/2003	1	SW6010
0146A-03-01	Soil	6/16/2003	1	SW7471
0146A-02-01	Soil	6/16/2003	1	CATFH
0146A-02-01	Soil	6/16/2003	1	SW6010
0146A-02-01	Soil	6/16/2003	1	SW7471
0146A-02-01	Soil	6/16/2003	1	SW8082
0146A-02-01	Soil	6/16/2003	1	SW8260
0146A-01-01	Soil	6/16/2003	1	CATFH
0146A-01-01	Soil	6/16/2003	1	SW6010
0146A-01-01	Soil	6/16/2003	1	SW7471
0146A-01-01	Soil	6/16/2003	1	SW8082
0146A-01-01	Soil	6/16/2003	1	SW8260
0146-04-04	Soil	8/20/2003	1	SW8260
0146-04-02	Soil	6/10/2003	1	CATFH
0146-04-02	Soil	6/10/2003	1	SW8082
0146-04-02	Soil	6/10/2003	1	SW8310
0146-04-01	Soil	6/10/2003	1	CATFH
0146-04-01	Soil	6/10/2003	1	SW8082
0146-03-01	Soil	6/10/2003	1	CATFH
0146-03-01	Soil	6/10/2003	1	SW8082
0146-03-01	Soil	6/10/2003	1	SW8260
0146-02-01	Soil	6/10/2003	1	CATFH
0146-02-01	Soil	6/10/2003	1	SW8310
0146-01-03	Soil	6/10/2003	1	CATFH
0146-01-03	Soil	6/10/2003	1	SW6010
0146-01-03	Soil	6/10/2003	1	SW7471
0146-01-03	Soil	6/10/2003	1	SW8082
0146-01-02	Soil	6/10/2003	1	CATFH
0146-01-02	Soil	6/10/2003	1	SW6010
0146-01-02	Soil	6/10/2003	1	SW7471
0146-01-02	Soil	6/10/2003	1	SW8082
0146-01-02	Soil	6/10/2003	1	SW8310
0146-01-01	Soil	6/10/2003	1	CATFH
0146-01-01	Soil	6/10/2003	1	SW6010

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Location	Matrix	DateSampled	Depth	Method
0146-01-01	Soil	6/10/2003	1	SW7471
0146-01-01	Soil	6/10/2003	1	SW8082
0145-04-01	Soil	6/20/2003	1	CATFH
0145-04-01	Soil	6/20/2003	1	EPA 314.0
0145-04-01	Soil	6/20/2003	1	SW8082
0145-04-01	Soil	6/20/2003	1	SW8260
0145-04-01	Soil	6/20/2003	1	SW8310
0145-03-01	Soil	6/9/2003	1	CATFH
0145-03-01	Soil	6/9/2003	1	EPA 314.0
0145-03-01	Soil	6/9/2003	1	SW8082
0145-03-01	Soil	6/9/2003	1	SW8260
0145-02-01	Soil	6/9/2003	1	CATFH
0145-02-01	Soil	6/9/2003	1	SW8310
0145-01-01	Soil	6/9/2003	1	CATFH
0145-01-01	Soil	6/9/2003	1	SW8082
0145-01-01	Soil	6/9/2003	1	SW8260
0144-01-01	Soil	6/18/2003	1	CATFH
0144-01-01	Soil	6/18/2003	1	EPA 314.0
0144-01-01	Soil	6/18/2003	1	SW8082
0144-01-01	Soil	6/18/2003	1	SW8260
0144-01-01	Soil	6/18/2003	1	SW8310
0142-05-01	Soil	6/9/2003	1	CATFH
0142-05-01	Soil	6/9/2003	1	SW8082
0142-05-01	Soil	6/9/2003	1	SW8260
0142-05-01	Soil	6/9/2003	1	SW8310
0142-04-02	Soil	8/20/2003	1	SW6010
0142-04-02	Soil	8/20/2003	1	SW7471
0142-04-01	Soil	6/9/2003	1	CATFH
0142-04-01	Soil	6/9/2003	1	SW6010
0142-04-01	Soil	6/9/2003	1	SW7471
0142-04-01	Soil	6/9/2003	1	SW8260
0142-04-01	Soil	6/9/2003	1	SW8310
0142-03-01	Soil	6/9/2003	1	CATFH
0142-03-01	Soil	6/9/2003	1	SW8082
0142-03-01	Soil	6/9/2003	1	SW8260
0142-03-01	Soil	6/9/2003	1	SW8310
0142-02-01	Soil	6/17/2003	1	CATFH
0142-02-01	Soil	6/17/2003	1	SW8082
0142-02-01	Soil	6/17/2003	1	SW8260
0142-02-01	Soil	6/17/2003	1	SW8310
0140-05-02	Soil	6/10/2003	1	CATFH
0140-05-02	Soil	6/10/2003	1	SW8082
0140-05-02	Soil	6/10/2003	1	SW8310
0140-04-01	Soil	6/17/2003	1	CATFH
0140-04-01	Soil	6/17/2003	1	SW6010
0140-04-01	Soil	6/17/2003	1	SW7471
0140-04-01	Soil	6/17/2003	1	SW8082
0140-04-01	Soil	6/17/2003	1	SW8260
0140-04-01	Soil	6/17/2003	1	SW8310
0140-03-04	Soil	6/17/2003	1	CATFH
0140-03-04	Soil	6/17/2003	1	SW6010
0140-03-04	Soil	6/17/2003	1	SW7471
0140-03-04	Soil	6/17/2003	1	SW8082
0140-03-04	Soil	6/17/2003	1	SW8260
0140-03-03	Soil	6/17/2003	1	CATFH
0140-03-03	Soil	6/17/2003	1	SW6010
0140-03-03	Soil	6/17/2003	1	SW7471
0140-03-03	Soil	6/17/2003	1	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0140-03-03	Soil	6/17/2003	1	SW8260
0140-03-03	Soil	6/17/2003	1	SW8310
0140-02-02	Soil	6/10/2003	1	CATFH
0140-02-02	Soil	6/10/2003	1	SW6010
0140-02-02	Soil	6/10/2003	1	SW7471
0140-02-02	Soil	6/10/2003	1	SW8082
0140-02-02	Soil	6/10/2003	1	SW8260
0140-02-01	Soil	6/10/2003	1	CATFH
0140-02-01	Soil	6/10/2003	1	SW6010
0140-02-01	Soil	6/10/2003	1	SW7471
0140-02-01	Soil	6/10/2003	1	SW8082
0140-02-01	Soil	6/10/2003	1	SW8260
0140-01-04	Soil	8/20/2003	1	CATFH
0140-01-04	Soil	8/20/2003	1	SW7196
0140-01-03	Soil	8/20/2003	1	CATFH
0140-01-03	Soil	8/20/2003	1	SW7196
0140-01-02	Soil	6/10/2003	1	CATFH
0140-01-02	Soil	6/10/2003	1	SW6010
0140-01-02	Soil	6/10/2003	1	SW7196
0140-01-02	Soil	6/10/2003	1	SW7471
0140-01-02	Soil	6/10/2003	1	SW8260
0140-01-02	Soil	6/10/2003	1	SW9010
0140-01-01	Soil	6/10/2003	1	CATFH
0140-01-01	Soil	6/10/2003	1	SW6010
0140-01-01	Soil	6/10/2003	1	SW7196
0140-01-01	Soil	6/10/2003	1	SW7471
0140-01-01	Soil	6/10/2003	1	SW8260
0140-01-01	Soil	6/10/2003	1	SW9010
0131-09-01	Soil	6/6/2003	1	CATFH
0131-09-01	Soil	6/6/2003	1	SW8082
0131-09-01	Soil	6/6/2003	1	SW8260
0131-08-01	Soil	6/5/2003	1	SW8260
0131-08-01	Soil	6/5/2003	1	SW8270
0131-07-08	Soil	6/24/2003	1	SW8260
0131-07-07	Soil	6/24/2003	1	SW8260
0131-07-06	Soil	6/25/2003	1	SW8260
0131-07-05	Soil	6/27/2003	1	SW8260
0131-07-03	Soil	6/5/2003	1	CATFH
0131-07-03	Soil	6/5/2003	1	SW6010
0131-07-03	Soil	6/5/2003	1	SW7471
0131-07-03	Soil	6/5/2003	1	SW8082
0131-07-03	Soil	6/5/2003	1	SW8260
0131-07-03	Soil	6/5/2003	1	SW8270
0131-07-02	Soil	6/5/2003	1	CATFH
0131-07-02	Soil	6/5/2003	1	SW6010
0131-07-02	Soil	6/5/2003	1	SW7471
0131-07-02	Soil	6/5/2003	1	SW8082
0131-07-02	Soil	6/5/2003	1	SW8260
0131-07-02	Soil	6/5/2003	1	SW8270
0131-07-01	Soil	6/5/2003	1	CATFH
0131-07-01	Soil	6/5/2003	1	SW6010
0131-07-01	Soil	6/5/2003	1	SW7471
0131-07-01	Soil	6/5/2003	1	SW8082
0131-07-01	Soil	6/5/2003	1	SW8260
0131-07-01	Soil	6/5/2003	1	SW8270
0131-06-01	Soil	6/5/2003	1	CATFH
0131-06-01	Soil	6/5/2003	1	SW6010
0131-06-01	Soil	6/5/2003	1	SW7471

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0131-06-01	Soil	6/5/2003	1	SW8082
0131-06-01	Soil	6/5/2003	1	SW8260
0131-06-01	Soil	6/5/2003	1	SW8270
0131-05-01	Soil	6/5/2003	1	SW8260
0131-05-01	Soil	6/5/2003	1	SW8270
0131-04-01	Soil	6/5/2003	1	CATFH
0131-04-01	Soil	6/5/2003	1	SW6010
0131-04-01	Soil	6/5/2003	1	SW7471
0131-04-01	Soil	6/5/2003	1	SW8082
0131-04-01	Soil	6/5/2003	1	SW8260
0131-03-01	Soil	6/5/2003	1	CATFH
0131-03-01	Soil	6/5/2003	1	SW6010
0131-03-01	Soil	6/5/2003	1	SW7471
0131-03-01	Soil	6/5/2003	1	SW8082
0131-03-01	Soil	6/5/2003	1	SW8260
0131-02-01	Soil	6/5/2003	1	CATFH
0131-02-01	Soil	6/5/2003	1	SW6010
0131-02-01	Soil	6/5/2003	1	SW7471
0131-02-01	Soil	6/5/2003	1	SW8082
0131-02-01	Soil	6/5/2003	1	SW8260
0131-01-01	Soil	6/5/2003	1	SW6010
0131-01-01	Soil	6/5/2003	1	SW7471
0130-V1-02	Soil	6/30/2003	1	CATFH
0130-V1-02	Soil	6/30/2003	1	SW6010
0130-V1-02	Soil	6/30/2003	1	SW7196
0130-V1-02	Soil	6/30/2003	1	SW7471
0130-V1-02	Soil	6/30/2003	1	SW8082
0130-V1-02	Soil	6/30/2003	1	SW8260
0130-V1-02	Soil	6/30/2003	1	SW8270
0130-06-04	Soil	6/13/2003	1	CATFH
0130-06-04	Soil	6/13/2003	1	EPA 314.0
0130-06-04	Soil	6/13/2003	1	SW6010
0130-06-04	Soil	6/13/2003	1	SW7196
0130-06-04	Soil	6/13/2003	1	SW7471
0130-06-04	Soil	6/13/2003	1	SW8082
0130-06-04	Soil	6/13/2003	1	SW8260
0130-06-04	Soil	6/13/2003	1	SW8270
0130-06-04	Soil	6/13/2003	1	SW8310
0130-06-04	Soil	6/13/2003	1	SW9010
0130-06-03	Soil	6/13/2003	1	CATFH
0130-06-03	Soil	6/13/2003	1	EPA 314.0
0130-06-03	Soil	6/13/2003	1	SW6010
0130-06-03	Soil	6/13/2003	1	SW7196
0130-06-03	Soil	6/13/2003	1	SW7471
0130-06-03	Soil	6/13/2003	1	SW8082
0130-06-03	Soil	6/13/2003	1	SW8260
0130-06-03	Soil	6/13/2003	1	SW8270
0130-06-03	Soil	6/13/2003	1	SW8310
0130-06-03	Soil	6/13/2003	1	SW9010
0130-06-02	Soil	6/13/2003	1	CATFH
0130-06-02	Soil	6/13/2003	1	EPA 314.0
0130-06-02	Soil	6/13/2003	1	SW6010
0130-06-02	Soil	6/13/2003	1	SW7196
0130-06-02	Soil	6/13/2003	1	SW7471
0130-06-02	Soil	6/13/2003	1	SW8082
0130-06-02	Soil	6/13/2003	1	SW8260
0130-06-02	Soil	6/13/2003	1	SW8270
0130-06-02	Soil	6/13/2003	1	SW8310

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0130-06-02	Soil	6/13/2003	1	SW9010
0130-06-01	Soil	6/13/2003	1	CATFH
0130-06-01	Soil	6/13/2003	1	EPA 314.0
0130-06-01	Soil	6/13/2003	1	SW6010
0130-06-01	Soil	6/13/2003	1	SW7196
0130-06-01	Soil	6/13/2003	1	SW7471
0130-06-01	Soil	6/13/2003	1	SW8082
0130-06-01	Soil	6/13/2003	1	SW8260
0130-06-01	Soil	6/13/2003	1	SW8270
0130-06-01	Soil	6/13/2003	1	SW8310
0130-06-01	Soil	6/13/2003	1	SW9010
0130-05-01	Soil	6/13/2003	1	SW8260
0130-04-01	Soil	6/13/2003	1	CATFH
0130-04-01	Soil	6/13/2003	1	SW6010
0130-04-01	Soil	6/13/2003	1	SW7196
0130-04-01	Soil	6/13/2003	1	SW7471
0130-04-01	Soil	6/13/2003	1	SW8082
0130-04-01	Soil	6/13/2003	1	SW8260
0130-04-01	Soil	6/13/2003	1	SW8270
0130-04-01	Soil	6/13/2003	1	SW8310
0130-04-01	Soil	6/13/2003	1	SW9010
0130-03-01	Soil	6/13/2003	1	CATFH
0130-03-01	Soil	6/13/2003	1	SW6010
0130-03-01	Soil	6/13/2003	1	SW7196
0130-03-01	Soil	6/13/2003	1	SW7471
0130-03-01	Soil	6/13/2003	1	SW8082
0130-03-01	Soil	6/13/2003	1	SW8260
0130-03-01	Soil	6/13/2003	1	SW8270
0130-03-01	Soil	6/13/2003	1	SW8310
0130-03-01	Soil	6/13/2003	1	SW9010
0130-02-02	Soil	6/18/2003	1	CATFH
0130-02-02	Soil	6/18/2003	1	EPA 314.0
0130-02-02	Soil	6/18/2003	1	SW6010
0130-02-02	Soil	6/18/2003	1	SW7196
0130-02-02	Soil	6/18/2003	1	SW7471
0130-02-02	Soil	6/18/2003	1	SW8082
0130-02-02	Soil	6/18/2003	1	SW8260
0130-02-02	Soil	6/18/2003	1	SW8270
0130-02-02	Soil	6/18/2003	1	SW8310
0130-02-02	Soil	6/18/2003	1	SW9010
0130-02-01	Soil	6/18/2003	1	CATFH
0130-02-01	Soil	6/18/2003	1	EPA 314.0
0130-02-01	Soil	6/18/2003	1	SW6010
0130-02-01	Soil	6/18/2003	1	SW7196
0130-02-01	Soil	6/18/2003	1	SW7471
0130-02-01	Soil	6/18/2003	1	SW8082
0130-02-01	Soil	6/18/2003	1	SW8260
0130-02-01	Soil	6/18/2003	1	SW8270
0130-02-01	Soil	6/18/2003	1	SW8310
0130-02-01	Soil	6/18/2003	1	SW9010
0130-01-01	Soil	6/13/2003	1	CATFH
0130-01-01	Soil	6/13/2003	1	SW6010
0130-01-01	Soil	6/13/2003	1	SW7196
0130-01-01	Soil	6/13/2003	1	SW7471
0130-01-01	Soil	6/13/2003	1	SW8082
0130-01-01	Soil	6/13/2003	1	SW8260
0130-01-01	Soil	6/13/2003	1	SW8270
0130-01-01	Soil	6/13/2003	1	SW8310

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Location	Matrix	DateSampled	Depth	Method
0129-02-01	Soil	6/18/2003	1	CATFH
0129-02-01	Soil	6/18/2003	1	SW6010
0129-02-01	Soil	6/18/2003	1	SW7471
0129-02-01	Soil	6/18/2003	1	SW8082
0129-02-01	Soil	6/18/2003	1	SW8260
0129-02-01	Soil	6/18/2003	1	SW8270
0129-02-01	Soil	6/18/2003	1	SW8310
0129-01-03	Soil	6/17/2003	1	CATFH
0129-01-03	Soil	6/17/2003	1	SW6010
0129-01-03	Soil	6/17/2003	1	SW7196
0129-01-03	Soil	6/17/2003	1	SW7471
0129-01-03	Soil	6/17/2003	1	SW8082
0129-01-03	Soil	6/17/2003	1	SW8260
0129-01-03	Soil	6/17/2003	1	SW8270
0129-01-03	Soil	6/17/2003	1	SW8310
0129-01-03	Soil	6/17/2003	1	SW9010
0129-01-02	Soil	6/17/2003	1	CATFH
0129-01-02	Soil	6/17/2003	1	SW6010
0129-01-02	Soil	6/17/2003	1	SW7196
0129-01-02	Soil	6/17/2003	1	SW7471
0129-01-02	Soil	6/17/2003	1	SW8082
0129-01-02	Soil	6/17/2003	1	SW8260
0129-01-02	Soil	6/17/2003	1	SW8270
0129-01-02	Soil	6/17/2003	1	SW8310
0129-01-02	Soil	6/17/2003	1	SW9010
0129-01-01	Soil	6/18/2003	1	CATFH
0129-01-01	Soil	6/18/2003	1	SW6010
0129-01-01	Soil	6/18/2003	1	SW7196
0129-01-01	Soil	6/18/2003	1	SW7471
0129-01-01	Soil	6/18/2003	1	SW8082
0129-01-01	Soil	6/18/2003	1	SW8260
0129-01-01	Soil	6/18/2003	1	SW8270
0129-01-01	Soil	6/18/2003	1	SW8310
0129-01-01	Soil	6/18/2003	1	SW9010
0128-02-03	Soil	8/28/2003	1	SW6010
0128-02-03	Soil	8/28/2003	1	SW7471
0128-02-03	Soil	8/28/2003	1	SW8260
0128-02-02	Soil	6/13/2003	1	CATFH
0128-02-02	Soil	6/13/2003	1	SW6010
0128-02-02	Soil	6/13/2003	1	SW7196
0128-02-02	Soil	6/13/2003	1	SW7471
0128-02-02	Soil	6/13/2003	1	SW8260
0128-02-02	Soil	6/13/2003	1	SW9010
0128-02-01	Soil	6/13/2003	1	CATFH
0128-02-01	Soil	6/13/2003	1	SW6010
0128-02-01	Soil	6/13/2003	1	SW7196
0128-02-01	Soil	6/13/2003	1	SW7471
0128-02-01	Soil	6/13/2003	1	SW8260
0128-02-01	Soil	6/13/2003	1	SW9010
0128-01-01	Soil	6/13/2003	1	CATFH
0128-01-01	Soil	6/13/2003	1	SW6010
0128-01-01	Soil	6/13/2003	1	SW7471
0128-01-01	Soil	6/13/2003	1	SW8082
0128-01-01	Soil	6/13/2003	1	SW8260
0127-03-01	Soil	6/17/2003	1	SW6010
0127-03-01	Soil	6/17/2003	1	SW7471
0127-02-01	Soil	6/17/2003	1	CATFH
0127-02-01	Soil	6/17/2003	1	SW8310

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Location	Matrix	DateSampled	Depth	Method
0127-01-01	Soil	6/17/2003	1	CATFH
0127-01-01	Soil	6/17/2003	1	SW6010
0127-01-01	Soil	6/17/2003	1	SW7471
0127-01-01	Soil	6/17/2003	1	SW8082
0127-01-01	Soil	6/17/2003	1	SW8260
0126-03-02	Soil	6/13/2003	1	CATFH
0126-03-02	Soil	6/13/2003	1	SW6010
0126-03-02	Soil	6/13/2003	1	SW7471
0126-03-02	Soil	6/13/2003	1	SW8082
0126-03-02	Soil	6/13/2003	1	SW8260
0126-03-01	Soil	6/13/2003	1	CATFH
0126-03-01	Soil	6/13/2003	1	SW6010
0126-03-01	Soil	6/13/2003	1	SW7471
0126-03-01	Soil	6/13/2003	1	SW8082
0126-03-01	Soil	6/13/2003	1	SW8260
0126-02-01	Soil	6/13/2003	1	CATFH
0126-02-01	Soil	6/13/2003	1	EPA 314.0
0126-02-01	Soil	6/13/2003	1	SW6010
0126-02-01	Soil	6/13/2003	1	SW7196
0126-02-01	Soil	6/13/2003	1	SW7471
0126-02-01	Soil	6/13/2003	1	SW8082
0126-02-01	Soil	6/13/2003	1	SW8260
0126-02-01	Soil	6/13/2003	1	SW8270
0126-02-01	Soil	6/13/2003	1	SW8310
0126-02-01	Soil	6/13/2003	1	SW9010
0126-01-03	Soil	6/13/2003	1	CATFH
0126-01-03	Soil	6/13/2003	1	EPA 314.0
0126-01-03	Soil	6/13/2003	1	SW6010
0126-01-03	Soil	6/13/2003	1	SW7471
0126-01-03	Soil	6/13/2003	1	SW8082
0126-01-03	Soil	6/13/2003	1	SW8260
0126-01-03	Soil	6/13/2003	1	SW8310
0126-01-02	Soil	6/18/2003	1	CATFH
0126-01-02	Soil	6/18/2003	1	EPA 314.0
0126-01-02	Soil	6/18/2003	1	SW6010
0126-01-02	Soil	6/18/2003	1	SW7471
0126-01-02	Soil	6/18/2003	1	SW8082
0126-01-02	Soil	6/18/2003	1	SW8260
0126-01-02	Soil	6/18/2003	1	SW8310
0126-01-01	Soil	6/18/2003	1	CATFH
0126-01-01	Soil	6/18/2003	1	SW6010
0126-01-01	Soil	6/18/2003	1	SW7471
0126-01-01	Soil	6/18/2003	1	SW8082
0126-01-01	Soil	6/18/2003	1	SW8260
0125-02-02	Soil	6/18/2003	1	CATFH
0125-02-02	Soil	6/18/2003	1	SW6010
0125-02-02	Soil	6/18/2003	1	SW7471
0125-02-02	Soil	6/18/2003	1	SW8082
0125-02-02	Soil	6/18/2003	1	SW8260
0125-02-02	Soil	6/18/2003	1	SW8270
0125-02-01	Soil	6/18/2003	1	CATFH
0125-02-01	Soil	6/18/2003	1	SW6010
0125-02-01	Soil	6/18/2003	1	SW7471
0125-02-01	Soil	6/18/2003	1	SW8082
0125-02-01	Soil	6/18/2003	1	SW8260
0125-02-01	Soil	6/18/2003	1	SW8270
0125-01-02	Soil	6/13/2003	1	CATFH
0125-01-02	Soil	6/13/2003	1	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0125-01-02	Soil	6/13/2003	1	SW8260
0125-01-01	Soil	6/13/2003	1	CATFH
0125-01-01	Soil	6/13/2003	1	SW8082
0125-01-01	Soil	6/13/2003	1	SW8260
0123-02-01	Soil	6/13/2003	1	CATFH
0123-01-01	Soil	6/13/2003	1	CATFH
0123-01-01	Soil	6/13/2003	1	SW8082
0123-01-01	Soil	6/13/2003	1	SW8310
0121-OA-04	Soil	6/17/2003	1	CATFH
0121-OA-04	Soil	6/17/2003	1	SW8082
0121-OA-04	Soil	6/17/2003	1	SW8260
0121-OA-04	Soil	6/17/2003	1	SW8310
0121-OA-03	Soil	6/17/2003	1	CATFH
0121-OA-03	Soil	6/17/2003	1	SW8082
0121-OA-03	Soil	6/17/2003	1	SW8260
0121-01-02	Soil	6/16/2003	1	SW6010
0121-01-02	Soil	6/16/2003	1	SW7471
0121-01-01	Soil	6/16/2003	1	SW6010
0121-01-01	Soil	6/16/2003	1	SW7471
0120-OA-32	Soil	8/27/2003	1	CATFH
0120-OA-32	Soil	8/27/2003	1	SW6010
0120-OA-32	Soil	8/27/2003	1	SW7471
0120-OA-31	Soil	8/27/2003	1	CATFH
0120-OA-31	Soil	8/27/2003	1	SW6010
0120-OA-31	Soil	8/27/2003	1	SW7471
0120-OA-30	Soil	8/27/2003	1	CATFH
0120-OA-30	Soil	8/27/2003	1	SW6010
0120-OA-30	Soil	8/27/2003	1	SW7471
0120-39-12	Soil	8/26/2003	1	CATFH
0120-39-12	Soil	8/26/2003	1	SW6010
0120-39-12	Soil	8/26/2003	1	SW7471
0120-39-12	Soil	8/26/2003	1	SW8260
0120-39-11	Soil	8/27/2003	1	SW8082
0120-39-10	Soil	8/27/2003	1	SW8082
0120-39-09	Soil	7/9/2003	1	SW8082
0120-39-08	Soil	7/9/2003	1	SW8082
0120-39-07	Soil	7/9/2003	1	SW8082
0120-39-06	Soil	7/9/2003	1	SW8082
0120-39-05	Soil	7/9/2003	1	SW8082
0120-39-04	Soil	7/9/2003	1	SW8082
0120-39-03	Soil	7/9/2003	1	SW8082
0120-39-02	Soil	7/11/2003	1	SW8082
0120-39-02	Soil	7/11/2003	1	SW8260B
0120-38-01	Soil	6/12/2003	1	CATFH
0120-38-01	Soil	6/12/2003	1	SW6010
0120-38-01	Soil	6/12/2003	1	SW7471
0120-38-01	Soil	6/12/2003	1	SW8082
0120-37-01	Soil	6/12/2003	1	SW8260
0120-36-04	Soil	8/27/2003	1	CATFH
0120-36-04	Soil	8/27/2003	1	SW8260
0120-36-03	Soil	6/12/2003	1	CATFH
0120-36-03	Soil	6/12/2003	1	SW6010
0120-36-03	Soil	6/12/2003	1	SW7196
0120-36-03	Soil	6/12/2003	1	SW7471
0120-36-03	Soil	6/12/2003	1	SW8260
0120-36-03	Soil	6/12/2003	1	SW9010
0120-36-02	Soil	6/12/2003	1	CATFH
0120-36-02	Soil	6/12/2003	1	SW6010

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0120-36-02	Soil	6/12/2003	1	SW7196
0120-36-02	Soil	6/12/2003	1	SW7471
0120-36-02	Soil	6/12/2003	1	SW8260
0120-36-02	Soil	6/12/2003	1	SW9010
0120-36-01	Soil	6/12/2003	1	CATFH
0120-36-01	Soil	6/12/2003	1	SW6010
0120-36-01	Soil	6/12/2003	1	SW7196
0120-36-01	Soil	6/12/2003	1	SW7471
0120-36-01	Soil	6/12/2003	1	SW8260
0120-36-01	Soil	6/12/2003	1	SW9010
0120-35-04	Soil	8/21/2003	1	CATFH
0120-35-03	Soil	8/21/2003	1	CATFH
0120-35-02	Soil	6/11/2003	1	CATFH
0120-35-02	Soil	6/11/2003	1	SW6010
0120-35-02	Soil	6/11/2003	1	SW7471
0120-35-02	Soil	6/11/2003	1	SW8082
0120-35-02	Soil	6/27/2003	1	SW8310
0120-35-01	Soil	6/11/2003	1	CATFH
0120-35-01	Soil	6/11/2003	1	SW6010
0120-35-01	Soil	6/11/2003	1	SW7471
0120-35-01	Soil	6/11/2003	1	SW8082
0120-35-01	Soil	6/27/2003	1	SW8310
0120-34-01	Soil	6/12/2003	1	CATFH
0120-34-01	Soil	6/12/2003	1	SW8082
0120-34-01	Soil	6/12/2003	1	SW8310
0120-33-02	Soil	6/13/2003	1	CATFH
0120-33-02	Soil	6/13/2003	1	SW6010
0120-33-02	Soil	6/13/2003	1	SW7471
0120-33-02	Soil	6/13/2003	1	SW8082
0120-33-02	Soil	6/13/2003	1	SW8260
0120-33-02	Soil	6/13/2003	1	SW8310
0120-33-01	Soil	6/12/2003	1	CATFH
0120-33-01	Soil	6/12/2003	1	SW6010
0120-33-01	Soil	6/12/2003	1	SW7471
0120-33-01	Soil	6/12/2003	1	SW8082
0120-33-01	Soil	6/12/2003	1	SW8260
0120-33-01	Soil	6/12/2003	1	SW8310
0120-32-01	Soil	6/12/2003	1	CATFH
0120-32-01	Soil	6/12/2003	1	SW8082
0120-31-01	Soil	6/12/2003	1	SW6010
0120-31-01	Soil	6/12/2003	1	SW7471
0120-30-01	Soil	6/12/2003	1	CATFH
0120-30-01	Soil	6/12/2003	1	SW8082
0120-30-01	Soil	6/12/2003	1	SW8310
0120-29-01	Soil	6/12/2003	1	CATFH
0120-29-01	Soil	6/12/2003	1	SW6010
0120-29-01	Soil	6/12/2003	1	SW7471
0120-29-01	Soil	6/12/2003	1	SW8082
0120-29-01	Soil	6/12/2003	1	SW8310
0120-28-02	Soil	8/21/2003	1	CATFH
0120-28-02	Soil	8/21/2003	1	SW6010
0120-28-02	Soil	8/21/2003	1	SW7471
0120-28-02	Soil	8/21/2003	1	SW8082
0120-28-02	Soil	8/21/2003	1	SW8310
0120-28-01	Soil	6/12/2003	1	CATFH
0120-28-01	Soil	6/12/2003	1	SW6010
0120-28-01	Soil	6/12/2003	1	SW7471
0120-28-01	Soil	6/12/2003	1	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0120-28-01	Soil	6/12/2003	1	SW8310
0120-27-01	Soil	6/12/2003	1	CATFH
0120-27-01	Soil	6/12/2003	1	SW8082
0120-26-01	Soil	6/11/2003	1	CATFH
0120-26-01	Soil	6/11/2003	1	SW8082
0120-25-03	Soil	8/28/2003	1	CATFH
0120-25-03	Soil	8/28/2003	1	SW6010
0120-25-03	Soil	8/28/2003	1	SW7471
0120-25-02	Soil	6/12/2003	1	CATFH
0120-25-02	Soil	6/12/2003	1	SW8260
0120-25-01	Soil	6/12/2003	1	CATFH
0120-25-01	Soil	6/12/2003	1	SW8260
0120-24-01	Soil	6/12/2003	1	CATFH
0120-24-01	Soil	6/12/2003	1	SW6010
0120-24-01	Soil	6/12/2003	1	SW7196
0120-24-01	Soil	6/12/2003	1	SW7471
0120-24-01	Soil	6/12/2003	1	SW8082
0120-24-01	Soil	6/12/2003	1	SW8260
0120-24-01	Soil	6/12/2003	1	SW8270
0120-24-01	Soil	6/12/2003	1	SW8310
0120-23-01	Soil	6/12/2003	1	CATFH
0120-23-01	Soil	6/12/2003	1	SW6010
0120-23-01	Soil	6/12/2003	1	SW7471
0120-23-01	Soil	6/12/2003	1	SW8082
0120-23-01	Soil	6/12/2003	1	SW8260
0120-22-01	Soil	6/18/2003	1	SW6010
0120-22-01	Soil	6/18/2003	1	SW7471
0120-21-06	Soil	7/9/2003	1	SW8260
0120-21-05	Soil	7/9/2003	1	SW8260
0120-21-04	Soil	6/12/2003	1	SW6010
0120-21-04	Soil	6/12/2003	1	SW7196
0120-21-04	Soil	6/12/2003	1	SW7471
0120-21-04	Soil	6/12/2003	1	SW8260
0120-21-04	Soil	6/12/2003	1	SW9010
0120-21-03	Soil	6/12/2003	1	SW6010
0120-21-03	Soil	6/12/2003	1	SW7196
0120-21-03	Soil	6/12/2003	1	SW7471
0120-21-03	Soil	6/12/2003	1	SW8260
0120-21-03	Soil	6/12/2003	1	SW9010
0120-21-02	Soil	6/12/2003	1	SW6010
0120-21-02	Soil	6/12/2003	1	SW7196
0120-21-02	Soil	6/12/2003	1	SW7471
0120-21-02	Soil	6/12/2003	1	SW8260
0120-21-02	Soil	6/12/2003	1	SW9010
0120-21-01	Soil	6/12/2003	1	SW6010
0120-21-01	Soil	6/12/2003	1	SW7196
0120-21-01	Soil	6/12/2003	1	SW7471
0120-21-01	Soil	6/12/2003	1	SW8260
0120-21-01	Soil	6/12/2003	1	SW9010
0120-20-01	Soil	6/12/2003	1	SW6010
0120-20-01	Soil	6/12/2003	1	SW7196
0120-20-01	Soil	6/12/2003	1	SW7471
0120-20-01	Soil	6/12/2003	1	SW8260
0120-20-01	Soil	6/12/2003	1	SW8270
0120-20-01	Soil	6/12/2003	1	SW9010
0120-19-02	Soil	6/12/2003	1	SW6010
0120-19-02	Soil	6/12/2003	1	SW7196
0120-19-02	Soil	6/12/2003	1	SW7471

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0120-19-02	Soil	6/12/2003	1	SW8082
0120-19-02	Soil	6/12/2003	1	SW8260
0120-19-02	Soil	6/12/2003	1	SW8270
0120-19-02	Soil	6/12/2003	1	SW9010
0120-19-01	Soil	6/12/2003	1	SW6010
0120-19-01	Soil	6/12/2003	1	SW7196
0120-19-01	Soil	6/12/2003	1	SW7471
0120-19-01	Soil	6/12/2003	1	SW8082
0120-19-01	Soil	6/12/2003	1	SW8260
0120-19-01	Soil	6/12/2003	1	SW8270
0120-19-01	Soil	6/12/2003	1	SW9010
0120-18-03	Soil	6/12/2003	1	SW6010
0120-18-03	Soil	6/12/2003	1	SW7471
0120-18-03	Soil	6/12/2003	1	SW8082
0120-18-03	Soil	6/12/2003	1	SW8260
0120-18-03	Soil	6/12/2003	1	SW8270
0120-18-02	Soil	6/12/2003	1	SW6010
0120-18-02	Soil	6/12/2003	1	SW7471
0120-18-02	Soil	6/12/2003	1	SW8082
0120-18-02	Soil	6/12/2003	1	SW8260
0120-18-02	Soil	6/12/2003	1	SW8270
0120-18-01	Soil	6/12/2003	1	SW6010
0120-18-01	Soil	6/12/2003	1	SW7471
0120-18-01	Soil	6/12/2003	1	SW8082
0120-18-01	Soil	6/12/2003	1	SW8260
0120-18-01	Soil	6/12/2003	1	SW8270
0120-17-01	Soil	6/12/2003	1	CATFH
0120-17-01	Soil	6/12/2003	1	SW8082
0120-17-01	Soil	6/12/2003	1	SW8260
0120-16-01	Soil	6/12/2003	1	SW8260
0120-16-01	Soil	6/12/2003	1	CATFH
0120-16-01	Soil	6/12/2003	1	SW8082
0120-15-01	Soil	6/12/2003	1	CATFH
0120-15-01	Soil	6/12/2003	1	SW6010
0120-15-01	Soil	6/12/2003	1	SW7471
0120-15-01	Soil	6/12/2003	1	SW8082
0120-15-01	Soil	6/12/2003	1	SW8310
0120-14-01	Soil	6/12/2003	1	CATFH
0120-14-01	Soil	6/12/2003	1	SW8082
0120-14-01	Soil	6/12/2003	1	SW8260
0120-13-01	Soil	6/12/2003	1	SW6010
0120-13-01	Soil	6/12/2003	1	SW7471
0120-12-07	Soil	8/27/2003	1	SW7196
0120-12-06	Soil	6/12/2003	1	CATFH
0120-12-06	Soil	6/12/2003	1	SW6010
0120-12-06	Soil	6/12/2003	1	SW7471
0120-12-06	Soil	6/12/2003	1	SW8082
0120-12-06	Soil	6/12/2003	1	SW8270
0120-12-05	Soil	6/12/2003	1	CATFH
0120-12-05	Soil	6/12/2003	1	SW6010
0120-12-05	Soil	6/12/2003	1	SW7471
0120-12-05	Soil	6/12/2003	1	SW8082
0120-12-05	Soil	6/12/2003	1	SW8260
0120-12-05	Soil	6/12/2003	1	SW8270
0120-12-04	Soil	6/12/2003	1	CATFH
0120-12-04	Soil	6/12/2003	1	SW6010
0120-12-04	Soil	6/12/2003	1	SW7196
0120-12-04	Soil	6/12/2003	1	SW7471

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Data Points Included in Risk Assessment
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2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-12-04	Soil	6/12/2003	1	SW8082
0120-12-04	Soil	6/12/2003	1	SW8260
0120-12-04	Soil	6/12/2003	1	SW8270
0120-12-04	Soil	6/12/2003	1	SW9010
0120-12-03	Soil	6/12/2003	1	CATFH
0120-12-03	Soil	6/12/2003	1	SW6010
0120-12-03	Soil	6/12/2003	1	SW7196
0120-12-03	Soil	6/12/2003	1	SW7471
0120-12-03	Soil	6/12/2003	1	SW8082
0120-12-03	Soil	6/12/2003	1	SW8260
0120-12-03	Soil	6/12/2003	1	SW8270
0120-12-03	Soil	6/12/2003	1	SW9010
0120-12-02	Soil	6/12/2003	1	CATFH
0120-12-02	Soil	6/12/2003	1	SW6010
0120-12-02	Soil	6/12/2003	1	SW7471
0120-12-02	Soil	6/12/2003	1	SW8082
0120-12-02	Soil	6/12/2003	1	SW8260
0120-12-02	Soil	6/12/2003	1	SW8270
0120-12-01	Soil	6/12/2003	1	CATFH
0120-12-01	Soil	6/12/2003	1	SW6010
0120-12-01	Soil	6/12/2003	1	SW7196
0120-12-01	Soil	6/12/2003	1	SW7471
0120-12-01	Soil	6/12/2003	1	SW8082
0120-12-01	Soil	6/12/2003	1	SW8260
0120-12-01	Soil	6/12/2003	1	SW8270
0120-12-01	Soil	6/12/2003	1	SW9010
0120-11-01	Soil	6/17/2003	1	CATFH
0120-11-01	Soil	6/17/2003	1	SW8082
0120-11-01	Soil	6/17/2003	1	SW8310
0120-10-01	Soil	6/12/2003	1	SW6010
0120-10-01	Soil	6/12/2003	1	SW7471
0120-10-01	Soil	6/12/2003	1	SW8260
0120-09-01	Soil	6/11/2003	1	SW6010
0120-09-01	Soil	6/11/2003	1	SW7471
0120-09-01	Soil	6/11/2003	1	SW8082
0120-09-01	Soil	6/11/2003	1	SW8260
0120-09-01	Soil	6/11/2003	1	SW8270
0120-08-01	Soil	6/11/2003	1	CATFH
0120-08-01	Soil	6/11/2003	1	SW6010
0120-08-01	Soil	6/11/2003	1	SW7471
0120-08-01	Soil	6/11/2003	1	SW8082
0120-08-01	Soil	6/11/2003	1	SW8260
0120-07-01	Soil	6/11/2003	1	SW6010
0120-07-01	Soil	6/11/2003	1	SW7471
0120-07-01	Soil	6/11/2003	1	SW9010
0120-06-04	Soil	6/11/2003	1	CATFH
0120-06-04	Soil	6/11/2003	1	SW6010
0120-06-04	Soil	6/11/2003	1	SW7471
0120-06-04	Soil	6/11/2003	1	SW8082
0120-06-04	Soil	6/11/2003	1	SW8260
0120-06-04	Soil	6/11/2003	1	SW8270
0120-06-03	Soil	6/11/2003	1	CATFH
0120-06-03	Soil	6/11/2003	1	SW6010
0120-06-03	Soil	6/11/2003	1	SW7471
0120-06-03	Soil	6/11/2003	1	SW8082
0120-06-03	Soil	6/11/2003	1	SW8260
0120-06-03	Soil	6/11/2003	1	SW8270
0120-06-02	Soil	6/11/2003	1	CATFH

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0120-06-02	Soil	6/11/2003	1	SW6010
0120-06-02	Soil	6/11/2003	1	SW7471
0120-06-02	Soil	6/11/2003	1	SW8082
0120-06-02	Soil	6/11/2003	1	SW8260
0120-06-02	Soil	6/11/2003	1	SW8270
0120-06-01	Soil	6/11/2003	1	CATFH
0120-06-01	Soil	6/11/2003	1	SW6010
0120-06-01	Soil	6/11/2003	1	SW7471
0120-06-01	Soil	6/11/2003	1	SW8082
0120-06-01	Soil	6/11/2003	1	SW8260
0120-06-01	Soil	6/11/2003	1	SW8270
0120-05-01	Soil	6/11/2003	1	SW6010
0120-05-01	Soil	6/11/2003	1	SW7471
0120-04-06	Soil	8/28/2003	1	SW7196
0120-04-05	Soil	8/27/2003	1	SW6010
0120-04-05	Soil	8/27/2003	1	SW7471
0120-04-04	Soil	8/27/2003	1	SW6010
0120-04-04	Soil	8/27/2003	1	SW7471
0120-04-03	Soil	6/11/2003	1	SW6010
0120-04-03	Soil	6/11/2003	1	SW7196
0120-04-03	Soil	6/11/2003	1	SW7471
0120-04-03	Soil	6/11/2003	1	SW8260
0120-04-03	Soil	6/11/2003	1	SW9010
0120-04-02	Soil	6/11/2003	1	SW6010
0120-04-02	Soil	6/11/2003	1	SW7196
0120-04-02	Soil	6/11/2003	1	SW7471
0120-04-02	Soil	6/11/2003	1	SW8260
0120-04-02	Soil	6/11/2003	1	SW9010
0120-04-01	Soil	6/11/2003	1	SW6010
0120-04-01	Soil	6/11/2003	1	SW7196
0120-04-01	Soil	6/11/2003	1	SW7471
0120-04-01	Soil	6/11/2003	1	SW8260
0120-04-01	Soil	6/11/2003	1	SW9010
0120-03-03	Soil	8/26/2003	1	CATFH
0120-03-03	Soil	8/26/2003	1	SW6010
0120-03-03	Soil	8/26/2003	1	SW7196
0120-03-03	Soil	8/26/2003	1	SW7471
0120-03-03	Soil	8/26/2003	1	SW8082
0120-03-03	Soil	8/26/2003	1	SW8260
0120-03-02	Soil	6/11/2003	1	CATFH
0120-03-02	Soil	6/11/2003	1	SW6010
0120-03-02	Soil	6/11/2003	1	SW7196
0120-03-02	Soil	6/11/2003	1	SW7471
0120-03-02	Soil	6/11/2003	1	SW8082
0120-03-02	Soil	6/11/2003	1	SW8260
0120-03-01	Soil	6/11/2003	1	CATFH
0120-03-01	Soil	6/11/2003	1	SW6010
0120-03-01	Soil	6/11/2003	1	SW7196
0120-03-01	Soil	6/11/2003	1	SW7471
0120-03-01	Soil	6/11/2003	1	SW8082
0120-03-01	Soil	6/11/2003	1	SW8260
0120-02-05	Soil	8/21/2003	1	SW6010
0120-02-05	Soil	8/21/2003	1	SW7471
0120-02-05	Soil	8/22/2003	1	SW6010
0120-02-05	Soil	8/22/2003	1	SW7471
0120-02-04	Soil	6/11/2003	1	CATFH
0120-02-04	Soil	6/11/2003	1	SW6010
0120-02-04	Soil	6/11/2003	1	SW7196

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Location	Matrix	DateSampled	Depth	Method
0120-02-04	Soil	6/11/2003	1	SW7471
0120-02-04	Soil	6/11/2003	1	SW8260
0120-02-04	Soil	6/11/2003	1	SW9010
0120-02-03	Soil	6/11/2003	1	CATFH
0120-02-03	Soil	6/11/2003	1	SW6010
0120-02-03	Soil	6/11/2003	1	SW7196
0120-02-03	Soil	6/11/2003	1	SW7471
0120-02-03	Soil	6/11/2003	1	SW8260
0120-02-03	Soil	6/11/2003	1	SW9010
0120-02-02	Soil	6/11/2003	1	CATFH
0120-02-02	Soil	6/11/2003	1	SW6010
0120-02-02	Soil	6/11/2003	1	SW7196
0120-02-02	Soil	6/11/2003	1	SW7471
0120-02-02	Soil	6/11/2003	1	SW8260
0120-02-02	Soil	6/11/2003	1	SW9010
0120-02-01	Soil	6/11/2003	1	CATFH
0120-02-01	Soil	6/11/2003	1	SW6010
0120-02-01	Soil	6/11/2003	1	SW7196
0120-02-01	Soil	6/11/2003	1	SW7471
0120-02-01	Soil	6/11/2003	1	SW8260
0120-02-01	Soil	6/11/2003	1	SW9010
0120-01-07	Soil	8/21/2003	1	SW7196
0120-01-06	Soil	8/27/2003	1	SW6010
0120-01-06	Soil	8/27/2003	1	SW7196
0120-01-06	Soil	8/27/2003	1	SW7471
0120-01-05	Soil	6/11/2003	1	CATFH
0120-01-05	Soil	6/11/2003	1	SW6010
0120-01-05	Soil	6/11/2003	1	SW7196
0120-01-05	Soil	6/11/2003	1	SW7471
0120-01-05	Soil	6/11/2003	1	SW8260
0120-01-05	Soil	6/11/2003	1	SW9010
0120-01-04	Soil	6/11/2003	1	CATFH
0120-01-04	Soil	6/11/2003	1	SW6010
0120-01-04	Soil	6/11/2003	1	SW7196
0120-01-04	Soil	6/11/2003	1	SW7471
0120-01-04	Soil	6/11/2003	1	SW8260
0120-01-04	Soil	6/11/2003	1	SW9010
0120-01-03	Soil	6/11/2003	1	CATFH
0120-01-03	Soil	6/11/2003	1	SW6010
0120-01-03	Soil	6/11/2003	1	SW7196
0120-01-03	Soil	6/11/2003	1	SW7471
0120-01-03	Soil	6/11/2003	1	SW8260
0120-01-03	Soil	6/11/2003	1	SW9010
0120-01-02	Soil	6/11/2003	1	CATFH
0120-01-02	Soil	6/11/2003	1	SW6010
0120-01-02	Soil	6/11/2003	1	SW7196
0120-01-02	Soil	6/11/2003	1	SW7471
0120-01-02	Soil	6/11/2003	1	SW8260
0120-01-02	Soil	6/11/2003	1	SW9010
0120-01-01	Soil	6/11/2003	1	CATFH
0120-01-01	Soil	6/11/2003	1	SW6010
0120-01-01	Soil	6/11/2003	1	SW7196
0120-01-01	Soil	6/11/2003	1	SW7471
0120-01-01	Soil	6/11/2003	1	SW8260
0120-01-01	Soil	6/11/2003	1	SW9010
0115-04-01	Soil	6/13/2003	1	CATFH
0115-04-01	Soil	6/13/2003	1	EPA 314.0
0115-04-01	Soil	6/13/2003	1	SW8082

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Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0115-04-01	Soil	6/13/2003	1	SW8310
0115-03-01	Soil	6/17/2003	1	CATFH
0115-03-01	Soil	6/17/2003	1	SW8082
0115-03-01	Soil	6/17/2003	1	SW8310
0115-02-01	Soil	6/19/2003	1	CATFH
0115-02-01	Soil	6/19/2003	1	SW8260
0115-01-01	Soil	6/10/2003	1	CATFH
0115-01-01	Soil	6/10/2003	1	SW8260
0112-01-01	Soil	6/13/2003	1	CATFH
0112-01-01	Soil	6/13/2003	1	SW6010
0112-01-01	Soil	6/13/2003	1	SW7471
0112-01-01	Soil	6/13/2003	1	SW8260
0112-01-01	Soil	6/13/2003	1	SW8310
0111-01-02	Soil	6/18/2003	1	CATFH
0111-01-02	Soil	6/18/2003	1	SW6010
0111-01-02	Soil	6/18/2003	1	SW7471
0111-01-02	Soil	6/18/2003	1	SW8082
0111-01-01	Soil	6/18/2003	1	CATFH
0111-01-01	Soil	6/18/2003	1	SW6010
0111-01-01	Soil	6/18/2003	1	SW7471
0111-01-01	Soil	6/18/2003	1	SW8082
0110-01-01	Soil	6/13/2003	1	SW6010
0110-01-01	Soil	6/13/2003	1	SW7471
0105-05-04	Soil	8/20/2003	1	CATFH
0105-05-03	Soil	8/20/2003	1	CATFH
0105-05-02	Soil	8/20/2003	1	CATFH
0105-05-01	Soil	6/19/2003	1	CATFH
0105-05-01	Soil	6/19/2003	1	SW6010
0105-05-01	Soil	6/19/2003	1	SW7196
0105-05-01	Soil	6/19/2003	1	SW7471
0105-05-01	Soil	6/19/2003	1	SW8082
0105-05-01	Soil	6/19/2003	1	SW8260
0105-05-01	Soil	6/19/2003	1	SW8270
0105-05-01	Soil	6/19/2003	1	SW8310
0105-05-01	Soil	6/19/2003	1	SW9010
0105-04-01A	Soil	6/25/2003	1	CATFH
0105-04-01A	Soil	6/25/2003	1	SW6010
0105-04-01A	Soil	6/25/2003	1	SW7196
0105-04-01A	Soil	6/25/2003	1	SW7471
0105-04-01A	Soil	6/25/2003	1	SW8082
0105-04-01A	Soil	6/25/2003	1	SW8260
0105-04-01A	Soil	6/25/2003	1	SW8270
0105-04-01A	Soil	6/25/2003	1	SW8310
0105-04-01A	Soil	6/25/2003	1	SW9010
0105-04-01	Soil	6/17/2003	1	CATFH
0105-04-01	Soil	6/17/2003	1	SW6010
0105-04-01	Soil	6/17/2003	1	SW7196
0105-04-01	Soil	6/17/2003	1	SW7471
0105-04-01	Soil	6/17/2003	1	SW8082
0105-04-01	Soil	6/17/2003	1	SW8260
0105-04-01	Soil	6/17/2003	1	SW8270
0105-04-01	Soil	6/17/2003	1	SW9010
0105-03-01	Soil	6/17/2003	1	CATFH
0105-03-01	Soil	6/17/2003	1	SW6010
0105-03-01	Soil	6/17/2003	1	SW7196
0105-03-01	Soil	6/17/2003	1	SW7471
0105-03-01	Soil	6/17/2003	1	SW8082
0105-03-01	Soil	6/17/2003	1	SW8260

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0105-03-01	Soil	6/17/2003	1	SW8270
0105-03-01	Soil	6/17/2003	1	SW8310
0105-03-01	Soil	6/17/2003	1	SW9010
0105-02-01	Soil	6/17/2003	1	CATFH
0105-02-01	Soil	6/17/2003	1	SW6010
0105-02-01	Soil	6/17/2003	1	SW7471
0105-02-01	Soil	6/17/2003	1	SW8082
0105-02-01	Soil	6/17/2003	1	SW8260
0105-01-02	Soil	6/17/2003	1	CATFH
0105-01-02	Soil	6/17/2003	1	SW6010
0105-01-02	Soil	6/17/2003	1	SW7196
0105-01-02	Soil	6/17/2003	1	SW7471
0105-01-02	Soil	6/17/2003	1	SW8082
0105-01-02	Soil	6/17/2003	1	SW8260
0105-01-02	Soil	6/17/2003	1	SW8270
0105-01-02	Soil	6/17/2003	1	SW8310
0105-01-02	Soil	6/17/2003	1	SW9010
0105-01-01	Soil	6/17/2003	1	CATFH
0105-01-01	Soil	6/17/2003	1	SW8082
0105-01-01	Soil	6/17/2003	1	SW8260
0105-01-01	Soil	6/17/2003	1	SW8270
0105-01-01	Soil	6/27/2003	1	SW6010
0105-01-01	Soil	6/27/2003	1	SW7196
0105-01-01	Soil	6/27/2003	1	SW7471
0105-01-01	Soil	6/27/2003	1	SW8310
0105-01-01	Soil	6/27/2003	1	SW9010
0102-03-01	Soil	6/10/2003	1	CATFH
0102-03-01	Soil	6/10/2003	1	SW8082
0102-03-01	Soil	6/10/2003	1	SW8310
0102-02-01	Soil	6/18/2003	1	CATFH
0102-02-01	Soil	6/18/2003	1	SW8082
0102-02-01	Soil	6/18/2003	1	SW8310
0102-01-02	Soil	8/21/2003	1	CATFH
0102-01-01	Soil	6/18/2003	1	CATFH
0102-01-01	Soil	6/18/2003	1	SW8082
0120-OA-28	Soil	6/19/2003	0	SW8082
0120-OA-27	Soil	6/19/2003	0	SW8082
0120-OA-26	Soil	6/19/2003	0	SW8082
0115-03-02	Soil	6/19/2003	0	SW8082
P3	Soil	2/24/1998	4	EPA 8015 M
P3	Soil	1/1/2000	6	EPA 8015 M
P2	Soil	2/24/1998	4	EPA 8015 M
P2	Soil	1/1/2000	6	EPA 8015 M
P1	Soil	2/23/1998	4	EPA 8015 M
P1	Soil	1/1/2000	6	EPA 8015 M
MW-C1	Soil	1/28/1992	7.5	EPA 8015 M
MW-C1	Soil	2/18/1992	7.5	EPA 8015 M
MWB1	Soil	1/1/2000	5	EPA 8015 M
MW-A3	Soil	1/29/1992	6.5	EPA 8015 M
MW-A2	Soil	1/29/1992	6.5	EPA 8015 M
MW-A1	Soil	1/29/1992	6.5	EPA 8015 M
SS0S-02-01	Soil Gas	5/27/2003	3	SW8260B
SS0S-01-02	Soil Gas	5/30/2003	3	SW8260B
SS0S-01-01	Soil Gas	5/30/2003	3	SW8260B
PARK-OA-07	Soil Gas	6/3/2003	3	SW8260B
PARK-OA-06	Soil Gas	6/3/2003	3	SW8260B
PARK-OA-05	Soil Gas	6/3/2003	3	SW8260B
PARK-OA-03	Soil Gas	6/3/2003	3	SW8260B

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Location	Matrix	DateSampled	Depth	Method
PARK-OA-02	Soil Gas	6/2/2003	3	SW8260B
PARK-OA-01	Soil Gas	6/4/2003	3	SW8260B
PARK-04-04	Soil Gas	6/3/2003	3	SW8260B
0TC4-03-01	Soil Gas	6/18/2003	3	SW8260B
0TC4-02-01	Soil Gas	5/28/2003	3	SW8260B
0532-01-01	Soil Gas	5/28/2003	3	SW8260B
0513-06-05	Soil Gas	5/28/2003	3	SW8260B
0513-06-04	Soil Gas	5/28/2003	3	SW8260B
0513-06-03	Soil Gas	5/28/2003	3	SW8260B
0513-06-02	Soil Gas	5/28/2003	3	SW8260B
0513-06-01	Soil Gas	5/27/2003	3	SW8260B
0513-05-01	Soil Gas	5/28/2003	3	SW8260B
0513-04-01	Soil Gas	5/28/2003	3	SW8260B
0513-03-01	Soil Gas	5/28/2003	3	SW8260B
0513-02-01	Soil Gas	5/28/2003	3	SW8260B
0513-01-01	Soil Gas	5/28/2003	3	SW8260B
0245-01-01	Soil Gas	5/29/2003	3	SW8260B
0242-03-38	Soil Gas	7/11/2003	3	SW8260B
0242-03-37	Soil Gas	7/11/2003	3	SW8260B
0242-03-36	Soil Gas	7/10/2003	3	SW8260B
0242-03-35	Soil Gas	7/10/2003	3	SW8260B
0242-03-34	Soil Gas	7/10/2003	3	SW8260B
0242-03-33	Soil Gas	7/10/2003	3	SW8260B
0242-03-32	Soil Gas	7/10/2003	3	SW8260B
0242-03-31	Soil Gas	7/10/2003	3	SW8260B
0242-03-23	Soil Gas	6/11/2003	3	SW8260B
0242-03-22	Soil Gas	6/11/2003	3	SW8260B
0242-03-21	Soil Gas	6/11/2003	3	SW8260B
0242-03-20	Soil Gas	6/11/2003	3	SW8260B
0242-03-19	Soil Gas	6/11/2003	3	SW8260B
0242-03-18	Soil Gas	6/9/2003	3	SW8260B
0242-03-17	Soil Gas	6/9/2003	3	SW8260B
0242-03-16	Soil Gas	6/9/2003	3	SW8260B
0242-03-15	Soil Gas	6/9/2003	3	SW8260B
0242-03-14	Soil Gas	6/9/2003	3	SW8260B
0242-03-13	Soil Gas	6/9/2003	3	SW8260B
0242-03-12	Soil Gas	6/9/2003	3	SW8260B
0242-03-11	Soil Gas	6/9/2003	3	SW8260B
0242-03-10	Soil Gas	6/5/2003	3	SW8260B
0242-03-09	Soil Gas	6/5/2003	3	SW8260B
0242-03-08	Soil Gas	6/5/2003	3	SW8260B
0242-03-07	Soil Gas	6/5/2003	3	SW8260B
0242-03-06	Soil Gas	6/5/2003	3	SW8260B
0242-03-05	Soil Gas	6/5/2003	3	SW8260B
0242-03-04	Soil Gas	5/27/2003	3	SW8260B
0242-03-03	Soil Gas	5/27/2003	3	SW8260B
0242-03-02	Soil Gas	5/27/2003	3	SW8260B
0242-03-01	Soil Gas	5/27/2003	3	SW8260B
0242-02-01	Soil Gas	5/27/2003	3	SW8260B
0242-01-01	Soil Gas	5/27/2003	3	SW8260B
0228-02-03	Soil Gas	5/30/2003	3	SW8260B
0228-02-02	Soil Gas	5/30/2003	3	SW8260B
0228-02-01	Soil Gas	5/30/2003	3	SW8260B
0228-01-04	Soil Gas	5/30/2003	3	SW8260B
0228-01-03	Soil Gas	5/30/2003	3	SW8260B
0228-01-02	Soil Gas	5/30/2003	3	SW8260B
0228-01-01	Soil Gas	5/30/2003	3	SW8260B
0222-01-01	Soil Gas	6/5/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0183-OA-09	Soil Gas	6/4/2003	3	SW8260B
0183-OA-08	Soil Gas	6/4/2003	3	SW8260B
0183-OA-07	Soil Gas	6/4/2003	3	SW8260B
0183-OA-06	Soil Gas	6/4/2003	3	SW8260B
0183-OA-05	Soil Gas	6/4/2003	3	SW8260B
0183-OA-04	Soil Gas	6/4/2003	3	SW8260B
0183-OA-03	Soil Gas	6/4/2003	3	SW8260B
0183-OA-02	Soil Gas	6/4/2003	3	SW8260B
0183-OA-01	Soil Gas	6/4/2003	3	SW8260B
0183-04-01	Soil Gas	6/4/2003	3	SW8260B
0183-03-01	Soil Gas	6/3/2003	3	SW8260B
0183-02-01	Soil Gas	6/3/2003	3	SW8260B
0183-01-01	Soil Gas	6/4/2003	3	SW8260B
0181-OA-05	Soil Gas	6/25/2003	3	SW8260B
0181-OA-04	Soil Gas	6/5/2003	3	SW8260B
0181-OA-03	Soil Gas	6/5/2003	3	SW8260B
0181-OA-02	Soil Gas	6/5/2003	3	SW8260B
0181-OA-01	Soil Gas	6/5/2003	3	SW8260B
0180-OA-11	Soil Gas	6/4/2003	3	SW8260B
0180-OA-10	Soil Gas	6/4/2003	3	SW8260B
0180-OA-09	Soil Gas	6/5/2003	3	SW8260B
0180-OA-08	Soil Gas	6/5/2003	3	SW8260B
0180-OA-07	Soil Gas	6/5/2003	3	SW8260B
0180-OA-06	Soil Gas	6/5/2003	3	SW8260B
0180-OA-05	Soil Gas	6/5/2003	3	SW8260B
0180-OA-04	Soil Gas	6/4/2003	3	SW8260B
0180-OA-03	Soil Gas	6/4/2003	3	SW8260B
0180-OA-02	Soil Gas	6/4/2003	3	SW8260B
0180-OA-01	Soil Gas	6/5/2003	3	SW8260B
0180-02-01	Soil Gas	6/4/2003	3	SW8260B
0170-OA-01C	Soil Gas	6/10/2003	3	SW8260B
0170-OA-01B	Soil Gas	6/10/2003	3	SW8260B
0170-OA-01A	Soil Gas	6/10/2003	3	SW8260B
0170-OA-01	Soil Gas	6/3/2003	3	SW8260B
0169-OA-01D	Soil Gas	6/9/2003	3	SW8260B
0169-OA-01C	Soil Gas	6/9/2003	3	SW8260B
0169-OA-01B	Soil Gas	6/9/2003	3	SW8260B
0169-OA-01A	Soil Gas	6/9/2003	3	SW8260B
0169-OA-01	Soil Gas	6/4/2003	3	SW8260B
0169-01-01	Soil Gas	6/2/2003	3	SW8260B
0167-OA-01	Soil Gas	6/2/2003	3	SW8260B
0167-01-05	Soil Gas	6/2/2003	3	SW8260B
0167-01-04	Soil Gas	6/2/2003	3	SW8260B
0167-01-03	Soil Gas	6/2/2003	3	SW8260B
0167-01-02	Soil Gas	6/2/2003	3	SW8260B
0167-01-01	Soil Gas	6/2/2003	3	SW8260B
0166-OA-01G	Soil Gas	6/11/2003	3	SW8260B
0166-OA-01F	Soil Gas	6/11/2003	3	SW8260B
0166-OA-01E	Soil Gas	6/11/2003	3	SW8260B
0166-OA-01D	Soil Gas	6/10/2003	3	SW8260B
0166-OA-01C	Soil Gas	6/10/2003	3	SW8260B
0166-OA-01B	Soil Gas	6/10/2003	3	SW8260B
0166-OA-01A	Soil Gas	6/10/2003	3	SW8260B
0166-OA-01	Soil Gas	6/4/2003	3	SW8260B
0166-02-02	Soil Gas	6/2/2003	3	SW8260B
0166-02-01	Soil Gas	6/2/2003	3	SW8260B
0166-01-19	Soil Gas	6/13/2003	3	SW8260B
0166-01-18	Soil Gas	6/13/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0166-01-17	Soil Gas	6/13/2003	3	SW8260B
0166-01-16	Soil Gas	6/13/2003	3	SW8260B
0166-01-15	Soil Gas	6/11/2003	3	SW8260B
0166-01-14	Soil Gas	6/11/2003	3	SW8260B
0166-01-13	Soil Gas	6/11/2003	3	SW8260B
0166-01-12	Soil Gas	6/11/2003	3	SW8260B
0166-01-11	Soil Gas	6/11/2003	3	SW8260B
0166-01-10	Soil Gas	6/11/2003	3	SW8260B
0166-01-09	Soil Gas	6/11/2003	3	SW8260B
0166-01-08	Soil Gas	6/10/2003	3	SW8260B
0166-01-07	Soil Gas	6/10/2003	3	SW8260B
0166-01-06	Soil Gas	6/10/2003	3	SW8260B
0166-01-05	Soil Gas	6/10/2003	3	SW8260B
0166-01-04	Soil Gas	6/2/2003	3	SW8260B
0166-01-03	Soil Gas	6/2/2003	3	SW8260B
0166-01-02	Soil Gas	6/2/2003	3	SW8260B
0166-01-01	Soil Gas	6/2/2003	3	SW8260B
0161-OA-02E	Soil Gas	6/11/2003	3	SW8260B
0161-OA-02D	Soil Gas	6/9/2003	3	SW8260B
0161-OA-02C	Soil Gas	6/10/2003	3	SW8260B
0161-OA-02B	Soil Gas	6/10/2003	3	SW8260B
0161-OA-02A	Soil Gas	6/9/2003	3	SW8260B
0161-OA-02	Soil Gas	6/3/2003	3	SW8260B
0161-OA-01	Soil Gas	6/2/2003	3	SW8260B
0161-04-11	Soil Gas	6/13/2003	3	SW8260B
0161-04-10	Soil Gas	6/13/2003	3	SW8260B
0161-04-09	Soil Gas	6/13/2003	3	SW8260B
0161-04-08	Soil Gas	6/13/2003	3	SW8260B
0161-04-07	Soil Gas	6/11/2003	3	SW8260B
0161-04-06	Soil Gas	6/11/2003	3	SW8260B
0161-04-05	Soil Gas	6/11/2003	3	SW8260B
0161-04-04	Soil Gas	6/9/2003	3	SW8260B
0161-04-03	Soil Gas	6/9/2003	3	SW8260B
0161-04-02	Soil Gas	6/4/2003	3	SW8260B
0161-04-01	Soil Gas	6/4/2003	3	SW8260B
0161-03-07	Soil Gas	6/2/2003	3	SW8260B
0161-03-06	Soil Gas	6/2/2003	3	SW8260B
0161-03-05	Soil Gas	6/2/2003	3	SW8260B
0161-03-04	Soil Gas	6/2/2003	3	SW8260B
0161-03-03	Soil Gas	6/2/2003	3	SW8260B
0161-03-02	Soil Gas	6/5/2003	3	SW8260B
0161-03-01	Soil Gas	6/2/2003	3	SW8260B
0161-02-04	Soil Gas	6/2/2003	3	SW8260B
0161-02-03	Soil Gas	6/2/2003	3	SW8260B
0161-02-02	Soil Gas	6/2/2003	3	SW8260B
0161-02-01	Soil Gas	6/5/2003	3	SW8260B
0161-01-01	Soil Gas	6/3/2003	3	SW8260B
0160-OA-02C	Soil Gas	6/9/2003	3	SW8260B
0160-OA-02B	Soil Gas	6/9/2003	3	SW8260B
0160-OA-02A	Soil Gas	6/9/2003	3	SW8260B
0160-OA-02	Soil Gas	6/3/2003	3	SW8260B
0160-OA-01	Soil Gas	6/3/2003	3	SW8260B
0160-OA-01	Soil Gas	6/9/2003	3	SW8260B
0160-02-01	Soil Gas	6/3/2003	3	SW8260B
0160-01-01	Soil Gas	6/3/2003	3	SW8260B
0159-02-02	Soil Gas	5/29/2003	3	SW8260B
0159-02-01	Soil Gas	5/29/2003	3	SW8260B
0159-01-01	Soil Gas	5/29/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0158-02-02	Soil Gas	6/25/2003	3	SW8260B
0158-02-01	Soil Gas	6/2/2003	3	SW8260B
0158-01-05	Soil Gas	6/25/2003	3	SW8260B
0158-01-03	Soil Gas	6/27/2003	3	SW8260B
0158-01-02	Soil Gas	6/27/2003	3	SW8260B
0158-01-01	Soil Gas	6/25/2003	3	SW8260B
0157-03-01	Soil Gas	5/29/2003	3	SW8260B
0157-02-02	Soil Gas	5/28/2003	3	SW8260B
0157-02-01	Soil Gas	5/29/2003	3	SW8260B
0157-01-01	Soil Gas	6/27/2003	3	SW8260B
0156-OA-06	Soil Gas	5/28/2003	3	SW8260B
0156-OA-05	Soil Gas	5/28/2003	3	SW8260B
0156-OA-04	Soil Gas	5/28/2003	3	SW8260B
0156-OA-03	Soil Gas	5/28/2003	3	SW8260B
0156-OA-02	Soil Gas	5/28/2003	3	SW8260B
0156-12-03	Soil Gas	5/28/2003	3	SW8260B
0156-12-02	Soil Gas	5/28/2003	3	SW8260B
0156-12-01	Soil Gas	5/28/2003	3	SW8260B
0156-10-01	Soil Gas	5/29/2003	3	SW8260B
0156-09-01	Soil Gas	5/29/2003	3	SW8260B
0156-08-05	Soil Gas	5/28/2003	3	SW8260B
0156-08-04	Soil Gas	5/28/2003	3	SW8260B
0156-08-03	Soil Gas	5/28/2003	3	SW8260B
0156-08-02	Soil Gas	5/28/2003	3	SW8260B
0156-08-01	Soil Gas	5/28/2003	3	SW8260B
0156-07-01	Soil Gas	5/28/2003	3	SW8260B
0156-06-01	Soil Gas	5/28/2003	3	SW8260B
0156-05-01	Soil Gas	5/28/2003	3	SW8260B
0156-04-01	Soil Gas	5/28/2003	3	SW8260B
0156-03-03	Soil Gas	5/28/2003	3	SW8260B
0156-03-02	Soil Gas	5/28/2003	3	SW8260B
0156-03-01	Soil Gas	5/28/2003	3	SW8260B
0156-02-01	Soil Gas	5/28/2003	3	SW8260B
0156-01-01	Soil Gas	5/28/2003	3	SW8260B
0153-02-01B	Soil Gas	6/27/2003	3	SW8260B
0153-02-01A	Soil Gas	6/27/2003	3	SW8260B
0153-02-01	Soil Gas	6/25/2003	3	SW8260B
0153-01-01	Soil Gas	5/29/2003	3	SW8260B
0152-OA-11	Soil Gas	5/28/2003	3	SW8260B
0152-OA-10	Soil Gas	5/28/2003	3	SW8260B
0152-OA-09	Soil Gas	5/28/2003	3	SW8260B
0152-OA-08	Soil Gas	5/28/2003	3	SW8260B
0152-OA-07	Soil Gas	5/28/2003	3	SW8260B
0152-OA-06	Soil Gas	5/28/2003	3	SW8260B
0152-OA-05	Soil Gas	5/28/2003	3	SW8260B
0152-OA-04	Soil Gas	5/28/2003	3	SW8260B
0152-OA-03	Soil Gas	5/28/2003	3	SW8260B
0152-OA-02	Soil Gas	5/29/2003	3	SW8260B
0152-OA-01	Soil Gas	5/29/2003	3	SW8260B
0152-05-01	Soil Gas	5/28/2003	3	SW8260B
0152-04-01	Soil Gas	5/28/2003	3	SW8260B
0152-02-01	Soil Gas	5/28/2003	3	SW8260B
0152-01-01	Soil Gas	5/28/2003	3	SW8260B
0146-OA-10	Soil Gas	5/29/2003	3	SW8260B
0146-OA-09	Soil Gas	5/30/2003	3	SW8260B
0146-OA-08	Soil Gas	5/29/2003	3	SW8260B
0146-OA-07	Soil Gas	5/29/2003	3	SW8260B
0146-OA-06	Soil Gas	5/30/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0146-OA-05	Soil Gas	5/30/2003	3	SW8260B
0146-OA-04	Soil Gas	5/29/2003	3	SW8260B
0146-OA-03	Soil Gas	5/29/2003	3	SW8260B
0146-OA-02	Soil Gas	5/30/2003	3	SW8260B
0146-OA-01	Soil Gas	5/30/2003	3	SW8260B
0146A-01-01	Soil Gas	6/2/2003	3	SW8260B
0146-03-01	Soil Gas	5/29/2003	3	SW8260B
0146-02-01	Soil Gas	5/29/2003	3	SW8260B
0145-03-01	Soil Gas	6/2/2003	3	SW8260B
0144-01-01	Soil Gas	6/2/2003	3	SW8260B
0142-05-01	Soil Gas	5/29/2003	3	SW8260B
0142-04-01	Soil Gas	5/29/2003	3	SW8260B
0142-03-01	Soil Gas	5/29/2003	3	SW8260B
0142-02-01	Soil Gas	5/29/2003	3	SW8260B
0142-01-01	Soil Gas	5/29/2003	3	SW8260B
0140-OA-15	Soil Gas	5/29/2003	3	SW8260B
0140-OA-14	Soil Gas	5/29/2003	3	SW8260B
0140-OA-13	Soil Gas	5/29/2003	3	SW8260B
0140-OA-12	Soil Gas	5/29/2003	3	SW8260B
0140-OA-11	Soil Gas	5/29/2003	3	SW8260B
0140-OA-10	Soil Gas	5/29/2003	3	SW8260B
0140-OA-09	Soil Gas	5/29/2003	3	SW8260B
0140-OA-08	Soil Gas	5/29/2003	3	SW8260B
0140-OA-07	Soil Gas	5/29/2003	3	SW8260B
0140-OA-06	Soil Gas	5/29/2003	3	SW8260B
0140-OA-05	Soil Gas	5/29/2003	3	SW8260B
0140-OA-04	Soil Gas	5/29/2003	3	SW8260B
0140-OA-03	Soil Gas	5/29/2003	3	SW8260B
0140-OA-02	Soil Gas	5/29/2003	3	SW8260B
0140-OA-01	Soil Gas	5/29/2003	3	SW8260B
0140-05-01	Soil Gas	5/29/2003	3	SW8260B
0140-04-01	Soil Gas	6/25/2003	3	SW8260B
0140-03-02	Soil Gas	6/2/2003	3	SW8260B
0140-03-01	Soil Gas	6/2/2003	3	SW8260B
0140-02-02	Soil Gas	5/29/2003	3	SW8260B
0140-02-01	Soil Gas	5/29/2003	3	SW8260B
0140-01-02	Soil Gas	6/2/2003	3	SW8260B
0140-01-01	Soil Gas	5/29/2003	3	SW8260B
0131-OA-10	Soil Gas	5/27/2003	3	SW8260B
0131-OA-09	Soil Gas	5/29/2003	3	SW8260B
0131-OA-08	Soil Gas	5/27/2003	3	SW8260B
0131-OA-06C	Soil Gas	6/11/2003	3	SW8260B
0131-OA-06B	Soil Gas	6/11/2003	3	SW8260B
0131-OA-06A	Soil Gas	6/11/2003	3	SW8260B
0131-OA-06	Soil Gas	5/27/2003	3	SW8260B
0131-OA-05	Soil Gas	5/27/2003	3	SW8260B
0131-OA-04	Soil Gas	5/27/2003	3	SW8260B
0131-OA-03	Soil Gas	5/27/2003	3	SW8260B
0131-OA-02	Soil Gas	5/27/2003	3	SW8260B
0131-OA-01	Soil Gas	5/27/2003	3	SW8260B
0131-09-01	Soil Gas	5/27/2003	3	SW8260B
0131-08-01	Soil Gas	5/27/2003	3	SW8260B
0131-07-01	Soil Gas	5/27/2003	3	SW8260B
0131-06-01	Soil Gas	5/27/2003	3	SW8260B
0131-05-01	Soil Gas	5/27/2003	3	SW8260B
0131-04-01	Soil Gas	5/27/2003	3	SW8260B
0131-03-01	Soil Gas	5/27/2003	3	SW8260B
0131-02-01	Soil Gas	5/27/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0131-01-02	Soil Gas	6/9/2003	3	SW8260B
0131-01-01	Soil Gas	5/27/2003	3	SW8260B
0130-OA-01	Soil Gas	6/2/2003	3	SW8260B
0130-06-04	Soil Gas	5/30/2003	3	SW8260B
0130-06-03	Soil Gas	5/30/2003	3	SW8260B
0130-06-02	Soil Gas	5/30/2003	3	SW8260B
0130-06-01	Soil Gas	5/30/2003	3	SW8260B
0130-05-01	Soil Gas	5/30/2003	3	SW8260B
0130-04-01	Soil Gas	5/30/2003	3	SW8260B
0130-03-01	Soil Gas	5/30/2003	3	SW8260B
0130-02-02	Soil Gas	5/30/2003	3	SW8260B
0130-02-01	Soil Gas	5/30/2003	3	SW8260B
0130-01-01	Soil Gas	6/2/2003	3	SW8260B
0129-02-01	Soil Gas	5/30/2003	3	SW8260B
0129-01-03	Soil Gas	6/18/2003	3	SW8260B
0129-01-02	Soil Gas	6/18/2003	3	SW8260B
0129-01-01	Soil Gas	5/30/2003	3	SW8260B
0128-OA-02	Soil Gas	6/2/2003	3	SW8260B
0128-OA-01	Soil Gas	6/2/2003	3	SW8260B
0128-02-02	Soil Gas	6/2/2003	3	SW8260B
0128-02-01	Soil Gas	6/2/2003	3	SW8260B
0128-01-01	Soil Gas	6/2/2003	3	SW8260B
0127-01-01	Soil Gas	5/30/2003	3	SW8260B
0126-OA-01	Soil Gas	5/30/2003	3	SW8260B
0126-03-02	Soil Gas	5/30/2003	3	SW8260B
0126-03-01	Soil Gas	5/30/2003	3	SW8260B
0126-02-01	Soil Gas	5/30/2003	3	SW8260B
0126-01-03	Soil Gas	5/30/2003	3	SW8260B
0126-01-01	Soil Gas	5/30/2003	3	SW8260B
0125-02-02	Soil Gas	5/30/2003	3	SW8260B
0125-02-01	Soil Gas	5/30/2003	3	SW8260B
0125-01-02	Soil Gas	5/30/2003	3	SW8260B
0125-01-01	Soil Gas	5/30/2003	3	SW8260B
0121-OA-07	Soil Gas	6/5/2003	3	SW8260B
0121-OA-06	Soil Gas	6/5/2003	3	SW8260B
0121-OA-05A	Soil Gas	6/5/2003	3	SW8260B
0121-OA-05	Soil Gas	6/5/2003	3	SW8260B
0121-OA-04B	Soil Gas	6/11/2003	3	SW8260B
0121-OA-04A	Soil Gas	6/11/2003	3	SW8260B
0121-OA-04	Soil Gas	6/5/2003	3	SW8260B
0121-OA-03	Soil Gas	6/5/2003	3	SW8260B
0121-OA-02	Soil Gas	6/5/2003	3	SW8260B
0121-OA-01	Soil Gas	6/5/2003	3	SW8260B
0120-OA-25	Soil Gas	5/30/2003	3	SW8260B
0120-OA-24C	Soil Gas	6/9/2003	3	SW8260B
0120-OA-24B	Soil Gas	6/9/2003	3	SW8260B
0120-OA-24A	Soil Gas	6/9/2003	3	SW8260B
0120-OA-24	Soil Gas	6/4/2003	3	SW8260B
0120-OA-23	Soil Gas	6/4/2003	3	SW8260B
0120-OA-22C	Soil Gas	6/9/2003	3	SW8260B
0120-OA-22A	Soil Gas	6/9/2003	3	SW8260B
0120-OA-22	Soil Gas	6/4/2003	3	SW8260B
0120-OA-22	Soil Gas	6/9/2003	3	SW8260B
0120-OA-21	Soil Gas	6/4/2003	3	SW8260B
0120-OA-20	Soil Gas	6/4/2003	3	SW8260B
0120-OA-19	Soil Gas	6/4/2003	3	SW8260B
0120-OA-18	Soil Gas	6/5/2003	3	SW8260B
0120-OA-17	Soil Gas	6/4/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-OA-16	Soil Gas	5/30/2003	3	SW8260B
0120-OA-15	Soil Gas	6/3/2003	3	SW8260B
0120-OA-14	Soil Gas	6/3/2003	3	SW8260B
0120-OA-13	Soil Gas	6/10/2003	3	SW8260B
0120-OA-12D	Soil Gas	6/11/2003	3	SW8260B
0120-OA-12C	Soil Gas	6/11/2003	3	SW8260B
0120-OA-12B	Soil Gas	6/10/2003	3	SW8260B
0120-OA-12A	Soil Gas	6/10/2003	3	SW8260B
0120-OA-12	Soil Gas	6/3/2003	3	SW8260B
0120-OA-11	Soil Gas	6/4/2003	3	SW8260B
0120-OA-10	Soil Gas	6/3/2003	3	SW8260B
0120-OA-09	Soil Gas	5/30/2003	3	SW8260B
0120-OA-08	Soil Gas	5/30/2003	3	SW8260B
0120-OA-07	Soil Gas	6/3/2003	3	SW8260B
0120-OA-06	Soil Gas	6/3/2003	3	SW8260B
0120-OA-05	Soil Gas	6/3/2003	3	SW8260B
0120-OA-04	Soil Gas	6/3/2003	3	SW8260B
0120-OA-03	Soil Gas	6/3/2003	3	SW8260B
0120-OA-02	Soil Gas	6/3/2003	3	SW8260B
0120-OA-01	Soil Gas	5/30/2003	3	SW8260B
0120-36-03	Soil Gas	6/4/2003	3	SW8260B
0120-36-02	Soil Gas	6/4/2003	3	SW8260B
0120-36-01	Soil Gas	6/4/2003	3	SW8260B
0120-33-04	Soil Gas	6/9/2003	3	SW8260B
0120-33-03	Soil Gas	6/9/2003	3	SW8260B
0120-33-02	Soil Gas	6/4/2003	3	SW8260B
0120-33-01	Soil Gas	6/4/2003	3	SW8260B
0120-29-01	Soil Gas	5/30/2003	3	SW8260B
0120-25-02	Soil Gas	6/3/2003	3	SW8260B
0120-25-01	Soil Gas	6/3/2003	3	SW8260B
0120-24-01	Soil Gas	6/2/2003	3	SW8260B
0120-23-01	Soil Gas	6/5/2003	3	SW8260B
0120-21-04	Soil Gas	6/10/2003	3	SW8260B
0120-21-03	Soil Gas	6/3/2003	3	SW8260B
0120-21-02	Soil Gas	6/3/2003	3	SW8260B
0120-21-01	Soil Gas	6/3/2003	3	SW8260B
0120-20-01	Soil Gas	6/3/2003	3	SW8260B
0120-19-02	Soil Gas	6/3/2003	3	SW8260B
0120-19-01	Soil Gas	6/3/2003	3	SW8260B
0120-18-03	Soil Gas	6/3/2003	3	SW8260B
0120-18-02	Soil Gas	6/4/2003	3	SW8260B
0120-18-01	Soil Gas	6/3/2003	3	SW8260B
0120-17-02	Soil Gas	6/10/2003	3	SW8260B
0120-17-01	Soil Gas	6/3/2003	3	SW8260B
0120-16-01	Soil Gas	6/4/2003	3	SW8260B
0120-14-01	Soil Gas	6/3/2003	3	SW8260B
0120-12-06	Soil Gas	6/4/2003	3	SW8260B
0120-12-05	Soil Gas	6/4/2003	3	SW8260B
0120-12-04	Soil Gas	6/4/2003	3	SW8260B
0120-12-03	Soil Gas	6/4/2003	3	SW8260B
0120-12-02	Soil Gas	6/4/2003	3	SW8260B
0120-12-01	Soil Gas	6/4/2003	3	SW8260B
0120-10-01	Soil Gas	6/3/2003	3	SW8260B
0120-09-01	Soil Gas	6/3/2003	3	SW8260B
0120-08-01	Soil Gas	6/3/2003	3	SW8260B
0120-06-04	Soil Gas	6/4/2003	3	SW8260B
0120-06-03	Soil Gas	6/4/2003	3	SW8260B
0120-06-02	Soil Gas	6/3/2003	3	SW8260B

Table 1
Data Points Included in Risk Assessment
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2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-06-01	Soil Gas	6/3/2003	3	SW8260B
0120-05-01	Soil Gas	6/4/2003	3	SW8260B
0120-04-03	Soil Gas	6/4/2003	3	SW8260B
0120-04-02	Soil Gas	6/4/2003	3	SW8260B
0120-04-01	Soil Gas	6/4/2003	3	SW8260B
0120-03-03	Soil Gas	6/4/2003	3	SW8260B
0120-03-02	Soil Gas	6/3/2003	3	SW8260B
0120-03-01	Soil Gas	6/4/2003	3	SW8260B
0120-02-04	Soil Gas	6/3/2003	3	SW8260B
0120-02-03	Soil Gas	6/3/2003	3	SW8260B
0120-02-02	Soil Gas	6/3/2003	3	SW8260B
0120-02-01	Soil Gas	6/3/2003	3	SW8260B
0120-01-05	Soil Gas	5/30/2003	3	SW8260B
0120-01-04	Soil Gas	5/30/2003	3	SW8260B
0120-01-03	Soil Gas	5/30/2003	3	SW8260B
0120-01-02	Soil Gas	5/30/2003	3	SW8260B
0120-01-01	Soil Gas	5/30/2003	3	SW8260B
0115-02-01	Soil Gas	5/30/2003	3	SW8260B
0115-01-02	Soil Gas	5/30/2003	3	SW8260B
0115-01-01	Soil Gas	5/30/2003	3	SW8260B
0112-OA-01	Soil Gas	6/2/2003	3	SW8260B
0112-01-01	Soil Gas	6/2/2003	3	SW8260B
0110-OA-01	Soil Gas	6/2/2003	3	SW8260B
0105-OA-05	Soil Gas	5/29/2003	3	SW8260B
0105-OA-04	Soil Gas	5/29/2003	3	SW8260B
0105-OA-03	Soil Gas	5/29/2003	3	SW8260B
0105-OA-02	Soil Gas	5/29/2003	3	SW8260B
0105-OA-01	Soil Gas	6/2/2003	3	SW8260B
0105-05-01	Soil Gas	5/29/2003	3	SW8260B
0105-04-01	Soil Gas	5/29/2003	3	SW8260B
0105-03-01	Soil Gas	5/29/2003	3	SW8260B
0105-02-01	Soil Gas	5/29/2003	3	SW8260B
0105-01-02	Soil Gas	5/29/2003	3	SW8260B
0105-01-01	Soil Gas	5/29/2003	3	SW8260B
0102-OA-02	Soil Gas	5/30/2003	3	SW8260B
0102-OA-01	Soil Gas	5/30/2003	3	SW8260B
PARK-GW-54	Water	7/2/2003	15	CATFH
PARK-GW-54	Water	7/2/2003	15	SW6010
PARK-GW-54	Water	7/2/2003	15	SW7196
PARK-GW-54	Water	7/2/2003	15	SW7470
PARK-GW-54	Water	7/2/2003	15	SW8260
PARK-GW-48	Water	7/2/2003	15	CATFH
PARK-GW-48	Water	7/2/2003	15	SW6010
PARK-GW-48	Water	7/2/2003	15	SW7196
PARK-GW-48	Water	7/2/2003	15	SW7470
PARK-GW-48	Water	7/2/2003	15	SW8260
0228-GW-59	Water	6/25/2003	15	CATFH
0228-GW-59	Water	6/25/2003	15	SW6010
0228-GW-59	Water	6/25/2003	15	SW7196
0228-GW-59	Water	6/25/2003	15	SW7470
0228-GW-59	Water	6/25/2003	15	SW8260
0181-GW-62	Water	7/2/2003	15	CATFH
0181-GW-62	Water	7/2/2003	15	SW6010
0181-GW-62	Water	7/2/2003	15	SW7196
0181-GW-62	Water	7/2/2003	15	SW7470
0181-GW-62	Water	7/2/2003	15	SW8260
0158-GW-53	Water	6/24/2003	15	CATFH
0158-GW-53	Water	6/24/2003	15	SW6010

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0158-GW-53	Water	6/24/2003	15	SW7196
0158-GW-53	Water	6/24/2003	15	SW7470
0158-GW-53	Water	6/24/2003	15	SW8260
0158-GW-50	Water	6/23/2003	15	CATFH
0158-GW-50	Water	6/23/2003	15	SW6010
0158-GW-50	Water	6/23/2003	15	SW7196
0158-GW-50	Water	6/23/2003	15	SW7470
0158-GW-50	Water	6/23/2003	15	SW8260
0156-GW-49	Water	6/23/2003	15	CATFH
0156-GW-49	Water	6/23/2003	15	SW6010
0156-GW-49	Water	6/23/2003	15	SW7196
0156-GW-49	Water	6/23/2003	15	SW7470
0156-GW-49	Water	6/23/2003	15	SW8260
0144-GW-51	Water	6/24/2003	15	CATFH
0144-GW-51	Water	6/24/2003	15	SW6010
0144-GW-51	Water	6/24/2003	15	SW7196
0144-GW-51	Water	6/24/2003	15	SW7470
0144-GW-51	Water	6/24/2003	15	SW8260
0130-GW-60	Water	7/1/2003	15	CATFH
0130-GW-60	Water	7/1/2003	15	SW6010
0130-GW-60	Water	7/1/2003	15	SW7196
0130-GW-60	Water	7/1/2003	15	SW7470
0130-GW-60	Water	7/1/2003	15	SW8260
0126-GW-55	Water	6/24/2003	15	CATFH
0126-GW-55	Water	6/24/2003	15	SW6010
0126-GW-55	Water	6/24/2003	15	SW7196
0126-GW-55	Water	6/24/2003	15	SW7470
0126-GW-55	Water	6/24/2003	15	SW8260
0120-GW-61	Water	6/26/2003	15	CATFH
0120-GW-61	Water	6/26/2003	15	SW6010
0120-GW-61	Water	6/26/2003	15	SW7196
0120-GW-61	Water	6/26/2003	15	SW7470
0120-GW-61	Water	6/26/2003	15	SW8260
0120-GW-58	Water	6/26/2003	15	CATFH
0120-GW-58	Water	6/26/2003	15	SW6010
0120-GW-58	Water	6/26/2003	15	SW7196
0120-GW-58	Water	6/26/2003	15	SW7470
0120-GW-58	Water	6/26/2003	15	SW8260
0120-GW-57	Water	6/30/2003	15	CATFH
0120-GW-57	Water	6/30/2003	15	SW6010
0120-GW-57	Water	6/30/2003	15	SW7196
0120-GW-57	Water	6/30/2003	15	SW7470
0120-GW-57	Water	6/30/2003	15	SW8260
0120-GW-56	Water	6/26/2003	15	CATFH
0120-GW-56	Water	6/26/2003	15	SW6010
0120-GW-56	Water	6/26/2003	15	SW7196
0120-GW-56	Water	6/26/2003	15	SW7470
0120-GW-56	Water	6/26/2003	15	SW8260
B131-MW3	Water	8/4/2005	13	8260B
0131-GW-66	Water	6/24/2003	13	SW8260
BLD102-MW-5	Water	8/5/2005	12	8260B
BLD102-MW4	Water	7/28/2005	12	8015M
BLD102-MW4	Water	7/28/2005	12	8260B
BLD102-MW3	Water	7/28/2005	12	8260B
B120-MW5	Water	8/2/2005	12	8260B
B120-MW5	Water	8/2/2005	12	8270C
P1	Water	8/5/2005	11.5	314
P1	Water	8/5/2005	11.5	8260B

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
P1	Water	8/5/2005	11.5	8270C
GT4	Water	8/2/2005	11.5	7199
GT4	Water	8/2/2005	11.5	8260B
GT4	Water	8/9/2005	11.5	6010B
GT4	Water	8/9/2005	11.5	6020
GT4	Water	8/9/2005	11.5	7470A
TC4EHP	Water	8/3/2005	11	6010B
TC4EHP	Water	8/3/2005	11	6020
TC4EHP	Water	8/3/2005	11	7199
TC4EHP	Water	8/3/2005	11	7470A
TC4EHP	Water	8/3/2005	11	8260B
TC4EHP	Water	8/3/2005	11	8270C
BLD156-MW1	Water	7/29/2005	11	8260B
B131-MW5	Water	8/5/2005	11	8015M
B131-MW5	Water	8/5/2005	11	8260B
B131-MW5	Water	8/5/2005	11	8270C
0EXA-GW-07	Water	6/20/2003	11	CATFH
0EXA-GW-07	Water	6/20/2003	11	E335.1
0EXA-GW-07	Water	6/20/2003	11	E335.2
0EXA-GW-07	Water	6/20/2003	11	SW6010
0EXA-GW-07	Water	6/20/2003	11	SW7470
0EXA-GW-07	Water	6/20/2003	11	SW8082
0EXA-GW-07	Water	6/20/2003	11	SW8260
0EXA-GW-07	Water	6/20/2003	11	SW8310
0EXA-GW-07	Water	6/23/2003	11	SW8330
0228-GW-29	Water	6/20/2003	11	CATFH
0228-GW-29	Water	6/20/2003	11	E335.1
0228-GW-29	Water	6/20/2003	11	E335.2
0228-GW-29	Water	6/20/2003	11	EPA 314.0
0228-GW-29	Water	6/20/2003	11	SW6010
0228-GW-29	Water	6/20/2003	11	SW7196
0228-GW-29	Water	6/20/2003	11	SW7470
0228-GW-29	Water	6/20/2003	11	SW8082
0228-GW-29	Water	6/20/2003	11	SW8260
0228-GW-29	Water	6/20/2003	11	SW8270
0228-GW-29	Water	6/20/2003	11	SW8310
0130-GW-31	Water	6/23/2003	11	SW8260
P2	Water	8/9/2005	10.5	6010B
P2	Water	8/9/2005	10.5	6020
P2	Water	8/9/2005	10.5	7199
P2	Water	8/9/2005	10.5	7470A
P2	Water	8/9/2005	10.5	8260B
P2	Water	8/9/2005	10.5	8270C
BLD156-MW3	Water	8/10/2005	10.5	6010B
BLD156-MW3	Water	8/10/2005	10.5	6020
BLD156-MW3	Water	8/10/2005	10.5	7470A
BLD120-MW3	Water	7/29/2005	10.5	314.0
BLD120-MW3	Water	7/29/2005	10.5	8260B
BLD120-MW3	Water	7/29/2005	10.5	8270C
BLD120-MW-2	Water	8/1/2005	10.5	314
BLD120-MW-2	Water	8/1/2005	10.5	8260B
BLD120-MW-2	Water	8/1/2005	10.5	8270C
BLD120-MW-1	Water	8/1/2005	10.5	314
BLD120-MW-1	Water	8/1/2005	10.5	8260B
BLD120-MW-1	Water	8/1/2005	10.5	8270C
B180-MW1	Water	10/4/2005	10.5	6010B
B180-MW1	Water	10/4/2005	10.5	6020
B180-MW1	Water	10/4/2005	10.5	7470A

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
B180-MW1	Water	10/4/2005	10.5	8260B
B131-MW1	Water	8/4/2005	10.5	8260B
B131-MW1	Water	8/4/2005	10.5	8270C
B120-MW6	Water	8/1/2005	10.5	8015M
B120-MW6	Water	8/1/2005	10.5	8260B
B120-MW6	Water	8/1/2005	10.5	8270C
B156-MW3	Water	8/2/2005	10	7199
B156-MW3	Water	8/2/2005	10	8260B
B131-MW4	Water	8/5/2005	10	8015M
B131-MW4	Water	8/5/2005	10	8260B
B131-MW4	Water	8/5/2005	10	8270C
B131-MW3	Water	8/4/2005	10	8270C
B131-MW2	Water	8/4/2005	10	8260B
B131-MW2	Water	8/4/2005	10	8270C
B120-MW4	Water	8/2/2005	10	8260B
B120-MW4	Water	8/2/2005	10	8270C
0156-GW-10	Water	6/20/2003	10	CATFH
0156-GW-10	Water	6/20/2003	10	SW8260
0156-GW-10	Water	6/20/2003	10	SW8310
0153-GW-11	Water	6/20/2003	10	CATFH
0153-GW-11	Water	6/20/2003	10	SW6010
0153-GW-11	Water	6/20/2003	10	SW7470
0153-GW-11	Water	6/20/2003	10	SW8082
0153-GW-11	Water	6/20/2003	10	SW8260
0152-GW-44	Water	6/20/2003	10	CATFH
0152-GW-44	Water	6/20/2003	10	SW6010
0152-GW-44	Water	6/20/2003	10	SW7470
0152-GW-44	Water	6/20/2003	10	SW8082
0152-GW-44	Water	6/20/2003	10	SW8260
0142-GW-09	Water	6/19/2003	10	CATFH
0142-GW-09	Water	6/19/2003	10	SW6010
0142-GW-09	Water	6/19/2003	10	SW7470
0142-GW-09	Water	6/19/2003	10	SW8082
0142-GW-09	Water	6/19/2003	10	SW8260
0142-GW-09	Water	6/19/2003	10	SW8310
0142-GW-08	Water	6/19/2003	10	CATFH
0142-GW-08	Water	6/19/2003	10	SW6010
0142-GW-08	Water	6/19/2003	10	SW7470
0142-GW-08	Water	6/19/2003	10	SW8082
0142-GW-08	Water	6/19/2003	10	SW8260
0142-GW-08	Water	6/19/2003	10	SW8310
0140-GW-21	Water	6/20/2003	10	CATFH
0140-GW-21	Water	6/20/2003	10	SW6010
0140-GW-21	Water	6/20/2003	10	SW7470
0140-GW-21	Water	6/20/2003	10	SW8082
0140-GW-21	Water	6/20/2003	10	SW8260
0140-GW-21	Water	6/20/2003	10	SW8270
0140-GW-21	Water	6/20/2003	10	SW8310
0120-GW-46	Water	6/23/2003	10	CATFH
0120-GW-46	Water	6/23/2003	10	E335.1
0120-GW-46	Water	6/23/2003	10	E335.2
0120-GW-46	Water	6/23/2003	10	SW6010
0120-GW-46	Water	6/23/2003	10	SW7196
0120-GW-46	Water	6/23/2003	10	SW7470
0120-GW-46	Water	6/23/2003	10	SW8260
0120-GW-45	Water	6/23/2003	10	SW6010
0120-GW-45	Water	6/23/2003	10	SW7470
0120-GW-43	Water	6/23/2003	10	SW6010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-GW-43	Water	6/23/2003	10	SW7470
0120-GW-43	Water	6/23/2003	10	SW8260
0120-GW-35	Water	6/23/2003	10	CATFH
0120-GW-35	Water	6/23/2003	10	SW6010
0120-GW-35	Water	6/23/2003	10	SW7470
0120-GW-35	Water	6/23/2003	10	SW8082
0120-GW-35	Water	6/23/2003	10	SW8260
0120-GW-35	Water	6/23/2003	10	SW8270
0120-GW-32	Water	6/23/2003	10	E335.1
0120-GW-32	Water	6/23/2003	10	E335.2
0120-GW-32	Water	6/23/2003	10	SW6010
0120-GW-32	Water	6/23/2003	10	SW7196
0120-GW-32	Water	6/23/2003	10	SW7470
0120-GW-32	Water	6/23/2003	10	SW8260
0120-GW-27	Water	6/23/2003	10	CATFH
0120-GW-27	Water	6/23/2003	10	SW6010
0120-GW-27	Water	6/23/2003	10	SW7196
0120-GW-27	Water	6/23/2003	10	SW7470
0120-GW-27	Water	6/23/2003	10	SW8082
0120-GW-27	Water	6/23/2003	10	SW8260
0120-GW-26	Water	6/23/2003	10	CATFH
0120-GW-26	Water	6/23/2003	10	E335.1
0120-GW-26	Water	6/23/2003	10	E335.2
0120-GW-26	Water	6/23/2003	10	SW6010
0120-GW-26	Water	6/23/2003	10	SW7196
0120-GW-26	Water	6/23/2003	10	SW7470
0120-GW-26	Water	6/23/2003	10	SW8260
0120-GW-25	Water	6/23/2003	10	CATFH
0120-GW-25	Water	6/23/2003	10	E335.1
0120-GW-25	Water	6/23/2003	10	E335.2
0120-GW-25	Water	6/23/2003	10	SW6010
0120-GW-25	Water	6/23/2003	10	SW7196
0120-GW-25	Water	6/23/2003	10	SW7470
0120-GW-25	Water	6/23/2003	10	SW8260
0105-GW-14	Water	6/19/2003	10	CATFH
0105-GW-14	Water	6/19/2003	10	E335.1
0105-GW-14	Water	6/19/2003	10	E335.2
0105-GW-14	Water	6/19/2003	10	SW6010
0105-GW-14	Water	6/19/2003	10	SW7196
0105-GW-14	Water	6/19/2003	10	SW7470
0105-GW-14	Water	6/19/2003	10	SW8082
0105-GW-14	Water	6/19/2003	10	SW8260
0105-GW-14	Water	6/19/2003	10	SW8270
0105-GW-14	Water	6/19/2003	10	SW8310
0242-GW-74	Water	7/10/2003	9.5	A2340B
0242-GW-74	Water	7/10/2003	9.5	E160.1
0242-GW-74	Water	7/10/2003	9.5	E310.1
0242-GW-74	Water	7/10/2003	9.5	E325.3
0242-GW-74	Water	7/10/2003	9.5	SW6010
0242-GW-74	Water	7/10/2003	9.5	SW8260B
0242-GW-73	Water	7/10/2003	9.5	A2340B
0242-GW-73	Water	7/10/2003	9.5	E160.1
0242-GW-73	Water	7/10/2003	9.5	E310.1
0242-GW-73	Water	7/10/2003	9.5	E325.3
0242-GW-73	Water	7/10/2003	9.5	SW6010
0242-GW-73	Water	7/10/2003	9.5	SW8260B
0242-GW-72	Water	7/10/2003	9.5	A2340B
0242-GW-72	Water	7/10/2003	9.5	E160.1

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0242-GW-72	Water	7/10/2003	9.5	E310.1
0242-GW-72	Water	7/10/2003	9.5	E325.3
0242-GW-72	Water	7/10/2003	9.5	SW6010
0242-GW-72	Water	7/10/2003	9.5	SW8260B
0242-GW-71	Water	7/11/2003	9.5	A2340B
0242-GW-71	Water	7/11/2003	9.5	E160.1
0242-GW-71	Water	7/11/2003	9.5	E310.1
0242-GW-71	Water	7/11/2003	9.5	E325.3
0242-GW-71	Water	7/11/2003	9.5	SW6010
0242-GW-71	Water	7/11/2003	9.5	SW8260B
0242-GW-70	Water	7/11/2003	9.5	A2340B
0242-GW-70	Water	7/11/2003	9.5	E160.1
0242-GW-70	Water	7/11/2003	9.5	E310.1
0242-GW-70	Water	7/11/2003	9.5	E325.3
0242-GW-70	Water	7/11/2003	9.5	SW6010
0242-GW-70	Water	7/11/2003	9.5	SW8260B
0242-GW-69	Water	7/11/2003	9.5	A2340B
0242-GW-69	Water	7/11/2003	9.5	E160.1
0242-GW-69	Water	7/11/2003	9.5	E310.1
0242-GW-69	Water	7/11/2003	9.5	E325.3
0242-GW-69	Water	7/11/2003	9.5	SW6010
0242-GW-69	Water	7/11/2003	9.5	SW8260B
0242-GW-37	Water	6/19/2003	9.5	CATFH
0242-GW-37	Water	6/19/2003	9.5	SW6010
0242-GW-37	Water	6/19/2003	9.5	SW7470
0242-GW-37	Water	6/19/2003	9.5	SW8082
0242-GW-37	Water	6/19/2003	9.5	SW8260
0242-GW-37	Water	6/19/2003	9.5	SW8270
0242-GW-37	Water	6/19/2003	9.5	SW8310
0158-GW-13	Water	6/20/2003	9.5	CATFH
0158-GW-13	Water	6/20/2003	9.5	E335.1
0158-GW-13	Water	6/20/2003	9.5	E335.2
0158-GW-13	Water	6/20/2003	9.5	SW6010
0158-GW-13	Water	6/20/2003	9.5	SW7196
0158-GW-13	Water	6/20/2003	9.5	SW7470
0158-GW-13	Water	6/20/2003	9.5	SW8260
0120-GW-78	Water	7/11/2003	9.5	SW8082
0120-GW-77	Water	7/11/2003	9.5	SW8082
0120-GW-76	Water	7/11/2003	9.5	SW8082
0120-GW-75	Water	7/11/2003	9.5	SW8082
0120-GW-41	Water	7/11/2003	9.5	SW8082
0120-GW-39	Water	7/11/2003	9.5	SW8082
TC4EGP	Water	8/9/2005	9	314
TC4EGP	Water	8/9/2005	9	8260B
TC4EGP	Water	8/9/2005	9	8270C
TC4EEP	Water	8/9/2005	9	8260B
TC4EEP	Water	8/9/2005	9	8270C
T-9	Water	9/22/2005	9	8260B
T-9	Water	9/22/2005	9	8270C
T-8	Water	9/22/2005	9	8260B
T-8	Water	9/22/2005	9	8270C
T-7	Water	9/22/2005	9	8260B
T-7	Water	9/22/2005	9	8270C
T-6	Water	7/5/2005	9	8260B
T-53	Water	10/17/2006	9	SW8270
T-53	Water	10/17/2006	9	SW8015
T-53	Water	10/17/2006	9	SW8260
T-52	Water	10/17/2006	9	SW8015

Table 1
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Location	Matrix	DateSampled	Depth	Method
T-52	Water	10/17/2006	9	SW8260
T-52	Water	10/17/2006	9	SW8270
T-51	Water	10/12/2006	9	SW8260
T-51	Water	10/12/2006	9	SW8015
T-51	Water	10/12/2006	9	SW8270
T-50	Water	10/12/2006	9	SW8015
T-50	Water	10/12/2006	9	SW8260
T-50	Water	10/12/2006	9	SW8270
T-5	Water	7/5/2005	9	8260B
T-49	Water	4/13/2006	9	6020
T-49	Water	4/13/2006	9	7196A
T-49	Water	4/13/2006	9	8015B
T-48	Water	4/13/2006	9	6020
T-48	Water	4/13/2006	9	7196A
T-48	Water	4/13/2006	9	8015B
T-47	Water	4/13/2006	9	6020
T-47	Water	4/13/2006	9	7196A
T-47	Water	4/13/2006	9	8015B
T-46	Water	3/30/2006	9	8270C
T-45	Water	3/30/2006	9	8270C
T-44	Water	3/30/2006	9	8270C
T-42	Water	7/13/2005	9	8260B
T-41	Water	7/14/2005	9	8260B
T-40	Water	7/13/2005	9	8260B
T-4	Water	7/5/2005	9	8260B
T-39	Water	7/13/2005	9	8015M
T-39	Water	7/13/2005	9	8260B
T-38	Water	7/14/2005	9	8260B
T-38	Water	7/14/2005	9	8270C
T-37	Water	7/14/2005	9	8015M
T-37	Water	7/14/2005	9	8260B
T-37	Water	7/14/2005	9	8270C
T-36	Water	7/14/2005	9	8260B
T-36	Water	7/14/2005	9	8270C
T-35	Water	7/14/2005	9	8260B
T-35	Water	7/14/2005	9	8270C
T-34	Water	7/14/2005	9	8015M
T-34	Water	7/14/2005	9	8260B
T-34	Water	7/14/2005	9	8270C
T-33	Water	7/1/2005	9	7470A
T-33	Water	7/1/2005	9	8260B
T-33	Water	7/1/2005	9	6010B
T-33	Water	7/1/2005	9	6020
T-32	Water	7/5/2005	9	8260B
T-32	Water	7/5/2005	9	6010B
T-32	Water	7/5/2005	9	6020
T-32	Water	7/5/2005	9	7470A
T-32	Water	7/5/2005	9	8260B
T-31	Water	7/1/2005	9	6010B
T-31	Water	7/1/2005	9	6020
T-31	Water	7/1/2005	9	7470A
T-31	Water	7/1/2005	9	8015M
T-31	Water	7/1/2005	9	8260B
T-30	Water	7/1/2005	9	7470A
T-30	Water	7/1/2005	9	6010B
T-30	Water	7/1/2005	9	6020
T-30	Water	7/1/2005	9	8260B
T-29	Water	7/1/2005	9	6010B

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Location	Matrix	DateSampled	Depth	Method
T-29	Water	7/1/2005	9	6020
T-29	Water	7/1/2005	9	7470A
T-29	Water	7/1/2005	9	8260B
T-28	Water	7/13/2005	9	8260B
T-28	Water	7/13/2005	9	8270C
T-27	Water	7/13/2005	9	8270C
T-27	Water	7/13/2005	9	8260B
T-26	Water	7/13/2005	9	8015M
T-26	Water	7/13/2005	9	8260B
T-26	Water	7/13/2005	9	8270C
T-25	Water	7/13/2005	9	8260B
T-25	Water	7/13/2005	9	8270C
T-24	Water	7/6/2005	9	8260B
T-24	Water	7/6/2005	9	8270C
T-23	Water	7/6/2005	9	8260B
T-23	Water	7/6/2005	9	8270C
T-22	Water	7/6/2005	9	8260B
T-22	Water	7/6/2005	9	8270C
T-21	Water	7/6/2005	9	8260B
T-21	Water	7/6/2005	9	8270C
T-20	Water	6/30/2005	9	8260B
T-20	Water	6/30/2005	9	8270C
T-2	Water	7/5/2005	9	8260B
T-19	Water	6/30/2005	9	8015M
T-19	Water	6/30/2005	9	8260B
T-19	Water	6/30/2005	9	8270C
T-18	Water	6/30/2005	9	8260B
T-18	Water	6/30/2005	9	8270C
T-17	Water	6/30/2005	9	8015M
T-17	Water	6/30/2005	9	8260B
T-17	Water	6/30/2005	9	8270C
T-16	Water	7/1/2005	9	8260B
T-16	Water	7/1/2005	9	8270C
T-15	Water	7/1/2005	9	8260B
T-15	Water	7/1/2005	9	8270C
T-14	Water	6/30/2005	9	8015M
T-14	Water	6/30/2005	9	8260B
T-14	Water	6/30/2005	9	8270C
T-13	Water	6/30/2005	9	8260B
T-13	Water	6/30/2005	9	8270C
T-11	Water	9/22/2005	9	6010B
T-11	Water	9/22/2005	9	6020
T-11	Water	9/22/2005	9	7470A
T-11	Water	9/22/2005	9	8260B
T-10	Water	9/22/2005	9	8260B
T-10	Water	9/22/2005	9	8270C
T-1	Water	7/5/2005	9	8260B
PARK-GW-54	Water	7/2/2003	9	CATFH
PARK-GW-54	Water	7/2/2003	9	SW6010
PARK-GW-54	Water	7/2/2003	9	SW7196
PARK-GW-54	Water	7/2/2003	9	SW7470
PARK-GW-54	Water	7/2/2003	9	SW8260
PARK-GW-48	Water	7/2/2003	9	CATFH
PARK-GW-48	Water	7/2/2003	9	SW6010
PARK-GW-48	Water	7/2/2003	9	SW7196
PARK-GW-48	Water	7/2/2003	9	SW7470
PARK-GW-48	Water	7/2/2003	9	SW8260
PARK-GW-113	Water	8/21/2003	9	SW6010

Table 1
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Location	Matrix	DateSampled	Depth	Method
PARK-GW-113	Water	8/21/2003	9	SW7470
0242-GW-68	Water	6/27/2003	9	SW8260
0242-GW-67	Water	6/27/2003	9	SW8260
0242-GW-65	Water	6/25/2003	9	SW8260
0242-GW-64	Water	6/25/2003	9	SW8260
0242-GW-63	Water	6/25/2003	9	SW8260
0242-GW-125	Water	8/20/2003	9	CATFH
0242-GW-125	Water	8/20/2003	9	SW8260
0242-GW-124	Water	8/20/2003	9	CATFH
0242-GW-124	Water	8/20/2003	9	SW8260
0228-GW-59	Water	6/25/2003	9	CATFH
0228-GW-59	Water	6/25/2003	9	SW6010
0228-GW-59	Water	6/25/2003	9	SW7196
0228-GW-59	Water	6/25/2003	9	SW7470
0228-GW-59	Water	6/25/2003	9	SW8260
0228-GW-108	Water	8/21/2003	9	CATFH
0228-GW-108	Water	8/21/2003	9	SW6010
0228-GW-108	Water	8/21/2003	9	SW7470
0228-GW-108	Water	8/21/2003	9	SW8270
0228-GW-107	Water	8/21/2003	9	SW6010
0228-GW-107	Water	8/21/2003	9	SW7470
0228-GW-107	Water	8/21/2003	9	SW8260
0228-GW-107	Water	8/21/2003	9	SW8270
0228-GW-106	Water	8/21/2003	9	SW6010
0228-GW-106	Water	8/21/2003	9	SW7470
0228-GW-106	Water	8/21/2003	9	SW8260
0222-GW-30	Water	6/20/2003	9	CATFH
0222-GW-30	Water	6/20/2003	9	E335.1
0222-GW-30	Water	6/20/2003	9	E335.2
0222-GW-30	Water	6/20/2003	9	SW6010
0222-GW-30	Water	6/20/2003	9	SW7196
0222-GW-30	Water	6/20/2003	9	SW7470
0222-GW-30	Water	6/20/2003	9	SW8082
0222-GW-30	Water	6/20/2003	9	SW8260
0222-GW-30	Water	6/20/2003	9	SW8270
0181-GW-62	Water	7/2/2003	9	CATFH
0181-GW-62	Water	7/2/2003	9	SW6010
0181-GW-62	Water	7/2/2003	9	SW7196
0181-GW-62	Water	7/2/2003	9	SW7470
0181-GW-62	Water	7/2/2003	9	SW8260
0166-GW-95	Water	8/22/2003	9	SW8260
0166-GW-95	Water	8/22/2003	9	SW8270
0166-GW-94	Water	8/22/2003	9	SW6010
0166-GW-94	Water	8/22/2003	9	SW7470
0166-GW-94	Water	8/22/2003	9	SW8260
0166-GW-93	Water	8/22/2003	9	SW8260
0166-GW-87	Water	8/26/2003	9	SW8260
0166-GW-86	Water	8/26/2003	9	SW6010
0166-GW-86	Water	8/26/2003	9	SW7196
0166-GW-86	Water	8/26/2003	9	SW7470
0166-GW-86	Water	8/26/2003	9	SW8260
0166-GW-85	Water	8/26/2003	9	CATFH
0166-GW-85	Water	8/26/2003	9	SW8260
0166-GW-84	Water	8/26/2003	9	CATFH
0166-GW-84	Water	8/26/2003	9	SW8260
0166-GW-83	Water	8/22/2003	9	CATFH
0166-GW-83	Water	8/22/2003	9	SW8260
0166-GW-82	Water	8/22/2003	9	SW8260

Table 1
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Location	Matrix	DateSampled	Depth	Method
0166-GW-82	Water	8/22/2003	9	SW8270
0166-GW-81	Water	8/22/2003	9	SW8260
0166-GW-81	Water	8/22/2003	9	SW8270
0166-GW-80	Water	8/22/2003	9	SW8260
0166-GW-126	Water	8/26/2003	9	CATFH
0166-GW-126	Water	8/26/2003	9	SW8260
0161-GW-42	Water	6/26/2003	9	CATFH
0161-GW-42	Water	6/26/2003	9	E335.1
0161-GW-42	Water	6/26/2003	9	E335.2
0161-GW-42	Water	6/26/2003	9	SW6010
0161-GW-42	Water	6/26/2003	9	SW7196
0161-GW-42	Water	6/26/2003	9	SW7470
0161-GW-42	Water	6/26/2003	9	SW8082
0161-GW-42	Water	6/26/2003	9	SW8260
0161-GW-42	Water	6/26/2003	9	SW8270
0161-GW-42	Water	6/26/2003	9	SW8310
0158-GW-53	Water	6/24/2003	9	CATFH
0158-GW-53	Water	6/24/2003	9	SW6010
0158-GW-53	Water	6/24/2003	9	SW7196
0158-GW-53	Water	6/24/2003	9	SW7470
0158-GW-53	Water	6/24/2003	9	SW8260
0158-GW-50	Water	6/23/2003	9	CATFH
0158-GW-50	Water	6/23/2003	9	SW6010
0158-GW-50	Water	6/23/2003	9	SW7196
0158-GW-50	Water	6/23/2003	9	SW7470
0158-GW-50	Water	6/23/2003	9	SW8260
0158-GW-15	Water	6/20/2003	9	CATFH
0158-GW-15	Water	6/20/2003	9	E335.1
0158-GW-15	Water	6/20/2003	9	E335.2
0158-GW-15	Water	6/20/2003	9	SW6010
0158-GW-15	Water	6/20/2003	9	SW7196
0158-GW-15	Water	6/20/2003	9	SW7470
0158-GW-15	Water	6/20/2003	9	SW8260
0158-GW-12	Water	6/20/2003	9	CATFH
0158-GW-12	Water	6/20/2003	9	E335.1
0158-GW-12	Water	6/20/2003	9	E335.2
0158-GW-12	Water	6/20/2003	9	SW6010
0158-GW-12	Water	6/20/2003	9	SW7196
0158-GW-12	Water	6/20/2003	9	SW7470
0158-GW-12	Water	6/20/2003	9	SW8260
0158-GW-119	Water	8/22/2003	9	SW6010
0158-GW-119	Water	8/22/2003	9	SW7196
0158-GW-119	Water	8/22/2003	9	SW7470
0158-GW-118	Water	8/20/2003	9	SW6010
0158-GW-118	Water	8/20/2003	9	SW7196
0158-GW-118	Water	8/20/2003	9	SW7470
0158-GW-117	Water	8/22/2003	9	SW6010
0158-GW-117	Water	8/22/2003	9	SW7196
0158-GW-117	Water	8/22/2003	9	SW7470
0158-GW-116	Water	8/20/2003	9	CATFH
0158-GW-115	Water	8/20/2003	9	SW6010
0158-GW-115	Water	8/20/2003	9	SW7196
0158-GW-115	Water	8/20/2003	9	SW7470
0156-GW-49	Water	6/23/2003	9	CATFH
0156-GW-49	Water	6/23/2003	9	SW6010
0156-GW-49	Water	6/23/2003	9	SW7196
0156-GW-49	Water	6/23/2003	9	SW7470
0156-GW-49	Water	6/23/2003	9	SW8260

Table 1
Data Points Included in Risk Assessment
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Location	Matrix	DateSampled	Depth	Method
0156-GW-123	Water	8/19/2003	9	SW6010
0156-GW-123	Water	8/19/2003	9	SW7470
0156-GW-06	Water	6/19/2003	9	CATFH
0156-GW-06	Water	6/19/2003	9	SW6010
0156-GW-06	Water	6/19/2003	9	SW7470
0156-GW-06	Water	6/19/2003	9	SW8082
0156-GW-06	Water	6/19/2003	9	SW8260
0156-GW-06	Water	6/19/2003	9	SW8270
0156-GW-06	Water	6/19/2003	9	SW8310
0156-GW-05	Water	6/19/2003	9	CATFH
0156-GW-05	Water	6/19/2003	9	SW8310
0152-GW-122	Water	8/19/2003	9	CATFH
0152-GW-121	Water	8/19/2003	9	CATFH
0147-GW-22	Water	6/20/2003	9	CATFH
0147-GW-22	Water	6/20/2003	9	SW6010
0147-GW-22	Water	6/20/2003	9	SW7470
0147-GW-22	Water	6/20/2003	9	SW8310
0146-GW-23	Water	6/26/2003	9	CATFH
0146-GW-23	Water	6/26/2003	9	SW8310
0146-GW-20	Water	6/20/2003	9	CATFH
0146-GW-20	Water	6/20/2003	9	SW6010
0146-GW-20	Water	6/20/2003	9	SW7470
0146-GW-20	Water	6/20/2003	9	SW8082
0146-GW-20	Water	6/20/2003	9	SW8260
0146-GW-20	Water	6/20/2003	9	SW8270
0146-GW-20	Water	6/20/2003	9	SW8310
0146-GW-120	Water	8/20/2003	9	SW8260
0144-GW-51	Water	6/24/2003	9	CATFH
0144-GW-51	Water	6/24/2003	9	SW6010
0144-GW-51	Water	6/24/2003	9	SW7196
0144-GW-51	Water	6/24/2003	9	SW7470
0144-GW-51	Water	6/24/2003	9	SW8260
0142-GW-24	Water	6/20/2003	9	CATFH
0142-GW-24	Water	6/20/2003	9	SW6010
0142-GW-24	Water	6/20/2003	9	SW7470
0142-GW-24	Water	6/20/2003	9	SW8082
0142-GW-24	Water	6/20/2003	9	SW8260
0142-GW-24	Water	6/20/2003	9	SW8310
0142-GW-02	Water	6/19/2003	9	CATFH
0142-GW-02	Water	6/19/2003	9	SW6010
0142-GW-02	Water	6/19/2003	9	SW7470
0142-GW-02	Water	6/19/2003	9	SW8082
0142-GW-02	Water	6/19/2003	9	SW8260
0142-GW-02	Water	6/19/2003	9	SW8310
0140-GW-114	Water	8/20/2003	9	CATFH
0140-GW-114	Water	8/20/2003	9	SW7196
0130-GW-60	Water	7/1/2003	9	CATFH
0130-GW-60	Water	7/1/2003	9	SW6010
0130-GW-60	Water	7/1/2003	9	SW7196
0130-GW-60	Water	7/1/2003	9	SW7470
0130-GW-60	Water	7/1/2003	9	SW8260
0128-GW-97	Water	8/28/2003	9	SW6010
0128-GW-97	Water	8/28/2003	9	SW7470
0128-GW-97	Water	8/28/2003	9	SW8260
0128-GW-96	Water	8/28/2003	9	SW6010
0128-GW-96	Water	8/28/2003	9	SW7470
0128-GW-96	Water	8/28/2003	9	SW8260
0128-GW-38	Water	6/26/2003	9	CATFH

Table 1
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Location	Matrix	DateSampled	Depth	Method
0128-GW-38	Water	6/26/2003	9	E335.1
0128-GW-38	Water	6/26/2003	9	E335.2
0128-GW-38	Water	6/26/2003	9	SW6010
0128-GW-38	Water	6/26/2003	9	SW7196
0128-GW-38	Water	6/26/2003	9	SW7470
0128-GW-38	Water	6/26/2003	9	SW8260
0127-GW-24	Water	6/26/2003	9	CATFH
0127-GW-24	Water	6/26/2003	9	SW8310
0126-GW-55	Water	6/24/2003	9	CATFH
0126-GW-55	Water	6/24/2003	9	SW6010
0126-GW-55	Water	6/24/2003	9	SW7196
0126-GW-55	Water	6/24/2003	9	SW7470
0126-GW-55	Water	6/24/2003	9	SW8260
0126-GW-28	Water	6/20/2003	9	CATFH
0126-GW-28	Water	6/20/2003	9	SW6010
0126-GW-28	Water	6/20/2003	9	SW7470
0126-GW-28	Water	6/20/2003	9	SW8082
0126-GW-28	Water	6/20/2003	9	SW8260
0125-GW-99	Water	8/21/2003	9	SW6010
0125-GW-99	Water	8/21/2003	9	SW7470
0125-GW-99	Water	8/21/2003	9	SW8260
0120-GW-98	Water	8/28/2003	9	CATFH
0120-GW-98	Water	8/28/2003	9	SW6010
0120-GW-98	Water	8/28/2003	9	SW7470
0120-GW-98	Water	8/28/2003	9	SW8260
0120-GW-92	Water	8/27/2003	9	SW6010
0120-GW-92	Water	8/27/2003	9	SW7470
0120-GW-91	Water	8/27/2003	9	CATFH
0120-GW-91	Water	8/27/2003	9	SW6010
0120-GW-91	Water	8/27/2003	9	SW7470
0120-GW-91	Water	8/27/2003	9	SW8082
0120-GW-91	Water	8/27/2003	9	SW8260
0120-GW-90	Water	8/27/2003	9	CATFH
0120-GW-90	Water	8/27/2003	9	SW8082
0120-GW-90	Water	8/27/2003	9	SW8260
0120-GW-89	Water	8/27/2003	9	CATFH
0120-GW-89	Water	8/27/2003	9	SW8082
0120-GW-89	Water	8/27/2003	9	SW8260
0120-GW-88	Water	8/21/2003	9	SW6010
0120-GW-88	Water	8/21/2003	9	SW7470
0120-GW-88	Water	8/21/2003	9	SW8260
0120-GW-61	Water	6/26/2003	9	CATFH
0120-GW-61	Water	6/26/2003	9	SW6010
0120-GW-61	Water	6/26/2003	9	SW7196
0120-GW-61	Water	6/26/2003	9	SW7470
0120-GW-61	Water	6/26/2003	9	SW8260
0120-GW-58	Water	6/26/2003	9	CATFH
0120-GW-58	Water	6/26/2003	9	SW6010
0120-GW-58	Water	6/26/2003	9	SW7196
0120-GW-58	Water	6/26/2003	9	SW7470
0120-GW-58	Water	6/26/2003	9	SW8260
0120-GW-57	Water	6/30/2003	9	CATFH
0120-GW-57	Water	6/30/2003	9	SW6010
0120-GW-57	Water	6/30/2003	9	SW7196
0120-GW-57	Water	6/30/2003	9	SW7470
0120-GW-57	Water	6/30/2003	9	SW8260
0120-GW-56	Water	6/26/2003	9	CATFH
0120-GW-56	Water	6/26/2003	9	SW6010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-GW-56	Water	6/26/2003	9	SW7196
0120-GW-56	Water	6/26/2003	9	SW7470
0120-GW-56	Water	6/26/2003	9	SW8260
0120-GW-41	Water	6/23/2003	9	CATFH
0120-GW-41	Water	6/23/2003	9	E335.1
0120-GW-41	Water	6/23/2003	9	E335.2
0120-GW-41	Water	6/23/2003	9	SW6010
0120-GW-41	Water	6/23/2003	9	SW7196
0120-GW-41	Water	6/23/2003	9	SW7470
0120-GW-41	Water	6/23/2003	9	SW8260
0120-GW-40	Water	6/26/2003	9	CATFH
0120-GW-40	Water	6/26/2003	9	E335.1
0120-GW-40	Water	6/26/2003	9	E335.2
0120-GW-40	Water	6/26/2003	9	SW6010
0120-GW-40	Water	6/26/2003	9	SW7196
0120-GW-40	Water	6/26/2003	9	SW7470
0120-GW-40	Water	6/26/2003	9	SW8082
0120-GW-40	Water	6/26/2003	9	SW8260
0120-GW-40	Water	6/26/2003	9	SW8310
0120-GW-39	Water	6/26/2003	9	CATFH
0120-GW-39	Water	6/26/2003	9	E335.1
0120-GW-39	Water	6/26/2003	9	E335.2
0120-GW-39	Water	6/26/2003	9	SW6010
0120-GW-39	Water	6/26/2003	9	SW7196
0120-GW-39	Water	6/26/2003	9	SW7470
0120-GW-39	Water	6/26/2003	9	SW8260
0120-GW-36	Water	6/26/2003	9	CATFH
0120-GW-36	Water	6/26/2003	9	SW6010
0120-GW-36	Water	6/26/2003	9	SW7470
0120-GW-36	Water	6/26/2003	9	SW8082
0120-GW-36	Water	6/26/2003	9	SW8260
0120-GW-34	Water	6/26/2003	9	CATFH
0120-GW-34	Water	6/26/2003	9	SW6010
0120-GW-34	Water	6/26/2003	9	SW7470
0120-GW-34	Water	6/26/2003	9	SW8082
0120-GW-34	Water	6/26/2003	9	SW8260
0120-GW-34	Water	6/26/2003	9	SW8270
0120-GW-33	Water	6/26/2003	9	CATFH
0120-GW-33	Water	6/26/2003	9	E335.1
0120-GW-33	Water	6/26/2003	9	E335.2
0120-GW-33	Water	6/26/2003	9	SW6010
0120-GW-33	Water	6/26/2003	9	SW7196
0120-GW-33	Water	6/26/2003	9	SW7470
0120-GW-33	Water	6/26/2003	9	SW8082
0120-GW-33	Water	6/26/2003	9	SW8260
0120-GW-33	Water	6/26/2003	9	SW8310
0120-GW-112	Water	8/27/2003	9	SW6010
0120-GW-112	Water	8/27/2003	9	SW7196
0120-GW-112	Water	8/27/2003	9	SW7470
0120-GW-109	Water	8/27/2003	9	CATFH
0120-GW-109	Water	8/27/2003	9	SW8260
0120-GW-105	Water	8/26/2003	9	CATFH
0120-GW-105	Water	8/26/2003	9	SW6010
0120-GW-105	Water	8/26/2003	9	SW7470
0120-GW-105	Water	8/26/2003	9	SW8260
0120-GW-103	Water	8/27/2003	9	SW8260
0120-GW-102	Water	8/28/2003	9	CATFH
0120-GW-102	Water	8/28/2003	9	SW6010

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0120-GW-102	Water	8/28/2003	9	SW7470
0120-GW-102	Water	8/28/2003	9	SW8260
0120-GW-102	Water	8/28/2003	9	SW8270
0120-GW-101	Water	8/28/2003	9	CATFH
0120-GW-101	Water	8/28/2003	9	SW6010
0120-GW-101	Water	8/28/2003	9	SW7470
0120-GW-101	Water	8/28/2003	9	SW8082
0120-GW-101	Water	8/28/2003	9	SW8260
0120-GW-101	Water	8/28/2003	9	SW8270
0120-GW-100	Water	8/26/2003	9	CATFH
0120-GW-100	Water	8/26/2003	9	SW6010
0120-GW-100	Water	8/26/2003	9	SW7470
0120-GW-100	Water	8/26/2003	9	SW8082
0120-GW-100	Water	8/26/2003	9	SW8260
0120-GW-04	Water	8/27/2003	9	CATFH
0120-GW-04	Water	8/27/2003	9	SW8260
0105-GW-19	Water	6/25/2003	9	CATFH
0105-GW-19	Water	6/25/2003	9	E335.1
0105-GW-19	Water	6/25/2003	9	E335.2
0105-GW-19	Water	6/25/2003	9	SW6010
0105-GW-19	Water	6/25/2003	9	SW7196
0105-GW-19	Water	6/25/2003	9	SW7470
0105-GW-19	Water	6/25/2003	9	SW8082
0105-GW-19	Water	6/25/2003	9	SW8260
0105-GW-19	Water	6/25/2003	9	SW8270
0105-GW-19	Water	6/25/2003	9	SW8310
0105-GW-18	Water	6/25/2003	9	CATFH
0105-GW-18	Water	6/25/2003	9	E335.1
0105-GW-18	Water	6/25/2003	9	E335.2
0105-GW-18	Water	6/25/2003	9	SW6010
0105-GW-18	Water	6/25/2003	9	SW7196
0105-GW-18	Water	6/25/2003	9	SW7470
0105-GW-18	Water	6/25/2003	9	SW8082
0105-GW-18	Water	6/25/2003	9	SW8260
0105-GW-18	Water	6/25/2003	9	SW8270
0105-GW-18	Water	6/25/2003	9	SW8310
142WGP	Water	8/8/2005	8.8	6010B
142WGP	Water	8/8/2005	8.8	6020
142WGP	Water	8/8/2005	8.8	7470A
142WGP	Water	8/8/2005	8.8	8260B
142WEP	Water	8/8/2005	8.8	6010B
142WEP	Water	8/8/2005	8.8	6020
142WEP	Water	8/8/2005	8.8	7199
142WEP	Water	8/8/2005	8.8	7470A
142WEP	Water	8/8/2005	8.8	8260B
142WEP	Water	8/8/2005	8.8	8270C
142WDP	Water	8/8/2005	8.8	6010B
142WDP	Water	8/8/2005	8.8	6020
142WDP	Water	8/8/2005	8.8	7470A
142WDP	Water	8/8/2005	8.8	8260B
142WDP	Water	8/8/2005	8.8	8270C
SDE	Water	8/3/2005	8	6010B
SDE	Water	8/3/2005	8	6020
SDE	Water	8/3/2005	8	7199
SDE	Water	8/3/2005	8	7470A
SDE	Water	8/3/2005	8	8260B
SDE	Water	8/3/2005	8	8270C
0513-GW-03	Water	6/19/2003	8	CATFH

Table 1
Data Points Included in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Matrix	DateSampled	Depth	Method
0513-GW-03	Water	6/19/2003	8	SW6010
0513-GW-03	Water	6/19/2003	8	SW7470
0513-GW-03	Water	6/19/2003	8	SW8082
0513-GW-03	Water	6/19/2003	8	SW8260
0513-GW-01	Water	6/19/2003	8	CATFH
0513-GW-01	Water	6/19/2003	8	SW6010
0513-GW-01	Water	6/19/2003	8	SW7470
0513-GW-01	Water	6/19/2003	8	SW8082
0513-GW-01	Water	6/19/2003	8	SW8260
0513-GW-01	Water	6/19/2003	8	SW8310
0156-GW-04	Water	6/19/2003	8	CATFH
0156-GW-04	Water	6/19/2003	8	SW6010
0156-GW-04	Water	6/19/2003	8	SW7470
0156-GW-04	Water	6/19/2003	8	SW8082
0156-GW-04	Water	6/19/2003	8	SW8260
0156-GW-04	Water	6/19/2003	8	SW8310
0120-GW-79	Water	7/11/2003	8	A2340B
0120-GW-79	Water	7/11/2003	8	E160.1
0120-GW-79	Water	7/11/2003	8	E310.1
0120-GW-79	Water	7/11/2003	8	E325.3
0120-GW-79	Water	7/11/2003	8	SW6010
0120-GW-111	Water	8/27/2003	1.1	CATFH
0120-GW-111	Water	8/27/2003	1.1	SW6010
0120-GW-111	Water	8/27/2003	1.1	SW7470
0120-GW-110	Water	8/27/2003	1.1	SW7196
P3	Water	2/24/1998		EPA 8260
P3	Water	1/1/2000		EPA 8260
MW-C3	Water	1/28/1992		EPA 8015 M
MW-C3	Water	2/1/1992		EPA 8015 M
MW-C2	Water	1/28/1992		EPA 8015 M
MW-C2	Water	2/18/1992		EPA 8015 M
MW-C1	Water	1/28/1992		EPA 8015 M
MW-C1	Water	2/18/1992		EPA 8015 M
MW-6-06130	Water	6/13/2003		CATFH
MW-5-06130	Water	6/13/2003		CATFH
MW-3-06130	Water	6/13/2003		CATFH
MW-2-06130	Water	6/13/2003		CATFH
GT4	Water	2/25/1998		EPA 8015 M
GT3	Water	2/25/1998		EPA 8015 M
GT2	Water	2/25/1998		EPA 8015 M
BLD120-MW-3	Water	2/25/2002		EPA 6010
BLD120-MW-2	Water	2/25/2002		EPA 6010
BLD120-MW-1	Water	3/25/1993		EPA 6010
BLD120-MW-1	Water	2/25/2002		EPA 6010
BLD102-MW-3	Water	2/6/2001		EPA 8015 M
BLD102-MW-2	Water	2/6/2001		EPA 8015 M

Table 2
Data Points Excluded in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Date	Matrix	Method	Rationale
30E-201	3/5/2002	Soil	EPA 8080	Sediment Data - Not pertinent. Outdated EPA method
0105-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0111-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0120-40-01	9/23/2003	Building Materials	SW8082	Bldg Material Sample - Not pertinent
0120-40-02	9/23/2003	Building Materials	SW8082	Bldg Material Sample - Not pertinent
0120-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-03	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-04	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-05	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-06	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-07	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-08	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-CC-09	6/27/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0120-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0120-PC-02	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0126-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0128-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0130-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0130-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0131-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0131-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0140-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0142-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0146-GW-52	6/25/2003	Water	CATFH	Newer data in vicinity
0147-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0147-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0150-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0150-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0152-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0152-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0152-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0152-PC-02	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0156-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0156-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0157-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0157-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0158-GW-16	6/20/2003	Soil	CATFH	2003 Haley and Aldrich, newer data in vicinity
0158-GW-16	6/20/2003	Soil	SW6010	2003 Haley and Aldrich, newer data in vicinity
0158-GW-16	6/20/2003	Soil	SW7196	2003 Haley and Aldrich, newer data in vicinity
0158-GW-16	6/20/2003	Soil	SW7471	2003 Haley and Aldrich, newer data in vicinity

Table 2
Data Points Excluded in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Date	Matrix	Method	Rationale
0158-GW-16	6/20/2003	Soil	SW8260	2003 Haley and Aldrich, newer data in vicinity
0158-GW-16	6/20/2003	Soil	SW9010	2003 Haley and Aldrich, newer data in vicinity
0158-GW-16	6/20/2003	Soil	SW9045	2003 Haley and Aldrich, newer data in vicinity
0161-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0161-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0161-CC-03	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0161-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0166-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0167-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0167-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0168-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0180-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0182-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0183-PC-01	6/27/2003	Paint Chip	SW8082	Bldg Material sample - Not Pertinent
0228-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0228-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0245-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0EXA-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0EXA-CC-02	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
0TC4-CC-01	6/26/2003	Cement	SW8082	Bldg Material sample - Not Pertinent
115 #1	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
115 #2	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
115 #3	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
120EB	2/4/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120EB	3/22/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120EB	4/19/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120NB	6/19/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120NB	7/11/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120NB	7/28/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120NB	8/15/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120NB	10/20/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120NB	6/19/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120NB	7/11/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120NB	7/28/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120NB	8/15/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120NB	10/20/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120SB	6/19/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120SB	7/11/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120SB	7/28/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120SB	8/15/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old

Table 2
Data Points Excluded in Risk Assessment
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Location	Date	Matrix	Method	Rationale
120SB	10/20/1991	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
120SB	6/19/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120SB	7/11/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120SB	7/28/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120SB	8/15/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120SB	10/20/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120WB	6/19/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120WB	7/11/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120WB	7/28/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
120WB	8/15/1991	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
142EAP	2/25/1998	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
142NC	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
142SC	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
142WEP	2/25/1998	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
142WEP	2/25/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
142WFP	2/25/1998	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
142WGP	2/25/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
142WGP	2/25/1998	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
150-2	12/2/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150-2	12/2/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150-3	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150-3	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150-4	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150-4	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150EE-1	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150EE-2	12/2/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150EE-3	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
150EE-4	12/9/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
151-1	12/9/1989	Soil	EPA 8260	Data greater than 10 years old.
151-2	12/9/1989	Soil	EPA 8260	Data greater than 10 years old.
151-3	12/9/1989	Soil	EPA 8260	Data greater than 10 years old.
151-3C	12/9/1988	Soil	EPA 8080	Data greater than 10 years old. Outdated EPA method.
151-4	12/9/1989	Soil	EPA 8260	Data greater than 10 years old.
151E-3	12/9/1988	Soil	EPA 8080	Data greater than 10 years old. Out dated EPA method
30E-144	3/5/2002	Soil	EPA 8080	Sediment Data - Not pertinent. Outdated EPA method
30E-147	3/5/2002	Soil	EPA 8080	Sediment Data - Not pertinent. Outdated EPA method
30E-152	3/5/2002	Soil	EPA 8080	Sediment Data - Not pertinent. Outdated EPA method
30E-154	3/5/2002	Soil	EPA 8080	Sediment Data - Not pertinent. Outdated EPA method
30E-161	4/9/2002	Soil	EPA 8080	Sediment Data - Not pertinent. Outdated EPA method
30W-O	3/5/2002	Soil	EPA 8080	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9. Outdated EPA method

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
3117-01	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-02	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-03	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-04	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-05	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-06	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-07	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-08	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-09	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
3117-14	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
536 #1	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
536 #2	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
536 #3	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
54-20	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
54-29	3/7/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
54-63	3/7/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
54-O	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-124	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-131-L	3/7/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-131-T	3/7/1997	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-133-L	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-133-T1	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-133-T2	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-135	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-89	3/7/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
60-O	3/5/2002	Soil	EPA 8080	Old storm drain data. Old EPA method, no longer used
BLD102-B-1	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-B-2	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-1	1/1/2000	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-1	1/1/2000	Ground Water	EPA 8260	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-1	2/6/2001	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-1	2/6/2001	Ground Water	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-1	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-2	12/17/1991	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-2	1/1/2000	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-2	12/17/1991	Ground Water	EPA 8260	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-2	1/1/2000	Ground Water	EPA 8260	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-2	2/6/2001	Ground Water	EPA 8260	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-2	12/17/1991	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-2	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
BLD102-MW-2	2/6/2001	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-3	12/17/1991	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-3	2/25/1998	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-3	1/1/2000	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-3	12/17/1991	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-3	2/25/1998	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-3	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-3	2/6/2001	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-3	12/17/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-3	2/25/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-3	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-3	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-4	12/17/1991	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-4	1/1/2000	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-4	12/17/1991	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-4	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-4	2/6/2001	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-4	12/17/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-4	2/6/2001	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
BLD102-MW-4	1/1/2000	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity
BLD102-MW-4	2/6/2001	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity
BLD102-MW-5	12/17/1991	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-5	2/6/2001	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-5	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-5	12/17/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD102-MW-6	12/17/1991	Ground Water	EPA 8015 M	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-6	12/17/1991	Ground Water	EPA 8260	2001 data Haley and Aldrich newer data in vicinity
BLD102-MW-6	2/6/2001	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
BLD102-MW-6	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD120-B3	10/5/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD120-B4	10/5/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD120-MW-1	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD120-MW-1	2/25/2002	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD120-MW-1	3/25/1993	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
BLD120-MW-1	2/25/2002	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity
BLD120-MW-2	3/25/1993	Ground Water	EPA 6010	2002 data
BLD120-MW-2	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD120-MW-2	2/25/2002	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity
BLD120-MW-2	3/25/1993	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity
BLD120-MW-2	2/25/2002	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
BLD120-MW-3	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
BLD120-MW-3	2/25/2002	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
BLD120-MW-3	3/25/1993	Ground Water	EPA 6010	2005 Geosyntec, newer data in vicinity
BLD120-MW-3	3/25/1993	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity
BLD120-MW-3	2/25/2002	Ground Water	EPA 8260	2007 Geosyntec, newer data in vicinity
BLD125-B-5	10/5/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
BLD125-B-6	10/5/1989	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old.
BLD142-B1	12/21/1992	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B1	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B2	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B3	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B4	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B5	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B6	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-B7	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW1	6/28/1993	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW1	7/8/1993	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW1	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW1	7/8/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW2	6/28/1993	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW2	7/8/1993	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW2	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW2	7/8/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW3	6/28/1993	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW3	7/8/1993	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW3	6/28/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD156-MW3	7/8/1993	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B1	9/30/1992	Soil	EPA 6010	2002 Haley and Aldrich, newer data in vicinity
BLD158-B1A	7/23/2002	Soil	EPA 6010	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B1A	7/23/2002	Soil	SW7196	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B2	9/30/1992	Soil	EPA 6010	2002 Haley and Aldrich, newer data in vicinity
BLD158-B2A	7/23/2002	Soil	EPA 6010	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B2A	7/23/2002	Soil	SW7196	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B3	9/30/1992	Soil	EPA 6010	2002 Haley and Aldrich, newer data in vicinity
BLD158-B3A	7/23/2002	Soil	EPA 6010	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B3A	7/23/2002	Soil	SW7196	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B4	9/30/1992	Soil	EPA 6010	2002 Haley and Aldrich, newer data in vicinity
BLD158-B4A	7/23/2002	Soil	EPA 6010	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B4A	7/23/2002	Soil	SW7196	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B5	9/30/1992	Soil	EPA 6010	2002 Haley and Aldrich, newer data in vicinity

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
BLD158-B5A	7/23/2002	Soil	EPA 6010	2003 Haley and Aldrich, newer data in vicinity.
BLD158-B5A	7/23/2002	Soil	SW7196	2003 Haley and Aldrich, newer data in vicinity.
CB-022	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-037	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-038	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-039	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-040	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-041	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-042	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-043	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-045	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-047	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-048	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-055	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-056	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-057	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-058	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-063	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-064	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-066	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-067	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-068	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-070	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-076	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-077	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-083	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-089	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-091	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-092	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-093	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-095	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-096	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-097	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-099	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-102	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-103	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-104	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-105	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-123	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-124	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
CB-131	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-132	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-133	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-134	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-135	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-141	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-143	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-144	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-145	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-146	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-147	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-150	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-151	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-152	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-153	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-154	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-155	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-159	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-160	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-161	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-168	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-169	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-170	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-171	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-172	6/5/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-173	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-174	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-175	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-181	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-182	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-187	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-188	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-190	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-191	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-192	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-193	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-194	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-196	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-200	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-202	5/28/2003	Soil	SW8082	Sediment Data- Not pertinent

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Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
CB-204	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-205	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
CB-206	5/29/2003	Soil	SW8082	Sediment Data- Not pertinent
GT1	12/21/1992	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT1	2/6/2001	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT1	12/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT1	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT2	12/21/1992	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT2	2/25/1998	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT2	12/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT2	2/25/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT2	12/21/1992	Ground Water	EPA 8015 M	Newer data not available
GT3	12/21/1992	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT3	2/25/1998	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT3	12/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT3	2/25/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT3	12/21/1992	Ground Water	EPA 8015 M	Newer data not available
GT4	12/21/1992	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT4	2/25/1998	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
GT4	12/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT4	2/25/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
GT4	12/21/1992	Ground Water	EPA 8015 M	Newer data not available
MW-01-0613	6/13/2003	Soil	SW8082	Unknown depth
MW-2-06130	6/13/2003	Ground Water	SW8260	2005 Geosyntec, newer data in vicinity
MW-3-06130	6/13/2003	Ground Water	SW8260	2005 Geosyntec, newer data in vicinity
MW-4-06130	6/13/2003	Ground Water	CATFH	2005 Geosyntec, newer data in vicinity
MW-4-06130	6/13/2003	Ground Water	SW8260	2005 Geosyntec, newer data in vicinity
MW-5-06130	6/13/2003	Ground Water	SW8260	2005 Geosyntec, newer data in vicinity
MW-6-06130	6/13/2003	Ground Water	SW8260	2005 Geosyntec, newer data in vicinity
MW-A1	1/29/1992	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
MW-A1	2/18/1992	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
MWB1	2/18/1992	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
MWB1	2/18/1992	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
MWB1	1/1/2000	Ground Water	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity. Tank removal data, USTs 7 8 9.
P1	2/23/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
P1	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
P2	2/24/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
P2	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
P3	2/24/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
SDE	2/21/1992	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity

Table 2
Data Points Excluded in Risk Assessment
Site Wide Risk Assessment
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Location	Date	Matrix	Method	Rationale
SDE	2/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
SDW	2/21/1992	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
SDW	2/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4ECP	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4ECP	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4ECP	1/1/2000	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4ECP	2/6/2001	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EDP	2/24/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EDP	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EDP	2/24/1998	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EDP	1/1/2000	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EEP	1/5/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EEP	2/24/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EEP	1/5/1991	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EEP	2/24/1998	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EGP	2/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EGP	2/21/1992	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EHP	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EHP	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EHP	1/1/2000	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EHP	2/6/2001	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EIP	1/5/1991	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EIP	2/21/1992	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EIP	1/5/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EIP	2/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4EIP	1/5/1991	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EIP	2/21/1992	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4EJP	4/12/1991	Ground Water	EPA 8260	Offsite well associated with airport
TC4EJP	4/12/1991	Soil	EPA 8015 M	Offsite well associated with airport
TC4EJP	1/1/2000	Ground Water	EPA 8260	Offsite well associated with airport
TC4EJP	1/1/2000	Soil	EPA 8015 M	Offsite well associated with airport
TC4EJP	2/6/2001	Ground Water	EPA 8260	Offsite well associated with airport
TC4EJP	2/6/2001	Soil	EPA 8015 M	Offsite well associated with airport
TC4ENC	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4ESC	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4SW	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WCP	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WCP	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WCP	1/1/2000	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WCP	2/6/2001	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
TC4WDP	1/1/2000	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WDP	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WDP	1/1/2000	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WDP	2/6/2001	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WEP	2/21/1992	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WEP	2/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WFP	2/21/1992	Ground Water	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WFP	2/21/1992	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WHP	1/5/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WHP	2/23/1998	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WHP	1/5/1991	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WHP	2/23/1998	Soil	EPA 8015 M	2005 Geosyntec, newer data in vicinity
TC4WIP	4/12/1991	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WIP	4/12/1991	Soil	EPA 8015 M	Offsite well associated with airport
TC4WIP	1/1/2000	Ground Water	EPA 8260	Offsite well associated with airport
TC4WIP	1/1/2000	Soil	EPA 8015 M	Offsite well associated with airport
TC4WIP	2/6/2001	Ground Water	EPA 8260	Offsite well associated with airport
TC4WIP	2/6/2001	Soil	EPA 8015 M	Offsite well associated with airport
TC4WNC	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TC4WSC	2/6/2001	Ground Water	EPA 8260	2005 Geosyntec, newer data in vicinity
TR-102	1/9/1989	Soil	EPA 8080	Outdated EPA method
TR-106	1/9/1989	Soil	EPA 8080	Outdated EPA method
TR-157 #1	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
TR-157 #2	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
TR-157 #3	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
TR-17&18	8/1/1986	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
TR-51	11/22/1988	Soil	EPA 8080	Outdated EPA method
TR-56	11/28/1988	Soil	EPA 8080	Outdated EPA method
TR-56	11/28/1988	Soil	EPA 8260	Soil removed during storm drain installation
TR-59	11/29/1988	Soil	EPA 8080	Outdated EPA method
TR-59	11/29/1988	Soil	EPA 8260	Soil removed during storm drain installation
TR-64	11/30/1988	Soil	EPA 8260	Soil removed during storm drain installation
TR-67	11/30/1988	Soil	EPA 8080	Outdated EPA method
TR-67	11/30/1988	Soil	EPA 8260	Soil removed during storm drain installation
TR-69	11/30/1988	Soil	EPA 8080	Outdated EPA method
TR-69	11/30/1988	Soil	EPA 8260	Soil removed during storm drain installation
TR-70	11/30/1988	Soil	EPA 8080	Outdated EPA method
TR-72	11/30/1988	Soil	EPA 8260	Soil removed during storm drain installation
TR8&9	7/1/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR8&9	1/1/2000	Soil	EPA 8015 M	Sample removed results not representative of current site conditions

Table 2
Data Points Excluded in Risk Assessment
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Location	Date	Matrix	Method	Rationale
TR-86	12/30/1988	Soil	EPA 8080	Outdated EPA method
TR-93	1/3/1989	Soil	EPA 8080	Outdated EPA method
TR-96	1/5/1989	Soil	EPA 8080	Outdated EPA method
TR-AGST	5/7/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-AR1	5/28/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-AR2	5/28/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TRIP BLANK	6/13/2003	Water	SW8260	Blank
TR-JP-4&5	5/7/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-PP4	5/15/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-PP-42	5/16/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-PT	5/16/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-SDE-L	2/6/2001	Ground Water	EPA 8260	Sample removed results not representative of current site conditions
TR-SDW-L	2/6/2001	Ground Water	EPA 8260	Sample removed results not representative of current site conditions
TR-SP	5/15/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-SP	5/16/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-TC#1	5/28/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-TC#2	5/15/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-U10	5/16/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-V14	5/16/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
TR-WT	5/7/1986	Soil	EPA 8015 M	Sample removed results not representative of current site conditions
VS-1	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-10	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-11	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-12	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-13	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-14	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-15	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-2	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-3	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-4	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-5	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-6	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-7	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-8	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
VS-9	3/25/1993	Soil	EPA 8260	2003 Haley and Aldrich, newer data in vicinity. Data greater than 10 years old
XBB2	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity
XBB3	1/1/2000	Soil	EPA 8015 M	2003 Haley and Aldrich, newer data in vicinity

Table 3
Summary of Soil Matrix Analytes and Methods
Site Wide Risk Assessment
2701 Harbor Drive
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Method	Soil Matrix Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
Cyanide					
EPA 9010	Cyanide (Amenable)	0.080	mg/Kg	X	d
EPA 9010	Cyanide (Total)	0.080	mg/Kg	X	d
Metals					
EPA 6010	Antimony	0.300	mg/Kg	X	d
EPA 6010	Arsenic	0.400	mg/Kg	X	d
EPA 6010	Barium	5.9	mg/Kg	X	d
EPA 6010	Beryllium	1.0	mg/Kg		RL
EPA 6010	Cadmium	0.060	mg/Kg	X	d
EPA 6010	Chromium	1.8	mg/Kg	X	d
EPA 7196	Chromium, hexavalent	0.040	mg/Kg	X	d
EPA 6010	Cobalt	0.500	mg/Kg	X	d
EPA 6010	Copper	0.200	mg/Kg	X	d
EPA 6010	Lead	0.600	mg/Kg	X	d
EPA 7471	Mercury	0.030	mg/Kg	X	d
EPA 6010	Molybdenum	0.100	mg/Kg	X	d
EPA 6010	Nickel	0.700	mg/Kg	X	d
EPA 6010	Selenium	0.400	mg/Kg	X	d
EPA 6010	Silver	1.4	mg/Kg	X	d
EPA 6010	Thallium	1.0	mg/Kg		RL
EPA 6010	Vanadium	3.0	mg/Kg	X	d
EPA 6010	Zinc	2.0	mg/Kg	X	d
PAHs					
EPA 8310	Acenaphthene	0.367	mg/Kg	X	d
EPA 8310	Anthracene	0.010	mg/Kg	X	d
EPA 8310	Benzo(a)anthracene	0.011	mg/Kg	X	d
EPA 8310	Benzo(a)pyrene	0.012	mg/Kg	X	d
EPA 8310	Benzo(b and k)fluoranthenes	0.012	mg/Kg	X	d
EPA 8310	Benzo(g,h,i)perylene	0.019	mg/Kg	X	d
EPA 8310	Benzo(k)fluoranthene	0.013	mg/Kg	X	d
EPA 8310	Chrysene	0.015	mg/Kg	X	d
EPA 8310	Dibenz(a,h)anthracene	0.080	mg/Kg	X	d
EPA 8310	Fluoranthene	0.029	mg/Kg	X	d
EPA 8310	Fluorene	0.674	mg/Kg	X	d
EPA 8310	Indeno(1,2,3-cd)pyrene	0.012	mg/Kg	X	d
EPA 8310	Naphthalene	0.008	mg/Kg	X	d
EPA 8310	Phenanthrene	0.012	mg/Kg	X	d
EPA 8310	Pyrene	0.011	mg/Kg	X	d
PCBs					
EPA 8082	Aroclor 1016	30	ug/Kg	X	d
EPA 8082	Aroclor 1221	67	ug/Kg		RL
EPA 8082	Aroclor 1232	33	ug/Kg		RL
EPA 8082	Aroclor 1242	160	ug/Kg	X	d
EPA 8082	Aroclor 1248	30	ug/Kg	X	d
EPA 8082	Aroclor 1254	30	ug/Kg	X	d
EPA 8082	Aroclor 1260	1.0	ug/Kg	X	d
EPA 8082	Aroclor 1262	37	ug/Kg	X	d
EPA 8082	Aroclor 1268	33	ug/Kg		RL

Table 3
Summary of Soil Matrix Analytes and Methods
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Method	Soil Matrix Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
Perchlorate					
EPA 314.0	Perchlorate	91	ug/Kg	X	d
SVOCs					
EPA 8270	1,2,4-Trichlorobenzene	5	ug/Kg	X	d
EPA 8270	1,2-Dichlorobenzene	330	ug/Kg		RL
EPA 8270	1,2-Diphenylhydrazine	330	ug/Kg		RL
EPA 8330	1,3,5-Trinitrobenzene	50	ug/kg		RL
EPA 8270	1,3-Dichlorobenzene	330	ug/Kg		RL
EPA 8270	1,4-Dichlorobenzene	2.9	ug/Kg	X	d
EPA 8270	1,4-Dioxane	90	ug/Kg	X	d
EPA 8270	2,2'-oxybis(1-Chloropropane)	330	ug/Kg		RL
EPA 8270	2,4,5-Trichlorophenol	330	ug/Kg		RL
EPA 8270	2,4,6-Trichlorophenol	330	ug/Kg		RL
EPA 8330	2,4,6-Trinitrotoluene	50	ug/kg		RL
EPA 8270	2,4-Dichlorophenol	1600	ug/Kg		RL
EPA 8270	2,4-Dimethylphenol	330	ug/Kg		RL
EPA 8270	2,4-Dinitrophenol	1600	ug/Kg		RL
EPA 8330	2,4-Dinitrotoluene	50	ug/kg		RL
EPA 8330	2,6-Dinitrotoluene	50	ug/kg		RL
EPA 8330	2-Amino-4,6-Dinitrotoluene	50	ug/kg		RL
EPA 8270	2-Chloronaphthalene	330	ug/Kg		RL
EPA 8270	2-Chlorophenol	330	ug/Kg		RL
EPA 8270	2-Methylnaphthalene	53000	ug/Kg	X	d
EPA 8270	2-Methylphenol	330	ug/Kg		RL
EPA 8270	2-Nitroaniline	1600	ug/Kg		RL
EPA 8270	2-Nitrophenol	330	ug/Kg		RL
EPA 8330	2-Nitrotoluene	16	ug/kg		RL
EPA 8270	3,3'-Dichlorobenzidine	660	ug/Kg		RL
EPA 8270	3/4-Methylphenol	330	ug/Kg		RL
EPA 8270	3-Nitroaniline	1600	ug/Kg		RL
EPA 8330	3-Nitrotoluene	10	ug/kg		RL
EPA 8270	4,6-Dinitro-2-methylphenol	1600	ug/Kg		RL
EPA 8330	4-Amino-2,6-dinitrotoluene	50	ug/kg		RL
EPA 8270	4-Bromophenyl phenyl ether	330	ug/Kg		RL
EPA 8270	4-Chloro-3-methylphenol	660	ug/Kg		RL
EPA 8270	4-Chloroaniline	660	ug/Kg		RL
EPA 8270	4-Chlorophenyl phenyl ether	330	ug/Kg		RL
EPA 8270	4-Nitroaniline	1600	ug/Kg		RL
EPA 8270	4-Nitrophenol	1600	ug/Kg		RL
EPA 8330	4-Nitrotoluene	24	ug/kg		RL
EPA 8270	Acenaphthene	367	ug/Kg	X	d
EPA 8270	Acenaphthylene	330	ug/Kg		RL
EPA 8270	Aniline	330	ug/Kg		RL
EPA 8270	Anthracene	10	ug/Kg	X	d
EPA 8270	Benzidine	1600	ug/Kg		RL
EPA 8270	Benzo(a)anthracene	330	ug/Kg		RL
EPA 8270	Benzo(a)pyrene	12	ug/Kg	X	d
EPA 8270	Benzo(b and k)fluoranthenes	330	ug/Kg		RL
EPA 8270	Benzo(g,h,i)perylene	19	ug/Kg	X	d

Table 3
Summary of Soil Matrix Analytes and Methods
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Method	Soil Matrix Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8270	Benzo(k)fluoranthene	13	ug/Kg	X	d
EPA 8270	Benzoic acid	1600	ug/Kg		RL
EPA 8270	Benzyl alcohol	660	ug/Kg		RL
EPA 8270	bis(2-Chloroethoxy)methane	330	ug/Kg		RL
EPA 8270	bis(2-Chloroethyl)ether	330	ug/Kg		RL
EPA 8270	bis(2-Ethylhexyl)phthalate	330	ug/Kg		RL
EPA 8270	Butyl Benzyl phthalate	330	ug/Kg		RL
EPA 8270	Carbazole	330	ug/Kg		RL
EPA 8270	Chrysene	15	ug/Kg	X	d
EPA 8270	Dibenz(a,h)anthracene	80	ug/Kg	X	d
EPA 8270	Dibenzofuran	330	ug/Kg		RL
EPA 8270	Diethyl phthalate	330	ug/Kg		RL
EPA 8270	Dimethyl phthalate	330	ug/Kg		RL
EPA 8270	Di-n-Butyl phthalate	330	ug/Kg		RL
EPA 8270	Di-n-Octyl phthalate	330	ug/Kg		RL
EPA 8270	Fluoranthene	29	ug/Kg	X	d
EPA 8270	Fluorene	674	ug/Kg	X	d
EPA 8270	Hexachlorobenzene	330	ug/Kg		RL
EPA 8270	Hexachlorobutadiene	18	ug/Kg	X	d
EPA 8270	Hexachlorocyclopentadiene	660	ug/Kg		RL
EPA 8270	Hexachloroethane	330	ug/Kg		RL
EPA 8270	Indeno(1,2,3-cd)pyrene	330	ug/Kg		RL
EPA 8270	Isophorone	12	ug/Kg	X	d
EPA 8330	m-Dinitrobenzene	50	ug/kg		RL
EPA 8270	Naphthalene	8.3	ug/Kg	X	d
EPA 8330	Nitrobenzene	50	ug/kg		RL
EPA 8270	N-Nitrosodimethylamine	330	ug/Kg		RL
EPA 8270	N-Nitroso-di-n-propylamine	330	ug/Kg		RL
EPA 8270	N-Nitrosodiphenylamine	330	ug/Kg		RL
EPA 8270	Pentachlorophenol	1600	ug/Kg		RL
EPA 8270	Phenanthrene	12	ug/Kg	X	d
EPA 8270	Phenol	90	ug/Kg	X	d
EPA 8270	Pyrene	11	ug/Kg	X	d
EPA 8270	Pyridine	1600	ug/Kg		RL
EPA 8330	Tetryl	50	ug/kg		RL
TPH					
EPA 8015M	T/R Hydrocarbons: C13 - C22 DRO	12	mg/Kg		RL
EPA 8015M	T/R Hydrocarbons: C23 - C36 HRO	0.012	mg/Kg	X	d
EPA 8015M	T/R Hydrocarbons: C6 - C12 GRO	2.5	mg/Kg	X	d
CATFH	TPH (C10-C12)	0.400	mg/Kg	X	d
CATFH	TPH (C13-C15)	0.300	mg/Kg	X	d
CATFH	TPH (C16-C22)	0.080	mg/Kg	X	d
CATFH	TPH (C23-C32)	0.400	mg/Kg	X	d
CATFH	TPH (C32+)	1.0	mg/Kg	X	d
CATFH	TPH (C5-C12)	0.300	mg/Kg	X	d
VOCs					
EPA 8260	1,1,1,2-Tetrachloroethane	5.0	ug/Kg		RL
EPA 8260	1,1,1-Trichloroethane	2.0	ug/Kg	X	d
EPA 8260	1,1,2,2-Tetrachloroethane	5.0	ug/Kg		RL

Table 3
Summary of Soil Matrix Analytes and Methods
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Method	Soil Matrix Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8260	1,1,2-Trichloroethane	5.0	ug/Kg		RL
EPA 8260	1,1,2-Trichlorotrifluoroethane	5.0	ug/Kg		RL
EPA 8260	1,1-Dichloroethane	3.0	ug/Kg	X	d
EPA 8260	1,1-Dichloroethene	5.0	ug/Kg		RL
EPA 8260	1,1-Dichloropropene	3.0	ug/Kg	X	d
EPA 8260	1,2,3-Trichlorobenzene	5.0	ug/Kg		RL
EPA 8260	1,2,3-Trichloropropane	5.0	ug/Kg		RL
EPA 8260	1,2,4-Trichlorobenzene	5.0	ug/Kg		RL
EPA 8260	1,2,4-Trimethylbenzene	5.0	ug/Kg	X	d
EPA 8260B	1,2-Dibromo-3-chloropropane	5.5	ug/Kg		RL
EPA 8260	1,2-Dibromoethane	5.0	ug/Kg		RL
EPA 8260	1,2-Dichlorobenzene	5.0	ug/Kg		RL
EPA 8260	1,2-Dichloroethane	5.0	ug/Kg		RL
EPA 8260	1,2-Dichloropropane	5.0	ug/Kg		RL
EPA 8260	1,3,5-Trimethylbenzene	2.0	ug/Kg	X	d
EPA 8260	1,3-Dichlorobenzene	5.0	ug/Kg		RL
EPA 8260	1,3-Dichloropropane	5.0	ug/Kg		RL
EPA 8260B	1,4-Dichlorobenzene	2.9	ug/Kg	X	d
EPA 8260	2,2-Dichloropropane	5.0	ug/Kg		RL
EPA 8260B	2-Butanone	22	ug/Kg		RL
EPA 8260	2-Chloroethyl vinyl ether	5.0	ug/Kg		RL
EPA 8260	2-Chlorotoluene	5.0	ug/Kg		RL
EPA 8260B	2-Hexanone	22	ug/Kg		RL
EPA 8260	4-Chlorotoluene	5.0	ug/Kg		RL
EPA 8260B	4-Methyl-2-pentanone	22	ug/Kg		RL
EPA 8260B	Acetone	7.3	ug/Kg	X	d
EPA 8260	Acrolein	50	ug/Kg		RL
EPA 8260	Acrylonitrile	50	ug/Kg		RL
EPA 8260	Benzene	2.0	ug/Kg	X	d
EPA 8260	Bromobenzene	5.0	ug/Kg		RL
EPA 8260	Bromochloromethane	5.0	ug/Kg		RL
EPA 8260	Bromodichloromethane	5.0	ug/Kg		RL
EPA 8260	Bromoform	5.0	ug/Kg		RL
EPA 8260	Bromomethane	5.0	ug/Kg		RL
EPA 8260	Carbon disulfide	3.0	ug/Kg	X	d
EPA 8260	Carbon tetrachloride	5.0	ug/Kg		RL
EPA 8260	Chlorobenzene	1.0	ug/Kg	X	d
EPA 8260	Chlorodibromomethane	5.0	ug/Kg		RL
EPA 8260	Chloroethane	5.0	ug/Kg		RL
EPA 8260	Chloroform	4.0	ug/Kg	X	d
EPA 8260	Chloromethane	5.0	ug/Kg		RL
EPA 8260	cis-1,2-Dichloroethene	3.0	ug/Kg	X	d
EPA 8260	cis-1,3-Dichloropropene	5.0	ug/Kg		RL
EPA 8260	Cyclohexanone	50	ug/Kg		RL
EPA 8260	Dibromofluoromethane	38	ug/Kg	X	d
EPA 8260	Dibromomethane	2.0	ug/Kg	X	d
EPA 8260	Dichlorodifluoromethane (Freon 12)	5.0	ug/Kg		RL
EPA 8260	Diisopropyl ether	1.0	ug/Kg	X	d
EPA 8260	Ethyl acetate	50	ug/Kg		RL

Table 3
Summary of Soil Matrix Analytes and Methods
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Method	Soil Matrix Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8260	Ethyl ether	50	ug/Kg		RL
EPA 8260	Ethyl tert-butyl ether (ETBE)	5.0	ug/Kg		RL
EPA 8260	Ethylbenzene	400.0	ug/Kg	X	d
EPA 8260	Hexachlorobutadiene	18	ug/Kg	X	d
EPA 8260	Isopropylbenzene	300	ug/Kg	X	d
EPA 8260	m/p-Xylene	4.0	ug/Kg	X	d/RL
EPA 8260	Methyl iodide	5.0	ug/Kg		RL
EPA 8260	Methyl tert-butyl ether (MTBE)	5.0	ug/Kg		RL
EPA 8260B	Methylene chloride	2.0	ug/Kg	X	d
EPA 8260	Naphthalene	8.3	ug/Kg	X	d
EPA 8260	n-Butylbenzene	520	ug/Kg	X	d
EPA 8260	n-Propylbenzene	200	ug/Kg	X	d
EPA 8260	o-Xylene	32	ug/Kg	X	d
EPA 8260	p-Isopropyltoluene (Cymene; 4-)	28	ug/Kg	X	d
EPA 8260	sec-Butylbenzene	3.0	ug/Kg	X	d
EPA 8260	Styrene	5.0	ug/Kg		RL
EPA 8260	tert-Amyl methyl ether (TAME)	5.0	ug/Kg		RL
EPA 8260	tert-Butyl alcohol	29	ug/Kg	X	d
EPA 8260	tert-Butylbenzene	4.0	ug/Kg	X	d
EPA 8260	Tetrachloroethene	2.0	ug/Kg	X	d
EPA 8260	Toluene	2.0	ug/Kg	X	d
EPA 8260	trans-1,2-Dichloroethene	7.4	ug/Kg	X	d
EPA 8260	trans-1,3-Dichloropropene	5.0	ug/Kg		RL
EPA 8260	Trichloroethene	2.0	ug/Kg	X	d
EPA 8260	Trichlorofluoromethane (Freon 11)	5.0	ug/Kg		RL
EPA 8260B	Vinyl acetate	22	ug/Kg		RL
EPA 8260	Vinyl chloride	4.0	ug/Kg	X	d
EPA 8260	Xylenes (total)	1100	ug/Kg	X	d

Notes:

" X " indicates that this chemical was detected

[(a)] Minimum value is either the minimum detected value ("d") and/or the minimum reporting limit ("RL")

Table 4
Summary of Soil Gas Analytes and Methods
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Method	Soil Gas Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8260B	1,1,1,2-Tetrachloroethane	0.500	ug/L		RL
EPA 8260B	1,1,1-Trichloroethane	0.520	ug/L	X	d
EPA 8260B	1,1,2,2-Tetrachloroethane	0.200	ug/L		RL
EPA 8260B	1,1,2-Trichloroethane	0.510	ug/L	X	d
EPA 8260B	1,1-Dichloroethane	0.510	ug/L	X	d
EPA 8260B	1,1-Dichloroethene	0.530	ug/L	X	d
EPA 8260B	1,1-Dichloropropene	0.200	ug/L		RL
EPA 8260B	1,2,3-Trichlorobenzene	0.200	ug/L		RL
EPA 8260B	1,2,3-Trichloropropane	0.200	ug/L		RL
EPA 8260B	1,2,4-Trichlorobenzene	0.200	ug/L		RL
EPA 8260B	1,2,4-Trimethylbenzene	0.200	ug/L		RL
EPA 8260B	1,2-Dibromo-3-chloropropane	0.600	ug/L		RL
EPA 8260B	1,2-Dibromoethane	0.200	ug/L		RL
EPA 8260B	1,2-Dichlorobenzene	1.6	ug/L		RL
EPA 8260B	1,2-Dichloroethane	0.270	ug/L	X	d
EPA 8260B	1,2-Dichloropropane	0.200	ug/L		RL
EPA 8260B	1,3,5-Trimethylbenzene	1.1	ug/L	X	d
EPA 8260B	1,3-Dichlorobenzene	0.500	ug/L		RL
EPA 8260B	1,3-Dichloropropane	0.200	ug/L		RL
EPA 8260B	1,4-Dichlorobenzene	0.200	ug/L		RL
EPA 8260B	2,2-Dichloropropane	0.200	ug/L		RL
EPA 8260B	2-Chlorotoluene	0.200	ug/L		RL
EPA 8260B	4-Chlorotoluene	0.200	ug/L		RL
EPA 8260B	Benzene	0.020	ug/L	X	d
EPA 8260B	Bromobenzene	0.200	ug/L		RL
EPA 8260B	Bromochloromethane	0.200	ug/L		RL
EPA 8260B	Bromodichloromethane	0.200	ug/L		RL
EPA 8260B	Bromoform	0.500	ug/L		RL
EPA 8260B	Bromomethane	0.530	ug/L	X	d
EPA 8260B	Carbon tetrachloride	0.530	ug/L	X	d
EPA 8260B	Chlorobenzene	2.3	ug/L		RL
EPA 8260B	Chlorodibromomethane	3.3	ug/L	X	d
EPA 8260B	Chloroethane	0.200	ug/L		RL
EPA 8260B	Chloroform	0.650	ug/L	X	d
EPA 8260B	Chloromethane	0.200	ug/L		RL
EPA 8260B	cis-1,2-Dichloroethene	0.510	ug/L	X	d
EPA 8260B	cis-1,3-Dichloropropene	0.200	ug/L		RL
EPA 8260B	Dibromomethane	0.200	ug/L		RL
EPA 8260B	Dichlorodifluoromethane	0.500	ug/L		RL
EPA 8260B	Diisopropyl ether	0.200	ug/L		RL
EPA 8260B	Ethyl tert-butyl ether (ETBE)	0.300	ug/L	X	d
EPA 8260B	Ethylbenzene	0.780	ug/L	X	d
EPA 8260B	Freon 113	0.590	ug/L	X	d
EPA 8260B	Hexachlorobutadiene	0.200	ug/L		RL
EPA 8260B	Isopropylbenzene	0.620	ug/L	X	d
EPA 8260B	m/p-Xylene	1.2	ug/L	X	d

Table 4
Summary of Soil Gas Analytes and Methods
Site Wide Risk Assessment
2701 Harbor Drive
San Diego, California

Method	Soil Gas Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8260B	Methyl tert-butyl ether (MTBE)	0.640	ug/L	X	d
EPA 8260B	Methylene chloride	0.500	ug/L		RL
EPA 8260B	Naphthalene	0.200	ug/L		RL
EPA 8260B	n-Butylbenzene	0.200	ug/L		RL
EPA 8260B	n-Propylbenzene	0.200	ug/L		RL
EPA 8260B	o-Xylene	1.6	ug/L	X	d
EPA 8260B	p-Isopropyltoluene (Cymene; 4-)	0.500	ug/L		RL
EPA 8260B	sec-Butylbenzene	0.500	ug/L		RL
EPA 8260B	Styrene	0.680	ug/L	X	d
EPA 8260B	tert-Amyl methyl ether (TAME)	0.200	ug/L		RL
EPA 8260B	tert-Butyl alcohol	6.7	ug/L	X	d
EPA 8260B	tert-Butylbenzene	0.200	ug/L		RL
EPA 8260B	Tetrachloroethene	0.510	ug/L	X	d
EPA 8260B	Toluene	0.510	ug/L	X	d
EPA 8260B	trans-1,2-Dichloroethene	0.540	ug/L	X	d
EPA 8260B	trans-1,3-Dichloropropene	0.200	ug/L		RL
EPA 8260B	Trichloroethene	0.300	ug/L	X	d
EPA 8260B	Trichlorofluoromethane	0.500	ug/L		RL
EPA 8260B	Vinyl chloride	0.003	ug/L	X	d

Notes:

" X " indicates that this chemical was detected

[(a)] Minimum value is either the minimum detected value ("d") and/or the minimum reporting limit ("RL")

Table 5
Summary of Groundwater Analytes and Methods
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Method	Groundwater Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
Cyanide					
EPA 335.1	Cyanide (Amenable)	0.050	mg/L		RL
EPA 335.2	Cyanide (Total)	0.005	mg/L	X	d
Metals					
EPA 6010	Antimony	0.030	mg/L	X	d
EPA 6020	Arsenic	0.0009	mg/L	X	d
EPA 6010	Barium	0.009	mg/L	X	d
EPA 6010	Beryllium	0.0003	mg/L	X	d
EPA 6010	Cadmium	0.003	mg/L	X	d
EPA 6010	Calcium	3.1	mg/L	X	d
EPA 6010	Chromium (Total)	0.002	mg/L	X	d
EPA 7196	Chromium VI	0.004	mg/L	X	d
EPA 6010	Cobalt	0.0008	mg/L	X	d
EPA 6010	Copper	0.002	mg/L	X	d
EPA 6010	Lead	0.031	mg/L	X	d
EPA 6010	Magnesium	0.460	mg/L	X	d
EPA 7470	Mercury	0.0002	mg/L		RL
EPA 6010	Molybdenum	0.004	mg/L	X	d
EPA 6010	Nickel	0.003	mg/L	X	d/RL
EPA 6020	Selenium	0.0007	mg/L	X	d
EPA 6010	Silver	0.003	mg/L		RL
EPA 6020	Thallium	0.00002	mg/L	X	d
EPA 6010	Vanadium	0.0008	mg/L	X	d
EPA 6010B	Zinc	0.005	mg/L	X	d
PAHs					
EPA 8310	Acenaphthene	0.200	ug/L		RL
EPA 8310	Acenaphthylene	2,520	ug/L	X	d
EPA 8310	Anthracene	0.200	ug/L		RL
EPA 8310	Benzo(a)anthracene	0.360	ug/L	X	d
EPA 8310	Benzo(a)pyrene	0.200	ug/L		RL
EPA 8310	Benzo(b and k)fluoranthenes	0.200	ug/L		RL
EPA 8310	Benzo(g,h,i)perylene	0.364	ug/L	X	d
EPA 8310	Benzo(k)fluoranthene	0.320	ug/L	X	d
EPA 8310	Chrysene	0.440	ug/L	X	d
EPA 8310	Dibenz(a,h)anthracene	0.200	ug/L		RL
EPA 8310	Fluoranthene	3.7	ug/L	X	d
EPA 8310	Fluorene	2.65	ug/L	X	d
EPA 8310	Indeno(1,2,3-cd)pyrene	0.280	ug/L	X	d
EPA 8310	Naphthalene	28	ug/L	X	d
EPA 8310	Phenanthrene	2.3	ug/L	X	d
EPA 8310	Pyrene	0.215	ug/L	X	d
PCBs					
EPA 8082	Aroclor 1016	1.1	ug/L	X	d
EPA 8082	Aroclor 1221	2.0	ug/L		RL
EPA 8082	Aroclor 1232	1.0	ug/L		RL
EPA 8082	Aroclor 1242	1.0	ug/L		RL

Table 5
Summary of Groundwater Analytes and Methods
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Method	Groundwater Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8082	Aroclor 1248	1.0	ug/L		RL
EPA 8082	Aroclor 1254	1.0	ug/L		RL
EPA 8082	Aroclor 1260	1.0	ug/L		RL
EPA 8082	Aroclor 1262	1.0	ug/L		RL
EPA 8082	Aroclor 1268	1.0	ug/L		RL
Perchlorate					
EPA 314.0	Perchlorate	1.0	ug/L		RL
SVOCs					
EPA 8270C	1,2,4-Trichlorobenzene	0.68	ug/L	X	d
EPA 8270C	1,2-Dichlorobenzene	0.1	ug/L	X	d
EPA 8270	1,2-Diphenylhydrazine	10	ug/L		RL
EPA 8330	1,3,5-Trinitrobenzene	0.047	ug/L		RL
EPA 8270C	1,3-Dichlorobenzene	0.1	ug/L	X	d
EPA 8270C	1,4-Dichlorobenzene	0.150	ug/L	X	d
EPA 8270C	1,4-Dioxane	0.630	ug/L	X	d
EPA 8270C	2,2'-oxybis(1-Chloropropane)	4.8	ug/L		RL
EPA 8270C	2,4,5-Trichlorophenol	4.8	ug/L		RL
EPA 8270C	2,4,6-Trichlorophenol	4.8	ug/L		RL
EPA 8330	2,4,6-Trinitrotoluene	0.063	ug/L		RL
EPA 8270C	2,4-Dichlorophenol	4.8	ug/L		RL
EPA 8270C	2,4-Dimethylphenol	9.5	ug/L		RL
EPA 8270C	2,4-Dinitrophenol	48	ug/L		RL
EPA 8330	2,4-Dinitrotoluene	0.078	ug/L		RL
EPA 8330	2,6-Dinitrotoluene	0.250	ug/L		RL
EPA 8330	2-Amino-4,6-Dinitrotoluene	0.250	ug/L		RL
EPA 8270C	2-Chloronaphthalene	4.8	ug/L		RL
EPA 8270C	2-Chlorophenol	4.8	ug/L		RL
EPA 8270C	2-Methylnaphthalene	0.660	ug/L	X	d
EPA 8270C	2-Methylphenol	4.8	ug/L		RL
EPA 8270C	2-Nitroaniline	19	ug/L		RL
EPA 8270C	2-Nitrophenol	4.8	ug/L		RL
EPA 8330	2-Nitrotoluene	0.250	ug/L		RL
EPA 8270C	3&4 Methylphenol total	8.9	ug/L	X	d
EPA 8270C	3,3'-Dichlorobenzidine	19	ug/L		RL
EPA 8270	3/4-Methylphenol	9.5	ug/L		RL
EPA 8270C	3-Nitroaniline	19	ug/L		RL
EPA 8330	3-Nitrotoluene	0.120	ug/l		RL
EPA 8270C	4,6-Dinitro-2-Methylphenol	19	ug/L		RL
EPA 8330	4-Amino-2,6-Dinitrotoluene	0.250	ug/L		RL
EPA 8270C	4-Bromophenyl phenyl ether	4.8	ug/L		RL
EPA 8270C	4-Chloro-3-methylphenol	1.9	ug/L	X	d
EPA 8270C	4-Chloroaniline	4.8	ug/L		RL
EPA 8270C	4-Chlorophenyl phenyl ether	4.8	ug/L		RL
EPA 8270C	4-Nitroaniline	19	ug/L		RL
EPA 8270C	4-Nitrophenol	48	ug/L		RL
EPA 8330	4-Nitrotoluene	0.095	ug/L		RL

Table 5
Summary of Groundwater Analytes and Methods
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Method	Groundwater Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8270C	Acenaphthene	4.8	ug/L		RL
EPA 8270C	Acenaphthylene	4.8	ug/L		RL
EPA 8270C	Aniline	0.710	ug/L	X	d
EPA 8270C	Anthracene	4.8	ug/L		RL
EPA 8270	Benzidine	50	ug/L		RL
EPA 8270C	Benzo(a)anthracene	0.364	ug/L	X	d
EPA 8270C	Benzo(a)pyrene	3.1	ug/L	X	d
EPA 8270C	Benzo(b and k)fluoranthenes	4.8	ug/L		RL
EPA 8270C	Benzo(g,h,i)perylene	0.380	ug/L	X	d
EPA 8270C	Benzo(k)fluoranthene	0.32	ug/L	x	d
EPA 8270C	Benzoic Acid	3.6	ug/L	X	d
EPA 8270C	Benzyl Alcohol	9.5	ug/L		RL
EPA 8270C	bis(2-Chloroethoxy) Methane	4.8	ug/L		RL
EPA 8270C	bis(2-Chloroethyl) Ether	4.8	ug/L		RL
EPA 8270	bis(2-Ethylhexyl) Phthalate	1.0	ug/L	X	d
EPA 8270C	Butyl Benzyl Phthalate	4.8	ug/L		RL
EPA 8270	Carbazole	10	ug/L		RL
EPA 8270C	Chrysene	4.8	ug/L		RL
EPA 8270C	Dibenz(a,h)anthracene	0.490	ug/L	X	d
EPA 8270C	Dibenzofuran	4.8	ug/L		RL
EPA 8270C	Diethyl Phthalate	0.360	ug/L	X	d
EPA 8270C	Dimethyl Phthalate	1.1	ug/L	X	d
EPA 8270C	Di-n-Butyl Phthalate	0.260	ug/L	X	d
EPA 8270C	Di-n-Octyl Phthalate	4.8	ug/L		RL
EPA 8270C	Fluoranthene	4.8	ug/L		RL
EPA 8270C	Fluorene	4.8	ug/L		RL
EPA 8270C	Hexachlorobenzene	2.0	ug/L		RL
EPA 8270C	Hexachlorobutadiene	0.4	ug/L	X	d
EPA 8270C	Hexachlorocyclopentadiene	9.5	ug/L		RL
EPA 8270C	Hexachloroethane	9.5	ug/L		RL
EPA 8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine	0.120	ug/L		RL
EPA 8270C	Indeno(1,2,3-cd)pyrene	0.330	ug/L	X	d
EPA 8270C	Isophorone	4.8	ug/L		RL
EPA 8330	m-Dinitrobenzene	0.110	ug/L		RL
EPA 8270C	Naphthalene	0.310	ug/L	X	d
EPA 8330	Nitrobenzene	0.057	ug/L		RL
EPA 8270C	N-Nitrosodimethylamine	4.8	ug/L		RL
EPA 8270C	N-Nitroso-di-n-propylamine	4.8	ug/L		RL
EPA 8270C	N-Nitrosodiphenylamine	4.8	ug/L		RL
EPA 8330	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine	0.120	ug/L		RL
EPA 8270C	Pentachlorophenol	29	ug/L		RL
EPA 8270C	Phenanthrene	4.8	ug/L		RL
EPA 8270	Phenol	1.0	ug/L	X	d
EPA 8270C	Pyrene	0.215	ug/L	X	d
EPA 8270C	Pyridine	9.5	ug/L		RL
EPA 8330	Tetryl	0.250	ug/L		RL

Table 5
Summary of Groundwater Analytes and Methods
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Method	Groundwater Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
TPH					
EPA 8015M	T/R Hydrocarbons: C13 - C22 DRO	0.620	mg/L	X	d
EPA 8015M	T/R Hydrocarbons: C23 - C36 HRO	0.400	mg/L	X	d
EPA 8015M	T/R Hydrocarbons: C6 - C12 GRO	0.720	mg/L	X	d
CATFH	TPH (C10-C12)	0.010	mg/L	X	d
CATFH	TPH (C13-C15)	0.010	mg/L	X	d
CATFH	TPH (C16-C22)	0.010	mg/L	X	d
CATFH	TPH (C23-C32)	0.020	mg/L	X	d
CATFH	TPH (C32+)	0.010	mg/L	X	d
CATFH	TPH (C5-C12)	0.054	mg/L	X	d
VOCs					
EPA 8260	1,1,1,2-Tetrachloroethane	0.200	ug/L	X	d
EPA 8260B	1,1,1-Trichloroethane	0.300	ug/L	X	d
EPA 8260B	1,1,2,2-Tetrachloroethane	0.500	ug/L		RL
EPA 8260	1,1,2-Trichloroethane	0.200	ug/L	X	d
EPA 8260	1,1,2-Trichlorotrifluoroethane	0.640	ug/L	X	d
EPA 8260	1,1-Dichloroethane	0.300	ug/L	X	d
EPA 8260	1,1-Dichloroethene	0.300	ug/L	X	d
EPA 8260B	1,1-Dichloropropene	0.520	ug/L	X	d
EPA 8260B	1,2,3-Trichlorobenzene	0.500	ug/L		RL
EPA 8260B	1,2,3-Trichloropropane	0.500	ug/L		RL
EPA 8260B	1,2,4-Trichlorobenzene	0.680	ug/L	X	d
EPA 8260B	1,2,4-Trimethylbenzene	0.200	ug/L	X	d
EPA 8260B	1,2-Dibromo-3-Chloropropane	0.600	ug/L	X	d
EPA 8260B	1,2-Dibromoethane	0.500	ug/L		RL
EPA 8260B	1,2-Dichlorobenzene	0.100	ug/L	X	d
EPA 8260B	1,2-Dichloroethane	0.200	ug/L	X	d
EPA 8260B	1,2-Dichloropropane	0.500	ug/L		RL
EPA 8260B	1,3,5-Trimethylbenzene	0.600	ug/L	X	d
EPA 8260	1,3-Dichlorobenzene	0.100	ug/L	X	d
EPA 8260B	1,3-Dichloropropane	0.500	ug/L		RL
EPA 8260B	1,4-Dichlorobenzene	0.140	ug/L	X	d
EPA 8260B	2,2-Dichloropropane	0.500	ug/L		RL
EPA 8260B	2-Butanone	0.660	ug/L	X	d
EPA 8260B	2-Chlorotoluene	0.220	ug/L	X	d
EPA 8260B	2-Hexanone	10	ug/L		RL
EPA 8260B	4-Chlorotoluene	0.500	ug/L		RL
EPA 8260B	4-Methyl-2-Pentanone	0.72	ug/L	X	d
EPA 8260B	Acetone	1.9	ug/L	X	d
EPA 8260	Acrylonitrile	10	ug/L		RL
EPA 8260	Benzene	0.100	ug/L	X	d
EPA 8260B	Bromobenzene	0.500	ug/L		RL
EPA 8260B	Bromochloromethane	1.5	ug/L	X	d
EPA 8260B	Bromodichloromethane	0.200	ug/L	X	d
EPA 8260B	Bromoform	0.500	ug/L		RL
EPA 8260	Bromomethane	0.200	ug/L	X	d

Table 5
Summary of Groundwater Analytes and Methods
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Method	Groundwater Analyte	Minimum Value	Units	Detected?	Minimum Detected Value or Minimum RL[(a)]
EPA 8260	Carbon disulfide	0.200	ug/L	X	d
EPA 8260B	Carbon tetrachloride	0.500	ug/L		RL
EPA 8260B	Chlorobenzene	0.420	ug/L	X	d
EPA 8260B	Chlorodibromomethane	0.510	ug/L	X	d
EPA 8260B	Chloroethane	0.200	ug/L	X	d
EPA 8260B	Chloroform	0.220	ug/L	X	d
EPA 8260B	Chloromethane	0.300	ug/L	X	d
EPA 8260B	cis-1,2-Dichloroethene	0.190	ug/L	X	d
EPA 8260B	cis-1,3-Dichloropropene	0.500	ug/L		RL
EPA 8260B	Dibromomethane	0.230	ug/L	X	d
EPA 8260B	Dichlorodifluoromethane	0.500	ug/L		RL
EPA 8260B	Diisopropyl ether	0.500	ug/L		RL
EPA 8260	Ethyl Acetate	10	ug/L		RL
EPA 8260	Ethyl Ether	10	ug/L		RL
EPA 8260B	Ethyl tert-butyl ether (ETBE)	0.800	ug/L	X	d
EPA 8260B	Ethylbenzene	0.200	ug/L	X	d
EPA 8260B	Freon-11	0.640	ug/L	X	d
EPA 8260B	Freon-12	0.500	ug/L		RL
EPA 8260	Hexachlorobutadiene	0.400	ug/L	X	d
EPA 8260	Isopropylbenzene	0.300	ug/L	X	d
EPA 8260	m/p-Xylene	0.400	ug/L	X	d
EPA 8260	Methyl Iodide	0.500	ug/L		RL
EPA 8260	Methyl tert-butyl ether (MTBE)	0.200	ug/L	X	d
EPA 8260B	Methylene chloride	0.200	ug/L	X	d
EPA 8260B	Naphthalene	0.310	ug/L	X	d
EPA 8260B	n-Butylbenzene	0.500	ug/L	X	d
EPA 8260B	n-Propylbenzene	0.280	ug/L	X	d
EPA 8260B	o-Xylene	0.200	ug/L	X	d
EPA 8260	p-Isopropyltoluene (Cymene; 4-)	0.400	ug/L	X	d
EPA 8260	sec-Butylbenzene	0.300	ug/L	X	d
EPA 8260B	Styrene	0.990	ug/L	X	d
EPA 8260B	tert-Amyl methyl ether (TAME)	0.500	ug/L		RL
EPA 8260	tert-Butyl alcohol	2.0	ug/L	X	d
EPA 8260	tert-Butylbenzene	0.200	ug/L	X	d
EPA 8260	Tetrachloroethene	0.200	ug/L	X	d
EPA 8260	Toluene	0.150	ug/L	X	d
EPA 8260B	trans-1,2-Dichloroethene	0.260	ug/L	X	d
EPA 8260B	trans-1,3-Dichloropropene	0.500	ug/L		RL
EPA 8260B	Trichloroethene	0.130	ug/L	X	d
EPA 8260B	Trichlorofluoromethane	0.640	ug/L	X	d
EPA 8260B	Vinyl acetate	10	ug/L		RL
EPA 8260B	Vinyl chloride	0.300	ug/L	X	d
EPA 8260B	Xylenes (total)	0.560	ug/L	X	d

Notes:

" X " indicates that this chemical was detected

[(a)] Minimum value is either the minimum detected value ("d") and/or the minimum reporting limit ("RL")

Table 6
Summary of Soil Matrix Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (mg/kg)	Maximum Detected Value (mg/kg)	Location of Maximum Detected Value	COPC?	EPC [a] (mg/kg)
Cyanide								
Cyanide (Amenable)	8	87	9%	0.080	1.0	0156-03-03	**Yes**	**1.0**
Cyanide (Total)	12	89	13%	0.080	1.7	0161-02-04	**Yes**	**1.7**
Metals								
Antimony	282	328	86%	0.300	8.5	0130-V1-01	**Yes**	**8.5**
Arsenic	54	270	20%	0.400	23	0120-28-02	No [b]	**--**
Barium	349	349	100%	5.9	440	0120-21-03	No [b]	**--**
Beryllium	0	248	0%	--	--	--	No	**--**
Cadmium	194	306	63%	0.060	6.8	0120-36-03	**Yes**	**6.8**
Chromium	348	348	100%	1.8	700	0130-V1-01	**Yes**	**700**
Chromium, hexavalent	64	182	35%	0.040	35	0120-12-05	**Yes**	**35**
Cobalt	347	347	100%	0.500	100	0120-28-02	**Yes**	**100**
Copper	346	347	100%	0.002	200	0228-01-02	**Yes**	**200**
Lead	324	349	93%	0.600	150	0183-04-01	No [d]	**--**
Mercury	39	262	15%	0.030	0.230	0120-03-03	**Yes**	**0.230**
Molybdenum	187	308	61%	0.100	10	0228-01-02	**Yes**	**10**
Nickel	346	346	100%	0.700	170	0228-01-02	**Yes**	**170**
Selenium	234	335	70%	0.400	30	0120-25-03	**Yes**	**30**
Silver	3	249	1%	1.4	2.3	0130-V1-02	**Yes**	**2.3**
Thallium	0	248	0%	--	--	--	No	**--**
Vanadium	352	352	100%	3.0	70	0120-28-02	No [b]	**--**
Zinc	353	353	100%	2.0	710	0513-04-01	**Yes**	**710**
PAHs								
2-Methylnaphthalene	1	82	1%	53	53	0161-02-03	**Yes**	**53**
Acenaphthene	2	171	1%	0.367	2.0	0161-02-03	**Yes**	**2.0**
Anthracene	1	169	1%	0.010	0.010	0159-02-01	**Yes**	**0.010**
Benzo(a)anthracene	10	174	6%	0.011	0.200	0166-01-07	**Yes**	**0.200**
Benzo(a)pyrene	8	173	5%	0.012	0.400	0166-01-07	**Yes**	**0.400**
Benzo(b)fluoranthene	19	178	11%	0.012	1.26	0105-05-01	**Yes**	**1.26**
Benzo(g,h,i)perylene	5	171	3%	0.019	0.900	0166-01-07	**Yes**	**0.900**
Benzo(k)fluoranthene	4	171	2%	0.013	0.100	0166-01-07	**Yes**	**0.100**
Chrysene	10	174	6%	0.0015	0.682	0105-05-01	**Yes**	**0.682**
Dibenz(a,h)anthracene	1	170	1%	0.080	0.080	0166-01-07	**Yes**	**0.080**
Fluoranthene	6	171	4%	0.029	0.200	0166-01-07	**Yes**	**0.200**
Fluorene	2	170	1%	0.674	5.7	0161-02-03	**Yes**	**5.7**
Indeno(1,2,3-cd)pyrene	6	171	4%	0.012	0.600	0166-01-07	**Yes**	**0.600**
Naphthalene	11	363	3%	0.008	18	0102-U1-04	**Yes**	**18**
Phenanthrene	12	174	7%	0.012	9.8	0161-02-03	**Yes**	**9.8**
Pyrene	10	174	6%	0.011	0.350	0166-01-07	**Yes**	**0.350**
PCBs								
Aroclor 1016	1	251	0%	0.030	0.030	0161-03-04	**Yes**	**0.030**
Aroclor 1221	0	251	0%	--	--	--	No	**--**
Aroclor 1232	0	251	0%	--	--	--	No	**--**
Aroclor 1242	1	252	0%	0.160	0.160	0120-39-10	**Yes**	**0.160**

Table 6
Summary of Soil Matrix Analytical Results
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San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (mg/kg)	Maximum Detected Value (mg/kg)	Location of Maximum Detected Value	COPC?	EPC [(a)] (mg/kg)
Aroclor 1248	9	258	3%	0.030	290	0156-08-05	**Yes**	**290**
Aroclor 1254	15	258	6%	0.030	1.7	0120-39-02	**Yes**	**1.7**
Aroclor 1260	34	265	13%	0.005	1.5	0EXA-01-01	**Yes**	**1.5**
Aroclor 1262	5	252	2%	0.037	0.330	0161-02-04	**Yes**	**0.330**
Aroclor 1268	0	250	0%	--	--	--	No	--
Perchlorate								
Perchlorate	4	27	15%	0.091	3.6	0228-01-01	**Yes**	**3.6**
SVOCs								
1,2,4-Trichlorobenzene	0	316	0%	--	--	--	No	--
1,2-Dichlorobenzene	0	316	0%	--	--	--	No	--
1,2-Diphenylhydrazine	0	82	0%	--	--	--	No	--
1,3,5-Trinitrobenzene	0	2	0%	--	--	--	No	--
1,3-Dichlorobenzene	0	316	0%	--	--	--	No	--
1,4-Dioxane	1	83	1%	0.090	0.090	T-46	**Yes**	**0.090**
2,2'-oxybis(1-Chloropropane)	0	82	0%	--	--	--	No	--
2,4,5-Trichlorophenol	0	82	0%	--	--	--	No	--
2,4,6-Trichlorophenol	0	82	0%	--	--	--	No	--
2,4,6-Trinitrotoluene	0	2	0%	--	--	--	No	--
2,4-Dichlorophenol	0	82	0%	--	--	--	No	--
2,4-Dimethylphenol	0	82	0%	--	--	--	No	--
2,4-Dinitrophenol	0	82	0%	--	--	--	No	--
2,4-Dinitrotoluene	0	84	0%	--	--	--	No	--
2,6-Dinitrotoluene	0	84	0%	--	--	--	No	--
2-Amino-4,6-dinitrotoluene	0	2	0%	--	--	--	No	--
2-Chloronaphthalene	0	82	0%	--	--	--	No	--
2-Chlorophenol	0	82	0%	--	--	--	No	--
2-Methylphenol	0	82	0%	--	--	--	No	--
2-Nitroaniline	0	82	0%	--	--	--	No	--
2-Nitrophenol	0	82	0%	--	--	--	No	--
2-Nitrotoluene	0	2	0%	--	--	--	No	--
3,3'-Dichlorobenzidine	0	82	0%	--	--	--	No	--
3-Nitroaniline	0	82	0%	--	--	--	No	--
3-Nitrotoluene	0	2	0%	--	--	--	No	--
4,6-Dinitro-2-methylphenol	0	82	0%	--	--	--	No	--
4-Amino-2,6-dinitrotoluene	0	2	0%	--	--	--	No	--
4-Bromophenyl phenyl ether	0	82	0%	--	--	--	No	--
4-Chloro-3-methylphenol	0	82	0%	--	--	--	No	--
4-Chloroaniline	0	82	0%	--	--	--	No	--
4-Chlorophenyl phenyl ether	0	82	0%	--	--	--	No	--
4-Methylphenol	0	82	0%	--	--	--	No	--
4-Nitroaniline	0	82	0%	--	--	--	No	--
4-Nitrophenol	0	82	0%	--	--	--	No	--
4-Nitrotoluene	0	2	0%	--	--	--	No	--
Aniline	0	82	0%	--	--	--	No	--

Table 6
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San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (mg/kg)	Maximum Detected Value (mg/kg)	Location of Maximum Detected Value	COPC?	EPC [(a)] (mg/kg)
Benzidine	0	82	0%	--	--	--	No	--
Benzoic acid	0	82	0%	--	--	--	No	--
Benzyl alcohol	0	82	0%	--	--	--	No	--
bis(2-Chloroethoxy)methane	0	82	0%	--	--	--	No	--
bis(2-Chloroethyl)ether	0	82	0%	--	--	--	No	--
bis(2-Ethylhexyl)phthalate	0	82	0%	--	--	--	No	--
Butyl benzyl phthalate	0	82	0%	--	--	--	No	--
Carbazole	0	82	0%	--	--	--	No	--
Dibenzofuran	0	82	0%	--	--	--	No	--
Diethyl phthalate	0	82	0%	--	--	--	No	--
Dimethyl phthalate	0	82	0%	--	--	--	No	--
Di-n-butyl phthalate	0	82	0%	--	--	--	No	--
Di-n-octyl phthalate	0	82	0%	--	--	--	No	--
Hexachlorobenzene	0	82	0%	--	--	--	No	--
Hexachlorocyclopentadiene	0	82	0%	--	--	--	No	--
Hexachloroethane	0	82	0%	--	--	--	No	--
Hexahydro-1,3,5-trinitro-1,3,5-triazine	0	2	0%	--	--	--	No	--
Isophorone	0	82	0%	--	--	--	No	--
m-Dinitrobenzene	0	2	0%	--	--	--	No	--
Nitrobenzene	0	84	0%	--	--	--	No	--
N-Nitrosodimethylamine	0	82	0%	--	--	--	No	--
N-Nitroso-di-n-propylamine	0	82	0%	--	--	--	No	--
N-Nitrosodiphenylamine	0	82	0%	--	--	--	No	--
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	0	2	0%	--	--	--	No	--
Pentachlorophenol	0	82	0%	--	--	--	No	--
Phenol	1	83	1%	0.090	0.090	0166-02-06	**Yes**	**0.090**
Pyridine	0	82	0%	--	--	--	No	--
Tetryl	0	2	0%	--	--	--	No	--
TPH								
TPH C5-C8	45	726	6%	0.700	1,682	P2	**Yes**	**1,682**
TPH C9-C18	421	713	59%	0.062	25,100	0120-U1-01	**Yes**	**25,100**
TPH C≥19	701	720	97%	0.400	22,700	0120-OA-32	**Yes**	**22,700**
VOCs								
1,1,1,2-Tetrachloroethane	0	315	0%	--	--	--	No	--
1,1,1-Trichloroethane	14	327	4%	0.002	0.051	0156-08-01	**Yes**	**0.051**
1,1,2,2-Tetrachloroethane	0	315	0%	--	--	--	No	--
1,1,2-Trichloroethane	0	315	0%	--	--	--	No	--
1,1,2-Trichlorotrifluoroethane	0	2	0%	--	--	--	No	--
1,1-Dichloroethane	1	316	0%	0.003	0.003	0120-39-03	**Yes**	**0.003**
1,1-Dichloroethene	0	315	0%	--	--	--	No	--
1,1-Dichloropropene	10	320	3%	0.003	0.004	0183-01-01	**Yes**	**0.004**
1,2,3-Trichlorobenzene	0	315	0%	--	--	--	No	--
1,2,3-Trichloropropane	0	315	0%	--	--	--	No	--
1,2,4-Trichlorobenzene	0	316	0%	--	--	--	No	--

Table 6
Summary of Soil Matrix Analytical Results
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San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (mg/kg)	Maximum Detected Value (mg/kg)	Location of Maximum Detected Value	COPC?	EPC [(a)] (mg/kg)
1,2,4-Trimethylbenzene	8	317	3%	0.005	16	0102-U1-04	**Yes**	**16**
1,2-Dibromo-3-chloropropane	0	315	0%	--	--	--	No	**--**
1,2-Dibromoethane	0	315	0%	--	--	--	No	**--**
1,2-Dichlorobenzene	0	316	0%	--	--	--	No	**--**
1,2-Dichloroethane	0	315	0%	--	--	--	No	**--**
1,2-Dichloropropane	0	315	0%	--	--	--	No	**--**
1,3,5-Trimethylbenzene	4	316	1%	0.002	0.680	0102-U1-05	**Yes**	**0.680**
1,3-Dichlorobenzene	0	316	0%	--	--	--	No	**--**
1,3-Dichloropropane	0	315	0%	--	--	--	No	**--**
1,4-Dichlorobenzene	4	319	1%	0.003	0.025	0242-03-28; 0242-GW-69	**Yes**	**0.025**
2,2-Dichloropropane	0	315	0%	--	--	--	No	**--**
2-Butanone (MEK)	0	308	0%	--	--	--	No	**--**
2-Chloroethyl vinyl ether	0	20	0%	--	--	--	No	**--**
2-Chlorotoluene	0	315	0%	--	--	--	No	**--**
2-Hexanone	0	308	0%	--	--	--	No	**--**
4-Chlorotoluene	0	315	0%	--	--	--	No	**--**
4-Methyl-2-pentanone	0	308	0%	--	--	--	No	**--**
Acetone	7	294	2%	0.0056	0.062	0167-01-05	**Yes**	**0.062**
Acrolein	0	21	0%	--	--	--	No	**--**
Acrylonitrile	0	37	0%	--	--	--	No	**--**
Benzene	4	318	1%	0.002	0.020	0140-03-03	**Yes**	**0.020**
Bromobenzene	0	315	0%	--	--	--	No	**--**
Bromochloromethane	0	315	0%	--	--	--	No	**--**
Bromodichloromethane	0	315	0%	--	--	--	No	**--**
Bromoform	0	315	0%	--	--	--	No	**--**
Bromomethane	0	315	0%	--	--	--	No	**--**
Carbon disulfide	6	314	2%	0.003	0.009	0513-06-03	**Yes**	**0.009**
Carbon tetrachloride	0	315	0%	--	--	--	No	**--**
Chlorobenzene	17	332	5%	0.001	0.004	0166-02-01	**Yes**	**0.004**
Chlorodibromomethane	0	315	0%	--	--	--	No	**--**
Chloroethane	0	315	0%	--	--	--	No	**--**
Chloroform	1	316	0%	0.001	0.004	0131-06-01	**Yes**	**0.004**
Chloromethane	0	315	0%	--	--	--	No	**--**
cis-1,2-Dichloroethene	43	344	13%	0.003	0.96	0242-03-25	**Yes**	**0.960**
cis-1,3-Dichloropropene	0	315	0%	--	--	--	No	**--**
Cyclohexanone	0	20	0%	--	--	--	No	**--**
Dibromomethane	0	315	0%	--	--	--	No	**--**
Dichlorodifluoromethane (Freon 12)	0	315	0%	--	--	--	No	**--**
Diisopropyl ether	1	307	0%	0.001	0.001	0131-09-01	**Yes**	**0.001**
Ethyl acetate	0	299	0%	--	--	--	No	**--**
Ethyl ether	0	299	0%	--	--	--	No	**--**
Ethyl tert-butyl ether (ETBE)	0	306	0%	--	--	--	No	**--**
Ethylbenzene	6	317	2%	0.400	2.3	0102-U1-01	**Yes**	**2.3**
Freon-113	0	306	0%	--	--	--	No	**--**

Table 6
Summary of Soil Matrix Analytical Results
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Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (mg/kg)	Maximum Detected Value (mg/kg)	Location of Maximum Detected Value	COPC?	EPC [(a)] (mg/kg)
Hexachlorobutadiene	1	317	0%	0.018	0.018	0242-03-28	**Yes**	**0.018**
Isopropylbenzene	6	317	2%	0.300	1.7	0102-U1-01	**Yes**	**1.7**
m/p-Xylene	7	311	2%	0.004	2.1	0102-U1-01	**Yes**	**2.1**
Methyl iodide	0	299	0%	--	--	--	No	**--**
Methyl tert-butyl ether (MTBE)	0	313	0%	--	--	--	No	**--**
Methylene chloride	28	332	8%	0.003	0.009	T-14	**Yes**	**0.009**
Naphthalene	11	363	3%	0.008	18	0102-U1-04	**Yes**	**18**
n-Butylbenzene	8	317	3%	0.420	5.5	0102-U1-01	**Yes**	**5.5**
n-Propylbenzene	8	317	3%	0.200	3.7	0102-U1-01	**Yes**	**3.7**
o-Xylene	4	308	1%	0.032	0.500	0102-U1-04	**Yes**	**0.500**
p-Isopropyltoluene (Cymene; 4-)	9	315	3%	0.330	5.8	0102-U1-01	**Yes**	**5.8**
sec-Butylbenzene (2-Phenylbutane)	9	318	3%	0.003	2.3	0102-U1-01	**Yes**	**2.3**
tert-Butyl alcohol	5	311	2%	0.029	0.100	0242-03-23	**Yes**	**0.100**
Styrene	0	315	0%	--	--	--	No	**--**
tert-Amyl methyl ether (TAME)	0	306	0%	--	--	--	No	**--**
tert-Butylbenzene	1	318	0%	0.004	0.004	0140-03-03	**Yes**	**0.004**
Tetrachloroethene	185	442	42%	0.002	220	0120-25-02	**Yes**	**100[(c)]**
Toluene	5	320	2%	0.002	0.010	0242-03-36	**Yes**	**0.010**
trans-1,2-Dichloroethene	12	325	4%	0.007	0.670	0242-03-26	**Yes**	**0.670**
trans-1,3-Dichloropropene	0	315	0%	--	--	--	No	**--**
Trichloroethene	104	387	27%	0.002	10	0131-06-01	**Yes**	**10**
Trichlorofluoromethane (Freon 11)	0	315	0%	--	--	--	No	**--**
Vinyl acetate	0	308	0%	--	--	--	No	**--**
Vinyl chloride	15	327	5%	0.004	0.054	0242-03-28	**Yes**	**0.054**
Xylenes (total)	2	131	2%	1.1	2.4	0102-U1-01	**Yes**	**2.4**

Notes:

" -- " not applicable

[(a)] Maximum detections were used as EPCs for the direct contact pathways (incidental soil ingestion and dermal contact with soil).

[(b)] Maximum detected value within background (see Appendix B)

[(c)] A soil saturation limit (C_{sat}) for PCE was used as the EPC for the outdoor air pathway since its maximum detected value was > its C_{sat} (see Table 14).

[(d)] Since the maximum concentration detected at the Site is < the Cal-EPA DTSC benchmark level of 255 mg/kg, lead was not selected as a COPC.

Table 7
Summary of Soil Gas Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?	EPC (µg/L)
VOCs								
1,1,1,2-Tetrachloroethane	0	455	0%	--	--	--	No	**--**
1,1,1-Trichloroethane	78	455	17%	0.520	300	0166-01-07	**Yes**	**300**
1,1,2,2-Tetrachloroethane	0	455	0%	--	--	--	No	**--**
1,1,2-Trichloroethane	3	455	1%	0.510	24	0166-01-06	**Yes**	**24**
1,1-Dichloroethane	57	455	13%	0.510	2,300	0242-03-05	**Yes**	**2,300**
1,1-Dichloroethene	42	455	9%	0.530	33	0120-21-03	**Yes**	**33**
1,1-Dichloropropene	0	455	0%	--	--	--	No	**--**
1,2,3-Trichlorobenzene	0	455	0%	--	--	--	No	**--**
1,2,3-Trichloropropane	0	455	0%	--	--	--	No	**--**
1,2,4-Trichlorobenzene	0	455	0%	--	--	--	No	**--**
1,2,4-Trimethylbenzene	0	455	0%	--	--	--	No	**--**
1,2-Dibromo-3-chloropropane	0	455	0%	--	--	--	No	**--**
1,2-Dibromoethane	0	455	0%	--	--	--	No	**--**
1,2-Dichlorobenzene	0	455	0%	--	--	--	No	**--**
1,2-Dichloroethane	1	455	0%	2.7	2.7	0242-03-36	**Yes**	**2.7**
1,2-Dichloropropane	0	455	0%	--	--	--	No	**--**
1,3,5-Trimethylbenzene	2	455	0%	1.1	1.5	0153-02-01	**Yes**	**1.5**
1,3-Dichlorobenzene	0	455	0%	--	--	--	No	**--**
1,3-Dichloropropane	0	455	0%	--	--	--	No	**--**
1,4-Dichlorobenzene	0	455	0%	--	--	--	No	**--**
2,2-Dichloropropane	0	455	0%	--	--	--	No	**--**
2-Chlorotoluene	0	455	0%	--	--	--	No	**--**
4-Chlorotoluene	0	455	0%	--	--	--	No	**--**
Benzene	67	455	15%	0.020	34	0153-02-01	**Yes**	**34**
Bromobenzene	0	455	0%	--	--	--	No	**--**
Bromochloromethane	0	455	0%	--	--	--	No	**--**
Bromodichloromethane	0	455	0%	--	--	--	No	**--**
Bromoform	0	455	0%	--	--	--	No	**--**
Bromomethane	3	455	1%	0.530	0.670	0146-OA-04	**Yes**	**0.670**
Carbon tetrachloride	9	455	2%	0.530	40	0166-01-01	**Yes**	**40**
Chlorobenzene	0	455	0%	--	--	--	No	**--**
Chlorodibromomethane	1	455	0%	3.3	3.3	0242-03-32	**Yes**	**3.3**
Chloroethane	0	455	0%	--	--	--	No	**--**
Chloroform	2	455	0%	0.650	0.960	0166-01-04	**Yes**	**0.960**
Chloromethane	0	455	0%	--	--	--	No	**--**
cis-1,2-Dichloroethene	138	455	30%	0.510	2,500	0242-03-05; 0242-03-16	**Yes**	**2,500**
cis-1,3-Dichloropropene	0	455	0%	--	--	--	No	**--**
Dibromomethane	0	455	0%	--	--	--	No	**--**
Dichlorodifluoromethane (Freon 12)	0	455	0%	--	--	--	No	**--**
Diisopropyl ether	0	455	0%	--	--	--	No	**--**
Ethyl tert-butyl ether (ETBE)	17	455	4%	0.300	10	0120-OA-22	**Yes**	**10**
Ethylbenzene	3	455	1%	0.780	2.2	0153-02-01	**Yes**	**2.2**
Freon 113	7	455	2%	0.590	19	0242-03-05	**Yes**	**19**

Table 7
Summary of Soil Gas Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?	EPC (µg/L)
Hexachlorobutadiene	0	455	0%	--	--	--	No	**--**
Isopropylbenzene	1	455	0%	0.620	0.620	0156-09-01	**Yes**	**0.620**
m/p-Xylene	6	455	1%	1.2	21	0120-21-03	**Yes**	**21**
Methyl tert-butyl ether (MTBE)	3	455	1%	0.640	1.4	0120-OA-22	**Yes**	**1.4**
Methylene chloride	0	455	0%	--	--	--	No	**--**
Naphthalene	0	455	0%	--	--	--	No	**--**
n-Butylbenzene	0	455	0%	--	--	--	No	**--**
n-Propylbenzene	0	455	0%	--	--	--	No	**--**
o-Xylene	1	455	0%	1.6	1.6	0242-03-36	**Yes**	**1.6**
p-Isopropyltoluene (Cymene; 4-)	0	455	0%	--	--	--	No	**--**
sec-Butylbenzene (2-Phenylbutane)	0	455	0%	--	--	--	No	**--**
Styrene	1	455	0%	0.680	0.680	0TC4-03-01	**Yes**	**0.680**
tert-Amyl methyl ether (TAME)	0	455	0%	--	--	--	No	**--**
tert-Butyl alcohol	2	455	0%	6.7	32	0169-OA-01	**Yes**	**32**
tert-Butylbenzene	0	455	0%	--	--	--	No	**--**
Tetrachloroethene	280	455	62%	0.510	3,000	0120-21-03; 0120-OA-12	**Yes**	**3,000**
Toluene	56	455	12%	0.510	15	0120-OA-12; 0166-01-11	**Yes**	**15**
trans-1,2-Dichloroethene	18	455	4%	0.540	22	0242-03-05	**Yes**	**22**
trans-1,3-Dichloropropene	0	455	0%	--	--	--	No	**--**
Trichloroethene	261	455	57%	0.300	2,100	0120-21-03	**Yes**	**2,100**
Trichlorofluoromethane (Freon 11)	0	455	0%	--	--	--	No	**--**
Vinyl chloride	78	455	17%	0.003	1,300	0242-03-16	**Yes**	**1,300**

Note:

" -- " not applicable

Table 8a
Summary of Groundwater Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?	EPC [(a)] (µg/L)
Cyanide								
Cyanide (Amenable)	0	17	0%	--	--	--	No	**--**
Cyanide (Total)	2	17	12%	--	10	0105-GW-14	**Yes**	**10**
Metals								
Antimony	3	92	3%	--	3,000	0158-GW-53; 0161-03-02	**Yes**	**3,000**
Arsenic	15	92	16%	--	7.1	T-33	**Yes**	**7.1**
Barium	92	94	98%	9.1	490	0158-GW-12	No [(b)]	**--**
Beryllium	2	92	2%	0.300	10	0181-GW-62	**Yes**	**10**
Cadmium	2	92	2%	3.1	10	0181-GW-62	**Yes**	**10**
Calcium	7	7	100%	3100	81,000	0242-GW-70	**Yes**	**81,000**
Chromium	15	97	15%	--	665,000	T-48	**Yes**	**665,000**
Chromium, hexavalent	5	51	10%	9.0	680,000	0158-GW-53	**Yes**	**680,000**
Cobalt	26	91	29%	0.800	17	0128-GW-97	**Yes**	**17**
Copper	4	92	4%	2.0	5.5	142WDP	**Yes**	**5.5**
Lead	2	92	2%	31	47	B180-MW1	**Yes**	**47**
Magnesium	7	7	100%	460	45,000	0242-GW-70	**Yes**	**45,000**
Mercury	0	92	0%	--	--	--	No	**--**
Molybdenum	86	94	91%	4.0	290	0120-GW-39	**Yes**	**290**
Nickel	49	94	52%	3.0	450	0128-GW-97	**Yes**	**450**
Selenium	88	93	95%	0.740	1,200	0111-01-01; 0125-02-01; 0158-GW-53	**Yes**	**1,200**
Silver	0	92	0%	--	--	--	No	**--**
Thallium	7	92	8%	0.020	2.0	B180-MW1	**Yes**	**2.0**
Vanadium	60	90	67%	0.800	130	0120-GW-61	**Yes**	**130**
Zinc	66	94	70%	5.0	100	0158-GW-115; 0158-GW-118	**Yes**	**100**
PAHs								
2-Methylnaphthalene	5	67	7%	0.660	32	0242-GW-37	**Yes**	**32**
Acenaphthene	1	83	1%	2,520	2,520	0242-GW-37	**Yes**	**2,520**
Anthracene	0	80	0%	--	--	--	No	**--**
Benzo(a)anthracene	1	81	1%	0.364	0.364	0242-GW-37	**Yes**	**0.364**
Benzo(a)pyrene	0	80	0%	--	--	--	No	**--**
Benzo(b)fluoranthene	0	80	0%	--	--	--	No	**--**
Benzo(g,h,i)perylene	3	81	4%	0.380	0.580	T-23	**Yes**	**0.580**
Benzo(k)fluoranthene	1	80	1%	0.320	0.320	T-52	**Yes**	**0.320**
Chrysene	1	81	1%	0.443	0.443	0242-GW-37	**Yes**	**0.443**
Dibenz(a,h)anthracene	1	80	1%	0.490	0.490	T-23	**Yes**	**0.490**
Fluoranthene	1	81	1%	3.7	3.7	0242-GW-37	**Yes**	**3.7**
Fluorene	1	81	1%	2.7	2.7	0242-GW-37	**Yes**	**2.7**
Indeno(1,2,3-cd)pyrene	5	81	6%	0.280	0.550	T-23	**Yes**	**0.550**
Naphthalene	20	187	11%	0.310	310	0158-GW-13	**Yes**	**310**
Phenanthrene	1	81	1%	2.3	2.3	0242-GW-37	**Yes**	**2.3**
Pyrene	1	81	1%	0.215	0.215	0242-GW-37	**Yes**	**0.220**
PCBs								
Aroclor 1016	2	36	6%	1.1	1.9	0120-GW-77	**Yes**	**1.9**
Aroclor 1221	0	36	0%	--	--	--	No	**--**
Aroclor 1232	0	36	0%	--	--	--	No	**--**
Aroclor 1242	0	36	0%	--	--	--	No	**--**
Aroclor 1248	0	36	0%	--	--	--	No	**--**
Aroclor 1254	0	36	0%	--	--	--	No	**--**

Table 8a
Summary of Groundwater Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?	EPC [(a)] (µg/L)
Aroclor 1260	0	36	0%	--	--	--	No	--
Aroclor 1262	0	36	0%	--	--	--	No	--
Aroclor 1268	0	36	0%	--	--	--	No	--
Perchlorate								
Perchlorate	0	5	0%	--	--	--	No	--
SVOCs								
1,2-Diphenylhydrazine	0	18	0%	--	--	--	No	--
1,4-Dioxane	28	69	41%	0.630	3,000	0166-GW-95	**Yes**	**3,000**
2,2'-oxybis(1-Chloropropane)	0	18	0%	--	--	--	No	--
2,4,5-Trichlorophenol	0	67	0%	--	--	--	No	--
2,4,6-Trichlorophenol	0	67	0%	--	--	--	No	--
2,4-Dichlorophenol	0	67	0%	--	--	--	No	--
2,4-Dimethylphenol	0	67	0%	--	--	--	No	--
2,4-Dinitrophenol	0	67	0%	--	--	--	No	--
2,4-Dinitrotoluene	0	67	0%	--	--	--	No	--
2,6-Dinitrotoluene	0	67	0%	--	--	--	No	--
2-Chloronaphthalene	0	67	0%	--	--	--	No	--
2-Chlorophenol	0	67	0%	--	--	--	No	--
2-Methylphenol	0	67	0%	--	--	--	No	--
2-Nitroaniline	0	67	0%	--	--	--	No	--
2-Nitrophenol	0	67	0%	--	--	--	No	--
3- and 4-Methylphenol Coelution	0	3	0%	--	--	--	No	--
3,3'-Dichlorobenzidine	0	67	0%	--	--	--	No	--
3/4-Methylphenol	0	44	0%	--	--	--	No	--
3-Nitroaniline	0	67	0%	--	--	--	No	--
4,6-Dinitro-2-methylphenol	0	67	0%	--	--	--	No	--
4-Bromophenyl phenyl ether	0	67	0%	--	--	--	No	--
4-Chloro-3-methylphenol	3	67	4%	1.9	7.7	T-21	**Yes**	**7.7**
4-Chloroaniline	0	67	0%	--	--	--	No	--
4-Chlorophenyl phenyl ether	0	67	0%	--	--	--	No	--
4-Methylphenol	0	20	0%	--	--	--	No	--
4-Nitroaniline	0	67	0%	--	--	--	No	--
4-Nitrophenol	0	67	0%	--	--	--	No	--
Aniline	5	67	7%	0.710	2.2	T-28	**Yes**	**2.2**
Benzidine	0	19	0%	--	--	--	No	--
Benzoic acid	3	67	4%	3.6	3.6	T-44	**Yes**	**3.6**
Benzyl alcohol	0	67	0%	--	--	--	No	--
bis(2-Chloroethoxy)methane	0	67	0%	--	--	--	No	--
Bis(2-chloroethyl)ether	0	67	0%	--	--	--	No	--
Bis(2-chloroisopropyl)ether	0	49	0%	--	--	--	No	--
Bis(2-ethylhexyl)phthalate	42	72	58%	0.9	210	T-52*	**Yes**	**210**
Butyl benzyl phthalate	0	67	0%	--	--	--	No	--
Carbazole	0	18	0%	--	--	--	No	--
Dibenzofuran	0	67	0%	--	--	--	No	--
Diethyl phthalate	11	66	17%	0.360	2.2	T-27	**Yes**	**2.2**
Dimethyl phthalate	2	69	3%	1.1	1.6	B120-MW4	**Yes**	**1.6**
Di-n-butyl phthalate	2	67	3%	0.260	3.0	0242-GW-37	**Yes**	**3.0**
Di-n-octyl phthalate	0	67	0%	--	--	--	No	--

Table 8a
Summary of Groundwater Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?	EPC [(a)] (µg/L)
Hexachlorobenzene	0	67	0%	--	--	--	No	--
Hexachlorocyclopentadiene	0	67	0%	--	--	--	No	--
Hexachloroethane	0	67	0%	--	--	--	No	--
Isophorone	0	67	0%	--	--	--	No	--
Nitrobenzene	0	67	0%	--	--	--	No	--
N-Nitrosodimethylamine	0	66	0%	--	--	--	No	--
N-Nitroso-di-n-propylamine	0	67	0%	--	--	--	No	--
N-Nitrosodiphenylamine	0	65	0%	--	--	--	No	--
Pentachlorophenol	0	67	0%	--	--	--	No	--
Phenol	1	67	1%	--	1.0	0242-GW-37	**Yes**	**1.0**
Pyridine	0	66	0%	--	--	--	No	--
TPH								
TPH C5-C8	59	92	60%	0.700	50,000	0242-GW-37	**Yes**	**50,000**
TPH C9-C18	74	88	61%	0.620	2,660	0158-GW-13	**Yes**	**2,660**
TPH C≥19	76	91	73%	0.400	1,297	0120-GW-111	**Yes**	**1,297**
VOCs								
1,1,1,2-Tetrachloroethane	2	169	1%	0.200	1.6	0242-GW-37	**Yes**	**1.6**
1,1,1-Trichloroethane	9	169	5%	0.300	45	0166-GW-95	**Yes**	**45**
1,1,2,2-Tetrachloroethane	0	169	0%	--	--	--	No	--
1,1,2-Trichloroethane	11	169	7%	0.200	9.4	0166-GW-95	**Yes**	**9.4**
1,1-Dichloroethane	58	170	34%	0.300	120	0166-GW-95	**Yes**	**120**
1,1-Dichloroethene	53	170	31%	0.300	540	0120-GW-58	**Yes**	**540**
1,1-Dichloropropene	2	169	1%	0.520	0.58	0156-GW-10	**Yes**	**0.58**
1,2,3-Trichlorobenzene	0	169	0%	--	--	--	No	--
1,2,3-Trichloropropane	0	169	0%	--	--	--	No	--
1,2,4-Trichlorobenzene	1	173	1%	0.680	0.680	0146-GW-52	**Yes**	**0.680**
1,2,4-Trimethylbenzene	7	170	4%	0.200	14	0158-GW-13	**Yes**	**14**
1,2-Dibromo-3-chloropropane	1	169	1%	0.600	0.600	0242-GW-71	**Yes**	**0.600**
1,2-Dibromoethane	0	169	0%	--	--	--	No	--
1,2-Dichlorobenzene	20	180	11%	0.100	9.7	T-18	**Yes**	**9.7**
1,2-Dichloroethane	11	167	7%	0.200	20	0120-GW-58	**Yes**	**20**
1,2-Dichloropropane	0	169	0%	--	--	--	No	--
1,3,5-Trimethylbenzene	5	169	3%	0.600	16	0158-GW-50	**Yes**	**16**
1,3-Dichlorobenzene	7	175	4%	0.100	5.6	0181-GW-62	**Yes**	**5.6**
1,3-Dichloropropane	0	169	0%	--	--	--	No	--
1,4-Dichlorobenzene	23	187	12%	0.150	32	0242-GW-37	**Yes**	**32**
2,2-Dichloropropane	0	169	0%	--	--	--	No	--
2-Butanone (MEK)	4	162	2%	1.1	300	0120-GW-58	**Yes**	**300**
2-Chlorotoluene	3	170	2%	0.220	0.380	T-17	**Yes**	**0.380**
2-Hexanone	0	163	0%	--	--	--	No	--
4-Chlorotoluene	0	169	0%	--	--	--	No	--
4-Methyl-2-pentanone	1	162	1%	0.720	0.720	T-54	**Yes**	**0.720**
Acetone	47	163	29%	1.9	49	0120-GW-102	**Yes**	**49**
Acrylonitrile	0	5	0%	--	--	--	No	--
Benzene	58	168	35%	0.100	110	0158-GW-13	**Yes**	**110**
Bromobenzene	0	169	0%	--	--	--	No	--
Bromochloromethane	1	169	1%	1.5	1.5	T-32	**Yes**	**1.5**
Bromodichloromethane	2	169	1%	0.200	2.6	T-32	**Yes**	**2.6**

Table 8a
Summary of Groundwater Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?	EPC [(a)] (µg/L)
Bromoform	0	169	0%	--	--	--	No	--
Bromomethane	13	169	8%	0.200	0.790	0166-GW-95	**Yes**	**0.790**
Carbon disulfide	23	161	14%	0.200	3.6	0158-GW-53	**Yes**	**3.6**
Carbon tetrachloride	0	169	0%	--	--	--	No	--
Chlorobenzene	10	170	6%	0.420	9.5	0242-GW-69	**Yes**	**9.5**
Chlorodibromomethane	1	169	1%	0.510	0.510	T-32	**Yes**	**0.510**
Chloroethane	2	168	1%	0.200	0.300	0228-GW-107	**Yes**	**0.300**
Chloroform	15	168	9%	0.220	27	T-32	**Yes**	**27**
Chloromethane	8	170	5%	0.300	0.93	0166-GW-95	**Yes**	**0.930**
cis-1,2-Dichloroethene	133	174	76%	0.190	57,000	0242-GW-69	**Yes**	**57,000**
cis-1,3-Dichloropropene	0	169	0%	--	--	--	No	--
Dibromomethane	1	169	1%	0.230	0.230	T-32	**Yes**	**0.230**
Dichlorodifluoromethane (Freon 12)	0	164	0%	--	--	--	No	--
Diisopropyl ether	0	96	0%	--	--	--	No	--
Ethyl acetate	0	90	0%	--	--	--	No	--
Ethyl ether	0	90	0%	--	--	--	No	--
Ethyl tert-butyl ether (ETBE)	1	96	1%	0.800	0.800	0242-GW-69	**Yes**	**0.800**
Ethylbenzene	11	169	7%	2.00	16	0158-GW-13	**Yes**	**16**
Freon-113	0	163	0%	--	--	--	No	--
Hexachlorobutadiene	1	174	1%	0.400	0.400	0242-GW-37	**Yes**	**0.400**
Isopropylbenzene	12	168	7%	0.300	89	0158-GW-13	**Yes**	**89**
m/p-Xylene	9	97	9%	0.400	5.6	0158-GW-13	**Yes**	**5.6**
Methyl iodide	0	90	0%	--	--	--	No	--
Methyl tert-butyl ether (MTBE)	6	168	4%	0.300	13	T-9*	**Yes**	**13**
Methylene chloride	10	168	6%	0.820	10	0120-GW-58; 0120-GW-61	**Yes**	**10**
n-Butylbenzene	6	169	4%	0.500	140	0158-GW-50	**Yes**	**140**
n-Propylbenzene	11	169	7%	0.280	320	0158-GW-50	**Yes**	**320**
o-Xylene	9	98	9%	0.200	2.8	0242-GW-37	**Yes**	**2.8**
p-Isopropyltoluene (Cymene; 4-)	4	168	2%	0.400	4.0	0158-GW-50	**Yes**	**4.0**
sec-Butylbenzene (2-Phenylbutane)	9	169	5%	0.300	54	0158-GW-50	**Yes**	**54**
Styrene	1	169	1%	0.990	0.990	0242-GW-37	**Yes**	**0.990**
tert-Amyl methyl ether (TAME)	0	96	0%	--	--	--	No	--
tert-Butyl alcohol	2	96	2%	2.0	41	T-23*	**Yes**	**41**
tert-Butylbenzene	9	169	5%	0.200	2.4	0158-GW-13	**Yes**	**2.4**
Tetrachloroethene	105	174	60%	0.200	240,000	0242-GW-37	**Yes**	**200,000[(c)]**
Toluene	57	164	35%	0.100	6.7	0242-GW-37	**Yes**	**6.7**
trans-1,2-Dichloroethene	86	173	50%	0.260	510	0242-GW-69	**Yes**	**510**
trans-1,3-Dichloropropene	0	169	0%	--	--	--	No	--
Trichloroethene	110	175	63%	0.130	21,000	0120-GW-58	**Yes**	**21,000**
Trichlorofluoromethane (Freon 11)	0	169	0%	--	--	--	No	--
Vinyl acetate	0	163	0%	--	--	--	No	--
Vinyl chloride	83	172	48%	0.300	25,000	T-21*	**Yes**	**25,000**
Xylenes (total)	7	163	4%	0.560	7.9	0242-GW-37	**Yes**	**7.9**

Notes:

" -- " not applicable

" EPC " exposure point concentration

* The maximum detected value is driven by a split value.

[(a)] Maximum detections were used as EPCs for dermal contact with groundwater pathway. Maximum detections of VOCs were used for outdoor air pathway.

[(b)] Maximum detected value within background (see Appendix B)

[(c)] For the outdoor air pathway, the solubility limit was used as the EPC if the maximum detected value was > the chemical-specific solubility (see Table 14).

Table 8b
Summary of Offsite Groundwater Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?[(a)]	EPC (µg/L)
VOCs								
1,1,1,2-Tetrachloroethane	0	29	0%	--	--	--	No	**--**
1,1,1-Trichloroethane	0	29	0%	--	--	--	No	**--**
1,1,2,2-Tetrachloroethane	0	29	0%	--	--	--	No	**--**
1,1,2-Trichloroethane	0	29	0%	--	--	--	No	**--**
1,1-Dichloroethane	2	29	7%	0.400	0.570	T-21*	**Yes**	**0.570**
1,1-Dichloroethene	4	29	14%	0.500	12	T-24*	**Yes**	**12**
1,1-Dichloropropene	0	29	0%	--	--	--	No	**--**
1,2,3-Trichlorobenzene	0	29	0%	--	--	--	No	**--**
1,2,3-Trichloropropane	0	29	0%	--	--	--	No	**--**
1,2,4-Trichlorobenzene	0	46	0%	--	--	--	No	**--**
1,2,4-Trimethylbenzene	2	29	7%	0.300	0.500	T-24*	**Yes**	**0.500**
1,2-Dibromo-3-chloropropane	0	29	0%	--	--	--	No	**--**
1,2-Dibromoethane	0	29	0%	--	--	--	No	**--**
1,2-Dichlorobenzene	3	46	7%	0.400	0.970	T-21*	**Yes**	**0.970**
1,2-Dichloroethane	0	29	0%	--	--	--	No	**--**
1,2-Dichloropropane	0	29	0%	--	--	--	No	**--**
1,3,5-Trimethylbenzene	0	29	0%	--	--	--	No	**--**
1,3-Dichlorobenzene	0	46	0%	--	--	--	No	**--**
1,3-Dichloropropane	0	29	0%	--	--	--	No	**--**
1,4-Dichlorobenzene	11	46	24%	1.2	13	T-21*; T-24*	**Yes**	**13**
2,2-Dichloropropane	0	29	0%	--	--	--	No	**--**
2-Butanone (MEK)	0	35	0%	--	--	--	No	**--**
2-Chlorotoluene	0	35	0%	--	--	--	No	**--**
2-Hexanone	0	35	0%	--	--	--	No	**--**
4-Chlorotoluene	0	35	0%	--	--	--	No	**--**
4-Methyl-2-pentanone	1	35	3%	3.9	3.9	MWCL-5	**Yes**	**3.9**
Acetone	4	35	11%	3.3	4.7	MWCL-5	**Yes**	**4.7**
Benzene	9	35	26%	0.300	49	T-21*	**Yes**	**49**
Bromobenzene	0	35	0%	--	--	--	No	**--**
Bromochloromethane	0	35	0%	--	--	--	No	**--**
Bromodichloromethane	0	38	0%	--	--	--	No	**--**
Bromoform	0	35	0%	--	--	--	No	**--**
Bromomethane	0	35	0%	--	--	--	No	**--**
Carbon disulfide	12	35	34%	0.600	1.1	T-21*	**Yes**	**1.1**
Carbon tetrachloride	0	35	0%	--	--	--	No	**--**
Chlorobenzene	4	35	11%	0.500	7.3	T-21*	**Yes**	**7.3**
Chlorodibromomethane	0	35	0%	--	--	--	No	**--**
Chloroethane	0	35	0%	--	--	--	No	**--**
Chloroform	0	35	0%	--	--	--	No	**--**
Chloromethane	1	35	3%	0.260	0.260	MWCL-1	**Yes**	**0.260**
cis-1,2-Dichloroethene	25	29	86%	0.220	17,000	T-24*	**Yes**	**17,000**
cis-1,3-Dichloropropene	0	29	0%	--	--	--	No	**--**
Dibromomethane	0	35	0%	--	--	--	No	**--**

Table 8b
Summary of Offsite Groundwater Analytical Results
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (µg/L)	Maximum Detected Value (µg/L)	Location of Maximum Detected Value	COPC?[(a)]	EPC (µg/L)
Dichlorodifluoromethane (Freon 12)	0	32	0%	--	--	--	No	--
Diisopropyl ether	0	15	0%	--	--	--	No	--
Ethyl acetate	0	15	0%	--	--	--	No	--
Ethyl ether	0	15	0%	--	--	--	No	--
Ethyl tert-butyl ether (ETBE)	0	15	0%	--	--	--	No	--
Ethylbenzene	2	35	6%	0.540	0.670	T-21*	**Yes**	**0.670**
Freon-113	0	29	0%	--	--	--	No	--
Hexachlorobutadiene	0	58	0%	--	--	--	No	--
Isopropylbenzene	1	35	3%	1.3	1.3	TC4-WIP*	**Yes**	**1.3**
m/p-Xylene	3	15	20%	0.800	0.900	T-21*	**Yes**	**0.900**
Methyl iodide	0	15	0%	--	--	--	No	--
Methyl tert-butyl ether (MTBE)	5	35	14%	0.200	13	T-9*	**Yes**	**13**
Methylene chloride	0	35	0%	--	--	--	No	--
n-Butylbenzene	1	35	3%	0.360	0.360	MWCL-6	**Yes**	**0.360**
n-Propylbenzene	1	35	3%	0.720	0.720	TC4-WIP*	**Yes**	**0.720**
o-Xylene	3	15	20%	0.300	0.580	T-21*	**Yes**	**0.580**
p-Isopropyltoluene (Cymene; 4-)	1	35	3%	0.064	0.064	MWCL-6	**Yes**	**0.064**
sec-Butylbenzene (2-Phenylbutane)	0	35	0%	--	--	--	No	--
Styrene	0	35	0%	--	--	--	No	--
tert-Amyl methyl ether (TAME)	1	15	7%	0.400	0.400	T-9*	**Yes**	**0.400**
tert-Butyl alcohol	3	15	20%	13	41	T-23*	**Yes**	**41**
tert-Butylbenzene	0	35	0%	--	--	--	No	--
Tetrachloroethene	3	35	9%	0.400	41,000	T-24	**Yes**	**41,000**
Toluene	7	35	20%	0.500	3.4	T-24*	**Yes**	**3.4**
trans-1,2-Dichloroethene	8	29	28%	16	89	T-21*	**Yes**	**89**
trans-1,3-Dichloropropene	0	29	0%	--	--	--	No	--
Trichloroethene	7	35	20%	0.130	9,600	T-24	**Yes**	**9,600**
Trichlorofluoromethane (Freon 11)	0	35	0%	--	--	--	No	--
Vinyl acetate	0	35	0%	--	--	--	No	--
Vinyl chloride	14	35	40%	0.920	25,000	T-21*	**Yes**	**25,000**
Xylenes (total)	3	21	14%	0.270	1.5	T-21*	**Yes**	**1.5**

Notes:

" -- " not applicable

" EPC " exposure point concentration

* The maximum detected value is driven by a split value.

[(a)] Only the offsite groundwater data for VOCs were evaluated for the indoor air pathway for an offsite industrial/commercial worker.

Table 9
Exposure Parameters for a Construction Worker
Future Exposure Scenario - During Property Redevelopment
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Exposure Route	Parameter Code	Parameter Definition	Units	Site-Specific Value	Site-Specific Rationale/Source	Default Value	Default Rationale/Source
General Parameters	EF	Exposure Frequency	days/year	250	USEPA 2002	250	USEPA 2002
	ED	Exposure Duration	years	1	Cal-EPA 2005	1	Cal-EPA 2005
	ET	Exposure Time with Soil	hours/day	8	USEPA 1997	8	USEPA 1997
	ET	Exposure Time with Groundwater	hours/event	2	Professional Judgment	2	Professional Judgment
	BW	Body Weight	kilograms	70	USEPA 1989; Average	70	USEPA 1989; Average
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA 1989	25,550	USEPA 1989
	AT-N	Averaging Time (Non-cancer)	days	ED x 365	USEPA 1989	ED x 365	USEPA 1989
Incidental Ingestion	IR-soil	Ingestion Rate of Soil	mg/day	330	USEPA 2002	330	Cal-EPA 2005
Dermal Contact	SA	Surface Area Available for Contact	cm^2/day	3,300	USEPA 2004a	5,700	Cal-EPA 2005
	AF	Soil Adherence Factor	mg/cm^2	0.3	USEPA 2004a; 95th percentile body part-specific surface area weighted soil AFs	0.8	Cal-EPA 2005
	EV	Event Frequency	event/day	1	USEPA 2004a	1	USEPA 2004a
	AbsD	Dermal Absorption Factor	unitless	chem-specific	USEPA 2004a	chem-specific	USEPA 2004a
	Kp	Water Permeability Coefficient (Kp)	cm/hour	chem-specific	USEPA 2004a	chem-specific	USEPA 2004a
Inhalation of Vapor/Particulates	InhR	Inhalation Rate	m^3/day	16	USEPA 1997; midpoint between moderate and heavy activities outdoor worker (Table 5-23)	20	Cal-EPA 2005
	VF	Volatilization Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002
	PEF	Particulate Emission Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002

Source:

Cal-EPA 2005. Human Health Risk Assessment (HHRA) Note. HERD HHRA Note #1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment At California Military Facilities.

USEPA 1989. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

USEPA 1997. Exposure Factors Handbook. Volumes I-III. An update to Exposure Factors Handbook EPA/600/8-89/043-May 1989. EPA/600/P-95-002Fa. August.

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. OSWER 9355.4-24. March.

USEPA 2004a. RAGS. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim Guidance. EPA/540/R-99/005

Table 10
Exposure Parameters for a Trench Worker
Future Exposure Scenario - During Property Redevelopment
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Exposure Route	Parameter Code	Parameter Definition	Units	Site-Specific Value	Site-Specific Rationale/Source	Default Value	Default Rationale/Source
General Parameters	EF	Exposure Frequency	days/year	30	Professional Judgment	30	Professional Judgment
	ED	Exposure Duration	years	1	Professional Judgment	1	Professional Judgment
	ET	Exposure Time with Soil	hours/day	8	USEPA 1997	8	USEPA 1997
	ET	Exposure Time with Groundwater	hours/event	2	Professional Judgment	2	Professional Judgment
	BW	Body Weight	kilograms	70	USEPA 1989; Average	70	USEPA 1989; Average
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA 1989	25,550	USEPA 1989
	AT-N	Averaging Time (Non-cancer)	days	ED x 365	USEPA 1989	ED x 365	USEPA 1989
Incidental Ingestion	IR-soil	Ingestion Rate of Soil	mg/day	100	USEPA 2002	330	Cal-EPA 2005
Dermal Contact	SA	Surface Area Available for Contact	cm^2/day	5,800	USEPA 2004a	5,700	Cal-EPA 2005
	AF	Soil Adherence Factor	mg/cm^2	0.08	USEPA 2004a; 95th percentile body part-specific surface area weighted soil AFs	0.8	Cal-EPA 2005
	EV	Event Frequency	event/day	1	USEPA 2004a	1	USEPA 2004a
	AbsD	Dermal Absorption Factor	unitless	chem-specific	USEPA 2004a	chem-specific	USEPA 2004a
	Kp	Water Permeability Coefficient (Kp)	cm/hour	chem-specific	USEPA 2004a	chem-specific	USEPA 2004a
Inhalation of Vapor/Particulates	InhR	Inhalation Rate	m^3/day	20	USEPA 1997	20	Cal-EPA 2005
	VF	Volatilization Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002
	PEF	Particulate Emission Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002

Source:

Cal-EPA 2005. Human Health Risk Assessment (HHRA) Note. HERD HHRA Note #1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment At California Military Facilities.

USEPA 1989. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

USEPA 1997. Exposure Factors Handbook. Volumes I-III. An update to Exposure Factors Handbook EPA/600/8-89/043-May 1989. EPA/600/P-95-002Fa. August.

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. OSWER 9355.4-24. March.

USEPA 2004a. RAGS. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim Guidance. EPA/540/R-99/005

Table 11
Exposure Parameters for an Industrial/Commercial Worker
Current and Future Exposure Scenarios
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Exposure Route	Parameter Code	Parameter Definition	Units	Site-Specific Value	Site-Specific Rationale/Source	Default Value	Default Rationale/Source
General Parameters	EF	Exposure Frequency	days/year	250	USEPA 1997	250	USEPA 1997
	ED	Exposure Duration	years	25	USEPA 1991	25	USEPA 1991
	ET	Exposure Time	hours/day	8	USEPA 1997	8	USEPA 1997
	BW	Body Weight	kilograms	70	USEPA 1989; Average	70	USEPA 1989; Average
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA 1989	25,550	USEPA 1989
	AT-N	Averaging Time (Non-cancer)	days	ED x 365	USEPA 1989	ED x 365	USEPA 1989
Incidental Ingestion	IR-soil	Ingestion Rate of Soil	mg/day	100	USEPA 1997 and 2002 (outdoor worker)	100	Cal-EPA 2005
Dermal Contact	SA	Surface Area Available for Contact	cm^2	3,300	USEPA 2004a	5,700	Cal-EPA 2005
	AF	Soil Adherence Factor	mg/cm^2	0.07	USEPA 2004a	0.2	Cal-EPA 2005
	EV	Event Frequency	event/day	1	USEPA 2004a	1	USEPA 2004a
	AbsD	Dermal Absorption Factor	unitless	chem-specific	USEPA 2004a	chem-specific	USEPA 2004a
Inhalation of Vapor/Particulates	InhR	Inhalation Rate	m^3/day	13.2	USEPA 1997	14	Cal-EPA 2005
	VF	Volatilization Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002
	PEF	Particulate Emission Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002

Source:

Cal-EPA 2005. Human Health Risk Assessment (HHRA) Note. HERD HHRA Note #1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment At California Military Facilities.

USEPA 1989. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

USEPA 1991. RAGS. Volume I: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

USEPA 1997. Exposure Factors Handbook. Volumes I-III. An update to Exposure Factors Handbook EPA/600/8-89/043-May 1989. EPA/600/P-95-002Fa. August.

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. OSWER 9355.4-24. March.

USEPA 2004a. RAGS. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim Guidance. EPA/540/R-99/005

Table 12
Exposure Parameters for a Landscaper
Future Exposure Scenario - After Property Redevelopment
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Exposure Route	Parameter Code	Parameter Definition	Units	Site-Specific Value	Site-Specific Rationale/Source	Default Value	Default Rationale/Source
General Parameters	EF	Exposure Frequency	days/year	50	Professional Judgment; once a week for 50 weeks	50	Professional Judgment; once a week for 50 weeks
	ED	Exposure Duration	years	25	USEPA 1991	25	USEPA 1991
	ET	Exposure Time	hours/day	8	USEPA 1997	8	USEPA 1997
	BW	Body Weight	kilograms	70	USEPA 1989; Average	70	USEPA 1989; Average
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA 1989	25,550	USEPA 1989
	AT-N	Averaging Time (Non-cancer)	days	ED x 365	USEPA 1989	ED x 365	USEPA 1989
Incidental Ingestion	IR-soil	Ingestion Rate of Soil	mg/day	100	USEPA 1997 and 2002 (for an outdoor worker)	330	Cal-EPA 2005
Dermal Contact	SA	Surface Area Available for Contact	cm^2	5,700	Cal-EPA 2005	5,700	Cal-EPA 2005
	AF	Soil Adherence Factor	mg/cm^2	0.5	USEPA 2004a; 95th percentile body part-specific surface area weighted soil AFs for a gardener	0.8	Cal-EPA 2005
	EV	Event Frequency	event/day	1	USEPA 2004a	1	USEPA 2004a
	AbsD	Dermal Absorption Factor	unitless	chem-specific	USEPA 2004a	chem-specific	USEPA 2004a
Inhalation of Vapor/Particulates	InhR	Inhalation Rate	m^3/day	16	USEPA 1997; midpoint between moderate and heavy activities outdoor worker (Table 5-23)	20	Cal-EPA 2005
	VF	Volatilization Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002
	PEF	Particulate Emission Factor	m^3/kg	chemical-specific	USEPA 2002	chemical-specific	USEPA 2002

Source:

Cal-EPA 2005. Human Health Risk Assessment (HHRA) Note. HERD HHRA Note #1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment At California Military Facilities.

USEPA 1989. Risk Assessment Guidance for Superfund (RAGS). Volume I: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

USEPA 1991. RAGS. Volume I: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

USEPA 1997. Exposure Factors Handbook. Volumes I-III. An update to Exposure Factors Handbook EPA/600/8-89/043-May 1989. EPA/600/P-95-002Fa. August.

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. OSWER 9355.4-24. March.

USEPA 2004a. RAGS. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim Guidance. EPA/540/R-99/005

Table 13
Volatilization and Particulate Emission Factors
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Parameter	Value	Units	Reference
Water-filled soil porosity (θw)	7.60E-02	(Lwater-Lsoil)	DTSC J&E model default for Loamy sand (LS)
Total soil porosity (θ_T)	3.90E-01	(Lpore-Lsoil)	DTSC J&E model default for Loamy sand (LS)
Air-filled soil porosity (θa)	3.14E-01	(Lair-Lsoil)	DTSC J&E model default for Loamy sand (LS)
Soil bulk density (Pb)	1.62	g/cm^3	DTSC J&E model default for Loamy sand (LS)
Fraction organic carbon in soil (foc)	0.002	unitless	DTSC J&E model default
Exposure interval $(T)_{commW,\ landscaper}$	7.88E+08	sec	25 year exposure duration
Exposure interval $(T)_{constW,\ trenchW}$	3.15E+07	sec	one year exposure duration
Inverse of mean conc, $Q/C_{commW,\ landscaper}$	42.25	(g/m^2-s per kg/m^3)	Estimated for an 8.5-acre site in Los Angeles (USEPA 2002)
Q/C_{sa}, volatiles $_{constW}$	8.64	(g/m^2-s per kg/m^3)	Estimated for an 8.5-acre site, subchronic (eqn E-15, USEPA 2002)
Q/C_{sr}, $particulates_{trenchW}$	15.49	(g/m^2-s per kg/m^3)	Estimated for an 8.5-acre site (eqn E-19, USEPA 2002)
Dispersion correction factor (F_D)	0.188	unitless	assumes 1-yr construction activities (eqn E-16, USEPA 2002)
Fraction of vegetative cover, $G_{commW,\ landscaper}$	0.5	unitless	Default (USEPA 2002)
Fraction of vegetative cover, $G_{trenchW}$	0	unitless	Professional Judgment
Ambient air velocity in mixing zone (Uair)	0.313	m/s	1/10th average wind speed (7 mph) for San Diego (NCDC 2006)
Width of source-zone area (W)	200	cm	Assume average length of trench = 2 m (average of length, 1m and width, 3 m)
Mixing zone height (H)	458	cm	Assume depth of trench = 15 ft; professional judgment
Width of trench (Wt)	100	cm	Assume width of trench = 1 m or ~3 ft; professional judgment
Source-zone area (A)	2.0E+05	cm2	2 sidewalls and bottom area of trench
Dispersion factor for ambient air (DFamb)	14.11	cm/s	Estimated (ASTM 1998)
Mean annual windspeed (Um)	3.13	m/s	Average wind speed (7 mph) for San Diego (NCDC 2006)
Equivalent threshold value of windspeed at 7m (Ut)	11.32	m/s	Default (USEPA 2002)
Function dependent on Um/Ut (Fx)	1.94E-01	unitless	Default (USEPA 2002)
Particulate Emission Factor, $PEF_{commW,\ landscaper}$	2.06E+09	(m^3/kg)	Estimated for a 8.5-acre area
Particulate Emission Factor, PEF_{constW}	4.00E+06	(m^3/kg)	5 x SCAQMD fugitive dust standard of 50 ug/m^3
Particulate Emission Factor, $PEF_{trenchW}$	3.78E+08	(m^3/kg)	Estimated for a limited area (0.5-acre)

Notes:

Particulate Emission Factor; $PEF_{commW,\ landscaper}$ (USEPA 2002): $PEF = [(Q/C_{commW,\ landscaper} \times 3600) / (0.036 \times (1-G_{commW,\ landscaper}) \times (Um/Ut)^3 \times Fx)]$

$PEF_{trenchW}$ (USEPA 2002): $PEF = [(Q/C_{sr} \times 3600) / (0.036 \times (1-G_{trenchW}) \times (Um/Ut)^3 \times Fx)]$

PEF_{constW} (USEPA 2002): As a conservative exposure assumption, a dust exposure concentration of 250 ug/m^3, five times the South Coast Air Quality Management District (SCAQMD) fugitive dust standard of 50 ug/m^3

Table 13
Volatilization and Particulate Emission Factors
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

VOCs	Diffusivity in Air (D_{air})	Henry's Law Constant (H')	Diffusivity in Water (D_{water})	Soil organic carbon partition coeff (Koc)	Soil-water partition coefficient (Kd)	Total soil conc. to pore water conc. Ratio (Ksw)	Apparent Diffusivity (D_A)	Effective Diffusion Coefficient (Deff)	Construction VF (m^3/kg)	Trench Worker VF (m^3/kg)	Commercial/ Landscaper VF (m^3/kg)
1,1,1,2-Tetrachloroethane	7.1E-02	1.4E-02	7.9E-06	9.3E+01	1.9E-01	2.4E-01	3.6E-04	9.9E-03	7.4E+02	2.3E+03	3.4E+03
1,1,1-Trichloroethane	7.8E-02	7.1E-01	8.8E-06	1.1E+02	2.2E-01	4.0E-01	1.2E-02	1.1E-02	1.3E+02	4.0E+02	6.0E+02
1,1,2-Trichloroethane	7.8E-02	3.7E-02	8.8E-06	5.0E+01	1.0E-01	1.5E-01	1.6E-03	1.1E-02	3.5E+02	1.1E+03	1.6E+03
1,1-Dichloroethane	7.4E-02	2.3E-01	1.1E-05	3.2E+01	6.3E-02	1.5E-01	9.4E-03	1.0E-02	1.5E+02	4.5E+02	6.7E+02
1,1-Dichloroethene	9.0E-02	1.1E+00	1.0E-05	5.9E+01	1.2E-01	3.7E-01	2.2E-02	1.2E-02	9.5E+01	2.9E+02	4.4E+02
1,2,4-Trichlorobenzene	3.0E-02	5.8E-02	8.2E-06	7.2E+02	1.4E+00	1.5E+00	1.0E-04	4.2E-03	1.4E+03	4.3E+03	6.5E+03
1,2,4-Trimethylbenzene	7.5E-02	2.3E-01	7.1E-06	3.7E+03	7.4E+00	7.5E+00	2.0E-04	1.0E-02	1.0E+03	3.1E+03	4.6E+03
1,2-Dibromo-3-chloropropane	2.1E-02	6.0E-03	7.0E-06	1.3E+02	2.6E-01	3.1E-01	3.5E-05	2.9E-03	2.4E+03	7.3E+03	1.1E+04
1,2-Dichlorobenzene	6.9E-02	7.8E-02	7.9E-06	6.2E+02	1.2E+00	1.3E+00	3.5E-04	9.6E-03	7.5E+02	2.3E+03	3.4E+03
1,2-Dichloroethane	1.0E-01	4.0E-02	9.9E-06	1.7E+01	3.5E-02	8.9E-02	4.0E-03	1.4E-02	2.2E+02	6.9E+02	1.0E+03
1,3,5-Trimethylbenzene	7.5E-02	3.2E-01	7.1E-06	8.2E+02	1.6E+00	1.7E+00	1.2E-03	1.0E-02	4.1E+02	1.3E+03	1.9E+03
1,3-Dichlorobenzene	6.9E-02	7.8E-02	7.9E-06	6.2E+02	1.2E+00	1.3E+00	3.5E-04	9.6E-03	7.5E+02	2.3E+03	3.4E+03
1,3-Dichloropropene	6.3E-02	7.3E-01	1.0E-05	4.6E+01	9.1E-02	2.8E-01	1.4E-02	8.7E-03	1.2E+02	3.7E+02	5.5E+02
1,4-Dichlorobenzene	6.9E-02	1.0E-01	7.9E-06	6.2E+02	1.2E+00	1.3E+00	4.5E-04	9.6E-03	6.6E+02	2.0E+03	3.1E+03
2-Butanone (MEK)	9.0E-02	1.1E-03	9.8E-06	4.5E+00	9.0E-03	5.6E-02	1.5E-04	1.2E-02	1.1E+03	3.5E+03	5.2E+03
2-Chlorotoluene	7.2E-02	1.4E-01	8.7E-06	1.6E+02	3.2E-01	3.9E-01	2.2E-03	1.0E-02	3.0E+02	9.1E+02	1.4E+03
4-Methyl-2-pentanone	7.5E-02	4.1E-03	7.8E-06	9.1E+00	1.8E-02	6.6E-02	4.0E-04	1.0E-02	7.1E+02	2.2E+03	3.2E+03
Acenaphthene	4.2E-02	6.4E-03	7.7E-06	4.9E+03	9.8E+00	9.8E+00	2.3E-06	5.8E-03	9.3E+03	2.8E+04	4.3E+04
Acetone	1.2E-01	1.6E-03	1.1E-05	5.8E-01	1.2E-03	4.8E-02	3.5E-04	1.7E-02	7.6E+02	2.3E+03	3.5E+03
Benzene	8.8E-02	2.3E-01	9.8E-06	5.9E+01	1.2E-01	2.1E-01	8.2E-03	1.2E-02	1.6E+02	4.8E+02	7.2E+02
Bromochloromethane	4.7E-02	6.0E-02	1.0E-05	2.4E+01	4.7E-02	1.1E-01	2.3E-03	6.6E-03	3.0E+02	9.1E+02	1.4E+03
Bromodichloromethane	3.0E-02	6.6E-02	1.1E-05	5.5E+01	1.1E-01	1.7E-01	9.8E-04	4.1E-03	4.5E+02	1.4E+03	2.1E+03
Bromomethane	7.3E-02	2.6E-01	1.2E-05	9.0E+00	1.8E-02	1.1E-01	1.4E-02	1.0E-02	1.2E+02	3.7E+02	5.5E+02
Carbon disulfide	1.0E-01	1.2E+00	1.0E-05	4.6E+01	9.1E-02	3.8E-01	2.9E-02	1.4E-02	8.3E+01	2.5E+02	3.8E+02
Carbon tetrachloride	7.8E-02	1.2E+00	8.8E-06	1.7E+02	3.5E-01	6.4E-01	1.3E-02	1.1E-02	1.2E+02	3.8E+02	5.7E+02
Chlorobenzene	7.3E-02	1.5E-01	8.7E-06	2.2E+02	4.4E-01	5.1E-01	1.8E-03	1.0E-02	3.3E+02	1.0E+03	1.5E+03
Chloroethane	1.0E-01	4.5E-01	1.2E-05	1.5E+01	2.9E-02	1.6E-01	2.4E-02	1.4E-02	9.0E+01	2.8E+02	4.1E+02
Chloroform	1.0E-01	1.5E-01	1.0E-05	4.0E+01	8.0E-02	1.6E-01	8.6E-03	1.4E-02	1.5E+02	4.7E+02	7.0E+02
Chloromethane	1.3E-01	3.6E-01	6.5E-06	1.4E+01	2.9E-02	1.5E-01	2.7E-02	1.7E-02	8.6E+01	2.6E+02	4.0E+02
cis-1,2-Dichloroethene	7.4E-02	1.7E-01	1.1E-05	3.6E+01	7.1E-02	1.5E-01	7.0E-03	1.0E-02	1.7E+02	5.2E+02	7.8E+02
Dibromochloromethane	2.0E-02	3.2E-02	1.1E-05	3.5E+01	7.0E-02	1.2E-01	4.3E-04	2.7E-03	6.8E+02	2.1E+03	3.1E+03
Dibromomethane	3.2E-02	3.4E-02	8.4E-06	2.4E+01	4.7E-02	1.0E-01	9.0E-04	4.4E-03	4.7E+02	1.4E+03	2.2E+03
Diisopropyl ether	6.8E-02	1.6E-01	7.2E-06	6.5E+01	1.3E-01	2.1E-01	4.5E-03	9.5E-03	2.1E+02	6.4E+02	9.6E+02

Table 13
Volatilization and Particulate Emission Factors
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

VOCs	Diffusivity in Air (D_{air})	Henry's Law Constant (H')	Diffusivity in Water (D_{water})	Soil organic carbon partition coeff (Koc)	Soil-water partition coefficient (Kd)	Total soil conc. to pore water conc. Ratio (Ksw)	Apparent Diffusivity (D_A)	Effective Diffusion Coefficient (Deff)	Construction VF (m^3/kg)	Trench Worker VF (m^3/kg)	Commercial/ Landscaper VF (m^3/kg)
Ethylbenzene	7.5E-02	3.2E-01	7.8E-06	3.6E+02	7.3E-01	8.4E-01	2.5E-03	1.0E-02	2.8E+02	8.7E+02	1.3E+03
Ethyl tert-butyl ether (ETBE)	6.9E-02	1.0E-01	7.3E-06	3.7E+01	7.4E-02	1.4E-01	4.2E-03	9.7E-03	2.2E+02	6.7E+02	1.0E+03
Fluorene	6.1E-02	3.2E-03	7.9E-06	1.4E+04	2.8E+01	2.8E+01	5.9E-07	8.4E-03	1.8E+04	5.6E+04	8.4E+04
Freon-113	2.9E-02	2.1E+01	8.1E-06	1.6E+02	3.2E-01	4.5E+00	1.2E-02	4.0E-03	1.3E+02	4.0E+02	6.0E+02
Hexachlorobutadiene	5.6E-02	4.2E-01	6.2E-06	9.9E+02	2.0E+00	2.1E+00	9.5E-04	7.8E-03	4.6E+02	1.4E+03	2.1E+03
Isopropylbenzene	7.5E-02	4.7E-01	7.1E-06	2.2E+02	4.4E-01	5.8E-01	5.2E-03	1.0E-02	2.0E+02	6.0E+02	9.0E+02
Methyl tert-butyl ether (MTBE)	8.0E-02	2.4E-02	1.0E-05	6.0E+00	1.2E-02	6.4E-02	2.6E-03	1.1E-02	2.8E+02	8.5E+02	1.3E+03
Methylene chloride	1.0E-01	9.0E-02	1.2E-05	1.2E+01	2.3E-02	8.8E-02	8.8E-03	1.4E-02	1.5E+02	4.6E+02	6.9E+02
Naphthalene	5.9E-02	2.0E-02	7.5E-06	1.2E+03	2.4E+00	2.4E+00	4.1E-05	8.2E-03	2.2E+03	6.8E+03	1.0E+04
n-Butylbenzene	7.5E-02	5.4E-01	7.8E-06	2.8E+03	5.7E+00	5.8E+00	5.9E-04	1.0E-02	5.8E+02	1.8E+03	2.7E+03
n-Propylbenzene	7.5E-02	5.4E-01	7.8E-06	2.8E+03	5.7E+00	5.8E+00	5.9E-04	1.0E-02	5.8E+02	1.8E+03	2.7E+03
p-Isopropyltoluene (Cymene; 4-)	5.7E-02	4.7E-01	6.7E-06	2.3E+03	4.6E+00	4.7E+00	4.8E-04	8.0E-03	6.4E+02	2.0E+03	3.0E+03
Pyrene	2.7E-02	4.5E-04	7.2E-06	1.1E+05	2.1E+02	2.1E+02	5.0E-09	3.8E-03	2.0E+05	6.1E+05	9.2E+05
sec-Butylbenzene (2-Phenylbutane)	7.5E-02	7.7E-01	7.8E-06	2.2E+03	4.3E+00	4.5E+00	1.1E-03	1.0E-02	4.3E+02	1.3E+03	2.0E+03
Styrene	7.1E-02	1.1E-01	8.0E-06	7.8E+02	1.6E+00	1.6E+00	4.2E-04	9.9E-03	6.9E+02	2.1E+03	3.2E+03
tert-Amyl methyl ether (TAME)	7.0E-02	1.0E-01	7.4E-06	4.2E+01	8.3E-02	1.5E-01	4.0E-03	9.7E-03	2.2E+02	6.8E+02	1.0E+03
tert-Butyl alcohol	8.5E-02	3.0E-03	9.1E-06	4.2E+00	8.4E-03	5.6E-02	3.9E-04	1.2E-02	7.1E+02	2.2E+03	3.3E+03
tert-Butylbenzene	7.5E-02	5.2E-01	7.8E-06	2.2E+03	4.3E+00	4.4E+00	7.4E-04	1.0E-02	5.2E+02	1.6E+03	2.4E+03
Tetrachloroethene	7.2E-02	7.5E-01	8.2E-06	1.6E+02	3.1E-01	5.0E-01	9.2E-03	1.0E-02	1.5E+02	4.5E+02	6.8E+02
Toluene	8.7E-02	2.7E-01	8.6E-06	1.8E+02	3.6E-01	4.6E-01	4.4E-03	1.2E-02	2.1E+02	6.5E+02	9.8E+02
trans-1,2-Dichloroethene	7.1E-02	3.8E-01	1.2E-05	5.3E+01	1.1E-01	2.3E-01	1.0E-02	9.8E-03	1.4E+02	4.3E+02	6.4E+02
Trichloroethene	7.9E-02	4.2E-01	9.1E-06	1.7E+02	3.3E-01	4.6E-01	6.2E-03	1.1E-02	1.8E+02	5.5E+02	8.3E+02
Vinyl chloride	1.1E-01	1.1E+00	1.2E-06	1.9E+01	3.7E-02	3.0E-01	3.4E-02	1.5E-02	7.7E+01	2.4E+02	3.5E+02
Xylenes (total)	7.0E-02	3.0E-01	7.8E-06	4.1E+02	8.1E-01	9.2E-01	2.0E-03	9.7E-03	3.2E+02	9.8E+02	1.5E+03

Notes:

Volatilization Factor; $VF_{commW,landscaper}$ (USEPA 2002): $VF = Q/C \times ((3.14 \times D_A \times T)^{1/2} \times 10^{-4})/(2 \times Pb \times D_A))$

VF_{constW} (eqn 5-14, USEPA 2002) = $1/F_D \times Q/C_{sa} \times ((3.14 \times D_A \times T)^{1/2} \times 10^{-4})/(2 \times Pb \times D_A))$ for short-term worker where Q/C = 8.64 for 8.5-acre site

$VF_{trenchW}$ (ASTM 1998): $VF = (Pb / DFamb) \times [(4 \times Deff \times H') / (3.14 \times T \times 3.2E07 \times Ksw \times Pb)]^{1/2}$

$$D_A = \frac{\left(\frac{D_{air}\,\theta_a^{3.33}}{\theta_T^{2}}\right) + \left(\frac{D_{water}\,\theta_w^{3.33}}{H'\,\theta^{2}}\right)}{Pb \times Koc \times foc + \theta_w + \theta_a \times H'}$$

$$D_{eff} = \left[\frac{\left(D_{air}\,\theta_a^{3.33}\right)}{(\theta_T^{2})}\right] + \left[\frac{\left(D_{water}\theta_w^{3.33}\right)}{(H'\,\theta_T^{2})}\right]$$

And where: $$K_{sw} = \frac{\theta_w + (\theta_a\,H') + (Pb\,Kd)}{Pb}$$

And where: $$DF_{amb} = \frac{(U_{air} \times W \times H')}{A}$$

Table 14
Soil Saturation Concentrations and Water Solubility
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

VOCs	CAS No.	Water Solubility, S (µg/L)	Organic carbon partition coefficient, Koc (cm^3/g)	Henry's Law Constant, H' (unitless)	Estimated C_{sat} (mg/kg)	Maximum Detected Soil Concentration (mg/kg)	Selected Soil EPC (mg/kg)	Maximum Detected Groundwater Concentration (µg/L)	Selected Groundwater EPC (µg/L)
1,1,1,2-Tetrachloroethane	630206	3.0E+06	9.3E+01	1.4E-02	7.0E+02	--	**--**	1.6E+00	**1.6E+00**
1,1,1-Trichloroethane	71556	1.3E+06	1.1E+02	7.1E-01	5.4E+02	5.1E-02	**5.1E-02**	4.5E+01	**4.5E+01**
1,1,2-Trichloroethane	79005	4.4E+06	5.0E+01	3.7E-02	6.8E+02	--	**--**	9.4E+00	**9.4E+00**
1,1-Dichloroethane	75343	5.1E+06	3.2E+01	2.3E-01	7.8E+02	3.0E-03	**3.0E-03**	1.2E+02	**1.2E+02**
1,1-Dichloroethene	75354	2.3E+06	5.9E+01	1.1E+00	8.4E+02	--	**--**	5.4E+02	**5.4E+02**
1,1-Dichloropropene*	542756	2.8E+06	4.6E+01	7.3E-01	7.8E+02	4.0E-03	**4.0E-03**	5.8E-01	**5.8E-01**
1,2,4-Trichlorobenzene	120821	3.0E+05	7.2E+02	5.8E-02	4.5E+02	--	**--**	6.8E-01	**6.8E-01**
1,2,4-Trimethylbenzene	95636	5.7E+04	3.7E+03	2.3E-01	4.3E+02	1.6E+01	**1.6E+01**	1.4E+01	**1.4E+01**
1,2-Dibromo-3-chloropropane	96128	1.2E+06	1.3E+02	6.0E-03	3.7E+02	--	**--**	6.0E-01	**6.0E-01**
1,2-Dichlorobenzene	95501	1.6E+05	6.2E+02	7.8E-02	2.0E+02	--	**--**	9.7E+00	**9.7E+00**
1,2-Dichloroethane	107062	8.5E+06	1.7E+01	4.0E-02	7.6E+02	--	**--**	2.0E+01	**2.0E+01**
1,3,5-Trimethylbenzene	108678	4.8E+04	8.2E+02	3.2E-01	8.4E+01	6.8E-01	**6.8E-01**	1.6E+01	**1.6E+01**
1,3-Dichlorobenzene	541731	1.6E+05	6.2E+02	7.8E-02	2.0E+02	--	**--**	5.6E+00	**5.6E+00**
1,4-Dichlorobenzene	106467	7.4E+04	6.2E+02	1.0E-01	9.6E+01	2.5E-02	**2.5E-02**	3.2E+01	**3.2E+01**
2-Butanone (MEK)	78933	2.7E+08	4.5E+00	1.1E-03	1.5E+04	--	**--**	3.0E+02	**3.0E+02**
2-Chlorotoluene	95498	4.7E+05	1.6E+02	1.4E-01	1.9E+02	--	**--**	3.8E-01	**3.8E-01**
4-Methyl-2-pentanone	108101	1.9E+07	9.1E+00	5.6E-03	1.3E+03	--	**--**	7.2E-01	**7.2E-01**
Acenaphthene	83329	3.9E+03	4.9E+03	6.4E-03	3.8E+01	2.0E+00	**2.0E+00**	2.5E+03	**2.5E+03**
Acetone	67641	1.0E+09	5.8E-01	1.6E-03	4.8E+04	6.2E-02	**6.2E-02**	4.9E+01	**4.9E+01**
Benzene	71432	1.8E+06	5.9E+01	2.3E-01	3.7E+02	2.0E-02	**2.0E-02**	1.1E+02	**1.1E+02**
Bromochloromethane	74975	2.0E+07	2.4E+01	6.0E-02	2.2E+03	--	**--**	1.5E+00	**1.5E+00**
Bromodichloromethane	75274	6.7E+06	5.5E+01	6.6E-02	1.1E+03	--	**--**	2.6E+00	**2.6E+00**
Bromomethane	74839	1.5E+07	9.0E+00	2.6E-01	1.7E+03	--	**--**	7.9E-01	**7.9E-01**
Carbon disulfide	75150	1.2E+06	4.6E+01	1.2E+00	4.5E+02	8.7E-03	**8.7E-03**	3.6E+00	**3.6E+00**
Chlorobenzene	108907	4.7E+05	2.2E+02	1.5E-01	2.4E+02	4.0E-03	**4.0E-03**	9.5E+00	**9.5E+00**
Chloroethane	75003	5.7E+06	1.5E+01	4.5E-01	9.3E+02	--	**--**	3.0E-01	**3.0E-01**
Chloroform	67663	7.9E+06	4.0E+01	1.5E-01	1.2E+03	4.0E-03	**4.0E-03**	2.7E+01	**2.7E+01**
Chloromethane	74873	8.2E+06	1.4E+01	3.6E-01	1.2E+03	--	**--**	9.3E-01	**9.3E-01**
cis-1,2-Dichloroethene	156592	3.5E+06	3.6E+01	1.7E-01	5.3E+02	9.6E-01	**9.6E-01**	5.7E+04	**5.7E+04**
Diisopropyl ether	108203	8.8E+06	1.1E+01	9.3E-02	7.6E+02	1.0E-03	**1.0E-03**	--	**--**
Dibromochloromethane	124481	4.4E+06	3.5E+01	3.2E-02	5.4E+02	--	**--**	5.1E-01	**5.1E-01**
Dibromomethane	74953	1.1E+07	2.4E+01	3.4E-02	1.1E+03	--	**--**	2.3E-01	**2.3E-01**
Ethylbenzene	100414	1.7E+05	3.6E+02	3.2E-01	1.4E+02	2.3E+00	**2.3E+00**	1.6E+01	**1.6E+01**
Ethyl tert-butyl ether (ETBE)	637923	5.0E+06	3.7E+01	1.0E-01	7.1E+02	--	**--**	8.0E-01	**8.0E-01**
Fluorene	86737	1.9E+03	1.4E+04	3.2E-03	5.2E+01	5.7E+00	**5.7E+00**	2.7E+00	**2.7E+00**
Hexachlorobutadiene	87683	3.2E+03	9.9E+02	4.2E-01	6.8E+00	1.8E-02	**1.8E-02**	4.0E-01	**4.0E-01**
Isopropylbenzene	98828	6.1E+04	2.2E+02	4.7E-01	3.5E+01	1.7E+00	**1.7E+00**	8.9E+01	**8.9E+01**
Methyl tert-butyl ether (MTBE)	1634044	1.5E+08	6.0E+00	2.4E-02	9.5E+03	--	**--**	1.3E+01	**1.3E+01**
Methylene chloride	75092	1.3E+07	1.2E+01	9.0E-02	1.2E+03	9.4E-03	**9.4E-03**	1.0E+01	**1.0E+01**
Naphthalene	91203	3.1E+04	1.2E+03	2.0E-02	7.5E+01	1.8E+01	**1.8E+01**	3.1E+02	**3.1E+02**

Table 14
Soil Saturation Concentrations and Water Solubility
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

VOCs	CAS No.	Water Solubility, S (µg/L)	Organic carbon partition coefficient, Koc (cm^3/g)	Henry's Law Constant, H' (unitless)	Estimated C_{sat} (mg/kg)	Maximum Detected Soil Concentration (mg/kg)	Selected Soil EPC (mg/kg)	Maximum Detected Groundwater Concentration (µg/L)	Selected Groundwater EPC (µg/L)
n-Butylbenzene	104518	1.4E+04	2.8E+03	5.4E-01	8.0E+01	5.5E+00	**5.5E+00**	1.4E+02	**1.4E+02**
n-Propylbenzene	103651	1.4E+04	2.8E+03	5.4E-01	8.0E+01	3.7E+00	**3.7E+00**	3.2E+02	**3.2E+02**
p-Isopropyltoluene (Cymene; 4-)	99876	1.7E+04	2.3E+03	4.7E-01	8.1E+01	5.8E+00	**5.8E+00**	4.0E+00	**4.0E+00**
Pyrene	129000	1.4E+02	1.1E+05	4.5E-04	2.8E+01	3.5E-01	**3.5E-01**	2.2E-01	**2.2E-01**
sec-Butylbenzene	135988	1.7E+04	2.2E+03	7.7E-01	7.6E+01	2.3E+00	**2.3E+00**	5.4E+01	**5.4E+01**
Styrene	100425	3.1E+05	7.8E+02	1.1E-01	5.0E+02	--	**--**	9.9E-01	**9.9E-01**
tert-Butyl alcohol	75650	2.4E+08	4.2E+00	3.0E-03	1.3E+04	1.0E-01	**1.0E-01**	4.1E+01	**4.1E+01**
tert-Butylbenzene	98066	3.0E+04	2.2E+03	5.2E-01	1.3E+02	4.0E-03	**4.0E-03**	2.4E+00	**2.4E+00**
Tetrachloroethene	127184	2.0E+05	1.6E+02	7.5E-01	1.0E+02	**2.2E+02**	**1.0E+02**	2.4E+05	**2.0E+05**
Toluene	108883	5.3E+05	1.8E+02	2.7E-01	2.4E+02	9.9E-03	**9.9E-03**	6.7E+00	**6.7E+00**
trans-1,2-Dichloroethene	156605	6.3E+06	5.3E+01	3.8E-01	1.4E+03	6.7E-01	**6.7E-01**	5.1E+02	**5.1E+02**
Trichloroethene	79016	1.1E+06	1.7E+02	4.2E-01	5.1E+02	1.0E+01	**1.0E+01**	2.1E+04	**2.1E+04**
Vinyl chloride	75014	2.8E+06	1.9E+01	1.1E+00	8.2E+02	5.4E-02	**5.4E-02**	2.5E+04	**2.5E+04**
Xylenes (total)	1330207	1.6E+05	4.1E+02	3.0E-01	1.5E+02	2.4E+00	**2.4E+00**	7.9E+00	**7.9E+00**

Note:

* 1,3-Dichloropropene used a surrogate for 1,1-Dichloropropene

C_{sat} = soil saturation limit

$$C_{sat} = \left(\frac{S}{Pb}\right) \times \left(K_{oc} f_{oc} Pb\right) + \left(\theta_w\right) + \left(H' \theta_a\right)$$

Soil Physical Properties	Value
Pb = soil bulk density	1.62
θw = water-filled soil porosity	0.076
θa = air-filled soil porosity	0.314
f_{oc} = fraction organic carbon in soil	0.002

Table 15
Groundwater-to-Outdoor Air Pathway
Site Wide Risk Assessment: Site-Specific
2701 North Harbor Drive
San Diego, California

Groundwater VOCs	Cas No.	Molecular Weight	Henry's Law constant ($atm\text{-}m^3/mol$)	Groundwater EPC[a]		Liquid Mass Transfer coefficient, Kl (cm/sec)	Gas-phase Mass Transfer coefficient, Kg (cm/sec)	Mass Transfer Coefficient, K (cm/sec)	Emission Rate at the Surface, ER (mg/sec)	Outdoor Air Concentration-GW, Ca-gw (mg/m^3)
				(µg/L)	(mg/L)					
1,1,1,2-Tetrachloroethane	630206	1.7E+02	3.5E-04	1.6	0.002	8.5E-04	3.8E-01	7.4E-04	3.5E-05	**2.8E-05**
1,1,1-Trichloroethane	71556	1.3E+02	1.7E-02	45	0.045	9.5E-04	4.1E-01	9.5E-04	1.3E-03	**1.0E-03**
1,1,2-Trichloroethane	79005	1.3E+02	9.1E-04	9.4	0.009	9.5E-04	4.1E-01	9.0E-04	2.5E-04	**2.0E-04**
1,1-Dichloroethane	75343	9.9E+01	5.6E-03	120	0.120	1.1E-03	4.6E-01	1.1E-03	3.9E-03	**3.1E-03**
1,1-Dichloroethene	75354	9.7E+01	2.6E-02	540	0.540	1.1E-03	4.6E-01	1.1E-03	1.8E-02	**1.4E-02**
1,1-Dichloropropene	563586	1.1E+02	1.8E-02	0.580	0.001	1.0E-03	4.4E-01	1.0E-03	1.8E-05	**1.4E-05**
1,2,4-Trichlorobenzene	120821	1.8E+02	1.4E-03	0.680	0.001	8.2E-04	3.7E-01	7.9E-04	1.6E-05	**1.3E-05**
1,2,4-Trimethylbenzene	95636	1.2E+02	5.7E-03	14	0.014	1.0E-03	4.3E-01	9.9E-04	4.2E-04	**3.3E-04**
1,2-Dibromo-3-chloropropane	96128	2.4E+02	1.5E-04	0.600	0.001	7.2E-04	3.4E-01	5.3E-04	9.6E-06	**7.7E-06**
1,2-Dichlorobenzene	95501	1.5E+02	1.9E-03	9.7	0.010	9.1E-04	4.0E-01	8.8E-04	2.6E-04	**2.1E-04**
1,2-Dichloroethane	107062	9.9E+01	9.8E-04	20	0.020	1.1E-03	4.6E-01	1.0E-03	6.3E-04	**5.0E-04**
1,3,5-Trimethylbenzene	108678	1.2E+02	7.7E-03	16	0.016	1.0E-03	4.3E-01	1.0E-03	4.8E-04	**3.8E-04**
1,3-Dichlorobenzene	541731	1.5E+02	1.9E-03	5.6	0.006	9.1E-04	4.0E-01	8.8E-04	1.5E-04	**1.2E-04**
1,4-Dichlorobenzene	106467	1.5E+02	2.4E-03	32	0.032	9.1E-04	4.0E-01	8.9E-04	8.5E-04	**6.8E-04**
2-Butanone (MEK)	78933	7.2E+01	2.7E-05	300	0.300	1.3E-03	5.1E-01	4.0E-04	3.6E-03	**2.9E-03**
2-Chlorotoluene	95498	1.3E+02	3.5E-03	0.380	0.0004	9.8E-04	4.2E-01	9.6E-04	1.1E-05	**8.8E-06**
4-Methyl-2-pentanone	108101	1.0E+02	1.4E-04	0.720	0.0007	1.1E-03	4.6E-01	7.8E-04	1.7E-05	**1.3E-05**
Acenaphthene	83329	1.5E+02	1.6E-04	2,520	2.52	8.9E-04	3.9E-01	6.6E-04	5.0E-02	**4.0E-02**
Acetone	67641	5.8E+01	3.9E-05	49	0.049	1.4E-03	5.5E-01	5.5E-04	8.1E-04	**6.5E-04**
Benzene	71432	7.8E+01	5.6E-03	110	0.110	1.2E-03	5.0E-01	1.2E-03	4.1E-03	**3.2E-03**
Bromochloromethane	74975	1.3E+02	1.5E-03	1.5	0.002	9.7E-04	4.2E-01	9.3E-04	4.2E-05	**3.4E-05**
Bromodichloromethane	75274	1.6E+02	1.6E-03	2.6	0.003	8.6E-04	3.9E-01	8.3E-04	6.5E-05	**5.2E-05**
Bromomethane	74839	9.5E+01	6.2E-03	0.790	0.001	1.1E-03	4.6E-01	1.1E-03	2.7E-05	**2.1E-05**
Carbon disulfide	75150	7.6E+01	3.0E-02	3.6	0.004	1.3E-03	5.0E-01	1.3E-03	1.4E-04	**1.1E-04**
Chlorobenzene	108907	1.1E+02	3.7E-03	9.5	0.010	1.0E-03	4.4E-01	1.0E-03	2.9E-04	**2.3E-04**
Chloroethane	75003	6.5E+01	1.1E-02	0.300	0.0003	1.4E-03	5.3E-01	1.4E-03	1.2E-05	**9.8E-06**
Chloroform	67663	1.2E+02	3.7E-03	27	0.027	1.0E-03	4.3E-01	9.9E-04	8.1E-04	**6.4E-04**
Chloromethane	74873	5.0E+01	8.8E-03	0.930	0.001	1.5E-03	5.7E-01	1.5E-03	4.3E-05	**3.4E-05**
cis-1,2-Dichloroethene	156592	9.7E+01	4.1E-03	57,000	57	1.1E-03	4.6E-01	1.1E-03	1.9E+00	**1.5E+00**
Dibromochloromethane	124481	2.1E+02	7.8E-04	0.510	0.001	7.6E-04	3.6E-01	7.2E-04	1.1E-05	**8.8E-06**
Dibromomethane	74953	1.7E+02	8.6E-04	0.230	0.0002	8.4E-04	3.8E-01	7.9E-04	5.4E-06	**4.3E-06**
Ethylbenzene	100414	1.1E+02	7.9E-03	16	0.016	1.1E-03	4.5E-01	1.1E-03	5.1E-04	**4.1E-04**
Ethyl tert-butyl ether (ETBE)	637923	1.0E+02	2.4E-03	0.800	0.001	1.1E-03	4.5E-01	1.1E-03	2.6E-05	**2.0E-05**
Fluorene	86737	1.7E+02	7.7E-05	2.7	0.003	8.5E-04	3.8E-01	5.1E-04	4.0E-05	**3.2E-05**
Hexachlorobutadiene	87683	2.6E+02	2.6E+02	0.400	0.0004	6.8E-04	3.3E-01	6.8E-04	8.2E-06	**6.5E-06**
Isopropylbenzene	98828	1.2E+02	1.2E-02	89	0.089	1.0E-03	4.3E-01	1.0E-03	2.7E-03	**2.1E-03**
Methyl tert-butyl ether (MTBE)	1634044	8.5E+01	5.9E-04	13	0.013	1.2E-03	4.8E-01	1.1E-03	4.2E-04	**3.4E-04**
Methylene chloride	75092	8.5E+01	2.2E-03	10	0.010	1.2E-03	4.8E-01	1.2E-03	3.5E-04	**2.8E-04**
Naphthalene	91203	1.3E+02	4.8E-04	310	0.310	9.7E-04	4.2E-01	8.7E-04	8.1E-03	**6.5E-03**
n-Butylbenzene	104518	1.3E+02	1.3E-02	140	0.140	9.5E-04	4.1E-01	9.5E-04	4.0E-03	**3.2E-03**
n-Propylbenzene	103651	1.2E+02	1.3E-02	320	0.320	1.0E-03	4.3E-01	1.0E-03	9.6E-03	**7.7E-03**
p-Isopropyltoluene (Cymene; 4-)	99876	1.3E+02	1.1E-02	4.0	0.004	9.5E-04	4.1E-01	9.5E-04	1.1E-04	**9.1E-05**

Table 15
Groundwater-to-Outdoor Air Pathway
Site Wide Risk Assessment: Site-Specific
2701 North Harbor Drive
San Diego, California

Groundwater VOCs	Cas No.	Molecular Weight	Henry's Law constant (atm-m^3/mol)	Groundwater EPC[(a)]		Liquid Mass Transfer coefficient, Kl (cm/sec)	Gas-phase Mass Transfer coefficient, Kg (cm/sec)	Mass Transfer Coefficient, K (cm/sec)	Emission Rate at the Surface, ER (mg/sec)	Outdoor Air Concentration-GW, Ca-gw (mg/m^3)
				(µg/L)	(mg/L)					
Pyrene	129000	2.0E+02	1.1E-05	0.215	0.0002	7.7E-04	3.6E-01	1.4E-04	8.8E-07	**7.1E-07**
sec-Butylbenzene	135988	1.3E+02	1.9E-02	54	0.054	9.5E-04	4.1E-01	9.5E-04	1.5E-03	**1.2E-03**
Styrene	100425	1.0E+02	2.8E-03	0.990	0.001	1.1E-03	4.5E-01	1.1E-03	3.1E-05	**2.5E-05**
tert-Butyl alcohol	75650	7.4E+01	7.3E-05	41	0.041	1.3E-03	5.0E-01	7.0E-04	8.6E-04	**6.9E-04**
tert-Butylbenzene	98066	1.3E+02	1.3E-02	2.4	0.002	9.5E-04	4.1E-01	9.5E-04	6.8E-05	**5.4E-05**
Tetrachloroethene	127184	1.7E+02	1.8E-02	200,000	200	8.5E-04	3.9E-01	8.5E-04	5.1E+00	**4.1E+00**
Toluene	108883	9.2E+01	6.6E-03	6.7	0.007	1.1E-03	4.7E-01	1.1E-03	2.3E-04	**1.8E-04**
trans-1,2-Dichloroethene	156605	9.7E+01	9.4E-03	510	0.510	1.1E-03	4.6E-01	1.1E-03	1.7E-02	**1.4E-02**
Trichloroethene	79016	1.3E+02	1.0E-02	21,000	21	9.6E-04	4.2E-01	9.6E-04	6.0E-01	**4.8E-01**
Vinyl chloride	75014	6.3E+01	2.7E-02	25,000	25	1.4E-03	5.3E-01	1.4E-03	1.0E+00	**8.3E-01**
Xylenes (total)	1330207	1.1E+02	7.3E-03	7.9	0.008	1.1E-03	4.5E-01	1.1E-03	2.5E-04	**2.0E-04**

Notes and Equations (USEPA 1995a):

[(a)] " EPC " exposure point concentrations, see Table 8a

** Tetrachloroethene was the only VOC with a maximum detection in groundwater > its solubility limit; therefore, its solubility was used as the EPC.

$$k_l = \left(\frac{MW_{O2}}{MW_i}\right)^{0.5} x\left(\frac{T}{298}\right) xk_{lo2} \qquad k_g = \left(\frac{MW_{H2O}}{MW_i}\right)^{0.335} x\left(\frac{T}{298}\right)^{1.005} xk_{gH2O} \qquad \frac{1}{K} = \frac{1}{k_l} + \frac{1}{k_g}\frac{RT}{H} \qquad ER = A_{Exc} C_{GW} KxCF \qquad C_{a-gw} = \frac{ER}{UxWxH}$$

Table 16
Model Input Parameters
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Model Input Parameter	Value Used	Rationale
Soil Properties		
Average Soil Temperature (Ts), ^{o}C	18	Area-specific average
Depth below grade to bottom of enclosed space floor (L_F), cm	15	Slab construction
Soil gas sampling depth below grade (Ls), cm	91.5	Depth at which samples were collected, 3 feet bgs
Thickness of soil stratum A (h_A), cm	Ls	Depth-to-soil gas sample
Thickness of soil stratum B (h_B), cm	--	Not applicable
Thickness of soil stratum C (h_C), cm	--	Not applicable
Soil stratum A SCS soil type	LS	Loamy sand soil type
Stratum A soil dry bulk density, gm/cm^3	1.62	DTSC J&E model default for Loamy sand (LS)
Stratum A soil total porosity, unitless	0.390	DTSC J&E model default for Loamy sand (LS)
Stratum A soil water-filled porosity, cm^3/cm^3	0.076	DTSC J&E model default for Loamy sand (LS)
Startum A soil organic carbon fraction (f_{oc}^{A}), unitless	0.002	DTSC J&E model default for Loamy sand (LS)
Industrial/Commercial Building Parameters		
Enclosed space floor thickness (L_{crack}), cm	10	Default assumption
Enclosed space floor length (L_B), cm	4819	158-foot length of 25,000 ft^2 building
Enclosed space floor width (W_B), cm	4819	158-foot width of 25,000 ft^2 building
Enclosed space height (H_B), cm	366	Ceiling height of 12 feet
Floor-wall seam crack width (w), cm	0.1	Default assumption
Indoor air exchange rate (ER), $hour^{-1}$	1	Default commercial building assumption
Average vapor flow rate into building (Qsoil), L/m	116	Based on 5 L/min per 100 m^2 of building floor space

Table 17
Chronic Toxicity Criteria
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	CAS No.	ABSd	Permeability Coefficient (Kp)	Oral/Dermal RfD (mg/kg-d)		Inhalation RfD (mg/kg-d)		Inhalation RfC or REL (mg/m^3)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Unit Risk Factor $(ug/m^3)^{-1}$
Inorganics													
Antimony	7440360	0.01	0.001		i								
Arsenic	7440382	0.03	0.001		i		c			c		c	
Beryllium	7440417	0.01	0.001	2.0E-03	i	2.0E-06	c	7.0E-06	--		8.4E+00	i,c	2.4E-03
Cadmium	7440439	0.001	0.001	5.0E-04 = water 1.0E-03 = soil	i	5.7E-06	c	2.0E-05	--		1.5E+01	c	4.2E-03
Chromium	16065831	0.01	0.001	1.5E+00	i	--		--	--		--		--
Chromium, hexavalent	18540299	0	0.002	3.0E-03	i	5.7E-05	c	2.0E-04	--		5.1E+02	c	1.5E-01
Cobalt	7440484	0.01	0.001	2.0E-02	a	5.7E-06	a	2.0E-05	--		--		--
Copper	7440508	0.01	0.001	4.0E-02	h	--		--	--		--		--
Cyanide (Amenable)*	57125	0.1	0.001	2.0E-02	i	--		--	--		--		--
Cyanide (Total)*	57125	0.1	0.001	2.0E-02	i	--		--	--		--		--
Lead	7439921	--	--	--		--		--	--		--		--
Mercury	7487947	0.01	0.001	3.0E-04	i	2.6E-05	c	9.0E-05	--		--		--
Molybdenum	7439987	0.01	0.001	5.0E-03	i	--		--	--		--		--
Nickel	7440020	0.01	0.0002	2.0E-02	i	1.4E-05	c	5.0E-05	--		9.1E-01	c	2.6E-04
Selenium	7782492	0.01	0.001	5.0E-03	i	5.7E-03	c	2.0E-02	--		--		--
Silver	7440224	0.01	0.001	5.0E-03	i	--		--	--		--		--
Thallium	7440280	0.01	0.001	6.6E-05	i	--		--	--		--		--
Vanadium	7440622	0.01	0.001	1.0E-03	n	--		--	--		--		--
Zinc	7440666	0.01	0.0006	3.0E-01	i	--		--	--		--		--
PAHs													
2-Methylnaphthalene*	91576	0.15	0.092	3.0E-02	i	3.0E-02	i,r	1.1E-01	--		--		--
Anthracene	120127	0.15	0.144	3.0E-01	i	3.0E-01	a,r	1.1E+00	--		--		--
Benzo(a)anthracene	56553	0.15	0.474	--		--		--	1.2E+00	c	3.9E-01	c	1.1E-04
Benzo(a)pyrene	50328	0.15	0.701	--		--		--	1.2E+01	c	3.9E+00	c	1.1E-03
Benzo(b)fluoranthene	205992	0.15	0.702	--		--		--	1.2E+00	c	3.9E-01	c	1.1E-04
Benzo(g,h,i)perylene*	191242	0.15	1.123	3.0E-02	i	3.0E-02	i,r	1.1E-01	--		--		--
Benzo(k)fluoranthene	207089	0.15	0.691	--		--		--	1.2E+00	c	3.9E-01	c	1.1E-04
Chrysene	218019	0.15	0.474	--		--		--	1.2E-01	c	3.9E-02	c	1.1E-05
Dibenz(a,h)anthracene	53703	0.15	1.508	--		--		--	4.1E+00	c	4.1E+00	c	1.2E-03
Fluoranthene	206440	0.15	0.224	4.0E-02	i	4.0E-02	a,r	1.4E-01	--		--		--
Indeno(1,2,3-cd)pyrene	193395	0.15	1.041	--		--		--	1.2E+00	c	3.9E-01	c	1.1E-04
Phenanthrene*	85018	0.15	0.144	3.0E-01	i	3.0E-01	a,r	1.1E+00	--		--		--
PCBs													
Aroclor 1016	12674112	0.15	0.305	7.0E-05	i	7.0E-05	i,r	2.5E-04	5.0E+00	c	2.0E+00	c	5.7E-04
Aroclor 1242	53469219	0.15	0.545	2.0E-05	a	2.0E-05	a,r	7.0E-05	5.0E+00	c	2.0E+00	c	5.7E-04
Aroclor 1248	12672296	0.15	0.589	2.0E-05	a	2.0E-05	a,r	7.0E-05	5.0E+00	c	2.0E+00	c	5.7E-04
Aroclor 1254	11097691	0.15	0.751	2.0E-05	i	2.0E-05	i,r	7.0E-05	5.0E+00	c	2.0E+00	c	5.7E-04
Aroclor 1260	11096825	0.15	2.969	2.0E-05	a	2.0E-05	a,r	7.0E-05	5.0E+00	c	2.0E+00	c	5.7E-04
Aroclor 1262	37324235	0.15	2.969	2.0E-05	a	2.0E-05	a,r	7.0E-05	5.0E+00	c	2.0E+00	c	5.7E-04
Perchlorate													
Perchlorate	7601903	0	0.0003	7.0E-04	i	7.0E-04	ir	2.5E-03	--		--		--
SVOCs													
1,4-Dioxane	123911	0.1	0.0003	--		8.6E-01	c	3.0E+00	2.7E-02	c	2.7E-02	c	7.7E-06
4-Chloro-3-methylphenol	59507	0.1	0.029	1.0E-01	p	--		--	--		--		--
Aniline	62533	0.1	0.002	7.0E-03	p	2.9E-04	i	1.0E-03	5.7E-03	c	5.7E-03	c	1.6E-06
Benzoic acid	65850	0.1	0.006	4.0E+00	i	4.0E+00	i,r	1.4E+01	--		--		--

Table 17
Chronic Toxicity Criteria
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	CAS No.	ABSd	Permeability Coefficient (Kp)	Oral/Dermal RfD (mg/kg-d)		Inhalation RfD (mg/kg-d)		Inhalation RfC or REL (mg/m^3)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Unit Risk Factor $(ug/m^3)^{-1}$
Bis(2-ethylhexyl)phthalate	117817	0.1	0.025	2.0E-02	i	2.0E-02	r	7.0E-02	3.0E-03	c	8.4E-03	c	2.4E-06
Diethylphthalate	84662	0.1	0.004	8.0E-01	i	8.0E-01	r	2.8E+00	--		--		--
Diisopropyl ether	108203	0.1	0.004	--		1.1E-01	a	3.9E-01	--		--		--
Dimethyl phthalate	131113	0.1	0.001	1.0E+01	h	1.0E+01	a,r	3.5E+01	--		--		--
Di-n-butylphthalate	84742	0.1	0.024	1.0E-01	i	1.0E-01	r	3.5E-01	--		--		--
Hexachlorobutadiene	87683	0.1	0.081	3.0E-04	n	3.0E-04	a,r	1.1E-03	7.8E-02	i	7.8E-02	i	2.2E-05
Phenol	108952	0.1	0.004	3.0E-01	i	5.7E-02	c	2.0E-01	--		--		--
TPH*													
TPH - aliphatic; C5-C8	--	0.15	0.047	4.0E-02	m	6.0E-02	m	2.1E-01	--		--		--
TPH - aliphatic; C9-C18	--	0.15	0.047	1.0E-01	m	3.0E-01	m	1.1E+00	--		--		--
TPH - aliphatic; C≥19	--	0.15	0.047	2.0E+00	m	3.0E-01	m	1.1E+00	--		--		--
TPH - aromatic; C5-C8	--	0.15	0.047	--		--		--	--		--		--
TPH - aromatic; C9-C18	--	0.15	0.047	3.0E-02	m	6.0E-03	m	2.1E-02	--		--		--
TPH - aromatic; C≥19	--	0.15	0.047	3.0E-02	m	--		--	--		--		--
VOCs													
1,1,1,2-Tetrachloroethane	630206	0.1	0.016	3.0E-02	i	3.0E-02	r	1.1E-01	2.6E-02	i	2.6E-02	i	7.4E-06
1,1,1-Trichloroethane	71556	0.1	0.013	2.8E-01	n	2.9E-01	c	1.0E+00	--		--		--
1,1,2-Trichloroethane	79005	0.1	0.006	4.0E-03	i	4.0E-03	r	1.4E-02	7.2E-02	c	5.7E-02	c	1.6E-05
1,1-Dichloroethane	75343	0.1	0.007	1.0E-01	h	1.4E-01	h	5.0E-01	5.7E-03	c	5.7E-03	c	1.6E-06
1,1-Dichloroethene	75354	0.1	0.012	5.0E-02	i	2.0E-02	c	7.0E-02	--		--		--
1,2,4-Trichlorobenzene	120821	0.1	0.066	1.0E-02	i	1.0E-02	i,r	3.5E-02	--		--		--
1,2,4-Trimethylbenzene	95636	0.1	0.086	5.0E-02	p	1.7E-03	p	6.0E-03	--		--		--
1,2-Dibromo-3-chloropropane	96128	0.1	0.007	5.7E-05	r	5.7E-05	i	2.0E-04	7.0E+00	c	7.0E+00	c	2.0E-03
1,2-Dichlorobenzene	95501	0.1	0.041	9.0E-02	i	5.7E-02	h	2.0E-01	--		--		--
1,2-Dichloroethane	107062	0.1	0.004	2.0E-02	n	1.4E-03	n	4.9E-03	4.7E-02	c	7.2E-02	c	2.1E-05
1,3,5-Trimethylbenzene	108678	0.1	0.062	5.0E-02	p	1.7E-03	p	6.0E-03	--		--		--
1,3-Dichlorobenzene	541731	0.1	0.058	3.0E-02	n	3.0E-02	r	1.1E-01	--		--		--
1,1-Dichloropropene*	563586	0.1	0.004	3.0E-02	i	5.7E-03	i	2.0E-02	9.1E-02	c	5.5E-02	c	1.6E-05
1,4-Dichlorobenzene	106467	0.1	0.042	3.0E-02	n	2.3E-01	c	8.0E-01	5.4E-03	c	4.0E-02	c	1.1E-05
2-Butanone (MEK)	78933	0.1	0.001	6.0E-01	i	1.4E+00	i	4.9E+00	--		--		--
2-Chlorotoluene	95498	0.1	0.057	2.0E-02	i	2.0E-02	i,r	7.0E-02	--		--		--
4-Methyl-2-pentanone	108101	0.1	0.003	8.0E-02	h	8.6E-01	a	3.0E+00	--		--		--
Acenaphthene	83329	0.15	0.086	6.0E-02	i	6.0E-02	r	2.1E-01	--		--		--
Acetone	67641	0.1	0.0005	9.0E-01	i	9.0E-01	r	3.2E+00	--		--		--
Benzene	71432	0.1	0.015	4.0E-03	i	1.7E-02	c	6.0E-02	1.0E-01	c	1.0E-01	c	2.9E-05
Bromochloromethane*	74975	0.1	0.003	2.0E-02	i	2.0E-02	i,r	7.0E-02	--		--		--
Bromodichloromethane	75274	0.1	0.005	2.0E-02	i	2.0E-02	i,r	7.0E-02	1.3E-01	c	1.3E-01	c	3.7E-05
Bromomethane	74839	0.1	0.003	1.4E-03	i	1.4E-03	i	5.0E-03	--		--		--
Carbon disulfide	75150	0.1	0.017	1.0E-01	i	2.3E-01	c	8.0E-01	--		--		--
Carbon tetrachloride	56235	0.1	0.016	7.0E-04	i	1.1E-02	c	4.0E-02	1.5E-01	c	1.5E-01	c	4.2E-05
Chlorobenzene	108907	0.1	0.028	2.0E-02	i	2.9E-01	c	1.0E+00	--		--		--
Chloroethane	75003	0.1	0.006	4.0E-01	n	8.6E+00	c	3.0E+01	2.9E-03	n	2.9E-03	r	8.3E-07
Chloroform	67663	0.1	0.007	1.0E-02	i	8.6E-02	c	3.0E-01	3.1E-02	c	1.9E-02	c	5.3E-06
Chloromethane	74873	0.1	0.003	2.6E-02	i,r	2.6E-02	i	9.0E-02	--		--		--
cis-1,2-Dichloroethene	156592	0.1	0.011	1.0E-02	a	1.0E-02	r	3.5E-02	--		--		--
Dibromochloromethane	124481	0.1	0.003	2.0E-02	i	2.0E-02	i,r	7.0E-02	9.4E-02	c	9.4E-02	c	2.7E-05
Dibromomethane	74953	0.1	0.002	1.0E-02	h	1.0E-02	a,r	3.5E-02	--		--		--
Ethylbenzene	100414	0.1	0.049	1.0E-01	i	5.7E-01	c	2.0E+00	--		--		--

Table 17
Chronic Toxicity Criteria
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	CAS No.	ABSd	Permeability Coefficient (Kp)	Oral/Dermal RfD (mg/kg-d)		Inhalation RfD (mg/kg-d)		Inhalation RfC or REL (mg/m^3)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Unit Risk Factor $(ug/m^3)^{-1}$
Ethyl tert-butyl ether (ETBE)	637923	0.1	0.007	1.0E-03	tex	8.6E-02	tex	3.0E-01	--		--		--
Fluorene	86737	0.15	0.110	4.0E-02	i	4.0E-02	a,r	1.4E-01	--		--		--
Freon-113	76131	0.1	0.018	3.0E+01	i	8.6E+00	h	3.0E+01	--		--		--
Isopropylbenzene	98828	0.1	0.090	1.0E-01	i	1.1E-01	i	3.9E-01	--		--		--
Methyl tert-butyl ether (MTBE)	1634044	0.1	0.002	8.6E-01	a,r	2.3E+00	c	8.0E+00	1.8E-03	c	9.1E-04	c	2.6E-07
Methylene chloride	75092	0.1	0.004	6.0E-02	i	1.1E-01	c	4.0E-01	1.4E-02	c	3.5E-03	c	1.0E-06
Naphthalene	91203	0.15	0.047	2.0E-02	i	2.6E-03	c	9.0E-03	1.2E-01	c	1.2E-01	c	3.4E-05
n-Butylbenzene	104518	0.1	0.196	4.0E-02	n	4.0E-02	a,r	1.4E-01	--		--		--
n-Propylbenzene	103651	0.1	0.100	4.0E-02	n	4.0E-02	a,r	1.4E-01	--		--		--
p-Isopropyltoluene* (cymene; 4-)	99876	0.1	0.156	1.0E-01	i	1.1E-01	i	3.9E-01	--		--		--
Pyrene	129000	0.1	0.201	3.0E-02	i	3.0E-02	a,r	1.1E-01	--		--		--
sec-Butylbenzene	135988	0.1	0.145	4.0E-02	n	4.0E-02	a,r	1.4E-01	--		--		--
Styrene	100425	0.1	0.037	2.0E-01	i	2.6E-01	c	9.0E-01	--		--		--
tert-Amyl methyl ether (TAME)	994058	0.1	--	4.0E-02	tex	4.0E-02	tex	1.4E-01	--		--		--
tert-Butyl alcohol*	75650	0.1	0.002	3.0E-01	i	3.0E-01	a,r	1.1E+00	--		--		--
tert-Butylbenzene	98066	0.1	0.166	4.0E-02	n	4.0E-02	r	1.4E-01	--		--		--
Tetrachloroethene	127184	0.1	0.033	1.0E-02	i	1.0E-02	c	3.5E-02	5.4E-01	c	2.1E-02	c	5.9E-06
Toluene	108883	0.1	0.031	2.0E-01	i	8.6E-02	c	3.0E-01	--		--		--
trans-1,2-Dichloroethene	156605	0.1	0.011	2.0E-02	i	2.0E-02	r	7.0E-02	--		--		--
Trichloroethene	79016	0.1	0.012	3.0E-04	n	1.7E-01	c	6.0E-01	1.3E-02	c	7.0E-03	c	2.0E-06
Vinyl chloride	75014	0.1	0.006	3.0E-03	i	2.9E-02	i	1.0E-01	2.7E-01	c	2.7E-01	c	7.8E-05
Xylenes (total)	1330207	0.1	0.053	2.0E-01	i	2.0E-01	c	7.0E-01	--		--		--

Notes:

ABSd: dermal absorption factor; RfD: reference dose; RfC: reference concentration; REL: reference exposure level

* Surrogate toxicity criteria: free cyanide for total/amenabe cyanide; 1,3-dichloropropene for 1,1-dichloropropene; pyrene for 2-methylnaphthalene and benzo(g,h,i)perylen anthracene for phenanthrene; isobutanol for tert-butyl alcohol; isopropylbenzene for p-isopropyltoluene; bromodichloromethane noncancer values for bromochlorometh

** For TPH: ABSd from PAHs, Kp from naphthalene

References:

a: USEPA Region 9, Preliminary Remediation Goals (PRGs) Table, October (USEPA 2004b)

c: Cal-EPA (2006) Office of Environmental Health Hazard Assessment (OEHHA), Toxicity Criteria Database http://www.oehha.ca.gov/risk/chemicalDB/index.asp

REL: Cal-EPA OEHHA, Chronic Reference Exposure Levels (RELs) for Airborne Toxicants, http://www.oehha.org/air/chronic_rels/AllChrels.html

h: Health Effects Assessment Summary Tables (HEAST, USEPA 1997b), from Region IX PRG table (USEPA 2004b)

i: Integrated Risk Information System (IRIS) Substance File Online Database. Website: http://www.epa.gov/iriswebp/iris/subst/index.html

m: Massachusetts Department of Environmental Protection Guidance, "Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of the MADEP VPH/EPH Approach, Policy #WSC-02-411 (MADEP, 2002)

n: National Center for Environmental Assessment (NCEA), from Region IX PRG table (USEPA 2004b)

p: Provisional Peer Reviewed Toxicity Values, PPRTV, from Region IX PRG table (USEPA 2004b)

r: route extrapolated value

tex: Texas Commission on Environmental Quality (TCEQ 2005), Texas Risk Reduction Program. http://www.tnrcc.state.tx.us/permitting/rrr.htm

Cancer Toxicity Value Reference Priority:

1. Cal-EPA OEHHA (2006), Toxicity Criteria Database http://www.oehha.ca.gov/risk/chemicalDB/index.asp
2. USEPA (2007) Integrated Risk Information System (IRIS) Substance File Online Database. Website: http://www.epa.gov/iriswebp/iris/subst/index.html
3. USEPA Region 9 PRG Table (USEPA 2004b)

Noncancer Toxicity Value Reference Priority:

The lower value between the REL-to-RfD (1) or the RfD (2) was used for the inhalation noncancer toxicity criteria:

1. Cal-EPA OEHHA (2006), Chronic RELs for Airborne Toxicants, http://www.oehha.org/air/chronic_rels/AllChrels.html
2. USEPA (2007) Integrated Risk Information System (IRIS) Substance File Online Database. Website: http://www.epa.gov/iriswebp/iris/subst/index.html
3. USEPA Region 9 PRG Table (USEPA 2004b)

Table 18
Cumulative Cancer Risk and Noncancer Hazard
Offsite Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Maximum Offsite GW EPC (µg/L)	Site-Specific RA		Default RA	
		Groundwater (GW)-to-Indoor Air		Groundwater (GW)-to-Indoor Air	
		Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
VOCs					
1,1,1,2-Tetrachloroethane	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--
1,1,2-Trichloroethane	--	--	--	--	--
1,1-Dichloroethane	0.570	2E-09	6E-06	2E-09	6E-06
1,1-Dichloroethene	12	--	5E-03	--	5E-03
1,1-Dichloropropene	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--
1,2,4-Trimethylbenzene	0.500	--	3E-04	--	3E-04
1,2-Dibromo-3-chloropropane	--	--	--	--	--
1,2-Dichlorobenzene	0.970	--	7E-06	--	7E-06
1,2-Dichloroethane	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--
1,4-Dichlorobenzene	13	1E-07	3E-05	1E-07	3E-05
2-Butanone (MEK)	--	--	--	--	--
2-Chlorotoluene	--	--	--	--	--
4-Methyl-2-pentanone	3.9	--	3E-07	--	3E-07
Acenaphthene	13	--	9E-06	--	1E-05
Acetone	4.7	--	2E-07	--	2E-07
Benzene	49	3E-06	5E-03	3E-06	5E-03
Bromochloromethane	--	--	--	--	--
Bromodichloromethane	--	--	--	--	--
Bromomethane	--	--	--	--	--
Carbon disulfide	1.1	--	5E-05	--	5E-05
Carbon tetrachloride	--	--	--	--	--
Chlorobenzene	7.3	--	2E-05	--	2E-05
Chloroethane	--	--	--	--	--
Chloroform	--	--	--	--	--
Chloromethane	0.260	--	4E-05	--	4E-05
cis-1,2-Dichloroethene	17000	--	2E+00	--	2E+00
Dibromochloromethane	--	--	--	--	--
Dibromomethane	--	--	--	--	--
Diisopropyl ether	--	--	--	--	--
Ethylbenzene	0.670	--	2E-06	--	2E-06
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--
Fluorene	--	--	--	--	--
Freon-113	--	--	--	--	--
Hexachlorobutadiene	--	--	--	--	--
Isopropylbenzene	1.3	--	2E-03	--	3E-03
Methyl tert-butyl ether (MTBE)	13	1E-09	1E-06	1E-09	2E-06

Table 18
Cumulative Cancer Risk and Noncancer Hazard
Offsite Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Maximum Offsite GW EPC (µg/L)	Site-Specific RA		Default RA	
		Groundwater (GW)-to-Indoor Air		Groundwater (GW)-to-Indoor Air	
		Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
Methylene chloride	--	--	--	--	--
Naphthalene	130	6E-07	6E-03	7E-07	6E-03
n-Butylbenzene	0.360	--	2E-05	--	2E-05
n-Propylbenzene	0.720	--	3E-05	--	4E-05
p-Isopropyltoluene (cymene; 4-)	0.064	--	1E-04	--	1E-04
Pyrene	2.9	--	3E-07	--	4E-07
sec-Butylbenzene	--	--	--	--	--
Styrene	--	--	--	--	--
tert-Amyl methyl ether (TAME)	0.400	--	8E-06	--	8E-06
tert-Butyl alcohol	41	--	8E-06	--	8E-06
tert-Butylbenzene	--	--	--	--	--
Tetrachloroethene	41000	1E-03	2E+01	1E-03	2E+01
Toluene	3.4	--	7E-05	--	8E-05
trans-1,2-Dichloroethene	89	--	1E-02	--	1E-02
Trichloroethene	9600	6E-05	1E-01	7E-05	2E-01
Vinyl chloride	25000	2E-02	9E+00	3E-02	1E+01
Xylenes	1.5	--	1E-05	--	1E-05
Cumulative Risk and Hazard =		**3E-02**	**3E+01**	**3E-02**	**3E+01**

Notes:

" -- " not applicable or not detected; EPC: Exposure Point Concentration

Table 19
Cumulative Cancer Risk and Noncancer Hazard
Construction Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
Inorganics												
Antimony	--	7E-02	--	5E-01	--	--	--	8E-02	--	8E-01	--	--
Arsenic	--	--	6E-08	2E-03	--	--	--	--	1E-07	3E-03	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	3E-04	--	--	--	--	--	6E-04	--	--
Cadmium	6E-08	7E-02	--	1E-03	--	--	7E-08	8E-02	--	2E-03	--	--
Chromium	--	2E-03	--	3E-02	--	--	--	2E-03	--	5E-02	--	--
Chromium, Hexavalent	1E-05	6E-02	--	3E+01	--	--	1E-05	7E-02	--	5E+01	--	--
Cobalt	--	7E-01	--	5E-05	--	--	--	9E-01	--	9E-05	--	--
Copper	--	2E-02	--	9E-06	--	--	--	2E-02	--	2E-05	--	--
Cyanide (Amenable)	--	2E-04	--	--	--	--	--	4E-04	--	--	--	--
Cyanide (Total)	--	4E-04	--	3E-05	--	--	--	7E-04	--	6E-05	--	--
Mercury	--	3E-03	--	--	--	--	--	3E-03	--	--	--	--
Molybdenum	--	7E-03	--	4E-03	--	--	--	7E-03	--	6E-03	--	--
Nickel	9E-08	5E-01	--	3E-04	--	--	1E-07	6E-01	--	5E-04	--	--
Selenium	--	2E-02	--	2E-02	--	--	--	2E-02	--	3E-02	--	--
Silver	--	2E-03	--	--	--	--	--	2E-03	--	--	--	--
Thallium	--	--	--	2E-03	--	--	--	--	--	3E-03	--	--
Vanadium	--	--	--	8E-03	--	--	--	--	--	1E-02	--	--
Zinc	--	8E-03	--	1E-05	--	--	--	9E-03	--	2E-05	--	--
PAHs												
2-Methylnaphthalene	--	8E-03	--	1E-02	--	--	--	2E-02	--	2E-02	--	--
Anthracene	--	2E-07	--	--	--	--	--	3E-07	--	--	--	--
Benzo(a)anthracene	2E-08	--	5E-07	--	--	--	3E-08	--	9E-07	--	--	--
Benzo(a)Pyrene	3E-07	--	--	--	--	--	7E-07	--	--	--	--	--
Benzo(b)Fluoranthene	1E-07	--	--	--	--	--	2E-07	--	--	--	--	--
Benzo(k)Fluoranthene	8E-09	--	--	--	--	--	2E-08	--	--	--	--	--

Table 19
Cumulative Cancer Risk and Noncancer Hazard
Construction Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
Benzo(g,h,i)Perylene	--	1E-04	--	5E-03	--	--	--	3E-04	--	9E-03	--	--
Chrysene	5E-09	--	6E-08	--	--	--	1E-08	--	1E-07	--	--	--
Dibenz(a,h)anthracene	6E-08	--	2E-05	--			1E-07	--	3E-05	--		
Fluoranthene	--	2E-05	--	3E-03	--	--	--	5E-05	--	5E-03	--	--
Indeno(1,2,3-cd)pyrene	5E-08	--	1E-06	--	--	--	1E-07	--	2E-06	--	--	--
Phenanthrene	--	2E-04	--	1E-04	--	--	--	3E-04	--	2E-04	--	--
PCBs												
Aroclor 1016	1E-10	2E-03	1E-07	2E+00	--	--	3E-10	4E-03	2E-07	3E+00	--	--
Aroclor 1242	5E-08	4E-02	--	--	--	--	1E-07	8E-02	--	--	--	--
Aroclor 1248	1E-04	7E+01	--	--	--	--	2E-04	1E+02	--	--	--	--
Aroclor 1254	6E-07	4E-01	--	--	--	--	1E-06	8E-01	--	--	--	--
Aroclor 1260	5E-07	4E-01	--	--	--	--	1E-06	7E-01	--	--	--	--
Aroclor 1262	1E-07	8E-02	--	--	--	--	2E-07	2E-01	--	--	--	--
Perchlorate												
Perchlorate	--	2E-02	--	--	--	--	--	2E-02	--	--	--	--
SVOCs												
1,4-Dioxane	1E-10	4E-09	3E-08	--	--	--	3E-10	5E-09	6E-08	--	--	--
4-Chloro-3-methylphenol	--	--	--	2E-04	--	--	--	--	--	4E-04	--	--
Aniline	--	--	3E-11	5E-05	--	--	--	--	5E-11	9E-05	--	--
Benzoic Acid	--	--	--	5E-07	--	--	--	--	--	9E-07	--	--
Bis(2-ethylhexyl)Phthalate	--	--	9E-08	1E-01	--	--	--	--	2E-07	2E-01	--	--
Diethylphthalate	--	--	--	2E-06	--	--	--	--	--	3E-06	--	--
Diisopropyl Ether	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl Phthalate	--	--	--	3E-08	--	--	--	--	--	6E-08	--	--
Di-n-butylphthalate	--	--	--	2E-04	--	--	--	--	--	3E-04	--	--
Phenol	--	1E-06	--	1E-06	--	--	--	2E-06	--	2E-06	--	--

Table 19
Cumulative Cancer Risk and Noncancer Hazard
Construction Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
TPH												
TPH - aliphatic; C5-C8	--	2E-01	--	4E+00	--	--	--	4E-01	--	6E+00	--	--
TPH - aliphatic; C9-C18	--	1E+00	--	8E-02	--	--	--	2E+00	--	1E-01	--	--
TPH - aliphatic; C≥19	--	6E-02	--	2E-03	--	--	--	1E-01	--	3E-03	--	--
TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--	--	--	--	--
TPH - aromatic; C9-C18	--	4E+00	--	3E-01	--	--	--	9E+00	--	5E-01	--	--
TPH - aromatic; C≥19	--	4E+00	--	1E-01	--	--	--	8E+00	--	2E-01	--	--
VOCs												
1,1,1,2-Tetrachloroethane	--	--	1E-09	1E-04	2E-09	1E-04	--	--	2E-09	2E-04	2E-09	2E-04
1,1,1-Trichloroethane	--	2E-04	--	2E-04	--	6E-04	--	3E-04	--	4E-04	--	7E-04
1,1,2-Trichloroethane	--	--	6E-09	2E-03	3E-08	8E-03	--	--	1E-08	3E-03	3E-08	1E-02
1,1-Dichloroethane	3E-10	2E-05	6E-09	7E-04	4E-08	3E-03	3E-10	3E-05	1E-08	1E-03	5E-08	4E-03
1,1-Dichloroethene	--	--	--	1E-02	--	1E-01	--	--	--	2E-02	--	1E-01
1,1-Dichloropropene	2E-11	6E-07	3E-10	8E-06	2E-09	4E-04	4E-11	1E-06	5E-10	1E-05	2E-09	5E-04
1,2,4-Trichlorobenzene	--	--	--	6E-04	--	2E-04	--	--	--	1E-03	--	3E-04
1,2,4-Trimethylbenzene	--	1E+00	--	2E-03	--	3E-02	--	2E+00	--	4E-03	--	4E-02
1,2-Dibromo-3-chloropropane	--	--	8E-08	1E-02	1E-07	2E-02	--	--	1E-07	2E-02	2E-07	3E-02
1,2-Dichlorobenzene	--	--	--	5E-04	--	6E-04	--	--	--	8E-04	--	7E-04
1,2-Dichloroethane	--	--	5E-09	4E-04	8E-08	6E-02	--	--	9E-09	6E-04	1E-07	7E-02
1,3,5-Trimethylbenzene	--	2E-01	--	2E-03	--	4E-02	--	2E-01	--	3E-03	--	4E-02
1,3-Dichlorobenzene	--	--	--	1E-03	--	6E-04	--	--	--	2E-03	--	8E-04
1,4-Dichlorobenzene	3E-09	3E-05	1E-08	5E-03	6E-08	5E-04	4E-09	4E-05	2E-08	8E-03	8E-08	6E-04
2-Butanone (MEK)	--	--	--	4E-05	--	3E-04	--	--	--	7E-05	--	4E-04
2-Chlorotoluene	--	--	--	1E-04	--	7E-05	--	--	--	2E-04	--	9E-05
4-Methyl-2-pentanone	--	--	--	2E-06	--	2E-06	--	--	--	4E-06	--	3E-06
Acenaphthene	--	7E-04	--	4E-01	--	1E-01	--	1E-03	--	7E-01	--	1E-01
Acetone	--	1E-05	--	2E-06	--	1E-04	--	2E-05	--	4E-06	--	1E-04

Table 19
Cumulative Cancer Risk and Noncancer Hazard
Construction Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
Benzene	3E-08	1E-03	2E-07	3E-02	7E-07	3E-02	4E-08	2E-03	3E-07	6E-02	9E-07	4E-02
Bromochloromethane	--	--	--	2E-05	--	3E-04	--	--	--	3E-05	--	3E-04
Bromodichloromethane	--	--	3E-09	7E-05	2E-08	4E-04	--	--	5E-09	1E-04	2E-08	5E-04
Bromomethane	--	--	--	1E-04	--	2E-03	--	--	--	2E-04	--	3E-03
Carbon Disulfide	--	7E-05	--	5E-05	--	7E-05	--	9E-05	--	9E-05	--	9E-05
Carbon Tetrachloride	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	--	7E-06	--	1E-03	--	1E-04	--	1E-05	--	2E-03	--	2E-04
Chloroethane	--	--	6E-12	4E-07	6E-11	2E-07	--	--	1E-11	6E-07	8E-11	2E-07
Chloroform	1E-09	5E-05	8E-09	2E-03	3E-08	1E-03	1E-09	6E-05	1E-08	3E-03	3E-08	1E-03
Chloromethane	--	--	--	9E-06	--	2E-04	--	--	--	2E-05	--	3E-04
cis-1,2-Dichloroethene	--	9E-02	--	5E+00	--	2E+01	--	1E-01	--	9E+00	--	3E+01
Dibromochloromethane	--	--	3E-10	1E-05	2E-09	7E-05	--	--	6E-10	2E-05	2E-09	9E-05
Dibromomethane	--	--	--	7E-06	--	7E-05	--	--	--	1E-05	--	8E-05
Diisopropyl ether	--	7E-06	--	--	--	--	--	8E-06	--	--	--	--
Ethylbenzene	--	2E-03	--	7E-04	--	1E-04	--	3E-03	--	1E-03	--	1E-04
Ethyl tert-butyl ether (ETBE)	--	--	--	5E-04	--	4E-05	--	--	--	9E-04	--	5E-05
Fluorene	--	2E-03	--	9E-04	--	1E-04	--	3E-03	--	2E-03	--	2E-04
Freon-113	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	7E-09	2E-02	7E-09	2E-02	1E-09	3E-03	9E-09	3E-02	1E-08	4E-02	1E-09	4E-03
Isopropylbenzene	--	1E-02	--	7E-03	--	3E-03	--	2E-02	--	1E-02	--	4E-03
Methyl tert-butyl ether (MTBE)	--	--	6E-11	3E-06	7E-10	2E-05	--	--	1E-10	5E-06	9E-10	3E-05
Methylene chloride	5E-10	9E-05	6E-10	5E-05	2E-09	4E-04	6E-10	1E-04	1E-09	9E-05	3E-09	5E-04
Naphthalene	2E-06	5E-01	2E-06	7E-02	2E-06	4E-01	3E-06	6E-01	4E-06	1E-01	2E-06	5E-01
n-Butylbenzene	--	4E-02	--	7E-02	--	1E-02	--	5E-02	--	1E-01	--	2E-02
n-Propylbenzene	--	3E-02	--	7E-02	--	3E-02	--	3E-02	--	1E-01	--	4E-02
p-Isopropyltoluene (cymene; 4-)	--	1E-02	--	6E-04	--	1E-04	--	2E-02	--	1E-03	--	2E-04
Pyrene	--	6E-05	--	2E-04	--	4E-06	--	1E-04	--	4E-04	--	5E-06

Table 19
Cumulative Cancer Risk and Noncancer Hazard
Construction Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard	Cancer RIsk	Noncancer Hazard
sec-Butylbenzene	--	2E-02	--	2E-02	--	5E-03	--	3E-02	--	3E-02	--	6E-03
Styrene	--	--	--	2E-05	--	2E-05	--	--	--	3E-05	--	2E-05
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--	--	--
tert-Butyl alcohol	--	7E-05	--	2E-05	--	4E-04	--	9E-05	--	3E-05	--	4E-04
tert-Butylbenzene	--	3E-05	--	1E-03	--	2E-04	--	4E-05	--	2E-03	--	3E-04
Tetrachloroethene	4E-05	1E+01	7E-03	1E+02	2E-04	6E+01	5E-05	1E+01	1E-02	2E+02	2E-04	8E+01
Toluene	--	8E-05	--	9E-05	--	3E-04	--	1E-04	--	1E-04	--	4E-04
trans-1,2-Dichloroethene	--	4E-02	--	2E-02	--	1E-01	--	5E-02	--	4E-02	--	1E-01
Trichloroethene	9E-07	2E-01	5E-06	8E+01	8E-06	4E-01	1E-06	3E-01	8E-06	1E+02	9E-06	5E-01
Vinyl chloride	4E-07	4E-03	4E-05	4E+00	5E-04	5E+00	5E-07	5E-03	7E-05	6E+00	6E-04	6E+00
Xylenes	--	6E-03	--	2E-04	--	2E-04	--	7E-03	--	3E-04	--	2E-04
Cumulative Risk and Hazard =	**2E-04**	**8E+01**	**8E-03**	**2E+02**	**7E-04**	**9E+01**	**3E-04**	**2E+02**	**1E-02**	**4E+02**	**9E-04**	**1E+02**
Cumulative Hazard for $TPH_{aliphatic}$ =	**--**	**1E+00**	**--**	**4E+00**	**--**	**--**	**--**	**3E+00**	**--**	**7E+00**	**--**	**--**
Cumulative Hazard for $TPH_{aromatic}$ =	**--**	**8E+00**	**--**	**4E-01**	**--**	**--**	**--**	**2E+01**	**--**	**7E-01**	**--**	**--**

Notes:

" -- " not applicable; EPCs: Exposure Point Concentrations

[a] Soil pathways include: incidental soil ingestion, dermal contact, and outdoor inhalation of particulates/vapors

Table 20
Cumulative Cancer Risk and Noncancer Hazard
Trench Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Inorganics												
Antimony	--	3E-03	--	1E-01	--	--	--	9E-03	--	1E-01	--	--
Arsenic	--	--	1E-08	3E-04	--	--	--	--	1E-08	3E-04	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	7E-05	--	--	--	--	--	7E-05	--	--
Cadmium	9E-11	9E-04	--	3E-04	--	--	9E-11	3E-03	--	3E-04	--	--
Chromium	--	6E-05	--	6E-03	--	--	--	2E-04	--	6E-03	--	--
Chromium, Hexavalent	2E-08	1E-03	--	6E+00	--	--	2E-08	5E-03	--	6E+00	--	--
Cobalt	--	2E-03	--	1E-05	--	--	--	3E-03	--	1E-05	--	--
Copper	--	6E-04	--	2E-06	--	--	--	2E-03	--	2E-06	--	--
Cyanide (Amenable)	--	9E-06	--	--	--	--	--	5E-05	--	--	--	--
Cyanide (Total)	--	1E-05	--	7E-06	--	--	--	8E-05	--	7E-06	--	--
Mercury	--	9E-05	--	--	--	--	--	3E-04	--	--	--	--
Molybdenum	--	2E-04	--	8E-04	--	--	--	9E-04	--	8E-04	--	--
Nickel	1E-10	2E-03	--	6E-05	--	--	1E-10	4E-03	--	6E-05	--	--
Selenium	--	7E-04	--	3E-03	--	--	--	3E-03	--	3E-03	--	--
Silver	--	6E-05	--	--	--	--	--	2E-04	--	--	--	--
Thallium	--	--	--	4E-04	--	--	--	--	--	4E-04	--	--
Vanadium	--	--	--	2E-03	--	--	--	--	--	2E-03	--	--
Zinc	--	3E-04	--	3E-06	--	--	--	1E-03	--	3E-06	--	--
PAHs												
2-Methylnaphthalene	--	4E-04	--	2E-03	--	--	--	2E-03	--	2E-03	--	--
Anthracene	--	7E-09	--	--	--	--	--	4E-08	--	--	--	--
Benzo(a)anthracene	7E-10	--	1E-07	--	--	--	4E-09	--	1E-07	--	--	--
Benzo(a)Pyrene	1E-08	--	--	--	--	--	8E-08	--	--	--	--	--
Benzo(b)Fluoranthene	4E-09	--	--	--	--	--	3E-08	--	--	--	--	--
Benzo(k)Fluoranthene	3E-10	--	--	--	--	--	2E-09	--	--	--	--	--

Table 20
Cumulative Cancer Risk and Noncancer Hazard
Trench Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Benzo(g,h,i)Perylene	--	6E-06	--	1E-03	--	--	--	4E-05	--	1E-03	--	--
Chrysene	2E-10	--	1E-08	--	--	--	1E-09	--	1E-08	--	--	--
Dibenz(a,h)anthracene	3E-09	--	4E-06	--			2E-08	--	4E-06	--		
Fluoranthene	--	1E-06	--	7E-04	--	--	--	6E-06	--	7E-04	--	--
Indeno(1,2,3-cd)pyrene	2E-09	--	3E-07	--	--	--	1E-08	--	3E-07	--	--	--
Phenanthrene	--	7E-06	--	3E-05	--	--	--	4E-05	--	3E-05	--	--
PCBs												
Aroclor 1016	6E-12	9E-05	3E-08	4E-01	--	--	4E-11	5E-04	3E-08	4E-01	--	--
Aroclor 1242	2E-09	2E-03	--	--	--	--	1E-08	1E-02	--	--	--	--
Aroclor 1248	4E-06	3E+00	--	--	--	--	2E-05	2E+01	--	--	--	--
Aroclor 1254	2E-08	2E-02	--	--	--	--	1E-07	1E-01	--	--	--	--
Aroclor 1260	2E-08	1E-02	--	--	--	--	1E-07	9E-02	--	--	--	--
Aroclor 1262	5E-09	3E-03	--	--	--	--	3E-08	2E-02	--	--	--	--
Perchlorate												
Perchlorate	--	6E-04	--	--	--	--	--	2E-03	--	--	--	--
SVOCs												
1,4-Dioxane	6E-12	7E-12	7E-09	--	--	--	3E-11	7E-12	7E-09	--	--	--
4-Chloro-3-methylphenol	--	--	--	5E-05	--	--	--	--	--	5E-05	--	--
Aniline	--	--	6E-12	1E-05	--	--	--	--	6E-12	1E-05	--	--
Benzoic Acid	--	--	--	1E-07	--	--	--	--	--	1E-07	--	--
Bis(2-ethylhexyl)Phthalate	--	--	2E-08	2E-02	--	--	--	--	2E-08	2E-02	--	--
Diethylphthalate	--	--	--	4E-07	--	--	--	--	--	4E-07	--	--
Diisopropyl Ether	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl Phthalate	--	--	--	7E-09	--	--	--	--	--	7E-09	--	--
Di-n-butylphthalate	--	--	--	3E-05	--	--	--	--	--	3E-05	--	--
Phenol	--	5E-08	--	3E-07	--	--	--	3E-07	--	3E-07	--	--

Table 20
Cumulative Cancer Risk and Noncancer Hazard
Trench Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
TPH												
TPH - aliphatic; C5-C8	--	8E-03	--	8E-01	--	--	--	5E-02	--	8E-01	--	--
TPH - aliphatic; C9-C18	--	5E-02	--	2E-02	--	--	--	3E-01	--	2E-02	--	--
TPH - aliphatic; C≥19	--	2E-03	--	4E-04	--	--	--	1E-02	--	4E-04	--	--
TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--	--	--	--	--
TPH - aromatic; C9-C18	--	2E-01	--	6E-02	--	--	--	1E+00	--	6E-02	--	--
TPH - aromatic; C≥19	--	2E-01	--	3E-02	--	--	--	9E-01	--	3E-02	--	--
VOCs												
1,1,1,2-Tetrachloroethane	--	--	2E-10	2E-05	2E-10	2E-05	--	--	2E-10	2E-05	2E-10	2E-05
1,1,1-Trichloroethane	--	1E-05	--	4E-05	--	8E-05	--	1E-05	--	4E-05	--	8E-05
1,1,2-Trichloroethane	--	--	1E-09	3E-04	4E-09	1E-03	--	--	1E-09	3E-04	4E-09	1E-03
1,1-Dichloroethane	1E-11	1E-06	1E-09	2E-04	6E-09	5E-04	1E-11	1E-06	1E-09	1E-04	6E-09	5E-04
1,1-Dichloroethene	--	--	--	2E-03	--	2E-02	--	--	--	2E-03	--	2E-02
1,1-Dichloropropene	9E-13	2E-08	--	--	3E-10	6E-05	5E-12	1E-07	--	--	3E-10	6E-05
1,2,4-Trichlorobenzene	--	--	--	1E-04	--	3E-05	--	--	--	1E-04	--	3E-05
1,2,4-Trimethylbenzene	--	7E-02	--	5E-04	--	5E-03	--	7E-02	--	5E-04	--	5E-03
1,2-Dibromo-3-chloropropane	--	--	2E-08	3E-03	2E-08	3E-03	--	--	2E-08	3E-03	2E-08	3E-03
1,2-Dichlorobenzene	--	--	--	1E-04	--	8E-05	--	--	--	1E-04	--	8E-05
1,2-Dichloroethane	--	--	1E-09	8E-05	1E-08	8E-03	--	--	1E-09	8E-05	1E-08	8E-03
1,3,5-Trimethylbenzene	--	7E-03	--	4E-04	--	5E-03	--	7E-03	--	4E-04	--	5E-03
1,3-Dichlorobenzene	--	--	--	2E-04	--	9E-05	--	--	--	2E-04	--	9E-05
1,4-Dichlorobenzene	2E-10	1E-06	2E-09	1E-03	9E-09	7E-05	2E-10	2E-06	2E-09	1E-03	9E-09	7E-05
2-Butanone (MEK)	--	--	--	8E-06	--	5E-05	--	--	--	8E-06	--	5E-05
2-Chlorotoluene	--	--	--	2E-05	--	1E-05	--	--	--	2E-05	--	1E-05
4-Methyl-2-pentanone	--	--	--	5E-07	--	4E-07	--	--	--	4E-07	--	4E-07
Acenaphthene	--	3E-05	--	9E-02	--	2E-02	--	7E-05	--	9E-02	--	2E-02
Acetone	--	7E-07	--	5E-07	--	2E-05	--	8E-07	--	5E-07	--	2E-05

Table 20
Cumulative Cancer Risk and Noncancer Hazard
Trench Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Benzene	1E-09	6E-05	4E-08	7E-03	1E-07	4E-03	1E-09	6E-05	4E-08	7E-03	1E-07	4E-03
Bromochloromethane	--	--	--	4E-06	--	4E-05	--	--	--	4E-06	--	4E-05
Bromodichloromethane	--	--	6E-10	2E-05	2E-09	6E-05	--	--	5E-10	1E-05	2E-09	6E-05
Bromomethane	--	--	--	3E-05	--	3E-04	--	--	--	3E-05	--	3E-04
Carbon Disulfide	--	4E-06	--	1E-05	--	1E-05	--	4E-06	--	1E-05	--	1E-05
Carbon Tetrachloride	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	--	4E-07	--	3E-04	--	2E-05	--	5E-07	--	3E-04	--	2E-05
Chloroethane	--	--	1E-12	8E-08	9E-12	3E-08	--	--	1E-12	8E-08	9E-12	3E-08
Chloroform	5E-11	2E-06	2E-09	4E-04	4E-09	2E-04	6E-11	3E-06	2E-09	4E-04	4E-09	2E-04
Chloromethane	--	--	--	2E-06	--	3E-05	--	--	--	2E-06	--	3E-05
cis-1,2-Dichloroethene	--	4E-03	--	1E+00	--	4E+00	--	4E-03	--	1E+00	--	4E+00
Dibromochloromethane	--	--	7E-11	3E-06	3E-10	1E-05	--	--	7E-11	3E-06	3E-10	1E-05
Dibromomethane	--	--	--	1E-06	--	1E-05	--	--	--	1E-06	--	1E-05
Diisopropyl ether	--	3E-07	--	--	--	--	--	3E-07	--	--	--	--
Ethylbenzene	--	1E-04	--	1E-04	--	2E-05	--	1E-04	--	1E-04	--	2E-05
Ethyl tert-butyl ether (ETBE)	--	--	--	1E-04	--	6E-06	--	--	--	1E-04	--	6E-06
Fluorene	--	9E-05	--	2E-04	--	2E-05	--	2E-04	--	2E-04	--	2E-05
Freon-113	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	3E-10	1E-03	--	--	2E-10	5E-04	4E-10	1E-03	--	--	2E-10	5E-04
Isopropylbenzene	--	6E-04	--	2E-03	--	5E-04	--	6E-04	--	2E-03	--	5E-04
Methyl tert-butyl ether (MTBE)	--	--	1E-11	6E-07	1E-10	3E-06	--	--	1E-11	6E-07	1E-10	3E-06
Methylene chloride	2E-11	4E-06	1E-10	1E-05	3E-10	6E-05	3E-11	4E-06	1E-10	1E-05	3E-10	6E-05
Naphthalene	1E-07	2E-02	5E-07	1E-02	3E-07	6E-02	1E-07	3E-02	5E-07	1E-02	3E-07	6E-02
n-Butylbenzene	--	2E-03	--	1E-02	--	2E-03	--	2E-03	--	1E-02	--	2E-03
n-Propylbenzene	--	1E-03	--	2E-02	--	5E-03	--	1E-03	--	1E-02	--	5E-03
p-Isopropyltoluene (cymene; 4-)	--	6E-04	--	1E-04	--	2E-05	--	7E-04	--	1E-04	--	2E-05
Pyrene	--	2E-06	--	5E-05	--	6E-07	--	1E-05	--	5E-05	--	6E-07

Table 20
Cumulative Cancer Risk and Noncancer Hazard
Trench Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA						Default RA					
	Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air		Soil Pathways[a]		Dermal Contact - Groundwater		Groundwater-to-Outdoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
sec-Butylbenzene	--	1E-03	--	4E-03	--	7E-04	--	1E-03	--	4E-03	--	7E-04
Styrene	--	--	--	3E-06	--	2E-06	--	--	--	3E-06	--	2E-06
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--	--	--
tert-Butyl alcohol	--	4E-06	--	--	--	5E-05	--	4E-06	--	--	--	5E-05
tert-Butylbenzene	--	1E-06	--	2E-04	--	3E-05	--	2E-06	--	2E-04	--	3E-05
Tetrachloroethene	2E-06	5E-01	2E-03	2E+01	3E-05	1E+01	3E-06	5E-01	2E-03	2E+01	3E-05	1E+01
Toluene	--	4E-06	--	2E-05	--	5E-05	--	4E-06	--	2E-05	--	5E-05
trans-1,2-Dichloroethene	--	2E-03	--	5E-03	--	2E-02	--	2E-03	--	5E-03	--	2E-02
Trichloroethene	4E-08	8E-03	1E-06	2E+01	1E-06	7E-02	4E-08	3E-02	9E-07	2E+01	1E-06	7E-02
Vinyl chloride	2E-08	2E-04	9E-06	8E-01	8E-05	7E-01	2E-08	2E-04	9E-06	8E-01	8E-05	7E-01
Xylenes	--	3E-04	--	4E-05	--	2E-05	--	3E-04	--	4E-05	--	2E-05
Cumulative Risk and Hazard =	**6E-06**	**4E+00**	**2E-03**	**5E+01**	**1E-04**	**1E+01**	**3E-05**	**2E+01**	**2E-03**	**5E+01**	**1E-04**	**1E+01**
Cumulative Hazard for $TPH_{aliphatic}$ =	**--**	**6E-02**	**--**	**8E-01**	**--**	**--**	**--**	**4E-01**	**--**	**8E-01**	**--**	**--**
Cumulative Hazard for $TPH_{aromatic}$ =	**--**	**3E-01**	**--**	**8E-02**	**--**	**--**	**--**	**2E+00**	**--**	**8E-02**	**--**	**--**

Notes:

" -- " not applicable; EPCs: Exposure Point Concentrations

[a] Soil pathways include: incidental soil ingestion, dermal contact, and outdoor inhalation of particulates/vapors

Table 21
Cumulative Cancer Risk and Noncancer Hazard
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA				Default RA			
	Soil Pathways[a]		Soil Gas-to-Indoor Air		Soil Pathways[a]		Soil Gas-to-Indoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Inorganics								
Antimony	--	2E-02	--	--	--	2E-02	--	--
Arsenic	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--
Cadmium	2E-09	7E-03	--	--	2E-09	7E-03	--	--
Chromium	--	5E-04	--	--	--	5E-04	--	--
Chromium, Hexavalent	4E-07	1E-02	--	--	4E-07	1E-02	--	--
Cobalt	--	6E-03	--	--	--	7E-03	--	--
Copper	--	5E-03	--	--	--	5E-03	--	--
Cyanide (Amenable)	--	6E-05	--	--	--	1E-04	--	--
Cyanide (Total)	--	1E-04	--	--	--	2E-04	--	--
Mercury	--	8E-04	--	--	--	8E-04	--	--
Molybdenum	--	2E-03	--	--	--	2E-03	--	--
Nickel	3E-09	9E-03	--	--	4E-09	1E-02	--	--
Selenium	--	6E-03	--	--	--	7E-03	--	--
Silver	--	5E-04	--	--	--	5E-04	--	--
Thallium	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--
Zinc	--	2E-03	--	--	--	3E-03	--	--
PAHs								
2-Methylnaphthalene	--	2E-03	--	--	--	5E-03	--	--
Anthracene	--	4E-08	--	--	--	9E-08	--	--
Benzo(a)anthracene	1E-07	--	--	--	2E-07	--	--	--
Benzo(a)Pyrene	2E-06	--	--	--	5E-06	--	--	--
Benzo(b)Fluoranthene	7E-07	--	--	--	1E-06	--	--	--
Benzo(k)Fluoranthene	6E-08	--	--	--	1E-07	--	--	--
Benzo(g,h,i)Perylene	--	4E-05	--	--	--	8E-05	--	--
Chrysene	4E-08	--	--	--	8E-08	--	--	--
Dibenz(a,h)anthracene	5E-07	--	--	--	9E-07	--	--	--
Fluoranthene	--	7E-06	--	--	--	1E-05	--	--
Indeno(1,2,3-cd)pyrene	3E-07	--	--	--	7E-07	--	--	--
Phenanthrene	--	4E-05	--	--	--	9E-05	--	--
PCBs								
Aroclor 1016	1E-09	6E-04	--	--	2E-09	1E-03	--	--
Aroclor 1242	4E-07	1E-02	--	--	8E-07	2E-02	--	--
Aroclor 1248	7E-04	2E+01	--	--	1E-03	4E+01	--	--
Aroclor 1254	4E-06	1E-01	--	--	8E-06	2E-01	--	--
Aroclor 1260	4E-06	1E-01	--	--	7E-06	2E-01	--	--
Aroclor 1262	8E-07	2E-02	--	--	2E-06	4E-02	--	--
Perchlorate								
Perchlorate	--	5E-03	--	--	--	5E-03	--	--

Table 21
Cumulative Cancer Risk and Noncancer Hazard
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA				Default RA			
	Soil Pathways[a]		Soil Gas-to-Indoor Air		Soil Pathways[a]		Soil Gas-to-Indoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
SVOCs								
1,4-Dioxane	1E-09	7E-12	--	--	2E-09	7E-12	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
Aniline	--	--	--	--	--	--	--	--
Benzoic Acid	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
Diethylphthalate	--	--	--	--	--	--	--	--
Diisopropyl Ether	--	--	--	--	--	--	--	--
Dimethyl Phthalate	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--
Phenol	--	4E-07	--	--	--	6E-07	--	--
TPH								
TPH - aliphatic; C5-C8	--	6E-02	--	--	--	1E-01	--	--
TPH - aliphatic; C9-C18	--	3E-01	--	--	--	7E-01	--	--
TPH - aliphatic; C≥19	--	1E-02	--	--	--	3E-02	--	--
TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
TPH - aromatic; C9-C18	--	1E+00	--	--	--	2E+00	--	--
TPH - aromatic; C≥19	--	1E+00	--	--	--	2E+00	--	--
VOCs								
1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	4E-05	--	7E-02	--	4E-05	--	7E-02
1,1,2-Trichloroethane	--	--	3E-05	4E-01	--	--	3E-05	4E-01
1,1-Dichloroethane	1E-09	4E-06	3E-04	1E+00	1E-09	4E-06	3E-04	1E+00
1,1-Dichloroethene	--	--	--	1E-01	--	--	--	1E-01
1,1-Dichloropropene	2E-10	2E-07	--	--	3E-10	3E-07	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	--	3E-01	--	--	--	3E-01	--	--
1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
1,2-Dichloroethane	--	--	5E-06	1E-01	--	--	5E-06	2E-01
1,3,5-Trimethylbenzene	--	3E-02	--	5E-02	--	3E-02	--	6E-02
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	2E-08	6E-06	--	--	2E-08	7E-06	--	--
2-Butanone (MEK)	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
Acenaphthene	--	1E-04	--	--	--	2E-04	--	--
Acetone	--	3E-06	--	--	--	3E-06	--	--
Benzene	1E-07	2E-04	8E-05	1E-01	1E-07	2E-04	9E-05	1E-01
Bromochloromethane	--	--	--	--	--	--	--	--
Bromodichloromethane	--	--	--	--	--	--	--	--
Bromomethane	--	--	--	3E-02	--	--	--	3E-02

Table 21
Cumulative Cancer Risk and Noncancer Hazard
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA				Default RA			
	Soil Pathways[a]		Soil Gas-to-Indoor Air		Soil Pathways[a]		Soil Gas-to-Indoor Air	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Carbon Disulfide	--	1E-05	--	--	--	1E-05	--	--
Carbon Tetrachloride	--	--	1E-04	2E-01	--	--	2E-04	2E-01
Chlorobenzene	--	1E-06	--	--	--	2E-06	--	--
Chloroethane	--	--	--	--	--	--	--	--
Chloroform	5E-09	9E-06	5E-07	8E-04	5E-09	1E-05	5E-07	9E-04
Chloromethane	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	--	2E-02	--	2E+01	--	2E-02	--	2E+01
Dibromochloromethane	--	--	4E-06	5E-03	--	--	4E-06	6E-03
Dibromomethane	--	--	--	--	--	--	--	--
Diisopropyl ether	--	1E-06	--	--	--	1E-06	--	--
Ethylbenzene	--	4E-04	--	3E-04	--	5E-04	--	3E-04
Ethyl tert-butyl ether (ETBE)	--	--	--	7E-03	--	--	--	8E-03
Fluorene	--	4E-04	--	--	--	6E-04	--	--
Freon-113	--	--	--	1E-04	--	--	--	2E-04
Hexachlorobutadiene	3E-08	4E-03	--	--	3E-08	4E-03	--	--
Isopropylbenzene	--	2E-03	--	4E-04	--	2E-03	--	4E-04
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--
Methylene chloride	2E-09	2E-05	1E-07	9E-04	2E-09	2E-05	1E-07	1E-03
Naphthalene	1E-05	9E-02	--	--	1E-05	1E-01	--	--
n-Butylbenzene	--	7E-03	--	--	--	7E-03	--	--
n-Propylbenzene	--	5E-03	--	--	--	5E-03	--	--
p-Isopropyltoluene (cymene; 4-)	--	2E-03	--	--	--	3E-03	--	--
Pyrene	--	2E-05	--	--	--	3E-05	--	--
sec-Butylbenzene	--	4E-03	--	--	--	4E-03	--	--
Styrene	--	--	--	2E-04	--	--	--	2E-04
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--
tert-Butyl alcohol	--	1E-05	--	7E-03	--	1E-05	--	8E-03
tert-Butylbenzene	--	6E-06	--	--	--	6E-06	--	--
Tetrachloroethene	2E-04	2E+00	1E-03	2E+01	2E-04	2E+00	2E-03	2E+01
Toluene	--	2E-05	--	1E-02	--	2E-05	--	1E-02
trans-1,2-Dichloroethene	--	7E-03	--	7E-02	--	7E-03	--	8E-02
Trichloroethene	4E-06	5E-02	4E-04	8E-01	4E-06	8E-02	4E-04	9E-01
Vinyl chloride	2E-06	7E-04	9E-03	3E+00	2E-06	8E-04	1E-02	4E+00
Xylenes	--	1E-03	--	8E-03	--	1E-03	--	8E-03
Cumulative Risk and Hazard =	**9E-04**	**2E+01**	**1E-02**	**4E+01**	**2E-03**	**4E+01**	**1E-02**	**4E+01**
Cumulative Hazard for $TPH_{aliphatic}$ =	**--**	**4E-01**	**--**	**--**	**--**	**8E-01**	**--**	**--**
Cumulative Hazard for $TPH_{aromatic}$ =	**--**	**2E+00**	**--**	**--**	**--**	**4E+00**	**--**	**--**

Notes:

" -- " not applicable; EPCs: Exposure Point Concentrations

[a] Soil pathways include: incidental soil ingestion, dermal contact, and outdoor inhalation of particulates/vapors

Table 22
Cumulative Cancer Risk and Noncancer Hazard
Landscaper Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Soil Pathways[a]			
	Site-Specific RA		Default RA	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Inorganics				
Antimony	--	5E-03	--	2E-02
Arsenic	--	--	--	--
Barium	--	--	--	--
Beryllium	--	--	--	--
Cadmium	6E-10	1E-03	7E-10	4E-03
Chromium	--	1E-04	--	3E-04
Chromium, Hexavalent	1E-07	2E-03	1E-07	8E-03
Cobalt	--	2E-03	--	4E-03
Copper	--	1E-03	--	4E-03
Cyanide (Amenable)	--	4E-05	--	8E-05
Cyanide (Total)	--	6E-05	--	1E-04
Mercury	--	2E-04	--	6E-04
Molybdenum	--	5E-04	--	1E-03
Nickel	8E-10	2E-03	1E-09	6E-03
Selenium	--	2E-03	--	4E-03
Silver	--	1E-04	--	3E-04
Thallium	--	--	--	--
Vanadium	--	--	--	--
Zinc	--	6E-04	--	2E-03
PAHs				
2-Methylnaphthalene	--	2E-03	--	4E-03
Anthracene	--	3E-08	--	7E-08
Benzo(a)anthracene	9E-08	--	2E-07	--
Benzo(a)Pyrene	2E-06	--	3E-06	--
Benzo(b)Fluoranthene	6E-07	--	1E-06	--
Benzo(k)Fluoranthene	4E-08	--	9E-08	--
Benzo(g,h,i)Perylene	--	3E-05	--	6E-05
Chrysene	3E-08	--	6E-08	--
Dibenz(a,h)anthracene	4E-07	--	7E-07	--
Fluoranthene	--	5E-06	--	1E-05
Indeno(1,2,3-cd)pyrene	3E-07	--	5E-07	--
Phenanthrene	--	3E-05	--	6E-05
PCBs				
Aroclor 1016	8E-10	4E-04	1E-09	9E-04
Aroclor 1242	3E-07	8E-03	6E-07	2E-02
Aroclor 1248	5E-04	1E+01	1E-03	3E+01
Aroclor 1254	3E-06	9E-02	6E-06	2E-01
Aroclor 1260	3E-06	8E-02	5E-06	1E-01
Aroclor 1262	6E-07	2E-02	1E-06	3E-02
Perchlorate				
Perchlorate	--	1E-03	--	3E-03

Table 22
Cumulative Cancer Risk and Noncancer Hazard
Landscaper Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Soil Pathways[a]			
	Site-Specific RA		Default RA	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
SVOCs				
1,4-Dioxane	7E-10	2E-12	1E-09	2E-12
4-Chloro-3-methylphenol	--	--	--	--
Aniline	--	--	--	--
Benzoic Acid	--	--	--	--
Bis(2-ethylhexyl)Phthalate	--	--	--	--
Diethylphthalate	--	--	--	--
Diisopropyl Ether	--	--	--	--
Dimethyl Phthalate	--	--	--	--
Di-n-butylphthalate	--	--	--	--
Phenol	--	2E-07	--	5E-07
TPH				
TPH - aliphatic; C5-C8	--	4E-02	--	8E-02
TPH - aliphatic; C9-C18	--	3E-01	--	5E-01
TPH - aliphatic; C≥19	--	1E-02	--	2E-02
TPH - aromatic; C5-C8	--	--	--	--
TPH - aromatic; C9-C18	--	9E-01	--	2E+00
TPH - aromatic; C≥19	--	8E-01	--	2E+00
VOCs				
1,1,1,2-Tetrachloroethane	--	--	--	--
1,1,1-Trichloroethane	--	9E-06	--	1E-05
1,1,2-Trichloroethane	--	--	--	--
1,1-Dichloroethane	3E-10	1E-06	4E-10	1E-06
1,1-Dichloroethene	--	--	--	--
1,1-Dichloropropene	1E-10	1E-07	2E-10	2E-07
1,2,4-Trichlorobenzene	--	--	--	--
1,2,4-Trimethylbenzene	--	6E-02	--	8E-02
1,2-Dibromo-3-chloropropane	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--
1,2-Dichloroethane	--	--	--	--
1,3,5-Trimethylbenzene	--	7E-03	--	8E-03
1,3-Dichlorobenzene	--	--	--	--
1,4-Dichlorobenzene	4E-09	2E-06	5E-09	3E-06
2-Butanone (MEK)	--	--	--	--
2-Chlorotoluene	--	--	--	--
4-Methyl-2-pentanone	--	--	--	--
Acenaphthene	--	6E-05	--	1E-04
Acetone	--	7E-07	--	9E-07
Benzene	3E-08	5E-05	4E-08	7E-05
Bromochloromethane	--	--	--	--
Bromodichloromethane	--	--	--	--
Bromomethane	--	--	--	--

Table 22
Cumulative Cancer Risk and Noncancer Hazard
Landscaper Exposure Scenario
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Soil Pathways[a]			
	Site-Specific RA		Default RA	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Carbon Disulfide	--	3E-06	--	4E-06
Carbon Tetrachloride	--	--	--	--
Chlorobenzene	--	4E-07	--	7E-07
Chloroethane	--	--	--	--
Chloroform	1E-09	2E-06	2E-09	3E-06
Chloromethane	--	--	--	--
cis-1,2-Dichloroethene	--	4E-03	--	5E-03
Dibromochloromethane	--	--	--	--
Dibromomethane	--	--	--	--
Diisopropyl ether	--	3E-07	--	4E-07
Ethylbenzene	--	1E-04	--	2E-04
Ethyl tert-butyl ether (ETBE)	--	--	--	--
Fluorene	--	2E-04	--	3E-04
Freon-113	--	--	--	--
Hexachlorobutadiene	8E-09	9E-04	1E-08	1E-03
Isopropylbenzene	--	6E-04	--	7E-04
Methyl tert-butyl ether (MTBE)	--	--	--	--
Methylene chloride	6E-10	4E-06	7E-10	5E-06
Naphthalene	3E-06	2E-02	5E-06	3E-02
n-Butylbenzene	--	2E-03	--	2E-03
n-Propylbenzene	--	1E-03	--	1E-03
p-Isopropyltoluene (cymene; 4-)	--	6E-04	--	8E-04
Pyrene	--	9E-06	--	2E-05
sec-Butylbenzene	--	1E-03	--	1E-03
Styrene	--	--	--	--
tert-Amyl methyl ether (TAME)	--	--	--	--
tert-Butyl alcohol	--	3E-06	--	4E-06
tert-Butylbenzene	--	1E-06	--	2E-06
Tetrachloroethene	7E-05	5E-01	1E-04	6E-01
Toluene	--	4E-06	--	5E-06
trans-1,2-Dichloroethene	--	2E-03	--	2E-03
Trichloroethene	1E-06	3E-02	1E-06	5E-02
Vinyl chloride	5E-07	2E-04	6E-07	2E-04
Xylenes	--	3E-04	--	3E-04
Cumulative Risk and Hazard =	**6E-04**	**2E+01**	**1E-03**	**3E+01**
Cumulative Hazard for $TPH_{aliphatic}$ =	**--**	**3E-01**	**--**	**6E-01**
Cumulative Hazard for $TPH_{aromatic}$ =	**--**	**2E+00**	**--**	**3E+00**

Notes:

" -- " not applicable; EPCs: Exposure Point Concentrations

[a] Soil pathways include: incidental soil ingestion, dermal contact, outdoor inhalation of particulates/vapors

Table 23
Summary of Cancer Risks and Noncancer Hazards
Site Wide Risk Assessment
2701 North Harbor Drive
San Diego, California

COPCs	Site-Specific RA				Default RA			
	Cancer Risk	Noncancer Hazard[a]	Noncancer Hazard $TPH_{aliphatic}$	Noncancer Hazard $TPH_{aromatic}$	Cancer Risk	Noncancer Hazard[a]	Noncancer Hazard $TPH_{aliphatic}$	Noncancer Hazard $TPH_{aromatic}$
Offsite Industrial/Commercial Worker								
Groundwater-to-Indoor Air =	3E-02	3E+01	--	--	3E-02	3E+01	--	--
Construction Worker								
Total Risk Across Soil (0-8' bgs)[b] =	2E-04	8E+01	1E+00	8E+00	3E-04	2E+02	3E+00	2E+01
Dermal Contact with Groundwater =	8E-03	2E+02	4E+00	4E-01	1E-02	4E+02	7E+00	7E-01
Groundwater-to-Outdoor Air =	7E-04	9E+01	--	--	9E-04	1E+02	--	--
Trench Worker								
Total Risk Across Soil (0-8' bgs)[b] =	6E-06	4E+00	6E-02	3E-01	3E-05	2E+01	4E-01	2E+00
Dermal Contact with Groundwater =	2E-03	5E+01	8E-01	8E-02	2E-03	5E+01	8E-01	8E-02
Groundwater-to-Outdoor Air =	1E-04	1E+01	--	--	1E-04	1E+01	--	--
Industrial/Commercial Worker								
Total Risk Across Soil (0-8' bgs)[b] =	9E-04	2E+01	4E-01	2E+00	2E-03	4E+01	8E-01	4E+00
Soil Gas-to-Indoor Air =	1E-02	4E+01	--	--	1E-02	4E+01	--	--
Landscaper								
Total Risk Across Soil (0-8' bgs)[b] =	6E-04	2E+01	3E-01	2E+00	1E-03	3E+01	6E-01	3E+00

Notes:

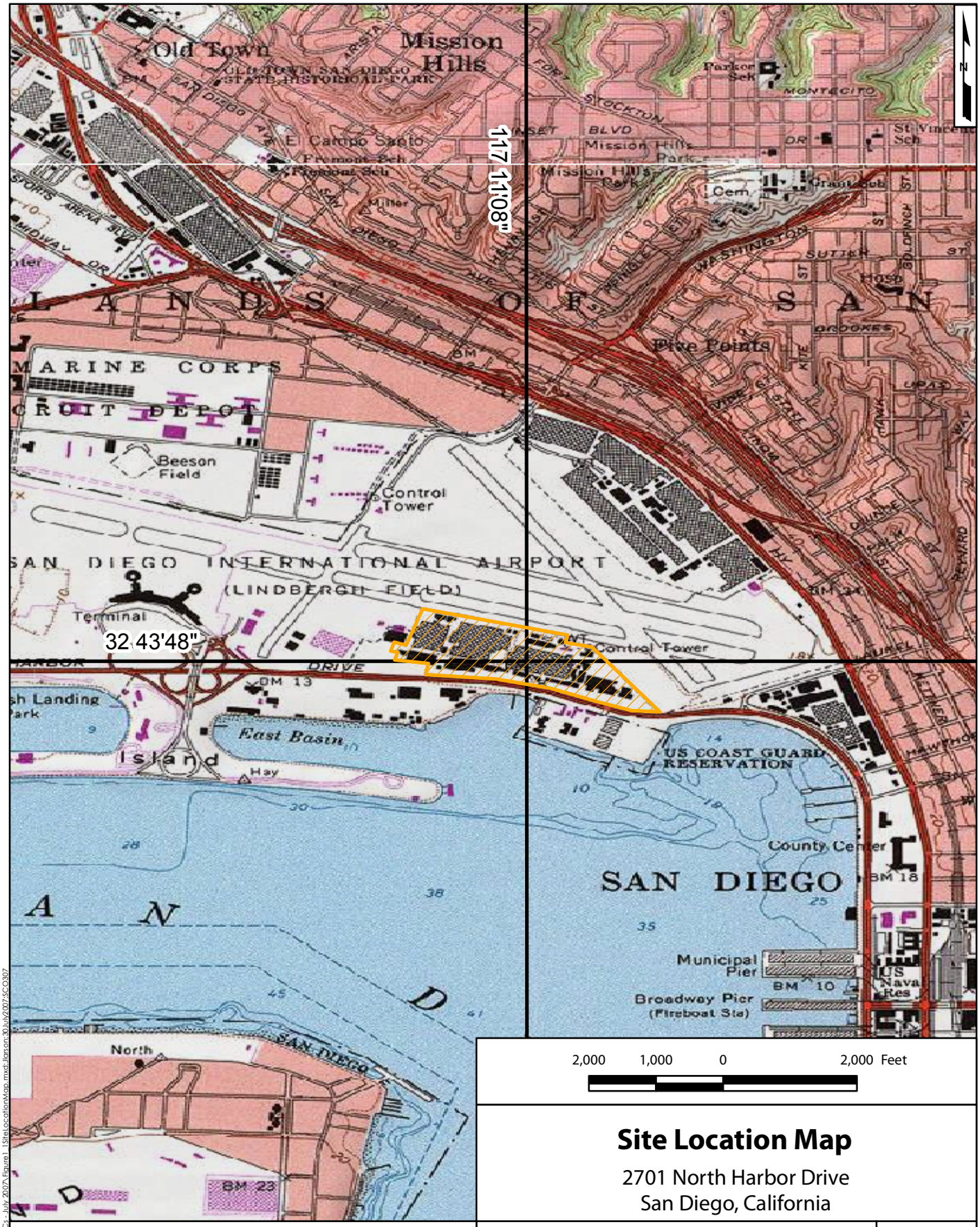
"--" not applicable

EPCs: Exposure Point Concentrations

[a] Cumulative noncancer hazard excludes aliphatic and aromatic TPH fractions

[b] Soil pathways include: incidental soil ingestion, dermal contact, and outdoor inhalation of particulates/vapors

FIGURES



Site Location Map

2701 North Harbor Drive
San Diego, California

Legend

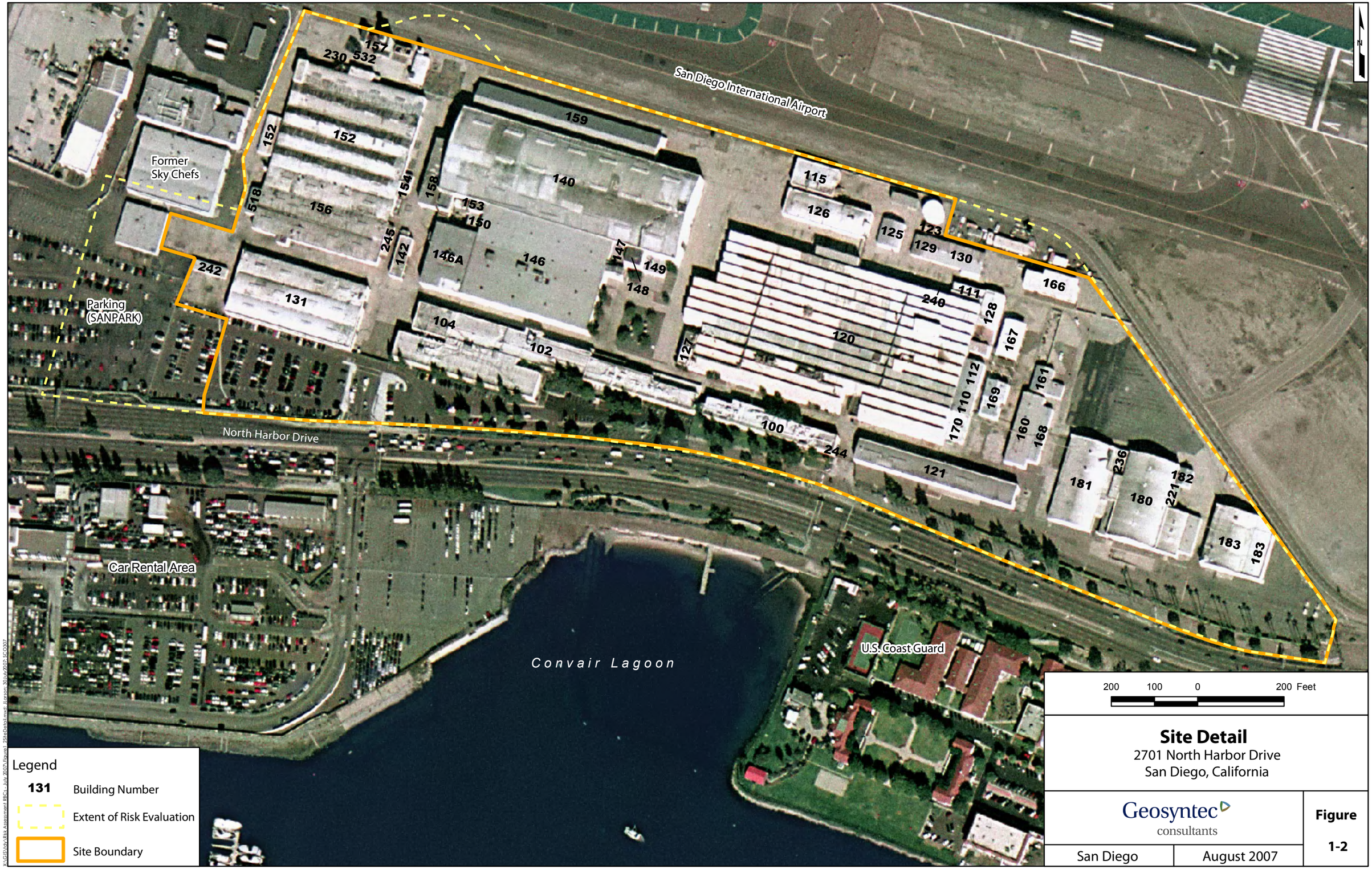
Site Boundary

Geosyntec consultants

San Diego | August 2007

Figure 1-1

X:\GIS\Vdv\Rkk Assessment RRC's - July 2007\Figure 1 1Site Location Map.mxd: ljanson; 30 July 2007; SCO 307



Site Detail

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | August 2007

Figure 1-2

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Sample Locations for Soil

2701 Harbor Drive
San Diego, California

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San Diego | August 2007

Figure 2-1

Sample Locations for Soil Gas

2701 Harbor Drive
San Diego, California

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Figure 2-2

Sample Locations for Groundwater

2701 Harbor Drive
San Diego, California

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Figure 2-3

N

27

0513-06-03 (2) Carbon Disulfide 0.0087 mg/Kg

0156-03-03 (1) Cyanide (Amenable) 1 mg/Kg

0242-03-36 (1) Toluene 0.0099 mg/Kg

0513-04-01 (1) Zinc 710 mg/Kg

0156-08-01 (1) 1,1,1-Trichloroethane 0.051 mg/Kg

0156-08-05 (1) Total PCBs 290 mg/Kg

T-14 (6) Dichloromethane (Methylene Chloride) 0.0094 mg/Kg

0242-03-25 (5) cis-1,2-Dichloroethene 0.96 mg/Kg

0242-03-26 (5) trans-1,2-Dichloroethene 0.67 mg/Kg

0242-GW-69 (5) 1,4-Dichlorobenzene 0.025 mg/Kg

0242-03-23 (1) Tert-Butyl Alcohol 0.1 mg/Kg

0131-09-01 (3) Diisopropylethene 0.001 mg/Kg

T-46 (5) 1-4-Dioxane 0.09 mg/Kg

P2 (6) TPH (C5-C8) 1682 mg/Kg

Location 0242-03-28
(5) 1,4-Dichlorobenzene 0.025 mg/Kg
(5) Hexachlorobutadiene 0.018 mg/Kg
(1) Vinyl Chloride 0.054 mg/Kg

0131-06-01 (1) Chloroform 0.004 mg/Kg
0131-06-01 (1) Trichloroethene 10 mg/Kg

0105-05-01 (3) Benzo(B)fluoranthene 1.26 mg/Kg
0105-05-01 (3) Chrysene 0.682 mg/Kg

T-48-6B (1) Total Petroleum Hydrocarbons 0.22 mg/Kg
T-48-6B (1) TPH -Gasoline 0.0.21 mg/Kg

0159-02-01 (1) Anthracene 0.01 mg/Kg

0140-03-03 (1) Benzene 0.02 mg/Kg
0140-03-03 (1) tert-Butylbenzene 0.004 mg/Kg

0120-28-02 (5) Arsenic 23 mg/kg
0120-28-02 (1) Cobalt 100 mg/Kg
0120-28-02 (5) Vanadium 70 mg/kg

Location 0228-01-02
(1) Molybdenum 10 mg/Kg
(1) Nickel 170 mg/Kg
(1) Copper 200 mg/Kg

0228-01-01 (2) Perchlorate 3.6 mg/Kg

0130-V1-02 (1) Silver 2.3 mg/Kg

0130-V1-01 (5) Chromium 700 mg/Kg
0130-V1-01 (5) Antimony 8.5 mg/Kg

Location 0166-01-07
(5) 1,4-Dioxane 0.09 mg/Kg
(1) Benz(A)anthracene 0.2 mg/Kg
(1) Benzo(A)pyrene 0.4 mg/Kg
(1) Dibenz(a,h)anthracene 0.08 mg/Kg
(1) Benzo(K)flouranthene 0.1 mg/Kg
(1) Benzo(g,h,i)perylene 0.9 mg/Kg
(1) Flouranthene 0.2 mg/Kg
(1) Indeno(1,2,3-cd)pyrene 0.6 mg/Kg
(1) Pyrene 0.35 mg/Kg

0166-02-01 (1) Chlorobenzene 0.004 mg/Kg

0166-02-06 (5) Phenol 0.09 mg/Kg

Location 0161-02-03
(1) 2-Methylnaphthalene 53 mg/Kg
(1) Acenaphtene 2 mg/Kg
(1) Flourene 5.7 mg/Kg
(1) Phenathrene 9.8 mg/Kg

0161-02-04 (1) Cyanide (Total) 1.7 mg/Kg

0120-03-03 (5) Mercury 0.23 mg/Kg

0120-36-03 (1) Cadmium 6.8 mg/Kg

0120-12-05 (5) Chromium, Hexavalent 35 mg/Kg

0120-25-03 (1) Selenium 30 mg/Kg

0167-01-05 (3) Acetone 0.062 mg/Kg

0120-25-02 (3) Tetrachloroethene 220 mg/Kg

0102-U1-05 (7) 1,3,5-Trimethylbenzene 0.68 mg/Kg

0120-221-03 (1) Barium 440 mg/Kg

0120-OA-32 (3) TPH (C19+) 22700 mg/Kg

0120-39-03 (5) 1,1-Dichloroethane 0.003 mg/Kg

Location 0102-U1-01
(7) 4-Isopropyltoluene 5.8 mg/Kg
(7) Ethyl benzene 2.3 mg/Kg
(7) Isopropylbenzene 1.7 mg/Kg
(7) n-Butylbenzene 5.5 mg/Kg
(7) n-Propylbenzene 3.7 mg/Kg
(7) sec-Butylbenzene 2.3 mg/Kg
(7) P/M-Xylene 2.1 mg/Kg
(7) TPH (C9-C18) 25100 mg/Kg
(7) Xylenes, Total 2.4 mg/Kg

Location 0102-U1-04
(3) 1,2,4-Trimethylbenzene 16 mg/Kg
(3) Naphthalene 18 mg/Kg

T-50 (1) TPH Heavy Range Organics 0.021 mg/Kg
T-50 (1) 1,2-Dichloroethene 0.0036 mg/Kg

0183-01-01 (3) 1,1-Dichloropropene 0.004 mg/Kg

Legend
- Soil Sample
- Site Boundary

Key to Labels

Location	Depth	COPC	Result	Unit
0513-04-01	(1)	Zinc	710	mg/Kg

COPC: Constituent Of Potential Concern

200 100 0 200 Feet

Maximum Exposure Point Concentrations for Soil

2701 Harbor Drive
San Diego, California

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Figure 2-4

X:\GIS\Ibx\Mxd Assessment Rpt\Ch. 2\2007\Ibx\Ibx_Figure2_4.mxd/ Jramos/Mon Aug/20/07/CDT

0TC4-03-01 (3) Styrene 0.68 ug/L
0156-09-01 (3) Isopropylbenzene 0.62 ug/L
Location 0153-02-01
(3) 1,3,5-Trimethylbenzene 1.5 ug/L
(3) Benzene 34 ug/L
(3) Ethyl benzene 2.2 ug/L
0146-OA-04 (3) Bromomethane 0.67 ug/L
0242-03-36 (3) 1,2-Dichloroethane 2.7 ug/L
0242-03-36 (3) O-Xylene 1.6 ug/L
0242-03-32 (3) Dibromochloromethane 3.3 ug/L
0242-03-16 (3) cis-1,2-Dichloroethene 2500 ug/L
0242-03-16 (3) Vinyl Chloride 1300 ug/L
Location 0242-03-05
(3) 1,1-Dichloroethane 2300 ug/L
(3) cis-1,2-Dichloroethene 2500 ug/L
(3) Freon-113 19 ug/L
(3) trans-1,2-Dichloroethene 22 ug/L
0166-01-06 (3) 1,1,2-Trichloroethane 24 ug/L
0166-01-07 (3) 1,1,1-Trichloroethane 300 ug/L
0166-01-01 (3) Carbon Tetrachloride 40 ug/L
0166-01-04 (3) Chloroform 0.96 ug/L
0166-01-11 (3) Toluene 15 ug/L
0120-21-03 (3) Tetrachloroethene 3000 ug/L
0120-OA-22 (3) Ethyl-Tert-Butyl Ether 10 ug/L
0120-OA-22 (3) Methyl tert-Butyl Ether 1.4 ug/L
0120-OA-12 (3) Tetrachloroethene 3000 ug/L
0120-OA-12 (3) Toluene 15 ug/L
0169-OA-01 (3) Tert-Butyl Alcohol 32 ug/L
N
200 100 0 200 Feet

Legend

- Soil Gas Sample
- Site Boundary

Key to Labels

Location Depth COPC Result Unit
OTC4-03-01 (3) Styrene 0.68 ug/L

COPC: Constituent Of Potential Concern

Maximum Exposure Point Concentrations for Soil Gas

2701 Harbor Drive
San Diego, California

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Figure 2-5

MW-C1 TPH-Diesel/Fuel Oil 650 ug/L

Location 0158-GW-13
(9.5) 1,2,4-Trimethylbenzene 14 ug/L
(9.5) Benzene 110 ug/L
(9.5) Ethyl benzene 16 ug/L
(9.5) Isopropylbenzene 89 ug/L
(9.5) Naphthalene 310 ug/L
(9.5) P/M-Xylene 5.6 ug/L
(9.5) tert-Butylbenzene 2.4 ug/L
(9.5) TPH (C9 - C18) 2660 ug/L

Location 0158-GW-53
(9) Antimony 3 mg/L
(9) Chromium, Hexavalent 680 mg/L
(9) Carbon Disulfide 3.6 ug/L
(9) Selenium 1.2 mg/L
T-48 Chromium 665 mg/L

Location 0242-GW-69
(9.5) cis-1,2-Dichloroethene 57000 ug/L
(9.5) Chlorobenzene 9.5 ug/L
(9.5) Ethyl-Tert-Butyl Ether 0.8 ug/L
(9.5) trans-1,2-Dichloroethene 510 ug/L

0158-GW-118 (9) Zinc 0.1 mg/L

0158-GW-115 (9) Zinc 0.1 mg/L

0156-GW-49 (15) Cobalt 0.09 mg/L
0156-GW-49 (15) Copper 0.019 mg/L

T-49 TPH-Gasoline 360 ug/L

0158-GW-12 (9) Barium 490 ug/L

Location 0158-GW-50
(9) 1,3,5-Trimethylbenzene 16 ug/L
(9) 4-Isopropyltoluene 4 ug/L
(9) n-Butylbenzene 140 ug/L
(9) n-Propylbenzene 320 ug/L
(9) sec-Butylbenzene 54 ug/L

T-17 (10) 2-Chlorotoluene 0.38 ug/L

T-18 (10) 1,2-Dichlorobenzene 9.7 ug/L

0156-GW-10 (10) 1,1-Dichloropropene 0.58 ug/L

T-21 (10) 4-Chloro-3-methylphenol 7.7 ug/L
T-21 (1) Vinyl Chloride 25000 ug/L

0242-GW-71 (9.5) 1,2-Dibromo-3-chloropropane 0.6 ug/L

GT2 Total Petroleum Hydrocarbons 6300 ug/L

T-22 (10) Vinyl Chloride 19000 ug/L

142WCP Copper 5.5 ug/L

Location T-23
(10) Benzo(g,h,i)perylene 0.58 ug/L
(10) Dibenz(a,h)anthracene 0.49 ug/L
(10) Indeno(1,2,3-cd)pyrene 0.55 ug/L
(3) Tert-Butyl Alcohol 41 ug/L

T-44 Benzoic Acid 3.6 ug/L

0242-GW-70 (9.5) Calcium 81 mg/L
0242-GW-70 (9.5) Magnesium 45 mg/L

0146-GW-52 (9) 1,2,4-Trichlorobenzene 0.68 ug/L

0105-GW-14 (10) Cyanide (Total) 0.01 mg/L

T-27 (10) Diethyl Phthalate 2.2 ug/L

T-9 (10) Methyl tert-Butyl Ether 13 ug/L

T-28 (10) Aniline 2.2 ug/L

Location 0242-GW-37
(9.5) 1,1,1,2-Tetrachloroethane 1.6 ug/L
(9.5) 1,4-Dichlorobenzene 32 ug/L
(9.5) 2-Methylnaphthalene 32 ug/L
(9.5) Acenaphthene 2520 ug/L
(9.5) Benz(a)anthracene 0.364 ug/L
(9.5) Chrysene 0.443 ug/L
(9.5) Di-n-butyl Phthalate 3 ug/L
(9.5) Fluoranthene 3.71 ug/L
(9.5) Fluorene 2.65 ug/L
(9.5) Hexachlorobutadiene 0.4 ug/L
(9.5) O-Xylene 2.8 ug/L
(9.5) Phenanthrene 2.33 ug/L
(9.5) Phenol 1 ug/L
(9.5) Pyrene 0.215 ug/L
(9.5) Styrene 0.99 ug/L
(9.5) Tetrachloroethene 240000 ug/L
(9.5) Toluene 6.7 ug/L
(9.5) TPH (C5-C8) 50000 ug/L
(9.5) Xylenes, Total 7.9 ug/L

T-54 4-Methyl-2-pentanone 0.720 ug/L

0228-GW-107 (9) Bis(2-ethylhexyl) Phthalate 120 ug/L
0228-GW-107 (9) Chloroethane 0.3 ug/L

Location 0166-GW-95
(9) 1,1-Dichloroethane 120 ug/L
(9) 1,4-Dioxane 3000 ug/L
(9) 1,1,1-Trichloroethane 45 ug/L
(9) 1,1,2-Trichloroethane 9.4 ug/L
(9) Bromomethane 0.79 ug/L
(9) Chloromethane 0.93 ug/L

0128-GW-97 (9) Nickel 0.45 mg/L
0128-GW-97 (9) Cobalt 17 mg/L

T-52 Benzo(K)Fluoranthene 0.32 ug/L
T-52 Bis(2-ethylhexyl) Phthalate 210 ug/L

Location 0120-GW-58
(9) 1,1-Dichloroethene 540 ug/L
(9) 1,2-Dichloroethane 20 ug/L
(9) 2-Butanone 300 ug/L
(15,9) Dichloromethane (Methylene Chloride) 10 ug/L
(9) Trichloroethene 21000 ug/L

0120-GW-102 (9) Acetone 49 ug/L

0120-GW-111 (1.1) TPH>19 1297 ug/L

0120-GW-39 (9) Molybdenum 0.29 mg/L

0120-GW-77 (9.5) Total PCBs 1.9 ug/L

0120-GW-61 (15,9) Dichloromethane (Methylene Chloride) 10 ug/L
0120-GW-61 (9) Vanadium 0.13 mg/L

B120-MW4 (10) Dimethyl Phthalate 1.6 ug/L

Location 0181-GW-62
(9) 1,3-Dichlorobenzene 5.6 ug/L
(9) Beryllium 0.01 mg/L
(9) Cadmium 0.01 mg/L

T-33 (10) Arsenic 0.0071 mg/L

B120-MW1 Lead 47 mg/L
B120-MW1 Thalium 2 mg/L

Location T-33
(10) Bromochloromethane 1.5 ug/L
(10) Bromodichloromethane 2.6 ug/L
(10) Chloroform 27 ug/L
(10) Dibromochloromethane 0.51 ug/L
(10) Dibromomethane 0.23 ug/L

N

27

Legend
- Groundwater Sample
- Site Boundary

Key to Labels

Location	Depth	COPC	Result	Unit
0158-GW-115	(9)	Zinc	100	ug/L

COPC: Constituent Of Potential Concern

200 100 0 200 Feet

Maximum Exposure Point Concentrations for Groundwater

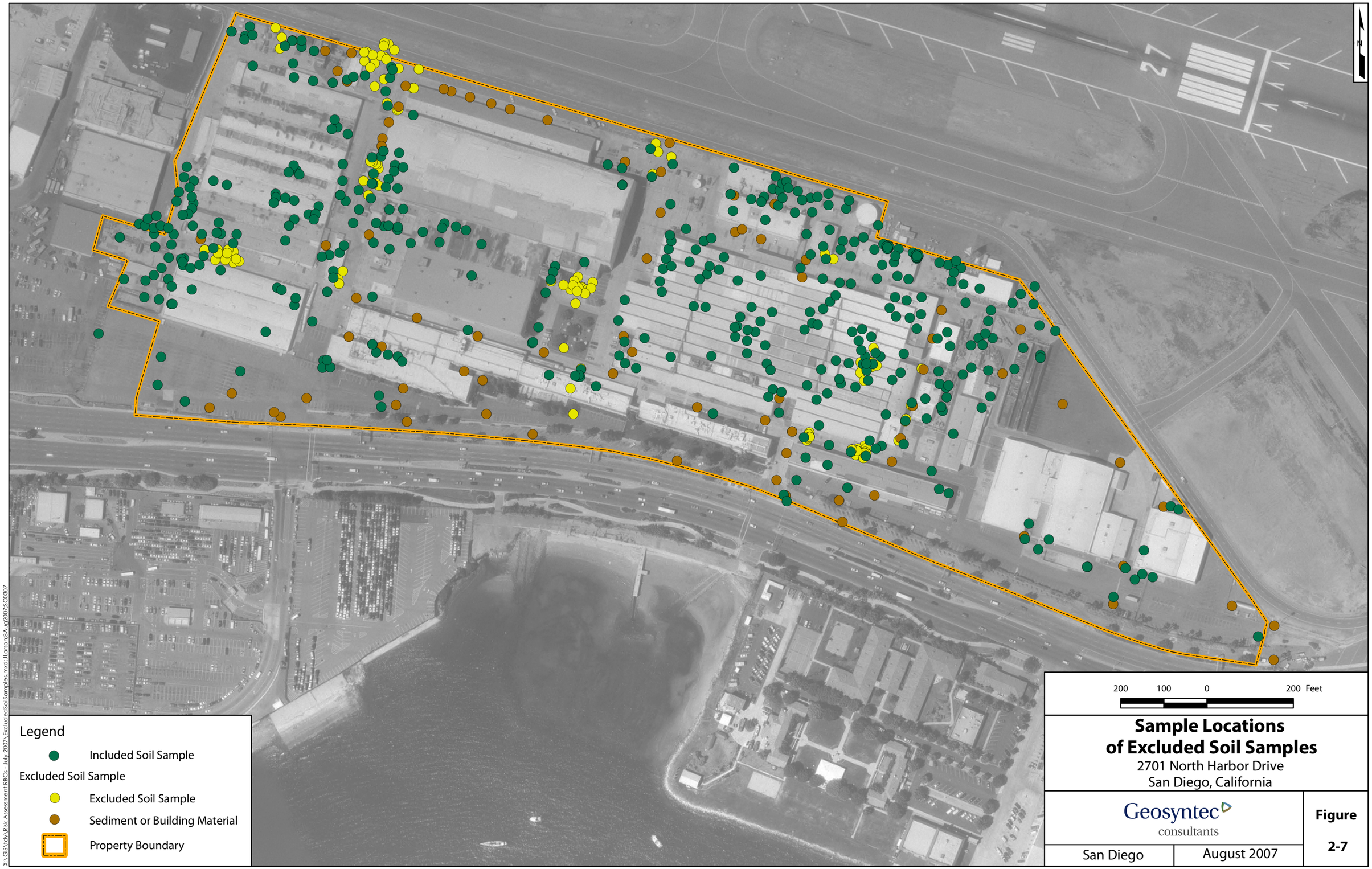
2701 Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | August 2007

Figure 2-6

X:\GIS\Projects\Site Assessment\RAC_-_July_2007\Workdata\Figure_mxd\Figure8Aug2007-CO3d7



Sample Locations of Excluded Soil Samples

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | August 2007

Figure 2-7

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Sample Locations of Excluded Groundwater Samples

2701 Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | August 2007

Figure 2-8

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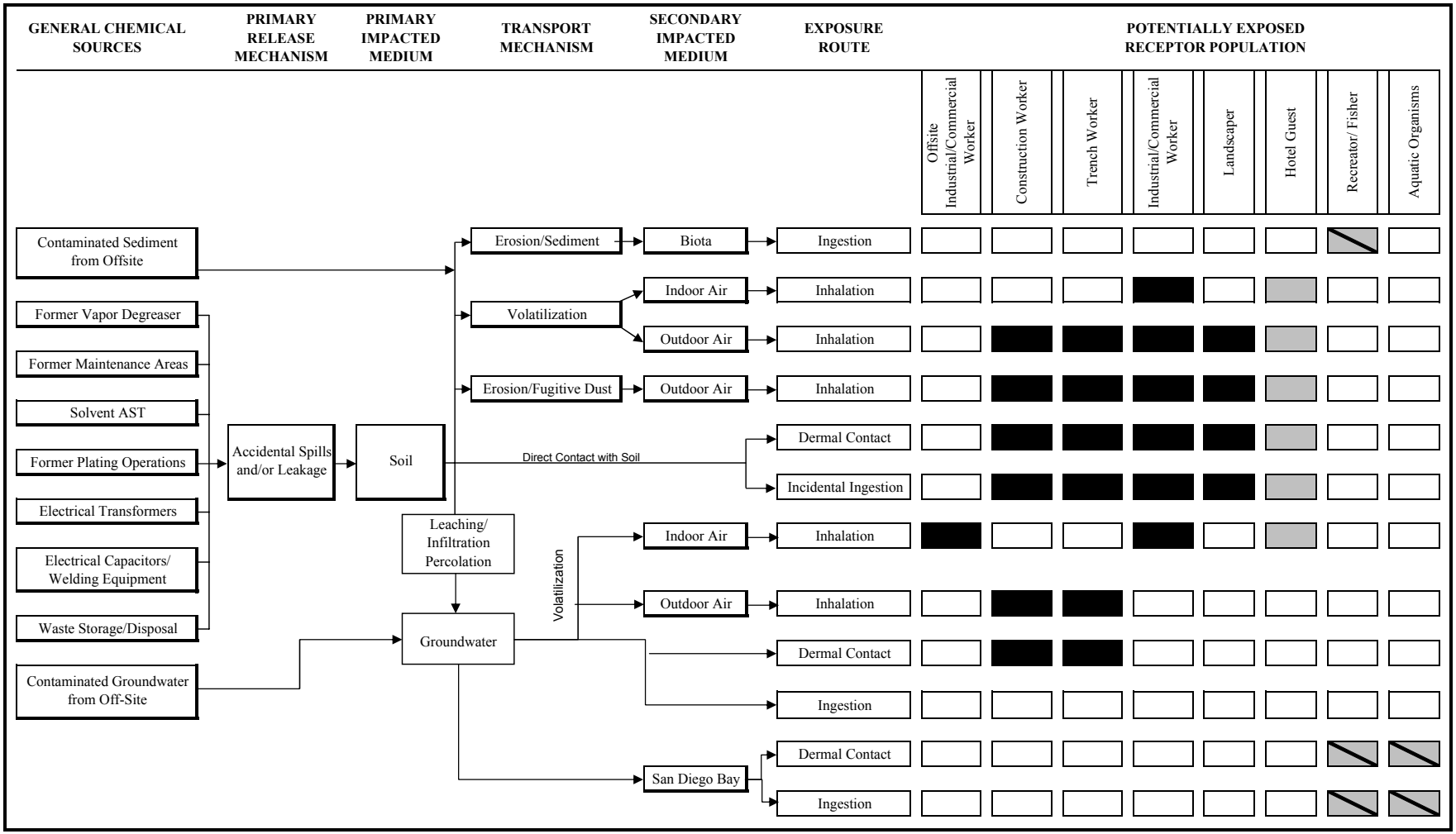


NOTES:

- Complete exposure pathway, which will be quantitatively evaluated in the risk assessment
- Potentially complete pathway, however, risk is likely negligible
- Incomplete exposure pathway; no evaluation necessary
- Potentially complete pathway, however, risk is likely negligible, to be evaluated in future Convair Lagoon Risk Assessment.

Figure 4-1: Conceptual Site Model

Geosyntec consultants

engineers | scientists | innovators

Project No.: SC0307

Date: August 2007

AOPC
EXPLOSIVES AREA

AOPC
TEST CELL #4

AOPC 158

AOC 156

AOC 131/242

AOPC 146

AOPC 142

AOPC 146

B102

B120

B120

B120

B222/B228

B120

AST

FORMER
MAINTENANCE YARD

B120

B120

B121

B180

N

200 100 0 200 Feet

Legend

- Metals 0 - 5 Feet BGS > Background Level
- VOC 0 - 5 Feet BGS > ND
- SVOC 0 - 5 Feet BGS > ND
- Approximate Extend of Excavation
- Building
- Site Boundary

Extent of Impacts in Shallow Soil
Soil Concentration Exceedances
0 - 5 Feet Below Ground Surface

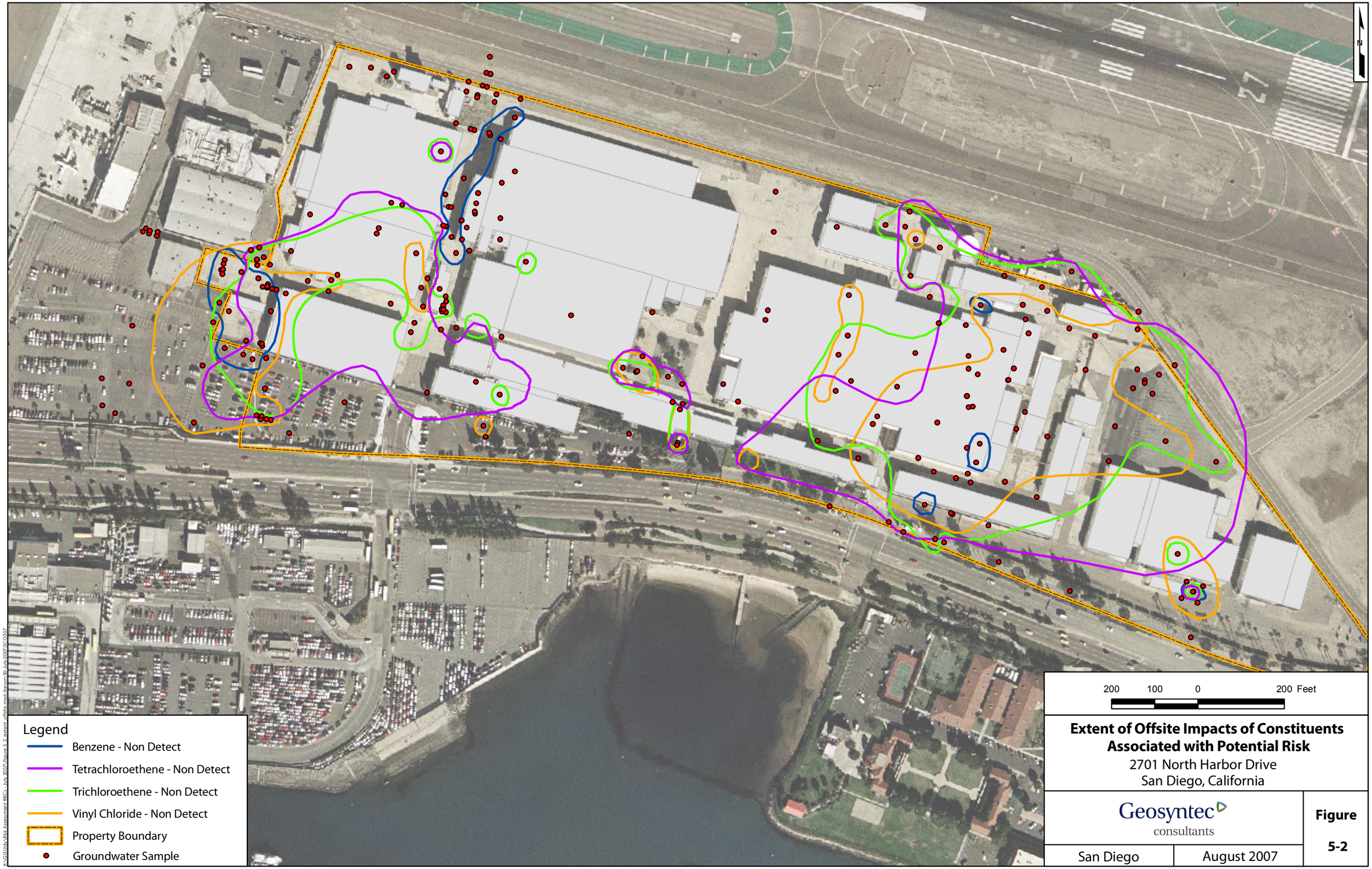
2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | August 2007

Figure 5-1

X:\GIS\tdy\Risk Assessment RBCs - July 2007\Figur5_1ShallowSoilImpacts.mxd:jlarson:30July2007:SC0307



Extent of Offsite Impacts of Constituents Associated with Potential Risk

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego	August 2007	**Figure 5-2**

X:\GIS\Utx\Risk Assessment RBCs - July 2007\Figure 5.2 extent_offsite.mxd:jlorson:30-July-2007:SCO307

APPENDIX A

Evaluation of Groundwater/Seep and Soil/Sediment Pathways through the SWCS

Prepared for

TDY Industries, Inc., TDY Holdings, LLC,
and Teledyne Ryan Aeronautical Company
1000 Six PPG Place
Pittsburgh, Pennsylvania

Risk Assessment Appendix A: Evaluation of Potential Soil/Sediment and Groundwater Impacts to Convair Lagoon

2701 North Harbor Drive
San Diego, California

Prepared by

Brian Hitchens, PG, CHG

Sam Williams, PG, CHG

Geosyntec consultants

engineers | scientists | innovators

10875 Rancho Bernardo Road, Suite 200
San Diego, California 92127

16 August 2010

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ATTACHMENTS

CERTIFICATION

I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Edgard Bertaut
Senior Environmental Manager
TDY Industries Inc.

Date

1. INTRODUCTION

A Site-Wide Risk Assessment was finalized in February 2008 (Geosyntec, 2008) which presented the approach and methodologies used to estimate potential human health risks associated with residual chemicals detected in soil, groundwater, and soil gas from the Site and contiguous impacted areas as reported in the Site Characterization Report (Geosyntec, 2005).

This Risk Assessment Appendix A addresses sediment and groundwater pathways from potential landside impacts on 2701 North Harbor Drive to Convair Lagoon and the Storm Water Conveyance System (SWCS). This document was prepared in accordance with the Risk Assessment Appendix A Work Plan dated 16 October 2007 and in response to comments from the San Diego Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) on the work plan.

This document details the additional data that was collected, the potential groundwater and sediment exposure pathways, and the receptors evaluated. Each exposure pathway/receptor is evaluated using existing California Toxics Rule (CTR) standards, where applicable. Additionally, a construction/maintenance worker exposure scenario is presented to evaluate potential risk to a worker who enters the storm drain for inspection or repair purposes. No quantitative onsite ecological risk assessment has been prepared as no onsite ecological receptors have been identified.

1.1 Scope of Site Demolition Activities

Site demolition activities are currently planned to begin in the 1st quarter 2010. The scope of the demolition activities includes removal of all above grade structures and appurtenances, followed by removal of all concrete slabs, foundations, utilities, and storm water conveyance systems, with the exception of the main trunks of the 60-inch and 54-inch SWCS. During demolition activities all storm drain systems will be sealed and all storm water runoff will be collected, treated, and discharged to the sanitary sewer system.

Concrete may be crushed and re-used as sub-base with import fill, followed by the placement of 1.5 to 2 inches of asphalt or overlay or other suitable surface treatment to minimize dust generation and runoff of surface sediment from the Site. Following completion of demolition, Low Impact Design (LID) Best Management Practices (BMPs) consistent with Standard Urban Storm Water Mitigation Plan (SUSWMP)

requirements to encourage infiltration of storm water on-site and reduce runoff and minimize storm drain impacts are anticipated for the Site (Port, 2009).

2. CONCEPTUAL SITE MODEL

Soil and groundwater pathways for on-site receptors were addressed in the Risk Assessment (Geosyntec, 2008). A Conceptual Site Model (CSM) identifies known chemical sources, transport mechanisms, exposure routes, and potential receptors. This general CSM was developed based on current and anticipated future use of the Site and adjacent areas. The general CSM was constructed based on a review of Site information regarding the environmental setting and chemical distribution in environmental media for on-site exposure scenarios.

Sediment and groundwater pathways related to potential impacts to Convair Lagoon and the SWCS are addressed in this document. To aid in this assessment, a Convair Lagoon and SWCS Conceptual Site Model was prepared (**Figure 1; Figure 2**). Potential transport and exposure pathways include:

Groundwater/Seep:

- Migration of impacted groundwater in the shallow/deep interval from the Site to Convair Lagoon (discharge to surface water and/or pore water);
- Migration of impacted groundwater from the Site to the SWCS backfill material followed by discharge into Convair Lagoon; and
- Migration of impacted groundwater from seeps into the SWCS followed by discharge into Convair Lagoon.

Soil/Sediment:

- Migration of impacted soil/sediment from the surface of the site to the SWCS followed by discharge into Convair Lagoon;
- Migration of impacted storm drain backfill material to the SWCS followed by discharge into Convair Lagoon; and
- Migration of impacted sediment currently within the SWCS followed by discharge into Convair Lagoon.

Additionally, a construction/maintenance worker exposure scenario is presented to evaluate potential risk to a worker who enters the storm drain to perform repair or inspection.

3. EVALUATION OF POTENTIAL GROUNDWATER/SEEP TRANSPORT AND EXPOSURE PATHWAYS

3.1 Migration of Impacted Groundwater in the Shallow/Deep Interval from the Site to San Diego Bay

3.1.1 Summary of Relevant Data

To evaluate potential impacts to San Diego Bay and Convair Lagoon from the direct discharge of groundwater from the Site, three pairs of shallow and deep groundwater wells were advanced adjacent to Convair Lagoon (MWCL-1 through MWCL-6) (**Figure 3, Figure 4**). The shallow wells are screened across the water table from 6 to 16 feet bgs. The deep wells are screened from 38 to 43 feet bgs. Boring logs are provided in **Attachment C**.

Due to the detection of volatile organic compounds (VOCs) in the deep well of the western well pair (MWCL-5), a deeper well (MWCL-7) and two temporary hydropunch borings (T-54 and T-55) were advanced to evaluate the horizontal and vertical distribution of groundwater impacts on the western edge of Convair Lagoon. Monitor well MWCL-7 is screened from 60 to 65 feet bgs. Groundwater samples were collected from hydropunch boring T-54 at 11, 40, and 65 feet bgs and from T-55 at 11, 40, and 70 feet bgs. Four rounds of semiannual samples have been collected from the original six monitor wells, while three rounds have been collected from MWCL-7. Metals were added as an additional parameter during the initial sampling event for MWCL-2 and MWCL-5 and have also been analyzed during the 1st quarter 2009 through 1st quarter 2010 semiannual monitoring events. These data are evaluated below, through an evaluation of trends and comparison with CTR standards (**Table 1, Attachment A**). CTRs are used for standards as they address the exposure pathways/receptors being evaluated (potential recreator/fisher and aquatic organism exposures to COCs in surface water).

3.1.2 Evaluation of Transport Pathway

This is a hydrologically complete transport pathway. Groundwater from the Site is transported downgradient, ultimately discharging to Convair Lagoon. Due to the low hydraulic gradient (0.002 ft/ft) and relatively low hydraulic conductivity of the surrounding saturated sediment of 6.7×10^{-4} cm/sec, the estimated annual flux of groundwater from the Site to Convair Lagoon is relatively small. Assuming a cross-sectional area of 820 feet wide (the shoreline length of Convair Lagoon) by an

approximate 30-foot thickness of saturated bay mud and bay fill above the semi-confining Point Loma Formation, approximately 700 gallons of groundwater discharge to Convair Lagoon/San Diego Bay per day is estimated.

3.1.3 Comparison of Data to CTRs

Six metals (copper, nickel, silver, thallium, zinc, and mercury), one SVOC (bis(2-ethylhexyl) phthalate), and total PCBs have historically been detected at concentrations in excess of CTRs in Convair Lagoon vicinity monitor wells (**Table 1**). Because the laboratory reporting limits for some metals were greater than the CTR standards, the non-detect metals results in this table are presented with their respective method detection limits, which were generally below the CTRs. The only exceptions were during the January 2010 sampling event, when the MDL for copper was approximately 0.8 ug/l above the CTR and the MDL for silver was approximately 0.2 ug/L above the CTR.

3.1.3.1 Metals

Copper was detected in only 4 of 92 on-site groundwater samples: three trace detections (0.002 J mg/L) located south of Building 156, south of Building 181, and north of Building 126; and one detection of 0.019 mg/L in north-central Building 156. Due to its infrequent detection in on-site groundwater, no background value was developed. Copper has been detected in 12 of the 26 samples collected in Convair Lagoon vicinity monitor wells (46%). Seven of these samples had reported estimated results exceeding the CTR (0.0031 mg/L). However, most of these exceedances are single sample events, not repeated in subsequent samples. Copper has been detected consistently above the CTR in only one well, MWCL-5. This is also the only well with a reported exceedance of the Copper CTR during the most recent Convair Lagoon sampling event in January 2010. The reported concentration in MWCL-5 was below the reporting limit, but was estimated at 0.0066 mg/L. Based on these results, the trace detections observed in the Convair Lagoon vicinity appear to be less than significant and are not likely to be Site related.

Nickel was detected above the CTR (0.0082 mg/L) in one groundwater sample collected from MWCL-5, three samples from MWCL-7, and one sample from MWCL-8. However none of these results exceeded the site-specific background value calculated for groundwater at the Site (0.1 mg/L). Only one sample collected during the most recent sampling event in January 2010 exceeded the CTR, with an estimated

concentration of 0.00934 mg/L. Based on these results, nickel does not appear to be Site related or a significant impact in Convair Lagoon vicinity groundwater.

Silver is not a constituent of concern (COC) at the Site and was not detected in any of the 92 on-site groundwater samples evaluated by the risk assessment. Due to this, no background value was developed. Silver has been detected in 11 of the 24 samples collected in Convair Lagoon vicinity monitor wells (46%). Nine of these samples had reported estimated results exceeding the CTR (0.0019 mg/L). Silver has been detected above the CTR in two consecutive monitoring events in only the deeper (30-foot) monitor wells MWCL-3, MWCL-5, and MWCL-7. It has only been sporadically detected in the shallow wells. MWCL-3, MWCL-5, and MWCL-7 were the only wells with detectable concentrations of silver in groundwater during the most recent Convair Lagoon sampling event in January 2010 (Table1). The reported concentrations ranged from 0.00548 mg/L to 0.00685 mg/L. Based on the lack of on-site detections, the concentrations observed in the deep Convair Lagoon vicinity wells are not likely to be Site-related.

Thallium was detected in only 7 of 92 on-site groundwater samples. All on-site detections were below the CTR of 0.0063 mg/L, with the highest detected concentration of 0.002 mg/L at B180-MW2. Due to its infrequent detection in on-site groundwater, no background value was developed. Thallium has been detected in 5 of the 26 samples collected in Convair Lagoon vicinity monitor wells (19%). Only one of these samples had reported estimated results exceeding the CTR, with a concentration of 0.074 mg/L in MWCL-5 in September 2006. No thallium was detected in this well in the three more recent sample events. Based on these results, the trace detections observed in the Convair Lagoon vicinity appear to be less than significant and not likely to be Site-related.

Zinc was detected above the CTR (0.081 mg/L) in only one sample, collected from MWCL-7 in the third quarter 2009. Two other samples from this well, including a more recent sample result collected during the first quarter of 2010, contained reported concentrations of zinc below the CTR. This constituent does not appear to be significantly present in Convair Lagoon vicinity groundwater.

Mercury is not a constituent of concern (COC) at the Site and was not detected in any of the 92 on-site groundwater samples evaluated by the risk assessment. Due to this, no background value was developed. Mercury has been detected twice in MWCL-4, once above the groundwater CTR (0.00005 mg/L) during the 3rd quarter 2009 with a trace

concentration of 0.000424 mg/L. No mercury was detected in any Convair Lagoon vicinity wells during the most recent sampling event in January 2010. Based on these results and the lack of on-site detections, the concentrations observed in the Convair Lagoon vicinity appear to be less than significant and not likely to be Site-related

3.1.3.2 Semi-Volatile Organic Compounds

Trace detections of SVOCs have been detected in groundwater in the vicinity of Convair Lagoon; however, only bis (2-ethylhexyl) phthalate has been detected at concentrations exceeding the CTR (5.9 ug/L). A result of 8.7 ug/L was reported in MWCL-8 in January 2007, and 11 ug/L was reported in a groundwater sample collected from MWCL-3 during the July 2008 sampling event. Bis (2-ethylhexyl) phthalate has not been detected in the six subsequent sampling events from MWCL-8, and has been detected only at trace detections of 1.0 ug/L or less in MWCL-3 in the three most recent semiannual sampling events. Based on these results, this constituent does not appear to be significantly present above the CTR in Convair Lagoon vicinity groundwater.

3.1.3.3 PCBs

Ultra high resolution PCB congener analyses were performed on groundwater samples from all Convair Lagoon vicinity monitor wells. Trace detections of PCBs exceeding the CTR have been reported for every sample collected from both the shallow and deeper monitor wells. All of these results were reported as estimated concentrations between the laboratory reporting and detection limit. Trace detections of PCBs exceeding the CTR have also been reported for every associated laboratory Method Blank.

During a site-wide sampling event in January 2010, groundwater was analyzed for PCBs in all on-site groundwater monitor wells. PCBs were only detected in one well, B120-MW2, at a concentration of 19 ug/L (**Table 4**). All other wells, including three wells located downgradient of B120-MW2 (B120-MW4, -MW5, and -MW7), were non-detect with detection limits of approximately 0.005 ug/L. The B120-MW-4, -MW5, and –MW7 results demonstrate that the PCBs detected at B120-MW2 have not significantly migrated. Similar or lower concentrations of PCBs in groundwater elsewhere on Site (e.g., those potentially resulting from PCBs in LNAPL at the Building 120 South AOC) are similarly not expected to migrate. Step-out borings were performed to delineate the extent of LNAPL, which appears to be limited to within approximately 20 feet of the excavation (within the footprint of Building 120). The

maximum aqueous solubility of the PCB Aroclors commonly detected on-Site (Aroclor 1248, 1254, and 1260) range from 2.7 ug/L to 54 ug/L (EPA, 1980). Groundwater concentrations substantively greater than the 19 ug/L recently detected at B120-MW2 aren't likely, based on these low aqueous solubilities and the relatively low concentrations of VOCs remaining in on-site groundwater. Therefore, the trace detections of PCBs observed in the Convair Lagoon vicinity groundwater samples are not believed to result from on-site impacts. Nevertheless, the potential groundwater impacts observed in the Building 120 South AOC will be further evaluated in the RI/FS Appendix A. Due to the southward hydraulic gradient, the trace detections of PCBs in groundwater samples collected from the Convair Lagoon Vicinity wells are also not believed to be related to the capped sediments in Convair Lagoon. The trace detections in these samples may result from sample contamination or a low-level ambient source, such as historical PCBs in the original San Diego Bay dredge-fill material used to reclaim the land in this area.

Regardless of the source of these potential PCB concentrations, a groundwater model was prepared to evaluate whether trace detections of PCBs in groundwater samples from monitor wells in the vicinity of Convair Lagoon would migrate to San Diego Bay (Appendix B). A PCB concentration of 0.008 ug/L was used as the starting concentration in the model. This was the highest laboratory reported concentration in the Convair Lagoon vicinity monitoring wells during the 3rd quarter 2009 groundwater sampling event. Laboratory reported concentrations for the 1st quarter 2010 groundwater sampling event were all lower. As noted above, although higher concentrations have been observed in on site groundwater monitor well B120-MW2, these impacts are bounded by non-detect concentrations (<0.005 ug/L) in two downgradient monitor wells between this well and Convair Lagoon. Therefore, the modeling effort was focused on evaluating the potential for the trace detections in the immediate vicinity of Convair Lagoon to migrate to Convair Lagoon.

Although the validated concentration shown for MWCL-8 in Table 1 has been reduced to 0.0059 ug/L due to the detection of PCBs in the laboratory Method Blank, the total reported concentration of 0.008 ug/L was conservatively used for modeling purposes.

Approach

Analytical groundwater modeling was performed to evaluate the potential groundwater to surface water pathway for PCBs at the Site. Groundwater PCB transport was modeled using the analytical transport model AT123D Version 6.3, a generalized three-

dimensional groundwater fate and transport model, originally developed at the Oak Ridge National Laboratory in 1981. AT123D has since been significantly updated and integrated with SESOIL and BIOSCREEN. AT123D is one component of the Internet Geographical Exposure Modeling System (IGEMS) currently being developed by the EPA.

Input parameters for the model were based on the highest reported PCB result for Site groundwater samples collected during the 3rd quarter 2009 sample event and the most conservative results from geotechnical samples collected within the Convair Lagoon vicinity in October, 2009. These groundwater data were the most recent data available at the time the modeling was initially performed, and the highest reported PCB result for the Convair Lagoon vicinity monitor wells the 1st quarter 2010 sampling event was less.

The geotechnical samples were collected specifically to support this modeling effort. Undisturbed soil samples were collected adjacent to the eastern (MWCL-1 /MWCL-2) and central (MWCL-3/MWCL-4) monitoring well clusters. Hand augers were used to clear a borehole approximately 2-feet from the previously installed monitor wells. A core sampler attached to a slide hammer was then used to collect undisturbed geotechnical samples from the desired depth intervals. The boring logs for the original wells are included as Attachment C. The eastern geotechnical sample was collected at 6.2 feet BGS within a zone described on the boring logs as medium to fine sand. The central geotechnical sample was collected from a depth of 7.8 feet BGS, from a zone of fine to medium sand. The eastern geotechnical sample had a hydraulic conductivity value that was slightly higher than the central sample, consistent with the described medium/fine sand observed within this boring. This sample result and the lower of the two total organic carbon values measured from the soils were used within the model. Remaining parameters were based on reference values within the AT123D chemical database for PCBs as described in the table below.

Hydraulic Conductivity

Hydraulic conductivity (K) often will significantly impact model predictions. Because there are many different measurement techniques (including geotechnical samples, slug tests, and pump tests) and these techniques can result in potentially significant variations in reported K values, a range of conductivities are often evaluated in groundwater models. The measured K for samples collected on-site has been reported to be approximately 1×10^{-5} cm/sec (Geosyntec, 2010). The two samples collected

adjacent to Convair Lagoon vicinity monitor wells had reported K values of 4.24 x 10^{-4} cm/sec and 6.68 x 10^{-4} cm/sec (Attachment B). The baseline model run was conservatively based on the highest measured Site K value of 6.68 x 10^{-4} cm/sec. Due to the potential for variability in this number due to geologic heterogeneity and measurement methods, an additional model run was performed to evaluate the sensitivity of the results to a higher K value. In this model, a K of 6.68 x 10^{-3} cm/sec was used, which is one order of magnitude above the highest K measured at the Site.

Degradation

While PCBs are slow to degrade, a reaction half-life in groundwater zone soil has been estimated at approximately 10 years for Aroclor 1254 (Hsieh, 1994) and is used by DTSC and OEHHA as an estimate for all Aroclors in the CalTOX model for PCBs in Groundwater. The baseline model run was based on this degradation rate. To evaluate the sensitivity of the model to degradation rate, the additional model run was performed using a one order of magnitude lower degradation rate (100 year half life), plus the one order of magnitude higher K value of 6.68 x 10-3 cm/sec discussed above.

Input Parameters

Parameter	Units	Value	Source
PCB Concentration:	ug/L	0.008	MWCL-8 (3rd Quarter 2009 result)
Hydraulic Conductivity (baseline model):	cm/sec	6.68 x 10^{-4}	Highest conductivity of geotechnical values
Hydraulic Conductivity (additional model):	cm/sec	6.68 x 10^{-3}	Highest conductivity of geotechnical values x 10
Hydraulic Gradient:	ft/ft	0.002	Average Convair Lagoon gradient
Effective Porosity:	%	0.21	Lowest porosity of geotechnical values
Longitudinal Dispersivity:	Ft	13.8	Calculated based on 300 foot hypothetical plume length
Transverse Dispersivity:	Ft	1.4	Calculated based on 300 foot hypothetical plume length
Vertical Dispersivity:	Ft	0	Calculated based on 300 foot hypothetical plume length
Soil Bulk Density:	kg/L	1.44	Lowest density of geotechnical values

Partition coefficient:	L/kg	44,800	Reference value from AT123D chemical database
Fraction organic carbon:	None	8.3×10^{-4}	Lowest value based on Convair Lagoon vicinity sampling
Retardation Factor:	None	381.2	Reference value from AT123D chemical database
Distribution coefficient:	m^3/kg	0.05376	Reference value from AT123D chemical database
Water diffusion coefficient:	cm^2/sec	2.880×10^{-6}	Reference value from AT123D chemical database
1st Order Degradation Rate (baseline model)	Year	10	DTSC CalTOX model (Hsieh, 1994)
1st Order Degradation Rate (additional model)	Year	100	DTSC CalTOX model (Hsieh, 1994) x 10

Dispersivity

Longitudinal dispersivity is difficult to directly measure in the field and is commonly estimated based on observed plume length. Because a plume of PCBs has not been defined in groundwater, a range of dispersivity values were evaluated due to the uncertainty related to this value. The approximate distance between the center of the Site and Convair Lagoon (300 feet) was used as a conservative starting point for the potential plume length. To determine the sensitivity of the model to variations in dispersivity values, separate baseline model runs were evaluated using potential plume lengths under a probable scenario of 30 feet (isolated local source in Convair Lagoon) to a worst case scenario of 1,000 feet (source near the northern Site boundary).

Initial Plume Length	Estimated Longitudinal Dispersivity	Modeled Plume Transport Distance
30 feet	2.5 Feet	<5 Feet
300 feet (baseline)	14 Feet	5 Feet
1,000 feet	25 Feet	5 Feet

This analysis suggests that adjusting the assumed plume length either larger or smaller than the starting point does not have any significant effect on the modeled plume length

(Attachment B). Based on these results, dispersivity does not appear to be a significant factor in the migration of PCBs at the Site.

Model Results

Baseline Model

Based on the conservative assumptions used within the baseline modeling scenario, the model results indicate that PCBs would not exceed the CTR at Convair Lagoon (approximately 80 feet downgradient of MWCL-8). The maximum migration distance of PCBs in groundwater exceeding the CTR is estimated to be approximately 5 feet after approximately 35 years and the maximum PCB concentration is modeled to degrade below the CTR after approximately 50 years (Attachment B).

Time	Modeled Maximum Concentration	Modeled Plume Transport Distance
35 years	0.476 ng/L 0 feet downgradient	6 feet
50 years	0.158 ng/L 0 feet downgradient	0 feet

The Convair Lagoon margin is approximately 80 feet downgradient of MWCL-8.

Additional Model

Under the additional model (high K/low degradation rate), the modeled results predict the maximum PCB concentration would degrade to below the CTR in approximately 175 years, while travelling approximately half the distance to Convair Lagoon (Attachment B).

Time	Modeled Maximum Concentration	Modeled Plume Transport Distance
50 years	0.978 ng/L 5 feet downgradient	45 feet
125 years	0.314 ng/L 35 feet downgradient	63 feet
175 years	0.167 ng/L 45 feet downgradient	43 feet

The Convair Lagoon margin is approximately 80 feet downgradient of MWCL-8.

Therefore, under both the baseline and the additional models, the trace PCBs detections observed in Convair Lagoon vicinity monitor well samples are not predicted to result in CTR exceedances at Convair Lagoon.

Summary

Both the baseline and additional model results show that trace detections of PCBs in groundwater in the Convair Lagoon vicinity are not predicted to impact Convair Lagoon pore water or surface water at concentrations exceeding the CTR. Therefore this pathway is not considered significant. However, it is recommended that this pathway be further evaluated in the RI/FS.

3.2 Migration of Impacted Groundwater from the Site to the SWCS Backfill Material Followed by Discharge into San Diego Bay

Based upon a review of boring logs from the installation of MWCL-8, and the six backfill borings advanced adjacent to the 60-inch SWCS discussed in Section 4.2, the SWCS appears to have been installed and backfilled with the material dug from the excavation or placed and buried with dredged fill as the tidal flat was reclaimed (Attachment C). While the SWCS continues to represent a potential preferential groundwater pathway in the subsurface, the absence of backfill material which is distinguishable from the surrounding soil makes this pathway identical to that evaluated in Section 3.1.

3.3 Migration of Impacted Groundwater from Seeps into the SWCS

Groundwater quality was evaluated across the Site in the vicinity of the SWCS which intercepts the water table, the 60" SWCS, the 54" SWCS and the 30" SWCS tributary to the 54" SWCS from the commuter terminal. The only CTR exceedances observed in groundwater in the vicinity of these storm drains were hexavalent chromium and zinc directly beneath Building 158. These impacts are limited to the area directly beneath the building. Samples between Building 158 and the 60-inch SWCS do not indicate CTR exceedances. Site wide groundwater samples for PCBs collected in January 2010 showed no detectable PCBs in groundwater with the exception of monitor well B120-MW2 which is not located hydraulically upgradient of any storm drain which intercepts the water table.

No seeps, which flowed at a sampleable rate, were observed within the 60-inch SWCS with the exception of two seeps within 15-feet of the outfall into Convair Lagoon. Both

of these seeps were repaired during the storm drain cleanout in 2006. In June 2009 seeps observed within the 54-inch SWCS were also repaired. No siginificant seeps were observed during remote CCTV video survey of the 30-inch SWCS tributary to the 54-inch SWCS. This tributary is scheduled to be removed and replaced during site demolition activities.

Based on these data, migration of groundwater from the Site into the SWCS and subsequently to Convair Lagoon does not appear to be a significant transport pathway. These data indicate that no further evaluation of this pathway is warranted.

4. SOIL/SEDIMENT TO SAN DIEGO BAY TRANSPORT AND EXPOSURE PATHWAYS

4.1 Migration of Impacted Soil/Sediment from the Surface of the Site to the SWCS Followed by Discharge into San Diego Bay

The description of the final site disposition of the site surface, as described in the Port Environmental Impact Report (EIR) (San Diego Unified Port District, 2009), includes re-use of approximately 4,000 cubic yards of uncontaminated crushed concrete and 6,300 cubic yards of import fill, followed by the placement of 1.5-2 inches of asphalt or overlay or other suitable surface treatment to minimize dust generation and runoff of surface sediment from the Site. This will result in a post-project condition where the land use cover type will be of a similar nature in function to the existing project Site conditions, or will provide for additional infiltration capacity, thereby reducing runoff as compared with current conditions. While the overall volume of soil at the Site is large, the average PCB concentration in shallow soils is low, and as described above, will be covered with stabilized import fill and/or concrete aggregate, mitigating the potential for soil erosion.

Following completion of demolition activities, storm water responsibilities will be assumed by the Airport. The Airport will implement storm water Best Management Practices (BMPs) to the Maximum Extent Practicable (MEP). These BMPs will be documented in the Airport's storm water management plan and are anticipated to include soil stabilization, drainage swales, infiltration areas, and filter fabric at storm drain inlets. Post demolition, the alternative soil PCB cleanup goal of 1 mg/kg, in addition to the erosion control measures and BMPs described above indicate that no further evaluation of this pathway is warranted.

4.2 Migration of Storm Drain Backfill Material to the SWCS Followed by Discharge into San Diego Bay

4.2.1 Summary of Relevant Data

During the 60-inch storm drain inspection on 18 January 2007, sediment samples were collected from all joints that appeared to have indications of groundwater infiltration (weeping) into the storm drain. A total of seven sediment samples were collected. On **Figure 6**, these locations are illustrated as green circles centered half-way up the side of the storm drain on the cross-section view. Of these seven samples, two were found to contain PCBs at concentrations greater than 10 mg/kg. These locations were identified

as areas where the potential for PCB migration into or out of the 60-inch SWCS through the joints could be evaluated. If the source of these elevated impacts was from an exterior source to the 60-inch SWCS, PCBs would be expected at equal or greater concentrations exterior to the 60-inch SWCS. Soil samples were collected immediately east, west, and above the 60-inch SWCS adjacent to each of these two joints, and analyzed for PCBs and TPH. These exterior soil samples are illustrated on **Figure 6** as red squares.

Two additional locations adjacent to the 60-inch SWCS were also sampled based on visual evidence of potential impacts. In the south-central portion of Building 120 there is evidence of a former floor drain which may have historically drained to the 60-inch SWCS. A soil sample was collected immediately adjacent to the juncture between this historical floor drain and the 60-inch SWCS. This location is approximately 120 feet west of the Building 120 south excavation which was performed for removal of elevated TPH impacts, where PCBs were observed in LNAPL at concentrations of approximately 9 mg/kg. In the north-central portion of Building 120, the 60-inch SWCS runs under a former machine foundation which is surrounded by heavily stained concrete. The soil backfill adjacent to the 60-inch SWCS was sampled in this vicinity (**Figure 5**). Finally, soil was sampled immediately north and south of a blind manhole located south of Building 100. This manhole contained historically high TPH and PCB concentrations in sediment samples scraped from the inside walls of the manhole (**Figure 5**).

4.2.2 Evaluation of Transport Pathway

Of the ten exterior soil samples collected, none contained any detectable TPH or PCBs (**Figure 5**). While it is not practical to evaluate soil conditions along the entire length of the 60-inch SWCS, these soil samples indicate that this transport pathway is not likely to be a source of PCBs to the 60-inch SWCS.

Direct inspection of the 60-inch and 54-inch SWCS indicated that both of these storm drains are structurally sound, with minimal water infiltration. Visual inspection of the bell and socket joint system used to fit the storm drains together showed only dampness around the joints under low-tide conditions. Although sediment has been deposited in many of the joints between SWCS segments, there is no evidence of sediment infiltration into these joints from outside of the storm drains. This is supported by the low seepage rates, non-detect exterior soil sampling results for TPH and PCBs, and a

general lack of soil subsidence around the storm drains located beneath the groundwater table.

Some of the small tributary lines installed in the vadose zone leading to the main SWCS trunks do, however, have sections of collapsed or broken pipe, which allows surrounding soil to enter into the SWCS. Currently, all tributaries leading to the 54-inch and 60-inch SWCS are fitted with filter socks to mitigate the introduction of sediment into the trunk of the SWCS. All on-site tributaries will be removed during Site demolition activities. These data indicate that no further evaluation of this pathway is warranted.

4.3 Migration of Impacted Sediment Currently Within the SWCS Followed by Discharge into San Diego Bay

4.3.1 Summary of Relevant Data

Following storm drain cleanout activities in 2006, sediment samples were collected at several locations within the 60-inch storm drain where sediment had re-accumulated. Many of these samples showed elevated PCB concentrations (**Figure 5**). Targeted re-cleaning of several segments of the storm drain was performed to address identified hot spots; however, elevated PCB concentrations continued to be detected in sediment within the 60-inch SWCS.

Filter socks were first installed in suspect tributaries in the vicinity of the most significant impacts, and later on all 20 tributaries entering both the 60-inch and 54-inch SWCS. These filter socks retain representative sediment contributed to the SWCS from each tributary. After significant rain events, the filter socks were inspected and if sufficient material is present, a sediment sample was collected.

In August 2007, sediment samples were collected from the Convair Lagoon Sand Cap and the discharge channel located at the end of the 60-inch SWCS (**Figure 6).** Samples from the sand cap were collected from the upper 6-inches and at the base of the sand cap.

4.3.2 Evaluation of Transport Pathway

Of the 20 tributaries with filter socks installed on the 54-inch and 60-inch SWCS, 7 sediment samples were collected from 6 of the tributaries to the 60-inch SWCS during sock sampling events on 2 May 2007, 21 December 2007, 6 February 2008, and 11

April 2008 (**Figure 5).** None of the filter socks located on the 54-inch SWCS contained a sampleable volume of sediment.

The 54-inch SWCS has been inspected on several occasions following the 2006 storm drain cleanout event, which was completed on 24 August 2006. The 54-inch storm drain was entered on 10 July 2007 to install filter socks on all tributaries entering the SWCS. The 54-inch SWCS was entered on 21 December 2007 and 10 January 2008 to inspect and sample the filter socks. Little to no sediment re-accumulation was noted in the 54-inch storm drain when the socks were installed, or during subsequent sampling events. Since the 54-inch SWCS is neither accumulating sediment nor receiving impacted sediment from the Site, movement of impacted sediment within the SWCS is not a significant transport pathway for the 54-inch SWCS.

Elevated concentrations of PCBs have been detected in sediment from two of the tributaries to the 60-inch SWCS: west of CB-133 and west of CB-131. Elevated PCB concentrations have historically been detected in the 60-inch SWCS in the vicinity of these catch basins. Specifically, sediment concentrations below and downgradient of the tributary west of CB-131 have shown significantly elevated post-cleanout concentrations of PCBs in sediment (**Figure 5**). These concentrations are consistent in concentration and Aroclor distribution (1248 and 1260) with the filter sock sample from this tributary. The sediment sample collected from the filter sock on the tributary west of CB-131when the diversion system was installed in April 2008 exhibited a PCB analytical result of 1,700 mg/kg.

The two tributaries with elevated PCB contributions in sediment have been blocked to prevent further discharge to the SWCS and are currently diverted through a filtration system. All existing tributaries are planned to be removed during Site demolition activities (**Figure 6**).

The primary sources of these sediment impacts appear to be historically impacted sediment from two of the 60-inch tributaries. These sources are currently being controlled by the storm water diversion and filtration systems installed at tributaries to CB-133 and CB-131. Based on these data, it is recommended that this pathway be brought forward into the RI/FS for further evaluation as an AOC.

5. CONSTRUCTION/MAINTENANCE WORKER EXPOSURE TO IMPACTED SEDIMENT WITHIN THE SWCS

The potential exists for contact to sediments within the SWCS during maintenance activities. Therefore, a construction/maintenance worker exposure scenario is presented to evaluate potential risk to a worker who enters the storm drain for inspection or repair purposes. This scenario is similar to the trench worker scenario evaluated in the Site Wide Risk Assessment and uses the same risk assessment methodology. A few exposure assumptions were modified from the trench worker assumptions to address the specific type of exposure that may occur within the SWCS during inspection or maintenance activities as presented below:

- A skin surface area of 3,300 cm^2 was used to account for the additional skin coverage provided by Tyvek and waders which are required for entry into the SWCS;
- The inhalation pathway was considered incomplete due to the continuously saturated conditions within the SWCS, precluding dust exposure; and
- The exposure frequency and duration was conservatively estimated as once per month for 25 years.

Exposure Route	Parameter Code	Parameter Definition	Units	Site-Specific Value
General Parameters	EF	Exposure Frequency	days/year	12
	ED	Exposure Duration	Years	25
	BW	Body Weight	kilograms	70
	AT-C	Averaging Time (Cancer)	Days	25,550
	AT-N	Averaging Time (Non-cancer)	Days	ED x 365
Incidental Ingestion	IR-soil	Ingestion Rate of Soil	mg/day	100
Dermal Contact	SA	Surface Area Available for Contact	cm^2/day	3,300
	AF	Soil Adherence Factor	mg/cm^2	0.08
	EV	Event Frequency	event/day	1
	AbsD	Dermal Absorption Factor	Unitless	chem-specific

A targeted cleanout of the 60-inch storm drain was undertaken in July 2007 to remove sediment containing elevated PCB concentrations identified during the 18 January 2007 inspection event south of CB-133. The SWCS samples considered within this analysis exclude the sample results from the sediment removed during this cleanout activity and are presented in **Table 3.** Maximum Aroclor concentrations from the sediment remaining in the SWCS were used to estimate the potential cancer risk and the potential noncancer hazard (**Table 3**).

The estimated potential cancer risk was slightly greater than the target risk goal of 1×10^{-5}. The estimated noncancer hazard was also slightly greater than the target hazard of 1.

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil: Incidental ingestion/ Dermal contact	**PCBs**								
	Aroclor 1016	--	--	--	--	--	--	--	--
	Aroclor 1242	3.4E-06	--	1.3E-06	4.7E-06	2.3E-01	--	9.3E-02	3.3E-01
	Aroclor 1248	1.3E-05	--	5.0E-06	1.8E-05	8.9E-01	--	3.5E-01	1.2E+00
	Aroclor 1254	6.7E-06	--	2.7E-06	9.4E-06	4.7E-01	--	1.9E-01	6.6E-01
	Aroclor 1260	1.9E-06	--	7.4E-07	2.6E-06	1.3E-01	--	5.2E-02	1.8E-01
	Aroclor 1262	--	--	--	--	--	--	--	--
	Cumulative Risk or Hazard	**2E-05**	**--**	**1E-05**	**3E-05**	**2E+00**	**--**	**7E-01**	**2E+00**

Based on the conservative estimates presented above, there is the potential for a small risk and hazard exceedance based on potential exposure to maximum Aroclor concentrations one day a month over 25 years. This exposure pathway has been recommended for evaluation in the RI/FS. The most significant exposure route within this scenario is through incidental ingestion. Therefore, it is recommended that interim precautions be taken by SWCS workers to reduce potential incidental ingestion of sediment during SWCS activities, such as notification to workers of the potential health hazards within the SWCS, recommendations to wear appropriate personal protective equipment including gloves, and recommended hand washing after completion of work within the SWCS.

6. SUMMARY AND CONCLUSIONS

6.1 Groundwater/Seep Pathways

Based on the low concentration of constituents in on-site groundwater in the vicinity of storm drains which intercept the water table, the lack of significant seepage in the submerged SWCS lines following the storm drain repairs performed in 2006 and 2009, and the lack of differentiable storm drain backfill material, no significant pathways were identified for impacted groundwater to migrate into the storm drains through seepage or storm drain backfill pathways. Although groundwater modeling results suggest that the migration rate of the trace PCBs detected in groundwater in the Convair Lagoon vicinity may be sufficiently slow enough to prevent discharge to Convair Lagoon in excess of the CTR, this pathway will be brought forward to the RI/FS to evaluate cleanup to background and monitoring alternatives. No other constituents attributed to the Site have consistently exceeded applicable CTRs in the Convair Lagoon vicinity.

6.2 Soil/Sediment Pathways

Transport of surface soil/sediment to the SWCS will be mitigated based on post-demolition Site condition and the implementation of MEP BMPs at all post-demolition storm drain inlets.

Transport of backfill material into the SWCS and Convair Lagoon is considered to be an insignificant pathway. No PCBs or other constituents were detected in soil samples collected immediately adjacent to the 60-inch SWCS at locations immediately adjacent to internally impacted PCB sediments. There is no observed evidence from interior inspections of the storm drain of sediment migration around the bell and socket joints of the storm drain.

Transport of impacted sediment currently within the SWCS was identified as a significant pathway for impacts to Convair Lagoon. Significant sediment accumulations have not been noted within the 54-inch SWCS and filter socks related to the 54-inch SWCS have not contained sampleable volumes of sediment. However, significant PCB impacts remain in sediment within the 60-inch SWCS and its tributaries. This pathway is recommended for additional evaluation in the RI/FS.

6.3 Construction/Maintenance Worker Targeted Risk Assessment

Using conservative exposure assumptions and maximum concentrations of sediment detected within the storm drain, there is the potential for a small risk and hazard exceedance for SWCS worker exposure to sediment in the storm drain. The primary driver for this exposure is through the incidental ingestion of sediment. Therefore, it is recommended that interim precautions be taken by SWCS workers to reduce potential incidental ingestion of sediment during SWCS activities, such as notification to workers of the potential health hazards within the SWCS, recommendations to wear appropriate personal protective equipment including gloves, and recommended hand washing after completion of work within the SWCS.

7. REFERENCES

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Tables

Table 1
Summary of Constituents Detected in Convair Lagoon Vicinity Sample Locations
2701 North Harbor Drive, San Diego, CA

					MWCL-1								MWCL-2							
			CTR	Background	31-Aug-06	10-Jan-07	22-Aug-07	25-Jan-08	22-Jul-08	16-Jan-09	20-Jul-09	08-Jan-10	31-Aug-06	11-Jan-07	22-Aug-07	25-Jan-08	22-Jul-08	16-Jan-09	21-Jul-09	07-Jan-10
PCBs																				
	Total PCBs	ng/L	0.17	NE	-	-	-	-	-	-	-	ND<3.58 B	-	-	-	-	-	**2.37 B**	ND<2.39 B	0.0185 JB
Metals																				
	ANTIMONY	MG/L	4.3	NE	-	-	-	-	-	0.00220 J	<0.00209	<0.00744						<0.00209	0.00950 J	0.00751 J
	ARSENIC	MG/L	0.036	NE	-	-	-	-	-	<0.00308	0.0184	0.0163	0.0085					<0.00308	<0.00308	<0.00611
	BARIUM	MG/L	NE	0.49	-	-	-	-	-	0.0472	0.0622	0.0628	0.085					0.109	0.101	0.134
	BERYLLIUM	MG/L	NE	NE	-	-	-	-	-	<0.000176	<0.000176	<0.00439						0.000509 J	0.000224 J	<0.00439
	CADMIUM	MG/L	0.0093	NE	-	-	-	-	-	<0.000350	<0.000350	<0.00454						<0.000350	<0.000350	<0.00454
	CHROMIUM	MG/L	NE	0.03	-	-	-	-	-	<0.000350	<0.000350	<0.00436	0.004J					<0.000350	<0.000350	<0.00436
	COBALT	MG/L	NE	0.04	-	-	-	-	-	<0.000696	0.00592	0.00533 J	<0.015					<0.000696	<0.000696	<0.00441
	COPPER	MG/L	0.0031	NE	-	-	-	-	-	<0.00134	<0.00134	**<0.00392**	**0.004J**					0.00234 J	<0.00134	**<0.00392**
	LEAD	MG/L	0.0081	NE	-	-	-	-	-	<0.00236	0.00284 J	<0.00693						<0.00236	<0.00236	<0.00693
	MOLYBDENUM	MG/L	NE	0.046	-	-	-	-	-	0.00286 J	0.0141	0.0178						0.00209 J	0.0139	0.00968 J
	NICKEL	MG/L	0.0082	0.1	-	-	-	-	-	<0.00137	0.00252 J	<0.00433						<0.00137	0.00239 J	<0.00433
	SELENIUM	MG/L	0.071	0.63	-	-	-	-	-	0.00529 J	0.00708 J	<0.0107	0.017					<0.00295	<0.00295	<0.0107
	SILVER	MG/L	0.0019	NE	-	-	-	-	-	<0.000400	**0.00212 J**	**<0.00211**						<0.000400	**0.00191 J**	**<0.00211**
	THALLIUM	MG/L	0.0063	NE	-	-	-	-	-	<0.00233	<0.00233	<0.00540	<0.0001					<0.00233	0.00254 J	<0.00540
	VANADIUM	MG/L	NE	0.076	-	-	-	-	-	0.00354 J	<0.000314	<0.00449	0.004J					<0.000314	<0.000314	<0.00449
	ZINC	MG/L	0.081	0.069	-	-	-	-	-	0.00213 J	0.0133	0.00692 J						**0.00962 J**	**0.0104**	0.00678 J
	MERCURY	MG/L	0.00005	NE	-	-	-	-	-	<0.0000177	<0.0000177	<0.0000310						<0.0000177	<0.0000177	<0.0000310
TPHs																				
	C13-C14	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C15-C16	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C17-C18	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C19-C20	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C21-C22	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C23-C24	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C25-C28	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C7	ug/L	NE	NE	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-
	C8	ug/L	NE	NE	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-
	Gasoline	ug/L	NE	NE	-	-	-	-	990	-	-	-	-	-	-	-	<100	-	-	-
	C24 - C36 HRO	MG/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TPH as Diesel	MG/L	NE	NE	<0.44	-	-	-	-	-	-	-	<0.44	-	-	-	-	-	-	-
VOCs																				
	1,1-Dichloroethane (1,1-DCA)	ug/L	99	NE	0.87	0.64	<0.27	<1	<1.0	0.42J	0.71J	0.62J	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1
	1,2,4-TRIMETHYLBENZENE	ug/L	NE	NE	0.11J	<1.0	<0.23	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.23	<1	<1.0	<1	<1	<1
	1,3,5-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.18	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.18	<1	<1.0	<1	<1	<1
	2-Butanone (MEK)	ug/L	NE	NE	<10	1.3J	<6.7	<10	<10	<10	<10	<10	<10	1.4J	<6.7	<10	<10	<10	<10	<10
	2-Hexanone	ug/L	NE	NE	<10	<10	<5.4	<10	<10	<10	<10	<10	<10	<10	<5.4	<10	<10	<10	<10	<10
	4-isopropyltoluene	ug/L	NE	NE	<1.0	<1.0	<0.31	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.31	<1	<1.0	<1	<1	<1
	ACETONE	ug/L	NE	NE	<10	<10	<6.3	<50	<50	<50	<50	<50	<10	<10	<6.3	<50	<50	<50	<50	<50
	BENZENE	ug/L	71	NE	<0.50	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5
	BROMODICHLOROMETHANE	ug/L	46	NE	<1.0	<1.0	<0.24	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.24	<1	<1.0	<1	<1	<1
	CARBON DISULFIDE	ug/L	NE	NE	<2.0	<2.0	<0.40	<10	<10	<10	<10	<10	<2.0	<2.0	<0.40	<10	<10	<10	<10	<10
	CHLOROETHANE	ug/L	NE	NE	<1.0	<1.0	<0.69	<1	<1.0	<5	<5	<5	<1.0	<1.0	<0.69	<1	<1.0	<5	<5	<5
	CHLOROFORM	ug/L	NE	NE	<0.50	<0.50	<0.24	<1	<1.0	0.46J	<1	<1	<0.50	<0.50	<0.24	<1	<1.0	<1	<1	<1
	CHLOROMETHANE	ug/L	NE	NE	0.26J	<1.0	<0.63	<10	<10	<10	<10	<10	<1.0	<1.0	<0.63	<10	<10	<10	<10	<10
	cis-1,2-Dichloroethene	ug/L	NE	NE	0.22J	0.17J	<0.35	<1	<1.0	<1	<1	<1	0.45J	0.46J	<0.35	<1	<1.0	<1	<1	<1
	ETHYLBENZENE	ug/L	29000	NE	<0.50	<0.50	<0.23	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.23	<1	<1.0	<1	<1	<1
	Isopropylbenzene (Cumene)	ug/L	NE	NE	<1.0	<1.0	<0.26	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.26	<1	<1.0	<1	<1	<1
	Methyl Isobutyl Ketone	ug/L	NE	NE	<10	<10	<3.7	<10	<10	<10	<10	<10	<10	<10	<3.7	<10	<10	<10	<10	<10
	Methylene Chloride	ug/L	1600	NE	<2.0	<2.0	<4.3	<10	<10	<10	<10	<10	<2.0	<2.0	<4.3	<10	<10	<10	<10	<10
	NAPHTHALENE	ug/L	NE	NE	<1.0	<1.0	<0.50	<10	<10	<10	<10	<10	<1.0	<1.0	<0.50	<10	<10	<10	<10	<10
	N-BUTYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.29	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.29	<1	<1.0	<1	<1	<1
	TERT-BUTYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.33	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.33	<1	<1.0	<1	<1	<1
	Toluene	ug/L	200000	NE	0.21J	0.15J	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1
	trans-1,2-Dichloroethene	ug/L	140000	NE	<0.50	<0.50	<0.38	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.38	<1	<1.0	<1	<1	<1
	Trichloroethene (TCE)	ug/L	81	NE	<0.50	<0.50	<0.37	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.37	<1	<1.0	<1	<1	<1
	VINYL CHLORIDE	ug/L	525	NE	<0.50	<0.50	<0.36	<0.5	<0.50	1.1	<0.5	<0.5	<0.50	<0.50	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5
	Xylenes, Total	ug/L	NE	NE	0.27J	<1.5	-	-	-	-	-	-	<1.5	<1.5	-	-	-	-	-	-
SVOCs																				
	1,4-Dioxane	ug/L	NE	NE	3.2	6.0	-	-	9.6	9.8	11	9.6	<0.41	<0.41	-	-	<2.0	<2	<2	<2
	4-METHYLPHENOL	ug/L	NE	NE	<0.28	<0.28	-	-	-	-	-	-	<0.28	<0.28	-	-	-	-	-	-
	ACENAPHTHENE	ug/L	2700	NE	<0.15	<0.15	<1.4	<10	<5.0	<1	<1	<1	<0.15	<0.15	<1.4	<10	<5.0	<1	<1	<1
	ACENAPHTHYLENE	ug/L	NE	NE	<0.23	<0.23	<1.4	<10	<5.0	-	-	-	<0.23	<0.23	<1.4	<10	<5.0	-	-	-
	Bis(2-Ethylhexyl) Phthalate	ug/L	5.9	NE	0.51JJ	0.71J	<1.0	<10	<5.0	0.43J	0.39J	<5	0.42JJ	1.4J	<1.0	<10	<5.0	<1	<1	<5
	DIBENZOFURAN	ug/L	NE	NE	<0.22	<0.22	<1.4	<10	-	-	-	-	<0.22	<0.22	<1.4	<10	-	-	-	-
	Diethyl Phthalate (DEP)	ug/L	120000	NE	<0.28	<0.28	<1.4	<10	<5.0	<1	<1	<5	<0.28	<0.28	<1.4	<10	<5.0	<1	<1	<5
	Di-N-Butyl Phthalate (DBP)	ug/L	12000	NE	0.30JJ	0.34J	<1.5	<10	<5.0	<1	<1	<5	0.28JJ	0.38J	<1.5	<10	<5.0	<1	<1	<5
	FLUORANTHENE	ug/L	370	NE	<0.21	<0.21	<1.5	<10	<5.0	-	-	-	<0.21	<0.21	<1.5	<10	<5.0	-	-	-
	FLUORENE	ug/L	14000	NE	<0.22	<0.22	<1.4	<10	<5.0	-	-	-	<0.22	<0.22	<1.4	<10	<5.0	-	-	-
	NAPHTHALENE	ug/L	NE	NE	<0.21	<0.21	<1.4	<10	<5.0	-	-	-	<0.21	<0.21	<1.4	<10	<5.0	-	-	-
	PHENOL	ug/L	NE	NE	<0.11	<0.11	<1.2	<10	<5.0	-	-	-	<0.11	<0.11	<1.2	<10	<5.0	-	-	-
	PYRENE	ug/L	1100	NE	<0.33	<0.33	<1.4	<10	<5.0	-	-	-	<0.33	<0.33	<1.4	<10	<5.0	-	-	-
	Butyl Benzyl Phthalate (Bbp)	ug/L	NE	NE	-	-	-	-	-	<1	0.14J	<5	-	-	-	-	-	<1	<1	<5

B - Validated Total Result - Adjusted due to method blank detections
- Not Sampled
NE - Not Established
J - Trace detection below the laboratory Reporting Limit
< Not detected, no established detection limit for individual carbon ranges
<(RL/MDL) not detected, above laboratory Method Detection limit for Metals,
Reporting Limit for other Constituents

Table 1
Summary of Constituents Detected in Convair Lagoon Vicinity Sample Locations
2701 North Harbor Drive, San Diego, CA

					MWCL-3								MWCL-4							
			CTR	Background	31-Aug-06	11-Jan-07	23-Aug-07	24-Jan-08	22-Jul-08	16-Jan-09	20-Jul-09	08-Jan-10	31-Aug-06	11-Jan-07	22-Aug-07	24-Jan-08	22-Jul-08	16-Jan-09	21-Jul-09	08-Jan-10
PCBs																				
	Total PCBs	ng/L	0.17	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.4 B**	**1.68 B**	-
Metals																				
	ANTIMONY	MG/L	4.3	NE	-	-	-	-	-	0.00658 J	<0.00209	<0.00744	-	-	-	-	-	<0.00209	<0.00209	<0.00744
	ARSENIC	MG/L	0.036	NE	-	-	-	-	-	<0.00308	0.0162	0.0265	-	-	-	-	-	<0.00308	<0.00308	<0.00611
	BARIUM	MG/L	NE	0.49	-	-	-	-	-	0.0518	0.0456	0.0436	-	-	-	-	-	0.0487	0.0556	0.0588
	BERYLLIUM	MG/L	NE	NE	-	-	-	-	-	<0.000176	<0.000176	<0.00439	-	-	-	-	-	<0.000176	<0.000176	<0.00439
	CADMIUM	MG/L	0.0093	NE	-	-	-	-	-	0.000858 J	0.000435 J	<0.00454	-	-	-	-	-	<0.000350	<0.000350	<0.00454
	CHROMIUM	MG/L	NE	0.03	-	-	-	-	-	<0.000350	<0.000350	<0.00436	-	-	-	-	-	<0.000350	<0.000350	<0.00436
	COBALT	MG/L	NE	0.04	-	-	-	-	-	<0.000696	0.00101 J	<0.00441	-	-	-	-	-	<0.000696	<0.000696	<0.00441
	COPPER	MG/L	0.0031	NE	-	-	-	-	-	0.00299 J	<0.00134	**<0.00392**	-	-	-	-	-	<0.00134	<0.00134	**<0.00392**
	LEAD	MG/L	0.0081	NE	-	-	-	-	-	<0.00236	0.00617 J	<0.00693	-	-	-	-	-	<0.00236	<0.00236	<0.00693
	MOLYBDENUM	MG/L	NE	0.046	-	-	-	-	-	<0.000800	0.00307 J	0.00620 J	-	-	-	-	-	0.00220 J	0.00727	0.00878 J
	NICKEL	MG/L	0.0082	0.1	-	-	-	-	-	0.00705	<0.00137	<0.00433	-	-	-	-	-	<0.00137	0.00341 J	<0.00433
	SELENIUM	MG/L	0.071	0.63	-	-	-	-	-	0.0282	0.0135 J	<0.0107	-	-	-	-	-	<0.00295	<0.00295	<0.0107
	SILVER	MG/L	0.0019	NE	-	-	-	-	-	<0.000400	**0.0051**	**0.00548**	-	-	-	-	-	<0.000400	0.00131 J	**<0.00211**
	THALLIUM	MG/L	0.0063	NE	-	-	-	-	-	<0.00233	<0.00233	<0.00540	-	-	-	-	-	<0.00233	<0.00233	<0.00540
	VANADIUM	MG/L	NE	0.076	-	-	-	-	-	<0.000314	<0.000314	<0.00449	-	-	-	-	-	0.00350 J	0.00467 J	<0.00449
	ZINC	MG/L	0.081	0.069	-	-	-	-	-	0.069	0.0225	0.0119	-	-	-	-	-	0.00270 J	0.00617 J	0.0106
	MERCURY	MG/L	0.00005	NE	-	-	-	-	-	<0.0000177	<0.0000177	<0.0000310	-	-	-	-	-	0.0000242 J	0.000424 J	<0.0000310
TPHs																				
	C13-C14	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C15-C16	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C17-C18	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C19-C20	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C21-C22	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C23-C24	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C25-C28	ug/L	NE	NE	-	-	-	<	-	<	-	-	-	-	-	<	-	<	-	-
	C7	ug/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C8	ug/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gasoline	ug/L	NE	NE	-	-	-	-	<100	-	-	-	-	-	-	-	<100	-	-	-
	C24 - C36 HRO	MG/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TPH as Diesel	MG/L	NE	NE	<0.44	-	-	-	-	-	-	-	<0.44	-	-	-	-	-	-	-
VOCs																				
	1,1-Dichloroethane (1,1-DCA)	ug/L	99	NE	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1
	1,2,4-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.23	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.23	<1	<1.0	<1	<1	<1
	1,3,5-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.18	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.18	<1	<1.0	<1	<1	<1
	2-Butanone (MEK)	ug/L	NE	NE	<10	1.5J	<6.7	<10	<10	<10	<10	<10	<10	1.4J	<6.7	<10	<10	<10	<10	<10
	2-Hexanone	ug/L	NE	NE	<10	<10	<5.4	<10	<10	<10	<10	<10	<10	<10	<5.4	<10	<10	<10	<10	<10
	4-isopropyltoluene	ug/L	NE	NE	<1.0	<1.0	<0.31	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.31	<1	<1.0	<1	<1	<1
	ACETONE	ug/L	NE	NE	<10	<10	<6.3	<50	<50	<50	<50	<50	<10	<10	<6.3	<50	<50	<50	<50	<50
	BENZENE	ug/L	71	NE	<0.50	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5
	BROMODICHLOROMETHANE	ug/L	46	NE	<1.0	<1.0	<0.24	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.24	<1	<1.0	<1	<1	<1
	CARBON DISULFIDE	ug/L	NE	NE	<2.0	<2.0	<0.40	<10	<10	<10	<10	<10	<2.0	<2.0	<0.40	<10	<10	<10	<10	<10
	CHLOROETHANE	ug/L	NE	NE	<1.0	<1.0	<0.69	<1	<1.0	<5	<5	<5	<1.0	<1.0	<0.69	<1	<1.0	<5	<5	<5
	CHLOROFORM	ug/L	NE	NE	<0.50	<0.50	<0.24	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.24	<1	<1.0	<1	<1	<1
	CHLOROMETHANE	ug/L	NE	NE	<1.0	<1.0	<0.63	<10	<10	<10	<10	<10	<1.0	<1.0	<0.63	<10	<10	<10	<10	<10
	cis-1,2-Dichloroethene	ug/L	NE	NE	<0.50	<0.50	<0.35	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.35	<1	<1.0	<1	<1	<1
	ETHYLBENZENE	ug/L	29000	NE	<0.50	<0.50	<0.23	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.23	<1	<1.0	<1	<1	<1
	Isopropylbenzene (Cumene)	ug/L	NE	NE	<1.0	<1.0	<0.26	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.26	<1	<1.0	<1	<1	<1
	Methyl Isobutyl Ketone	ug/L	NE	NE	<10	<10	<3.7	<10	<10	<10	<10	<10	<10	<10	<3.7	<10	<10	<10	<10	<10
	Methylene Chloride	ug/L	1600	NE	<2.0	<2.0	<4.3	<10	<10	<10	<10	<10	<2.0	<2.0	<4.3	<10	<10	<10	<10	<10
	NAPHTHALENE	ug/L	NE	NE	<1.0	<1.0	<0.50	<10	<10	<10	<10	<10	<1.0	<1.0	<0.50	<10	<10	<10	<10	<10
	N-BUTYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.29	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.29	<1	<1.0	<1	<1	<1
	TERT-BUTYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.33	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.33	<1	<1.0	<1	<1	<1
	Toluene	ug/L	200000	NE	0.15J	0.15J	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1
	trans-1,2-Dichloroethene	ug/L	140000	NE	<0.50	<0.50	<0.38	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.38	<1	<1.0	<1	<1	<1
	Trichloroethene (TCE)	ug/L	81	NE	<0.50	<0.50	<0.37	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.37	<1	<1.0	<1	<1	<1
	VINYL CHLORIDE	ug/L	525	NE	<0.50	<0.50	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5
	Xylenes, Total	ug/L	NE	NE	<1.5	<1.5	-	-	-	-	-	-	<1.5	<1.5	-	-	-	-	-	-
SVOCs																				
	1,4-Dioxane	ug/L	NE	NE	<0.41	<0.41	-	-	<2.0	<2	<2	<2	<0.41	<0.41	-	-	<2.0	<2	<2	<2
	4-METHYLPHENOL	ug/L	NE	NE	<0.28	<0.28	-	-	-	-	-	-	<0.28	<0.28	-	-	-	-	-	-
	ACENAPHTHENE	ug/L	2700	NE	<0.15	<0.15	<1.4	<10	<5.0	<1	<1	<1	<0.15	<0.15	<1.4	<10	<5.0	<1	<1	<1
	ACENAPHTHYLENE	ug/L	NE	NE	<0.23	<0.23	<1.4	<10	<5.0	-	-	-	<0.23	<0.23	<1.4	<10	<5.0	-	-	-
	Bis(2-Ethylhexyl) Phthalate	ug/L	5.9	NE	0.85JJ	1.8J	<1.0	<10	**11**	0.57J	0.51J	1.0J	<0.30	0.43J	<1.0	<10	<5.0	0.52J	<1	<5
	DIBENZOFURAN	ug/L	NE	NE	<0.22	<0.22	<1.4	<10	-	-	-	-	<0.22	<0.22	<1.4	<10	-	-	-	-
	Diethyl Phthalate (DEP)	ug/L	120000	NE	<0.28	<0.28	<1.4	<10	<5.0	<1	<1	<5	<0.28	0.47J	<1.4	<10	<5.0	<1	0.16J	<5
	Di-N-Butyl Phthalate (DBP)	ug/L	12000	NE	0.38JJ	0.49J	<1.5	<10	<5.0	<1	<1	<5	0.28JJ	0.39J	<1.5	<10	<5.0	0.13J	0.58BJ	<5
	FLUORANTHENE	ug/L	370	NE	<0.21	<0.21	<1.5	<10	<5.0	-	-	-	<0.21	<0.21	<1.5	<10	<5.0	-	-	-
	FLUORENE	ug/L	14000	NE	<0.22	<0.22	<1.4	<10	<5.0	-	-	-	<0.22	<0.22	<1.4	<10	<5.0	-	-	-
	NAPHTHALENE	ug/L	NE	NE	<0.21	<0.21	<1.4	<10	<5.0	-	-	-	<0.21	<0.21	<1.4	<10	<5.0	-	-	-
	PHENOL	ug/L	NE	NE	<0.11	<0.11	<1.2	<10	<5.0	-	-	-	<0.11	<0.11	<1.2	<10	<5.0	-	-	-
	PYRENE	ug/L	1100	NE	<0.33	<0.33	<1.4	<10	<5.0	-	-	-	<0.33	<0.33	<1.4	<10	<5.0	-	-	-
	Butyl Benzyl Phthalate (Bbp)	ug/L	NE	NE	-	-	-	-	-	<1	<1	<5	-	-	-	-	-	<1	<1	<5

B - Validated Total Result - Adjusted due to method blank detections
- Not Sampled
NE - Not Established
J - Trace detection below the laboratory Reporting Limit
< Not detected, no established detection limit for individual carbon ranges
<(RL/MDL) not detected, above laboratory Method Detection limit for Metals,
Reporting Limit for other Constituents

Table 1
Summary of Constituents Detected in Convair Lagoon Vicinity Sample Locations
2701 North Harbor Drive, San Diego, CA

					MWCL-5								MWCL-6							
			CTR	Background	01-Sep-06	12-Jan-07	24-Aug-07	24-Jan-08	22-Jul-08	16-Jan-09	20-Jul-09	08-Jan-10	31-Aug-06	11-Jan-07	24-Aug-07	24-Jan-08	22-Jul-08	16-Jan-09	21-Jul-09	08-Jan-10
PCBs																				
	Total PCBs	ng/L	0.17	NE	-	-	-	-	-	-	-	ND<4.32 B	-	-	-	-	-	**1.1 B**	ND<1.0 B	-
Metals																				
	ANTIMONY	MG/L	4.3	NE	-	-	-	-	-	<0.00209	<0.00209	<0.00744	-	-	-	-	-	<0.00209	0.00855 J	<0.00744
	ARSENIC	MG/L	0.036	NE	0.027	-	-	-	-	<0.00308	0.00969 J	0.0241	-	-	-	-	-	<0.00308	0.00311 J	<0.00611
	BARIUM	MG/L	NE	0.49	0.118J	-	-	-	-	0.0557	0.0497	0.0512	-	-	-	-	-	0.0405	0.042	0.0539
	BERYLLIUM	MG/L	NE	NE	-	-	-	-	-	<0.000176	<0.000176	<0.00439	-	-	-	-	-	<0.000176	<0.000176	<0.00439
	CADMIUM	MG/L	0.0093	NE	-	-	-	-	-	0.000516 J	<0.000350	<0.00454	-	-	-	-	-	0.000350 J	<0.000350	<0.00454
	CHROMIUM	MG/L	NE	0.03	<0.1	-	-	-	-	<0.000350	0.0309	<0.00436	-	-	-	-	-	<0.000350	0.00479 J	<0.00436
	COBALT	MG/L	NE	0.04	0.033J	-	-	-	-	0.00101 J	0.00168 J	<0.00441	-	-	-	-	-	<0.000696	<0.000696	<0.00441
	COPPER	MG/L	0.0031	NE	**0.021J**	-	-	-	-	**0.0101**	**0.00417 J**	**0.00660 J**	-	-	-	-	-	**0.00327 J**	0.00137 J	**<0.00392**
	LEAD	MG/L	0.0081	NE	-	-	-	-	-	<0.00236	0.00424 J	<0.00693	-	-	-	-	-	<0.00236	<0.00236	<0.00693
	MOLYBDENUM	MG/L	NE	0.046	-	-	-	-	-	<0.000800	0.00225 J	0.00512 J	-	-	-	-	-	<0.000800	0.00523	0.00554 J
	NICKEL	MG/L	0.0082	0.1	-	-	-	-	-	**0.0085**	<0.00137	<0.00433	-	-	-	-	-	0.00369 J	0.00287 J	<0.00433
	SELENIUM	MG/L	0.071	0.63	0.052	-	-	-	-	0.0189	0.00699 J	<0.0107	-	-	-	-	-	0.00468 J	0.0124 J	<0.0107
	SILVER	MG/L	0.0019	NE	-	-	-	-	-	<0.000400	0.0059	**0.00597**	-	-	-	-	-	<0.000400	0.00188 J	**<0.00211**
	THALLIUM	MG/L	0.0063	NE	**0.074J**	-	-	-	-	<0.00233	<0.00233	<0.00540	-	-	-	-	-	<0.00233	0.00323 J	<0.00540
	VANADIUM	MG/L	NE	0.076	0.049J	-	-	-	-	0.00263 JB	0.00275 J	0.00733 J	-	-	-	-	-	0.00245 JB	0.00295 J	<0.00449
	ZINC	MG/L	0.081	0.069	-	-	-	-	-	0.0592	0.0169	0.0209	-	-	-	-	-	0.027	0.00857 J	<0.00666
	MERCURY	MG/L	0.00005	NE	-	-	-	-	-	<0.0000177	<0.0000177	<0.0000310	-	-	-	-	-	<0.0000177	<0.0000177	<0.0000310
TPHs																				
	C13-C14	ug/L	NE	NE	-	-	-	<	-	24	-	-	-	-	-	<	-	<	-	-
	C15-C16	ug/L	NE	NE	-	-	-	<	-	44	-	-	-	-	-	<	-	<	-	-
	C17-C18	ug/L	NE	NE	-	-	-	<	-	78	-	-	-	-	-	<	-	<	-	-
	C19-C20	ug/L	NE	NE	-	-	-	<	-	53	-	-	-	-	-	<	-	<	-	-
	C21-C22	ug/L	NE	NE	-	-	-	<	-	49	-	-	-	-	-	<	-	<	-	-
	C23-C24	ug/L	NE	NE	-	-	-	<	-	14	-	-	-	-	-	<	-	<	-	-
	C25-C28	ug/L	NE	NE	-	-	-	<	-	8.7	-	-	-	-	-	<	-	<	-	-
	C7	ug/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C8	ug/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gasoline	ug/L	NE	NE	-	-	-	-	<100	-	-	-	-	-	-	-	<100	-	-	-
	C24 - C36 HRO	MG/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TPH as Diesel	MG/L	NE	NE	<0.44	-	-	-	-	-	-	-	0.53JJ	-	-	-	-	-	-	-
VOCs																				
	1,1-Dichloroethane (1,1-DCA)	ug/L	99	NE	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1	0.24J	0.24J	<0.27	<1	<1.0	<1	<1	<1
	1,2,4-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.23	<1	<1.0	<1	<1	<1	0.27J	<1.0	<0.23	<1	<1.0	<1	<1	<1
	1,3,5-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.18	<1	<1.0	<1	<1	<1	0.12J	<1.0	<0.18	<1	<1.0	<1	<1	<1
	2-Butanone (MEK)	ug/L	NE	NE	<10	<10	<6.7	<10	<10	<10	<10	<10	<10	<10	<6.7	<10	<10	<10	<10	<10
	2-Hexanone	ug/L	NE	NE	<10	<10	<5.4	<10	<10	<10	<10	<10	<10	<10	<5.4	<10	<10	<10	<10	<10
	4-isopropyltoluene	ug/L	NE	NE	<1.0	<1.0	<0.31	<1	<1.0	<1	<1	<1	0.064J	<1.0	<0.31	<1	<1.0	<1	<1	<1
	ACETONE	ug/L	NE	NE	4.7J	4.5J	<6.3	<50	<50	<50	<50	<50	<10	<10	<6.3	<50	<50	<50	<50	<50
	BENZENE	ug/L	71	NE	<0.50	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5
	BROMODICHLOROMETHANE	ug/L	46	NE	<1.0	<1.0	<0.24	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.24	<1	<1.0	<1	<1	<1
	CARBON DISULFIDE	ug/L	NE	NE	0.60J	<2.0	<0.40	<10	<10	<10	<10	<10	<2.0	<2.0	<0.40	<10	<10	<10	<10	<10
	CHLOROETHANE	ug/L	NE	NE	<1.0	<1.0	<0.69	<1	<1.0	<5	<5	<5	<1.0	<1.0	<0.69	<1	<1.0	<5	<5	<5
	CHLOROFORM	ug/L	NE	NE	<0.50	<0.50	<0.24	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.24	<1	<1.0	<1	<1	<1
	CHLOROMETHANE	ug/L	NE	NE	<1.0	<1.0	<0.63	<10	<10	<10	<10	<10	<1.0	<1.0	<0.63	<10	<10	<10	<10	<10
	cis-1,2-Dichloroethene	ug/L	NE	NE	320D	68	58	52	20	0.78J	3.8	30	0.69	0.46J	<0.35	<1	<1.0	<1	<1	<1
	ETHYLBENZENE	ug/L	29000	NE	<0.50	<0.50	<0.23	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.23	<1	<1.0	<1	<1	<1
	Isopropylbenzene (Cumene)	ug/L	NE	NE	<1.0	<1.0	<0.26	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.26	<1	<1.0	<1	<1	<1
	Methyl Isobutyl Ketone	ug/L	NE	NE	3.9J	<10	<3.7	<10	<10	<10	<10	<10	<10	<10	<3.7	<10	<10	<10	<10	<10
	Methylene Chloride	ug/L	1600	NE	<2.0	<2.0	<4.3	<10	<10	<10	<10	<10	<2.0	0.26J	<4.3	<10	<10	<10	<10	<10
	NAPHTHALENE	ug/L	NE	NE	<1.0	<1.0	<0.50	<10	<10	<10	<10	<10	130D	3.1	<0.50	<10	<10	<10	<10	<10
	N-BUTYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.29	<1	<1.0	<1	<1	<1	0.36J	<1.0	<0.29	<1	<1.0	<1	<1	<1
	TERT-BUTYLBENZENE	ug/L	NE	NE	<1.0	<1.0	<0.33	<1	<1.0	<1	<1	<1	<1.0	<1.0	<0.33	<1	<1.0	<1	<1	<1
	Toluene	ug/L	200000	NE	<0.50	0.27J	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.27	<1	<1.0	<1	<1	<1
	trans-1,2-Dichloroethene	ug/L	140000	NE	1.1	<0.50	<0.38	<1	<1.0	<1	<1	<1	0.92	0.58	<0.38	<1	<1.0	<1	<1	<1
	Trichloroethene (TCE)	ug/L	81	NE	<0.50	<0.50	<0.37	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.37	<1	<1.0	<1	<1	<1
	VINYL CHLORIDE	ug/L	525	NE	1.1	<0.50	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5	0.92	0.46J	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5
	Xylenes, Total	ug/L	NE	NE	<1.5	<1.5	-	-	-	-	-	-	0.33J	<1.5						
SVOCs																				
	1,4-Dioxane	ug/L	NE	NE	0.80JJ	<0.41	-	-	<2.0	<2	<2	<2	2.3	1.9J	-	-	<2.0	<2	<2	<2
	4-METHYLPHENOL	ug/L	NE	NE	<0.28	<0.28	-	-	-	-	-	-	<0.28	<0.28	-	-	-	-	-	-
	ACENAPHTHENE	ug/L	2700	NE	0.36JJ	<0.15	<1.4	<10	<5.0	<1	<1	<1	13	7.1	<1.4	-	-	<2	<2	<2
	ACENAPHTHYLENE	ug/L	NE	NE	<0.23	<0.23	<1.4	<10	<5.0	-	-	-	0.33JJ	<0.23	<1.4	-	-	-	-	-
	Bis(2-Ethylhexyl) Phthalate	ug/L	5.9	NE	1.2JJ	0.92J	<1.0	<10	<5.0	<1	0.68J	0.55J	<0.30	1.3J	<1.0	-	-	<1	0.24J	<5
	DIBENZOFURAN	ug/L	NE	NE	<0.22	<0.22	<1.4	<10	-	-	-	-	<0.22	0.88J	<1.4	-	-	-	-	-
	Diethyl Phthalate (DEP)	ug/L	120000	NE	<0.28	<0.28	<1.4	<10	<5.0	0.18J	14	<5	<0.28	0.30J	<1.4	-	-	<1	<1	<5
	Di-N-Butyl Phthalate (DBP)	ug/L	12000	NE	0.98JJ	0.44J	<1.5	<10	<5.0	<1	<1	<5	0.32JJ	0.37J	<1.5	-	-	<1	0.12BJ	<5
	FLUORANTHENE	ug/L	370	NE	<0.21	<0.21	<1.5	<10	<5.0	-	-	-	1.8JJ	<0.21	<1.5	-	-	-	-	-
	FLUORENE	ug/L	14000	NE	<0.22	<0.22	<1.4	<10	<5.0	-	-	-	<0.22	0.95J	<1.4	-	-	-	-	-
	NAPHTHALENE	ug/L	NE	NE	<0.21	<0.21	<1.4	<10	<5.0	-	-	-	<0.21	2.4J	<1.4	-	-	-	-	-
	PHENOL	ug/L	NE	NE	<0.11	<0.11	<1.2	<10	<5.0	-	-	-	<0.11	<0.11	<1.2	-	-	-	-	-
	PYRENE	ug/L	1100	NE	<0.33	<0.33	<1.4	<10	<5.0	-	-	-	2.9JJ	<0.33	<1.4	-	-	-	-	-
	Butyl Benzyl Phthalate (Bbp)	ug/L	NE	NE	-	-	-	-	-	<1	<1	<5	-	-	-	-	-	<1	0.13J	<5

B - Validated Total Result - Adjusted due to method blank detections
- Not Sampled
NE - Not Established
J - Trace detection below the laboratory Reporting Limit
< Not detected, no established detection limit for individual carbon ranges
<(RL/MDL) not detected, above laboratory Method Detection limit for Metals,
Reporting Limit for other Constituents

Table 1
Summary of Constituents Detected in Convair Lagoon Vicinity Sample Locations
2701 North Harbor Drive, San Diego, CA

					MWCL-7							MWCL-8							T-54-GW-11	T-54-GW-40	T-54-GW-65	T-55-GW-11	T-55-GW-40	T-55-GW-70
			CTR	Background	12-Jan-07	24-Aug-07	24-Jan-08	22-Jul-08	16-Jan-09	20-Jul-09	08-Jan-10	12-Jan-07	24-Aug-07	24-Jan-08	22-Jul-08	16-Jan-09	21-Jul-09	07-Jan-10	20-Dec-06	20-Dec-06	20-Dec-06	20-Dec-06	20-Dec-06	20-Dec-06
PCBs																								
	Total PCBs	ng/L	0.17	NE	-	-	-	-	-	-	ND<4.56 B	-	-	**5.12 B**	**33.3 B**	**5.9 B**	**1.21 B**	ND<4.31 B	-	-	-	-	-	-
Metals																								
	ANTIMONY	MG/L	4.3	NE	-	-	-	-	<0.00209	<0.00209	<0.00744	-	-	-	-	<0.00209	0.00407 J	<0.00744	-	-	-	-	-	-
	ARSENIC	MG/L	0.036	NE	-	-	-	-	<0.00308	0.00391 J	0.0201	-	-	-	-	<0.00308	<0.00308	<0.00611	-	-	-	-	-	-
	BARIUM	MG/L	NE	0.49	-	-	-	-	0.0539	0.13	0.0472	-	-	-	-	0.0321	0.0577	0.0526	-	-	-	-	-	-
	BERYLLIUM	MG/L	NE	NE	-	-	-	-	<0.000176	<0.000176	<0.00439	-	-	-	-	<0.000176	<0.000176	<0.00439	-	-	-	-	-	-
	CADMIUM	MG/L	0.0093	NE	-	-	-	-	0.00101 J	0.000394 J	<0.00454	-	-	-	-	0.00200 J	<0.000350	<0.00454	-	-	-	-	-	-
	CHROMIUM	MG/L	NE	0.03	-	-	-	-	<0.000350	0.0748	<0.00436	-	-	-	-	0.0316	<0.000350	<0.00436	-	-	-	-	-	-
	COBALT	MG/L	NE	0.04	-	-	-	-	0.0265	0.0106	0.0228	-	-	-	-	<0.000696	0.000809 J	<0.00441	-	-	-	-	-	-
	COPPER	MG/L	0.0031	NE	-	-	-	-	0.00562	0.00251 J	**<0.00392**	-	-	-	-	**0.11**	<0.00134	**<0.00392**	-	-	-	-	-	-
	LEAD	MG/L	0.0081	NE	-	-	-	-	<0.00236	0.00306 J	<0.00693	-	-	-	-	<0.00236	<0.00236	<0.00693	-	-	-	-	-	-
	MOLYBDENUM	MG/L	NE	0.046	-	-	-	-	<0.000800	0.0208	0.00520 J	-	-	-	-	<0.000800	0.00829	0.00682 J	-	-	-	-	-	-
	NICKEL	MG/L	0.0082	0.1	-	-	-	-	0.0129	0.0115	**0.00934 J**	-	-	-	-	**0.733**	0.00634	<0.00433	-	-	-	-	-	-
	SELENIUM	MG/L	0.071	0.63	-	-	-	-	0.0234	0.00799 J	<0.0107	-	-	-	-	0.0186	0.0161	<0.0107	-	-	-	-	-	-
	SILVER	MG/L	0.0019	NE	-	-	-	-	<0.000400	0.00497 J	**0.00685**	-	-	-	-	<0.000400	**0.00201 J**	**<0.00211**	-	-	-	-	-	-
	THALLIUM	MG/L	0.0063	NE	-	-	-	-	0.00240 J	<0.00233	<0.00540	-	-	-	-	<0.00233	0.00604 J	<0.00540	-	-	-	-	-	-
	VANADIUM	MG/L	NE	0.076	-	-	-	-	<0.000314	<0.000314	<0.00449	-	-	-	-	<0.000314	0.00260 J	<0.00449	-	-	-	-	-	-
	ZINC	MG/L	0.081	0.069	-	-	-	-	0.0684	0.167	0.0204	-	-	-	-	0.0454	0.00701 J	0.0118	-	-	-	-	-	-
	MERCURY	MG/L	0.00005	NE	-	-	-	-	<0.0000177	<0.0000177	<0.0000310	-	-	-	-	<0.0000177	<0.0000177	<0.0000310	-	-	-	-	-	-
TPHs																								
	C13-C14	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-
	C15-C16	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-	-
	C17-C18	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-	-
	C19-C20	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-	-
	C21-C22	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-	-
	C23-C24	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-	-
	C25-C28	ug/L	NE	NE	-	-	<	-	<	-	-	-	-	<	-	<	-	-	-	-	-	-	-	-	-
	C7	ug/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C8	ug/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gasoline	ug/L	NE	NE	-	-	-	<100	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-
	C24 - C36 HRO	MG/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	<0.50	<0.50	3.6	1.2	<0.50
	TPH as Diesel	MG/L	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	<0.44	<0.44	4.7	0.83J	<0.44
VOCs																								
	1,1-Dichloroethane (1,1-DCA)	ug/L	99	NE	<0.50	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,2,4-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<0.23	<1	<1.0	<1	<1	<1	<1.0	<0.23	<1	<1.0	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3,5-TRIMETHYLBENZENE	ug/L	NE	NE	<1.0	<0.18	<1	<1.0	<1	<1	<1	<1.0	<0.18	<1	<1.0	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2-Butanone (MEK)	ug/L	NE	NE	<10	<6.7	<10	<10	<10	<10	<10	<10	<6.7	<10	<10	<10	<10	<10	3.5J	3.8J	9.0J	2.2J	16	3.1J
	2-Hexanone	ug/L	NE	NE	<10	<5.4	<10	<10	<10	<10	<10	<10	<5.4	<10	<10	<10	<10	<10	<10	1.4J	<10	<10	2.2J	<10
	4-isopropyltoluene	ug/L	NE	NE	<1.0	<0.31	<1	<1.0	<1	<1	<1	<1.0	<0.31	<1	<1.0	<1	<1	<1	0.89J	0.14J	0.29J	<1.0	<1.0	<1.0
	ACETONE	ug/L	NE	NE	1.1J	<6.3	<50	<50	<50	<50	<50	<10	<6.3	<50	<50	<50	<50	<50	36	20	33	15	76	13
	BENZENE	ug/L	71	NE	<0.50	<0.14	<0.5	<0.50	<0.5	1.7	<0.5	<0.50	<0.14	<0.5	<0.50	<0.5	<0.5	<0.5	0.19J	<0.50	0.41J	<0.50	0.14J	0.24J
	BROMODICHLOROMETHANE	ug/L	46	NE	<1.0	<0.24	<1	<1.0	<1	0.79J	<1	<1.0	<0.24	<1	<1.0	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	CARBON DISULFIDE	ug/L	NE	NE	<2.0	<0.40	<10	<10	<10	<10	<10	<2.0	<0.40	<10	<10	<10	<10	<10	0.20J	3.8	0.25J	0.44J	14	0.84J
	CHLOROETHANE	ug/L	NE	NE	<1.0	<0.69	<1	<1.0	<5	<5	<5	<1.0	<0.69	<1	<1.0	<5	<5	<5	<1.0	<1.0	<1.0	0.69J	0.37J	<1.0
	CHLOROFORM	ug/L	NE	NE	<0.50	<0.24	<1	<1.0	<1	1.9	<1	<0.50	<0.24	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	CHLOROMETHANE	ug/L	NE	NE	<1.0	<0.63	<10	<10	<10	<10	<10	<1.0	<0.63	<10	<10	<10	0.57J	<10	<1.0	0.36J	0.27J	0.75J	0.47J	0.34J
	cis-1,2-Dichloroethene	ug/L	NE	NE	0.49J	4.6	1.9	<1.0	<1	7.5	<1	<0.50	<0.35	<1	<1.0	<1	<1	<1	<0.50	<0.50	0.29J	<0.50	<0.50	0.31J
	ETHYLBENZENE	ug/L	29000	NE	<0.50	<0.23	<1	<1.0	<1	<1	<1	<0.50	<0.23	<1	<1.0	<1	<1	<1	0.19J	<0.50	<0.50	<0.50	<0.50	<0.50
	Isopropylbenzene (Cumene)	ug/L	NE	NE	<1.0	<0.26	<1	<1.0	<1	<1	<1	<1.0	<0.26	<1	<1.0	<1	<1	<1	0.38J	<1.0	0.13J	<1.0	<1.0	<1.0
	Methyl Isobutyl Ketone	ug/L	NE	NE	<10	<3.7	<10	<10	<10	<10	<10	<10	<3.7	<10	<10	<10	<10	<10	0.72J	15	8.7J	0.79J	9.1J	11
	Methylene Chloride	ug/L	1600	NE	<2.0	<4.3	<10	<10	<10	<10	<10	<2.0	<4.3	<10	<10	<10	<10	<10	0.82J	0.73J	0.69J	0.54J	0.41J	0.44J
	NAPHTHALENE	ug/L	NE	NE	<1.0	<0.50	<10	<10	<10	<10	<10	<1.0	<0.50	<10	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	N-BUTYLBENZENE	ug/L	NE	NE	<1.0	<0.29	<1	<1.0	<1	<1	<1	<1.0	<0.29	<1	<1.0	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	TERT-BUTYLBENZENE	ug/L	NE	NE	<1.0	<0.33	<1	<1.0	<1	<1	<1	<1.0	<0.33	<1	<1.0	<1	<1	<1	<1.0	<1.0	<1.0	0.094J	<1.0	<1.0
	Toluene	ug/L	200000	NE	0.14J	<0.27	<1	<1.0	<1	<1	<1	<0.50	<0.27	<1	<1.0	<1	<1	<1	0.15J	0.21J	0.44J	<0.50	0.38J	0.68
	trans-1,2-Dichloroethene	ug/L	140000	NE	<0.50	<0.38	<1	<1.0	<1	<1	<1	<0.50	<0.38	<1	<1.0	<1	<1	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Trichloroethene (TCE)	ug/L	81	NE	13	6.7	7.2	6.4	3.6	13	5.6	<0.50	<0.37	<1	<1.0	<1	<1	<1	<0.50	<0.50	4.3	<0.50	<0.50	35
	VINYL CHLORIDE	ug/L	525	NE	<0.50	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5	<0.50	<0.36	<0.5	<0.50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Xylenes, Total	ug/L	NE	NE	<1.5	-	-	-	-	-	-	<1.5	-	-	-	-	-	-	0.97J	<1.5	0.14J	0.52J	<1.5	<1.5
SVOCs																								
	1,4-Dioxane	ug/L	NE	NE	0.68J	-	-	<2.0	<2	21	<2	<0.41	-	-	<2.0	<2	<2	<2	<4.1	<0.41	0.70J	<4.1	-	-
	4-METHYLPHENOL	ug/L	NE	NE	7.0	-	-		-	-	-	<0.28	-	-	-	-	-	-	<2.8	<0.28	<0.28	<2.8	-	-
	ACENAPHTHENE	ug/L	2700	NE	<0.15	<1.4	-	<5.0	<1	<1	<1	<0.15	<1.4	<10	<5.0	<1	<1	<1	<1.5	<0.15	<0.15	<1.5	-	-
	ACENAPHTHYLENE	ug/L	NE	NE	<0.23	<1.4	-	<5.0	-	-	-	<0.23	<1.4	<10	<5.0	-	-	-	<2.3	<0.23	<0.23	<2.3	-	-
	Bis(2-Ethylhexyl) Phthalate	ug/L	5.9	NE	0.51J	<1.0	-	<5.0	<1	0.23J	0.45J	**8.7**	<1.0	<10	<5.0	<1	<1	<5	<3.0	3.1J	0.51J	<3.0	-	-
	DIBENZOFURAN	ug/L	NE	NE	<0.22	<1.4	-	-	-	-	-	<0.22	<1.4	<10	-	-	-	-	<2.2	<0.22	<0.22	<2.2	-	-
	Diethyl Phthalate (DEP)	ug/L	120000	NE	<0.28	<1.4	-	<5.0	<1	0.099J	<5	1.4J	<1.4	<10	<5.0	<1	<1	<5	<2.8	<0.28	<0.28	<2.8	-	-
	Di-N-Butyl Phthalate (DBP)	ug/L	12000	NE	<0.25	<1.5	-	<5.0	<1	0.58BJ	<5	0.43J	<1.5	<10	<5.0	<1	<1	<5	<2.5	<0.25	0.26J	<2.5	-	-
	FLUORANTHENE	ug/L	370	NE	<0.21	<1.5	-	<5.0	-	-	-	<0.21	<1.5	<10	<5.0	-	-	-	<2.1	<0.21	<0.21	<2.1	-	-
	FLUORENE	ug/L	14000	NE	<0.22	<1.4	-	<5.0	-	-	-	<0.22	<1.4	<10	<5.0	-	-	-	<2.2	<0.22	<0.22	<2.2	-	-
	NAPHTHALENE	ug/L	NE	NE	<0.21	<1.4	-	<5.0	-	-	-	<0.21	<1.4	<10	<5.0	-	-	-	<2.1	<0.21	<0.21	<2.1	-	-
	PHENOL	ug/L	NE	NE	<0.11	<1.2	-	<5.0	-	-	-	<0.11	<1.2	<10	<5.0	-	-	-	<1.1	<0.11	1.0J	6.8JD	-	-
	PYRENE	ug/L	1100	NE	<0.33	<1.4	-	<5.0	-	-	-	<0.33	<1.4	<10	<5.0	-	-	-	<3.3	<0.33	<0.33	<3.3	-	-
	Butyl Benzyl Phthalate (Bbp)	ug/L	NE	NE	-	-	-	-	<1	<1	<5	-	-	-	-	<1	<1	<5	-	-	-	-	-	-

B - Validated Total Result - Adjusted due to method blank detections
- Not Sampled
NE - Not Established
J - Trace detection below the laboratory Reporting Limit
< Not detected, no established detection limit for individual carbon ranges
<(RL/MDL) not detected, above laboratory Method Detection limit for Metals,
Reporting Limit for other Constituents

Table 2
60-Inch SWCS Sediment and Filter Sock Sample Results
2701 North Harbor Drive
San Diego, California

Geosyntec consultants

		Parameter								
				Polychlorinated Biphenyl (PCB)						
		Grain Size	TOC (Total Organic Carbon)	Aroclor 1016	Aroclor 1221	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262
Sample ID	Date		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample 1	1/18/2007	Medium Sand	11000	ND<1.0	ND<1.0	ND<1.0	39	ND<1.0	2.4	ND<1.0
Sample 2	1/18/2007	Fine Sand	30200	ND<0.5	ND<0.5	ND<0.5	59	ND<0.5	7.5	ND<0.5
Sample 3	1/18/2007	Fine Sand	14400	ND<0.5	ND<0.5	ND<0.5	3.3	ND<0.5	2.1	ND<0.5
Sample 4	1/18/2007	Silt	43300	ND<2.5	ND<2.5	ND<2.5	36	ND<2.5	ND<2.5	ND<2.5
Sample 5	1/18/2007	Silt	43000	ND<50	ND<50	ND<50	480	ND<50	ND<50	ND<50
Sample 6	1/18/2007	Fine Sand	106400	ND<50	ND<50	ND<50	480	ND<50	200	ND<50
Sample 7	1/18/2007	Fine Sand	46000	ND<50	ND<50	ND<50	1000	ND<50	360	ND<50
Sample 8	1/18/2007	Coarse Sand	5950	ND<1.0	ND<1.0	ND<1.0	8.7	ND<1.0	ND<1.0	ND<1.0
Sample 9	1/18/2007	Fine Sand	173600	ND<1.0	ND<1.0	ND<1.0	9.2	ND<1.0	ND<1.0	ND<1.0
Sample 10	1/18/2007	Fine Sand	44900	ND<1.0	ND<1.0	ND<1.0	14	ND<1.0	ND<1.0	ND<1.0
Sample 11	1/18/2007	Medium Sand	27200	ND<2.5	ND<2.5	ND<2.5	13	ND<2.5	ND<2.5	ND<2.5
Sample 12	1/18/2007	Medium Sand	23400	ND<0.5	ND<0.5	ND<0.5	6.8	ND<0.5	ND<0.5	ND<0.5
Sample 13	1/18/2007	Fine Sand	12100	ND<0.05	ND<0.05	ND<0.05	0.63	ND<0.05	1.4	ND<0.05
Sample 14	1/18/2007	Silt	36800	ND<0.05	ND<0.05	ND<0.05	0.35	ND<0.05	0.28	ND<0.05
Sample 15	1/18/2007	Medium Sand	12000	ND<0.5	ND<0.5	ND<0.5	6.4	ND<0.5	2.2	ND<0.5
Sample 16	1/18/2007	Fine Sand	169800	ND<5.0	ND<5.0	ND<5.0	55	ND<5.0	ND<5.0	ND<5.0
Sample 17	1/18/2007	Fine Sand	1850	ND<0.5	ND<0.5	ND<0.5	2.4	ND<0.5	ND<0.5	ND<0.5
Sample 17b	1/18/2007	Medium Sand	2950	ND<0.05	ND<0.05	ND<0.05	0.99	ND<0.05	ND<0.05	ND<0.05
Sample 18	1/18/2007	Fine Sand	25500	ND<1.0	ND<1.0	ND<1.0	15	ND<1.0	ND<1.0	ND<1.0
Sample 19	1/18/2007	Fine Sand	6000	ND<1.0	ND<1.0	ND<1.0	12	ND<1.0	ND<1.0	ND<1.0
Sample 20	1/18/2007	Fine Sand	18400	ND<1.0	ND<1.0	ND<1.0	16	ND<1.0	ND<1.0	ND<1.0
Sample 21	1/18/2007	Fine Sand	294900	ND<25	ND<25	ND<25	380	ND<25	200	ND<25
Sample 22	1/18/2007	Fine Sand	93900	ND<1.0	ND<1.0	ND<1.0	11	ND<1.0	ND<1.0	ND<1.0
Sample 23	1/18/2007	Fine Sand	83100	ND<25	ND<25	ND<25	220	ND<25	ND<25	ND<25
Sample 24	1/18/2007	Medium Sand	121100	ND<5.0	ND<5.0	ND<5.0	ND<5.0	46	ND<5.0	ND<5.0
Sample 25	1/18/2007	Fine Sand	17800	ND<0.05	ND<0.05	ND<0.05	0.21	0.12	ND<0.05	ND<0.05
Sample 26	1/18/2007	Fine Sand	23800	ND<0.1	ND<0.1	ND<0.1	2	ND<0.1	ND<0.1	ND<0.1
Filtersock-CB131	2/5/2007	Fine Sand	126900	ND<0.5	ND<0.5	ND<0.5	5.5	ND<0.5	ND<0.5	ND<0.5
Filtersock-CB133	2/5/2007	Medium Sand	57000	ND<25	ND<25	ND<25	390	ND<25	160	ND<25
C1	8/13/2007	-	-	ND<1.0	ND<1.0	7.6	ND<1.0	ND<1.0	ND<1.0	ND<1.0
C2	8/13/2007	Medium Sand	7400	ND<5.0	ND<5.0	54	ND<5.0	ND<5.0	ND<5.0	ND<5.0
FS-133-E	12/21/2007	-	-	ND<0.5	ND<0.5	ND<0.5	0.14	ND<0.5	ND<0.5	ND<0.5
FS-133-W	12/21/2007	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
FS-132-S	12/21/2007	-	-	ND<0.25	ND<0.25	ND<0.25	1.4	ND<0.25	1.6	ND<0.25
T4-N-BOTTOM	12/21/2007	-	-	ND<50	ND<50	ND<50	160	ND<50	ND<50	ND<50
FS-131-W	2/5/2007	-	-	ND<0.5	ND<0.5	ND<0.5	5.5	ND<0.5	ND<0.5	ND<0.5
FS-131-W	12/21/2007	-	-	ND<0.5	ND<0.5	ND<0.5	14	ND<0.5	4.7	ND<0.5
FS-131-W	4/15/2008	-	-	ND<5.0	ND<5.0	ND<5.0	1,700	ND<0.5	ND<0.5	ND<0.5
Filter Sock-N133-S	2/6/2008	-	-	ND<0.25	ND<0.25	ND<0.25	1.4	ND<0.25	2.6	ND<0.25
188-W	12/15/2008	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
133-SE	12/15/2008	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
133-NW	12/15/2008	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
CB-67-E	4/29/2009	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.16	ND<0.5	ND<0.5
CB-188	4/29/2009	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
CB-64	4/29/2009	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.6	ND<0.5	ND<0.5
CB-132-N1	4/29/2009	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.7	ND<0.5	ND<0.5
CB-133SE	4/29/2009	-	-	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

mg/kg - miligram per kilogram

- Not Analyzed

ND<0.5 - Not detected at concentrations greater than or equal to the RL

Geosyntec consultants

Table 3
Summary of PCB Data from 60-Inch SWCS for Risk Calculations
2701 North Harbor Drive
San Diego, California

Sample ID	Constituent (mg/kg)			
	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
CB134_20S_PI	54	50	17	11
CB133_55S_PW	ND<0.016	0.11	0.087	0.052
CB133_15S_PI	48	130	60	**56**
CB133_15N_PI	42	56	47	25
CB133_250N_PI	1.3	2.1	0.79	0.33
CB133_15N_PR	2.4	6.4	4.7	3.8
CB133_100S_WL	**100**	170	79	54
C1	7.6	ND<1.0	ND<1.0	ND<1.0
C2	54	ND<5.0	ND<5.0	ND<5.0
SAMPLE 1	ND<1.0	39	ND<1.0	2.4
SAMPLE 2	ND<0.5	59	ND<0.5	7.5
SAMPLE 3	ND<0.5	3.3	ND<0.5	2.1
SAMPLE 4	ND<2.5	36	ND<2.5	ND<2.5
SAMPLE 9	ND<1.0	9.2	ND<1.0	ND<1.0
SAMPLE 10	ND<1.0	14	ND<1.0	ND<1.0
SAMPLE 11	ND<2.5	13	ND<2.5	ND<2.5
SAMPLE 12	ND<0.5	6.8	ND<0.5	ND<0.5
SAMPLE 13	ND<0.05	0.63	ND<0.05	1.4
SAMPLE 14	ND<0.05	0.35	0.28	ND<0.05
SAMPLE 15	ND<0.5	6.4	ND<0.05	2.2
SAMPLE 16	ND<5.0	ND<5.0	55	ND<5.0
SAMPLE 17A	ND<0.5	2.4	ND<0.5	ND<0.5
SAMPLE 17B	ND<0.05	0.99	ND<0.05	ND<0.05
SAMPLE 18	ND<1.0	15	ND<1.0	ND<1.0
SAMPLE 19	ND<1.0	12	ND<1.0	ND<1.0
SAMPLE 20	ND<1.0	16	ND<1.0	ND<1.0
SAMPLE 21	ND<25	**380**	**200**	ND<25
SAMPLE 22	ND<1.0	11	ND<1.0	ND<1.0
SAMPLE 23	ND<25	220	ND<25	ND<25
SAMPLE 24	ND<5.0	ND<5.0	46	ND<5.0
SAMPLE 25	ND<0.05	0.21	0.12	ND<0.05
SAMPLE 26	ND<0.1	2.0	ND<0.1	ND<0.1
T4-N-Bottom	ND<50	160	ND<50	ND<50

Bold - Maximum concentration of individual Aroclor, value used in risk evaluation

Sample Locations Shown on Figure 3

MDL - Method Detection Limit

ND - Not detected at value greater than the MDL

Table 4
PCB Groundwater Analytical Results
2701 North Harbor Drive, San Diego CA

Geosyntec consultants

	Parameter	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
	Unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	RBC	**1.1**			**0.14**	**0.13**	**0.078**	**0.013**
B131-MW1	1/7/2010	ND<0.0050	ND<0.010	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050
B131-MW2	1/6/2010	ND<0.0055 i	ND<0.018 i	ND<0.015 i	ND<0.0096 i	ND<0.0061 i	ND<0.0050 i	ND<0.0050 i
B131-MW2D	1/7/2010	ND<0.0050 i	ND<0.010i	ND<0.0077 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
B131-MW3	1/6/2010	ND<0.034 i	ND<0.14 i	ND<0.076 i	ND<0.050 i	ND<0.034 i	ND<0.0063 i	ND<0.015 i
B131-MW3-B	1/6/2010	ND<0.011 i	ND<0.061 i	ND<0.022 i	ND<0.018 i	ND<0.015 i	ND<0.0065 i	ND<0.0050
B131-MW3D	1/6/2010	ND<0.0050 i	ND<0.020 i	ND<0.014 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i
B131-MW4	1/7/2010	ND<0.0050 i	ND<0.010 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
B131-MW5	1/7/2010	ND<0.0050 i	ND<0.010 i	ND<0.0065 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
B131-MW6	1/6/2010	ND<0.030 i	ND<0.094 i	ND<0.045 i	ND<0.056 i	ND<0.047 i	ND<0.014 i	ND<0.0093 i
B156-MW1	1/7/2010	ND<0.0050 i	ND<0.010 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
AREA D-MW-2	1/6/2010	ND<0.025 i	ND<0.044 i	ND<0.046 i	ND<0.046 i	ND<0.029 i	ND<0.024 i	ND<0.011 i
AREA D-MW-1	1/6/2010	ND<0.056 i	ND<1.1 i	ND<0.15 i	ND<0.088 i	ND<0.049 i	ND<0.018 i	ND<0.014 i
P2	1/6/2010	ND<0.0083 i	ND<0.030 i	ND<0.015 i	ND<0.0095 i	ND<0.0085 i	ND<0.0050 i	ND<0.0050 i
GT4	1/5/2010	ND<0.0050 i	ND<0.028 i	ND<0.011 i	ND<0.0085 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i
B158-MW1	1/7/2010	ND<0.0084 i	ND<0.065 i	ND<0.015 i	ND<0.021 i	ND<0.0084 i	ND<0.0084	ND<0.0084
B158-MW2	1/7/2010	ND<0.0050 i	ND<0.019 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
B120-MW1	1/5/2010	ND<0.0066 i	ND<0.022 i	ND<0.011 i	ND<0.014 i	ND<0.0085 i	ND<0.0050 i	ND<0.0050 i
B120-MW2	1/6/2010	ND<0.50	ND<1.0	ND<0.50	ND<0.50	**18 D**	ND<0.50	**0.89 D**
B120-MW2-B	1/6/2010	ND<0.50	ND<1.0	ND<0.50	ND<0.50	**11 D**	ND<0.50	**0.43 JD**
B120-MW3	1/6/2010	ND<0.0050 i	ND<0.015 i	ND<0.0061 i	ND<0.0075 i	ND<0.0068 i	ND<0.0062 i	ND<0.0050 i
B120-MW4	1/5/2010	ND<0.0050 i	ND<0.027 i	ND<0.0091 i	ND<0.0061 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i
B120-MW5	1/6/2010	ND<0.0050 i	ND<0.017 i	ND<0.0057 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i
B120-MW6	1/8/2010	ND<0.017 i	ND<0.11 i	ND<0.034 i	ND<0.029 i	ND<0.019 i	ND<0.021 i	ND<0.0050 i
B120-MW7	1/5/2010	ND<0.0050 i	ND<0.040 i	ND<0.012 i	ND<0.013 i	ND<0.011 i	ND<0.0050 i	ND<0.0050 i
B120-MW8	1/5/2010	ND<0.0054 i	ND<0.033 i	ND<0.012 i	ND<0.012 i	ND<0.0070 i	ND<0.0050 i	ND<0.0050 i
B120-MW9	1/5/2010	ND<0.0093 i	ND<0.025 i	ND<0.0099 i	ND<0.012 i	ND<0.012 i	ND<0.0052 i	ND<0.0050 i
FMY-MW1	1/7/2010	ND<0.0050 i	ND<0.010 i	ND<0.016 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050
B102-MW6	1/6/2010	ND<0.0057 i	ND<0.028 i	ND<0.012 i	ND<0.0066 i	ND<0.013 i	ND<0.0054 i	ND<0.0050 i
B102-MW4	1/7/2010	ND<0.0050	ND<0.010 i	ND<0.0058 i	ND<0.0050	ND<0.0050 i	ND<0.0050	ND<0.0050
B102-MW5	1/7/2010	ND<0.0050 i	ND<0.020 i	ND<0.0065 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
B180-MW1	1/5/2010	ND<0.0050 i	ND<0.024 i	ND<0.0050 i	ND<0.0054 i	ND<0.0062 i	ND<0.0050 i	ND<0.0050
B180-MW2	1/7/2010	ND<0.0050 i	ND<0.010 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050
B180-MW2B	1/7/2010	ND<0.0050 i	ND<0.010 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050 i	ND<0.0050	ND<0.0050

Notes:

ND - Non-Detect less than laboratory reporting limit

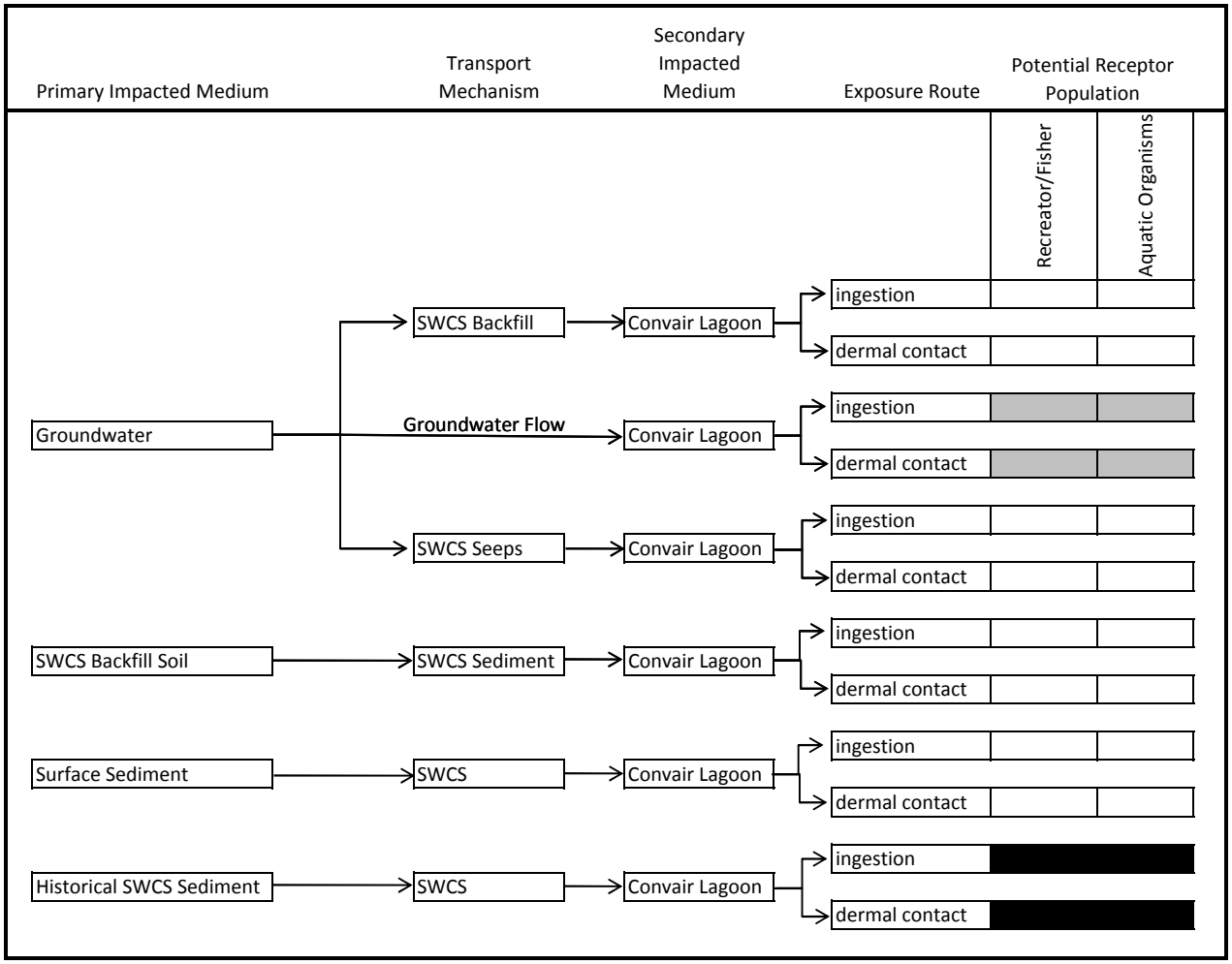
i - Matrix interference

J - Trace detection between laboratory reporting and detection limits

D - laboratory dilution performed

RBC - Risk Based Concentration

Figures



Complete Exposure Pathway

Potentially Complete Exposure Pathway

Incomplete Exposure Pathway

Convair Lagoon and SWCS Conceptual Site Model

2701 North Harbor Drive

San Diego, California

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Figure 1

N

PCBs in rainfall

Former TRA

PCBs in Surface Sediment Runoff

Pacific Coast Highway

Former General Dynamics

San Diego Airport

PCBs in Joint Compound

PCBs in Concrete

Other Off-Site Sources

PCBs in Off-Site Paint,Asphalt, and Joint Compound

PCBs in Surface Sediment Runoff

Harbor Drive

MonitorWell

Paint

Transite Siding

Catch Basin

Catch Basin

PCBs in Off-Site Soil

Non-Tidally Influenced PCB Impacted Sediment

PCBs in SWCS Tributary

Monitor Well

PCBs in Shallow Soil

PCBs in Groundwater

Convair Lagoon

Storm Water Conveyance Pipe

Stormwater/Tidal Flux

PCB Impacted Sediment

Break in Connection

PCBs in Groundwater

Legend

- Site Related PBC Source
- Non Site Related PCB Source
- Ambient PCB Souce
- Source to be Removed During Demolition

Conceptual Site Model

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Figure 2

X:\SC\2007 TDY Harbor Drive\RIFS\Whole Site RI_FS\VOCB Summary Rpt\Final Draft

AREA D-MW1
2.80

AREA D-MW2
2.80

P2
2.77

B158-MW1*
2.69

B158-MW2
2.82

B131-MW1
2.42

B131-MW2
2.49

B156-MW1
2.49

B131-MW2D*

GT4*
1.88

B131-MW6
2.28

B131-MW3
2.31

B131-MW3D*

B131-MW5
2.21

B131-MW4
2.26

B102-MW6
2.41

B102-MW5
2.34

B102-MW4*
2.06

B120-MW9
2.89

FMY-MW!
2.14

B120-MW1
2.73

B120-MW8
2.95

B120-MW2
2.51

B120-MW3
2.42

B120-MW7
2.13

B120-MW6
2.49

B120-MW-5
2.22

B120-MW-4
2.08

B180-MW2
1.71

B180-MW1
1.53

MWCL-6
1.20

MWCL-7*
1.16

MWCL-5*
1.04

MWCL-4
1.70

MWCL-3*
0.86

MWCL-8R*
1.38

MWCL-2
2.03

MWCL-1*
1.79

2.75
2.50
2.25
2.00
1.75
1.50
1.25
0.0032
0.0023
0.0027

Legend

- Monitor Well With Groundwater (Elevation in Feet Above Mean Sea Level)
- 0.0009 — Approximate Groundwater Flow Direction and Hydraulic Gradient (Ft/Ft)
- 2.75 — Groundwater Elevation Contour (Contour Interval 0.25 Feet)
- Storm Water Conveyance System
- Site Boundary

* - Well not used in groundwater contouring
Water levels gauged on 5 Janaury 2010 from 9:30 AM to 11:30 AM

200 100 0 200 Feet

Groundwater Elevations and Flow Direction

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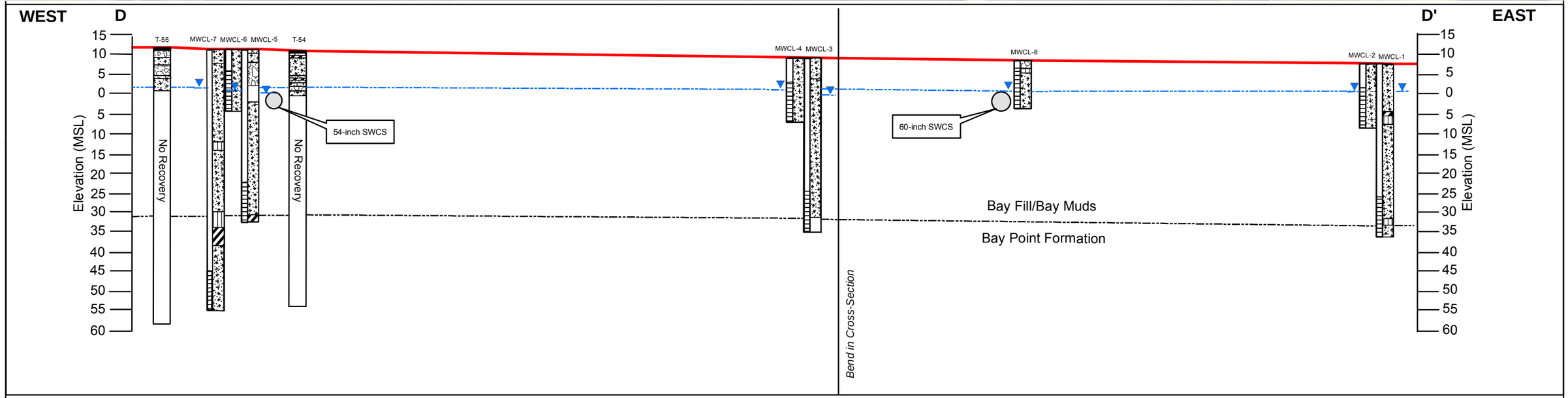
Figure 3

X:\GIS\tdy\FIG13Q08_gw flow.mxd:SC03070916 08:cleder



Legend

- Storm Water Conveyance System
- Lithologic Contact
- Groundwater Elevation
- Hydropunch
- Shallow Monitor Well
- Deep Monitor Well
- Asphalt
- Fill
- Concrete
- Fine Sand with Gravel
- Fine Sand/Silty Sand
- Silt
- Clay
- 10 ft Screen Interval

T-54, T-55, T-56 Sampled on 12/20/06
MWCL Monitor Wells Sampled on 1/7/10

50 25 0 50 Feet

Hydrogeologic Cross-Section D - D' - Convair Lagoon

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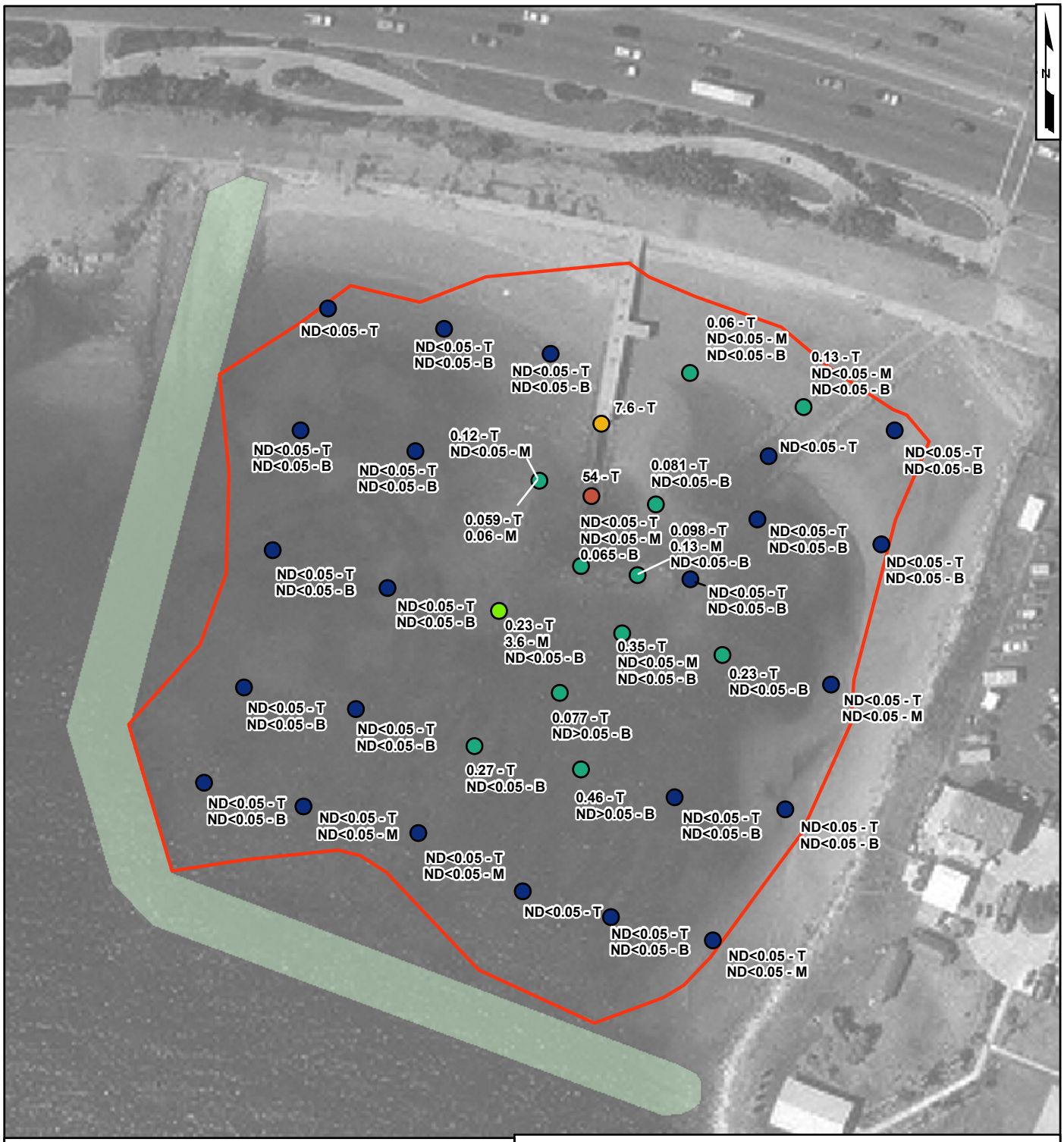
Figure 4

X:\GIS\TDY\ConvairXsectionJAug2010.mxd

Sample 1
Sample 2
Sample 3
Sample 4
Sample 5
Sample 6
Sample 7
Sample 8
Sample 9
Sample 10
Sample 11
Sample 12
Sample 13
Sample 14
Sample 15
Sample 16
Sample 17A
Sample 17B
Sample 18
Sample 19
Sample 20
Sample 21
Sample 22
T62-8.0
Sample 23
Sample 24
Sample 25
Sample 26
C1
C2
CB_134_20S_PI
CB_134_100S_WL
CB_133_15S_PI
CB_133_15N_PI/PR
CB_133_55S_PW
CB_133_250N_PI
CB-134
CB-133
CB-132
CB-131
CB-124
BM-S-6.0
BM-N-6.0
FS-133-E
FS-133-W
T-1N
T-2N
T-3N
T-4N
(T4-N Bottom)
T56-9.5
T57-10
T58-10.5
T-59-7.5
T60-10
T61-10.5
T63-10.0
FS-132N
FS-132S
FS-131W
PIER
CHANNEL
CB133_100S_WL
AROCLOR 1242 - 100 mg/Kg
AROCLOR 1248 - 170 mg/Kg
AROCLOR 1254 - 79 mg/Kg
AROCLOR 1260 - 54 mg/Kg
FS-133-E
AROCLOR 1248 - 0.14 mg/Kg
FS-133-W
ND<0.05 mg/kg
FILTERSOCK - CB133***
AROCLOR 1248 - 390 mg/Kg
AROCLOR 1260 - 160 mg/Kg
CB133_15N_PR
AROCLOR 1242 - 2.4 mg/KG
AROCLOR 1248 - 6.4 mg/Kg
AROCLOR 1254 - 4.7 mg/Kg
AROCLOR 1260 - 3.8 mg/Kg
T1-N****
AROCLOR 1248 - 1.4 mg/Kg
AROCLOR 1260 - 2.6 mg/Kg
BM-S-6.0
ND<0.05 mg/kg
BM-N-6.0
ND<0.05 mg/kg
SAMPLE 6
AROCLOR 1248 - 480 mg/Kg
AROCLOR 1260 - 200 mg/Kg
SAMPLE 8
AROCLOR 1248 - 8.7 mg/Kg
T4-N
No Sock
T3-N
No Sediment
T2-N
No Sediment
T56-9.5T
ND<0.05 mg/kg
CB133_55S_PW
AROCLOR 1248 - 0.11 mg/Kg
AROCLOR 1254 - 0.087 mg/Kg
AROCLOR 1260 - 0.052 mg/Kg
SAMPLE 9
AROCLOR 1248 - 9.2 mg/Kg
T4-N-Bottom*
Aroclor 1248 - 160 mg/kg
C2**
AROCLOR 1242 - 54 mg/Kg
C1**
AROCLOR 1242 - 7.6 mg/Kg
SAMPLE 1
AROCLOR 1248 - 39 mg/Kg
AROCLOR 1260 - 2.4 mg/Kg
SAMPLE 2
AROCLOR 1248 - 59 mg/Kg
AROCLOR 1260 - 7.5 mg/Kg
SAMPLE 3
AROCLOR 1248 - 3.3 mg/Kg
AROCLOR 1260 - 2.1 mg/Kg
SAMPLE 4
AROCLOR 1248 - 36 mg/Kg
CB134_20S_PI
AROCLOR 1242 - 54 mg/Kg
AROCLOR 1248 - 50 mg/Kg
AROCLOR 1254 - 17 mg/Kg
AROCLOR 1260 - 11 mg/Kg
SAMPLE 5
AROCLOR 1248 - 480 mg/Kg
SAMPLE 7
AROCLOR 1248 - 1000 mg/Kg
AROCLOR 1260 - 360 mg/Kg
CB133_15S_PI
AROCLOR 1242 - 48
AROCLOR 1248 - 130 mg/Kg
AROCLOR 1254 - 60 mg/Kg
AROCLOR 1260 - 56 mg/Kg
SAMPLE 10
AROCLOR 1248 - 14 mg/Kg
CB133_15N_PI
AROCLOR 1242 - 42 mg/Kg
AROCLOR 1248 - 56 mg/Kg
AROCLOR 1254 - 47 mg/Kg
AROCLOR 1260 - 25 mg/Kg
SAMPLE 11
AROCLOR 1248 - 13 mg/Kg
SAMPLE 26
AROCLOR 1248 - 2 mg/Kg
T-57-10.0B
ND<0.05 mg/kg
CB133_250N_PI
AROCLOR 1242 - 1.3 mg/Kg
AROCLOR 1248 - 2.1 mg/Kg
AROCLOR 1254 - 0.79 mg/Kg
AROCLOR 1260 - 0.33 mg/Kg
SAMPLE 25
AROCLOR 1248 - 0.21 mg/Kg
AROCLOR 1254 - 0.12 mg/Kg
SAMPLE 16
AROCLOR 1254 - 55 mg/Kg
SAMPLE 14
AROCLOR 1248 - 0.35 mg/Kg
AROCLOR 1254 - 0.28 mg/Kg
SAMPLE 13
AROCLOR 1248 - 0.63 mg/Kg
AROCLOR 1260 - 1.4 mg/Kg
SAMPLE 12
AROCLOR 1248 - 6.8 mg/Kg
SAMPLE 15
AROCLOR 1248 - 6.4 mg/Kg
AROCLOR 1260 - 2.2 mg/Kg
SAMPLE 18
AROCLOR 1248 - 15 mg/Kg
SAMPLE 17A
AROCLOR 1248 - 2.4 mg/Kg
SAMPLE 17B
AROCLOR 1248 - 0.99 mg/Kg
T-58-10.5B & T-60-10T
ND<0.05 mg/kg
SAMPLE 21
AROCLOR 1248 - 380 mg/Kg
AROCLOR 1254 - 200 mg/Kg
T-59-7.5
ND<0.05 mg/kg
FS-132N
No Sediment
FS-132S
AROCLOR 1248 - 1.4 mg/Kg
AROCLOR 1260 - 1.6 mg/Kg
SAMPLE 24
AROCLOR 1254 - 46 mg/Kg
SAMPLE 19
AROCLOR 1248 - 12 mg/Kg
SAMPLE 20
AROCLOR 1248 - 16 mg/Kg
FILTERSOCK - CB131***
AROCLOR 1248 - 5.5 mg/Kg
FS-131W
AROCLOR 1248 - 14 mg/Kg
AROCLOR 1260 - 4.7 mg/Kg
FS-131-W
AROCLOR 1248 - 1,700 mg/Kg
T-62-8.0
ND<0.05 mg/kg
SAMPLE 23
AROCLOR 1248 - 220 mg/Kg
T-61-10.5 B & T-63-10.0B
ND<0.05 mg/kg
SAMPLE 22
AROCLOR 1248 - 11 mg/Kg
Legend
Sediment Sample (TDY 1/18/07 except as noted)
Sediment Sample (H&A 8/10/07)
Sock Sediment Sample (TDY 12/21/07 except as noted)
Exterior Soil Sample (TDY 11/28/07-11/29/07)
Catch Basin
Storm Drain
* Sample collected from base of storm drain, below tributary T4 on 12/21/07
** Sample collected on 8/13/07
*** Sample collected from filter sock on 02/05/07
**** Sample collected from filter sock on 02/06/08
40 20 0 40 80 120 Feet
SEDIMENT, SOIL, AND FILTER SOCK
SAMPLING RESULTS - 60-INCH SWCS
2701 NORTH HARBOR DRIVE
SAN DIEGO, CALIFORNIA
Geosyntec
consultants
Figure
5
SC0307
August 2010



Legend

Maximum PCB Concentration (mg/kg)

- ND<0.05
- 0.05 - 1
- 1 - 4.6
- 4.6 - 10
- 10 - 100
- Berm
- Extent of Cap

Sample Depth
T = 0.5' BGS
M = 1.0' BGS
B = 1.5' BGS

425 212.5 0 425 Feet

Sand Cap Sampling Results
Total PCB

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San Diego, California

Geosyntec consultants

San Diego | August 2010

Figure
6

X:\GIS\Tdy\Convair lagoon\Lagoon Samples\Aug07\CapMonitoring.mxd:3C0307:30Aug2007:Jlarson

Attachment A
Analytical Laboratory and Geotechnical Results

19408 Park Row Suite 320 Houston, TX 77084 (713) 266-1599 (713) 266-0130 fax

Columbia Analytical Services INC.
An Employee - Owned Company

March 06, 2008

Service Request No: E0800129

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road
Suite 200
San Diego, CA 92127

RE: PCB Congeners - TDY/SC0307

Dear Brian:

Enclosed are the results of the sample(s) submitted to our laboratory on February 8, 2008. For your reference, these analyses have been assigned our service request number **E0800129**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please call if you have any questions. My extension is 2957. You may also contact me via email at JFreemyer@houston.caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Darren Biles for JF

Jane Freemyer
Project Chemist

Page 1 of _____

Columbia Analytical Services INC.

An Employee - Owned Company

Certificate of Analysis

19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

COLUMBIA ANALYTICAL SERVICES, INC

Client:	GeoSyntec Consultants	**Service Request No.:**	E0800129
Project:	PCB Congeners – TDY/SC0307	**Date Received:**	02/08/08
Sample Matrix:	Aqueous		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One aqueous sample was received for analysis at Columbia Analytical Services on 02/08/08.

The following discrepancies were noted upon initial sample inspection: no custody seals on cooler(s). The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The sample was received at 5°C in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

The solid particles were removed by filtration before extraction.

Data Validation Notes and Discussion

Y flags – Labeled Standards

Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Form 2s. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

Total Homologue Qualifiers

The qualifier flag assignment criterion is defined for individual congeners. Qualifier flags assigned to total homologues do not apply.

MS/MSD

EQ0800073: Laboratory Control Spike /Laboratory Control Spike Duplicate (LCS/LCSD) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch.

Approved by Xiangqiu Liang **Date** 2/27/08

Xiangqiu Liang, Laboratory Director

Detection Limits

Detection limits are calculated for each congener in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Approved by Xiangqiu Liang **Date** 3/7/08

Xiangqiu Liang, Laboratory Director

Client: GeoSyntec Consultants
Project: PCB Congeners - TDY/SC0307

Service Request: E0800129

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E0800129-001	54SEEP-18S-CB63	02/06/08	13:30

Superset Summary

Service Request: E0800129

SuperSet Reference: 08-0000069703 rev 00

1668A/Cl Biphen Cong

Calibrations: 12/13/07

Data Files:

Raw Data	*Begin CCAL*	*Method Blank*	*Lab ID*
U214206	U214205	U214206	EQ0800073-01
U214208	U214205	U214206	E0800129-001
U214213	U214205	U214206	EQ0800073-02
U214214	U214205	U214206	EQ0800073-03

ABBREVIATIONS, ACRONYMS

Abbreviations, acronyms and definitions

Cal	Calibration
Conc	Concentration
Dioxins	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated detection limit
EMPC	Estimated maximum possible concentration
Flags	Data qualifiers
Furans	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial calibration
ID	Identifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory control sample
LCSD	Laboratory control spike duplicate
MB	Method blank
MCL	Method calibration limit
MDL	Method detection limit
ML	Mililiters
MS	Matrix spike sample
MSD	Matrix spiked sample duplicate
NO	Number of peaks meeting all identification criteria
PCDD	Polychlorinated dibenzo-p-dioxin(s)
PCDF	Polychlorinated dibenzofuran(s)
ppm	Parts per million
ppb	Parts per billion
ppt	Parts per trillion
ppq	Parts per quadrillion
QC	Quality control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative percent difference
RRF	Relative response factor
RT	Retention time
SDG	Sample delivery group
S/N	Signal-to-noise ratio
TEF	Toxicity equivalence factor
TEQ	Toxicity equivalence

Data Qualifier Flags

- **B** Indicates the associated analyte is found in the method blank, as well as in the sample
- **C** Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225.) The results from both the DB-5 column and the DB-225 column are included in this data package. The results from the DB-225 analyses should be used to evaluate the 2378-TCDF in the samples. The confirmed result should be used in determining the TEQ value for TCDF.
- **E** Indicates an estimated value – used when the analyte concentration exceeds the upper end of the linear calibration range
- **J** Indicates an estimated value – used when the analyte concentration is below the method reporting limit (MRL) and above the detection limit (DL)
- **K** EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.
- **U** Indicates the compound was analyzed and not detected
- **Y** Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Form 2s. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.
- * Indicates concentration is reported as 'Not Detected'
- **S** Peak is saturated; data not reportable
- **Q** Lock-mass interference by ether compounds

CAS/HOU - Form Production, Peer Review & Project Review Signatures

SR# Unique ID: E0800129

First Level - Data Processing - to be filled by person generating the forms

Date	26 feb 08	Person 1	Lee
Date		Person 2	

Second Level - Data Review – to be filled by person doing peer review

Date	2/29/08	Primary Data Reviewer	DB
Date		Secondary Data Reviewer	

Project Level - Review - to be filled by person doing project compliance review

Date	3/7/08	Reviewer	DB

Columbia Analytical Services INC.

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Analytical Results

19408 Park Row, Suite 320, Houston, TX 77084
Phone (713) 266-1599 Fax (713) 266-0130
www.caslab.com

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ0800073-01	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 20:30:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214206	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	ND	U	5.77	200			1
Total DiCB	**196**	J	8.03	500			1
Total TriCB	**103**	J	1.98	500			1
Total TetraCB	**57.7**	J	1.49	500			1
Total PentaCB	**26.8**	J	1.06	1000			1
Total HexaCB	**16.6**	J	0.624	1000			1
Total HeptaCB	**57.8**	J	1.00	1000			1
Total OctaCB	**37.8**	J	1.08	1000			1
Total NonaCB	ND	U	3.22	1000			1
PCB 209	ND	U	2.13	500			1
Total PCBs	**496**	J	0.624	1000			1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ0800073-01	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 20:30:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214206	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	337.798	17		15-150	3.30	0.742
PCB 3L	2000	348.423	17		15-150	3.26	0.872
PCB 4L	2000	404.201	20	Y	25-150	1.48	0.886
PCB 15L	2000	450.925	23	Y	25-150	1.58	1.225
PCB 19L	2000	408.102	20	Y	25-150	1.06	1.066
PCB 37L	2000	634.134	32		25-150	1.04	1.083
PCB 54L	2000	524.332	26		25-150	0.77	0.830
PCB 81L	2000	878.056	44		25-150	0.79	1.331
PCB 77L	2000	872.173	44		25-150	0.79	1.352
PCB 104L	2000	596.982	30		25-150	1.54	0.826
PCB 123L	2000	899.640	45		25-150	1.57	1.136
PCB 118L	2000	954.624	48		25-150	1.58	1.146
PCB 114L	2000	923.464	46		25-150	1.59	1.161
PCB 105L	2000	989.935	49		25-150	1.61	1.181
PCB 126L	2000	1183.889	59		25-150	1.54	1.271
PCB 155L	2000	598.183	30		25-150	1.22	0.802
PCB 167L	2000	997.154	50		25-150	1.30	1.071
PCBs 156L + 157L	4000	2247.630	56		25-150	1.27	1.098
PCB 169L	2000	1198.774	60		25-150	1.27	1.175
PCB 188L	2000	411.598	21	Y	25-150	1.02	0.731
PCB 189L	2000	722.232	36		25-150	1.03	0.961
PCB 202L	2000	502.068	25		25-150	0.90	0.830
PCB 205L	2000	972.457	49		25-150	0.88	1.009
PCB 208L	2000	837.905	42		25-150	0.76	0.952
PCB 206L	2000	987.844	49		25-150	0.77	1.040
PCB 209L	2000	1200.049	60		25-150	1.19	1.069
PCB 28L	2000	529.792	26	Y	30-135	1.04	0.932
PCB 111L	2000	866.469	43		30-135	1.56	1.078
PCB 178L	2000	956.496	48		30-135	1.03	1.010

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	02/06/2008
Sample Matrix:	Water	**Date Received:**	02/08/2008
Sample Name:	54SEEP-18S-CB63	**Units:**	pg/L
Lab Code:	E0800129-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 22:46:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1100mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214208	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**23.4**	J	4.28	182			1
Total DiCB	**996**		8.63	455			1
Total TriCB	**2930**		3.88	455			1
Total TetraCB	**4150**		2.12	455			1
Total PentaCB	**1230**		2.11	909			1
Total HexaCB	**300**	J	0.765	909			1
Total HeptaCB	**82.8**	J	1.14	909			1
Total OctaCB	**18.9**	J	1.10	909			1
Total NonaCB	ND	U	4.46	909			1
PCB 209	ND	U	3.09	455			1
Total PCBs	**9740**		0.765	909			1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	02/06/2008
Sample Matrix:	Water	**Date Received:**	02/08/2008
Sample Name:	54SEEP-18S-CB63	**Units:**	pg/L
Lab Code:	E0800129-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 22:46:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1100mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214208	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	334.945	17		15-150	3.25	0.743
PCB 3L	2000	332.895	17		15-150	3.22	0.872
PCB 4L	2000	398.761	20	Y	25-150	1.56	0.886
PCB 15L	2000	375.861	19	Y	25-150	1.54	1.225
PCB 19L	2000	370.148	19	Y	25-150	1.00	1.066
PCB 37L	2000	403.011	20	Y	25-150	1.05	1.083
PCB 54L	2000	459.477	23	Y	25-150	0.76	0.830
PCB 81L	2000	483.761	24	Y	25-150	0.79	1.331
PCB 77L	2000	491.289	25		25-150	0.81	1.352
PCB 104L	2000	424.833	21	Y	25-150	1.55	0.827
PCB 123L	2000	504.459	25		25-150	1.64	1.136
PCB 118L	2000	534.740	27		25-150	1.56	1.146
PCB 114L	2000	511.966	26		25-150	1.58	1.161
PCB 105L	2000	553.374	28		25-150	1.62	1.181
PCB 126L	2000	656.812	33		25-150	1.62	1.271
PCB 155L	2000	366.698	18	Y	25-150	1.20	0.802
PCB 167L	2000	546.080	27		25-150	1.30	1.071
PCBs 156L + 157L	4000	1231.281	31		25-150	1.28	1.098
PCB 169L	2000	673.700	34		25-150	1.27	1.175
PCB 188L	2000	219.116	11	Y	25-150	1.02	0.731
PCB 189L	2000	379.251	19	Y	25-150	1.05	0.962
PCB 202L	2000	275.933	14	Y	25-150	0.87	0.830
PCB 205L	2000	522.239	26		25-150	0.90	1.009
PCB 208L	2000	449.607	22	Y	25-150	0.78	0.952
PCB 206L	2000	535.387	27		25-150	0.76	1.040
PCB 209L	2000	650.681	33		25-150	1.21	1.069
PCB 28L	2000	352.194	18	Y	30-135	1.09	0.933
PCB 111L	2000	439.847	22	Y	30-135	1.57	1.078
PCB 178L	2000	474.981	24	Y	30-135	1.04	1.010

Comments:

Columbia Analytical Services INC.

An Employee - Owned Company

Accuracy & Precision Data

19408 Park Row, Suite 320, Houston, TX 77084
Phone(713)266-1599 Fax (713)266-0130
www.caslab.com

Client: GeoSyntec Consultants
Project: PCB Congeners - TDY/SC0307
Sample Matrix: Water

Service Request: E0800129

Sample Name: Lab Control Sample
Lab Code: EQ0800073-02

Units: pg/L
Basis: NA

Analytical Method: 1668A
Prep Method: Method

Analyte Name	Lab Control Sample Result	Lab Control Sample Expected	Lab Control Sample % Rec	Duplicate Lab Control Sample Result	Duplicate Lab Control Sample Expected	Duplicate Lab Control Sample % Rec	% Rec Limits	RPD	RPD Limi
PCB 1	952	1000	95	1040	1000	104	50 - 150	9	50
PCB 3	900	1000	90	948	1000	95	50 - 150	5	50
PCB 4	934	1000	93	1000	1000	100	50 - 150	7	50
PCB 15	943	1000	94	984	1000	98	50 - 150	4	50
PCB 19	921	1000	92	1030	1000	103	50 - 150	11	50
PCB 37	942	1000	94	1010	1000	101	50 - 150	7	50
PCB 54	920	1000	92	960	1000	96	50 - 150	4	50
PCB 81	906	1000	91	947	1000	95	50 - 150	4	50
PCB 77	926	1000	93	966	1000	97	50 - 150	4	50
PCB 104	917	1000	92	959	1000	96	50 - 150	4	50
PCB 123	932	1000	93	962	1000	96	50 - 150	3	50
PCB 118	908	1000	91	962	1000	96	50 - 150	6	50
PCB 114	991	1000	99	1040	1000	104	50 - 150	5	50
PCB 105	946	1000	95	991	1000	99	50 - 150	5	50
PCB 126	935	1000	94	977	1000	98	50 - 150	4	50
PCB 155	946	1000	95	994	1000	99	50 - 150	5	50
PCB 167	940	1000	94	1020	1000	102	50 - 150	8	50
PCBs 156 + 157	1880	2000	94	1970	2000	99	50 - 150	5	50
PCB 169	975	1000	98	1070	1000	107	50 - 150	9	50
PCB 188	977	1000	98	1020	1000	102	50 - 150	4	50
PCB 189	1040	1000	104	1090	1000	109	50 - 150	5	50
PCB 202	1040	1000	104	1090	1000	109	50 - 150	5	50
PCB 205	959	1000	96	997	1000	100	50 - 150	4	50
PCB 208	998	1000	100	1060	1000	106	50 - 150	6	50
PCB 206	992	1000	99	1050	1000	105	50 - 150	6	50
PCB 209	953	1000	95	1000	1000	100	50 - 150	5	50

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0800073-02	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 04:25:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214213	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	**952**		7.90	200	3.19	1.001	1
PCB 3	**900**		7.44	400	2.93	1.001	1
PCB 4	**934**		20.4	500	1.54	1.001	1
PCB 15	**943**		11.6	500	1.52	1.001	1
PCB 19	**921**		9.40	100	1.04	1.001	1
PCB 37	**942**		2.80	500	1.02	1.001	1
PCB 54	**920**		1.07	500	0.72	1.001	1
PCB 81	**906**		1.64	500	0.74	1.001	1
PCB 77	**926**		1.75	500	0.77	1.001	1
PCB 104	**917**		1.27	500	1.55	1.001	1
PCB 123	**932**		3.15	500	1.60	1.000	1
PCB 118	**908**		2.96	500	1.60	1.000	1
PCB 114	**991**		3.12	500	1.55	1.000	1
PCB 105	**946**		2.99	200	1.55	1.001	1
PCB 126	**935**		2.80	500	1.57	1.000	1
PCB 155	**946**	J	0.685	1000	1.17	1.001	1
PCB 167	**940**		0.921	500	1.22	1.000	1
PCBs 156 + 157	**1880**		1.39	1000	1.20	1.000	1
PCB 169	**975**		0.981	500	1.20	1.000	1
PCB 188	**977**		1.02	500	0.99	1.001	1
PCB 189	**1040**		1.19	500	1.01	1.000	1
PCB 202	**1040**		0.792	100	0.88	1.001	1
PCB 205	**959**	J	0.681	1000	0.86	1.001	1
PCB 208	**998**	J	1.21	1000	0.74	1.000	1
PCB 206	**992**	J	4.38	1000	0.76	1.001	1
PCB 209	**953**		0.421	500	1.18	1.000	1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0800073-02	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 04:25:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214213	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**1850**		7.44	200			1
Total DiCB	**1880**		11.6	500			1
Total TriCB	**1860**		2.80	500			1
Total TetraCB	**2750**		1.07	500			1
Total PentaCB	**5630**		1.27	1000			1
Total HexaCB	**4740**		0.685	1000			1
Total HeptaCB	**2020**		1.02	1000			1
Total OctaCB	**2000**		0.681	1000			1
Total NonaCB	**1990**		1.21	1000			1
Total PCBs	**25700**		0.421	1000			1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0800073-02	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 04:25:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214213	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	159.552	8	Y	15-150	3.41	0.742
PCB 3L	2000	202.658	10	Y	15-150	3.36	0.872
PCB 4L	2000	254.688	13	Y	25-150	1.51	0.887
PCB 15L	2000	365.127	18	Y	25-150	1.59	1.227
PCB 19L	2000	290.570	15	Y	25-150	1.02	1.067
PCB 37L	2000	555.645	28		25-150	1.06	1.083
PCB 54L	2000	419.258	21	Y	25-150	0.74	0.831
PCB 81L	2000	761.372	38		25-150	0.80	1.331
PCB 77L	2000	778.022	39		25-150	0.79	1.353
PCB 104L	2000	505.458	25		25-150	1.57	0.827
PCB 123L	2000	767.379	38		25-150	1.56	1.137
PCB 118L	2000	809.615	40		25-150	1.58	1.147
PCB 114L	2000	772.705	39		25-150	1.55	1.162
PCB 105L	2000	840.875	42		25-150	1.63	1.181
PCB 126L	2000	1042.438	52		25-150	1.56	1.272
PCB 155L	2000	578.588	29		25-150	1.24	0.802
PCB 167L	2000	942.109	47		25-150	1.28	1.071
PCBs 156L + 157L	4000	2145.952	54		25-150	1.27	1.099
PCB 169L	2000	1211.488	61		25-150	1.32	1.175
PCB 188L	2000	362.836	18	Y	25-150	1.04	0.731
PCB 189L	2000	711.337	36		25-150	1.02	0.962
PCB 202L	2000	467.025	23	Y	25-150	0.90	0.830
PCB 205L	2000	954.059	48		25-150	0.89	1.009
PCB 208L	2000	826.473	41		25-150	0.79	0.953
PCB 206L	2000	1027.279	51		25-150	0.76	1.040
PCB 209L	2000	1280.874	64		25-150	1.20	1.069
PCB 28L	2000	567.149	28	Y	30-135	1.04	0.933
PCB 111L	2000	821.090	41		30-135	1.53	1.078
PCB 178L	2000	887.332	44		30-135	1.05	1.010

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample Dup	**Units:**	pg/L
Lab Code:	EQ0800073-03	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 05:33:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214214	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	**1040**		8.18	200	3.26	1.001	1
PCB 3	**948**		7.82	400	2.99	1.001	1
PCB 4	**1000**		21.8	500	1.62	1.002	1
PCB 15	**984**		10.1	500	1.53	1.001	1
PCB 19	**1030**		8.31	100	0.97	1.001	1
PCB 37	**1010**		3.69	500	1.02	1.001	1
PCB 54	**960**		1.95	500	0.72	1.001	1
PCB 81	**947**		2.29	500	0.78	1.001	1
PCB 77	**966**		2.41	500	0.76	1.000	1
PCB 104	**959**		1.27	500	1.49	1.001	1
PCB 123	**962**		3.12	500	1.61	1.000	1
PCB 118	**962**		2.99	500	1.62	1.000	1
PCB 114	**1040**		3.10	500	1.61	1.000	1
PCB 105	**991**		3.02	200	1.59	1.001	1
PCB 126	**977**		2.72	500	1.62	1.000	1
PCB 155	**994**	J	0.658	1000	1.16	1.001	1
PCB 167	**1020**		2.26	500	1.19	1.000	1
PCBs 156 + 157	**1970**		3.37	1000	1.19	1.000	1
PCB 169	**1070**		2.35	500	1.22	1.000	1
PCB 188	**1020**		0.741	500	1.00	1.001	1
PCB 189	**1090**		0.830	500	1.04	1.000	1
PCB 202	**1090**		0.763	100	0.88	1.000	1
PCB 205	**997**	J	0.627	1000	0.89	1.000	1
PCB 208	**1060**		1.17	1000	0.76	1.000	1
PCB 206	**1050**		5.11	1000	0.79	1.001	1
PCB 209	**1000**		0.946	500	1.16	1.000	1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample Dup	**Units:**	pg/L
Lab Code:	EQ0800073-03	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 05:33:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214214	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**1990**		7.82	200			1
Total DiCB	**1990**		10.1	500			1
Total TriCB	**2040**		3.69	500			1
Total TetraCB	**2870**		1.95	500			1
Total PentaCB	**5890**		1.27	1000			1
Total HexaCB	**5050**		0.658	1000			1
Total HeptaCB	**2110**		0.741	1000			1
Total OctaCB	**2090**		0.627	1000			1
Total NonaCB	**2110**		1.17	1000			1
Total PCBs	**27100**		0.627	1000			1

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample Dup	**Units:**	pg/L
Lab Code:	EQ0800073-03	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 05:33:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214214	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	124.400	6	Y	15-150	3.38	0.742
PCB 3L	2000	156.240	8	Y	15-150	3.47	0.872
PCB 4L	2000	201.152	10	Y	25-150	1.53	0.886
PCB 15L	2000	277.131	14	Y	25-150	1.59	1.226
PCB 19L	2000	220.290	11	Y	25-150	0.97	1.067
PCB 37L	2000	421.353	21	Y	25-150	1.01	1.083
PCB 54L	2000	343.723	17	Y	25-150	0.77	0.831
PCB 81L	2000	589.341	29		25-150	0.80	1.331
PCB 77L	2000	600.119	30		25-150	0.76	1.353
PCB 104L	2000	414.808	21	Y	25-150	1.52	0.826
PCB 123L	2000	628.283	31		25-150	1.57	1.136
PCB 118L	2000	660.356	33		25-150	1.60	1.146
PCB 114L	2000	636.563	32		25-150	1.60	1.161
PCB 105L	2000	686.601	34		25-150	1.59	1.181
PCB 126L	2000	860.149	43		25-150	1.57	1.271
PCB 155L	2000	469.063	23	Y	25-150	1.24	0.802
PCB 167L	2000	778.446	39		25-150	1.34	1.071
PCBs 156L + 157L	4000	1778.028	44		25-150	1.28	1.098
PCB 169L	2000	994.270	50		25-150	1.27	1.175
PCB 188L	2000	298.668	15	Y	25-150	1.04	0.731
PCB 189L	2000	584.488	29		25-150	1.06	0.962
PCB 202L	2000	380.966	19	Y	25-150	0.88	0.831
PCB 205L	2000	807.990	40		25-150	0.88	1.009
PCB 208L	2000	677.813	34		25-150	0.77	0.953
PCB 206L	2000	858.176	43		25-150	0.79	1.040
PCB 209L	2000	1074.041	54		25-150	1.21	1.069
PCB 28L	2000	480.341	24	Y	30-135	1.05	0.933
PCB 111L	2000	705.252	35		30-135	1.58	1.078
PCB 178L	2000	789.184	39		30-135	1.02	1.010

Comments:

Columbia Analytical Services INC.

An Employee - Owned Company

Chain-of-Custody

19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

Document Number: 2341

Analysis Request and Chain of Custody Record

Project Name: TDY	Project Number: SC0307	Page 1 of 1
Samplers Names: CL	Project Contact: Brian Hitchens	
Laboratory Name: Columbia Analytical	Lab Contact: Jane Freemyer	White copy: to accompany samples
Lab Address: 19400 Park Row Ste 320 Houston TX. 77084	Lab Phone: 281-994-2957	Yellow copy: field copy
	Carrier/Waybill No.	

Required Analyses

Sample Name	Time (was Date)	Date (was Time)	Sample Type	VOCs by ____	Metals	SVOCs by 8270	High Res PCB Analyses							Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative			1 Liter Amber								
				Number of Containers			2								
54SEEP-185-CB63	13:30	2/6/08	H_2O				2							Remove solids from sample prior to extraction. AE 2/8/08	

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Special Instructions:

Turn-around Time: ☒ Normal ☐ Rush: _____

1. Relinquished by (Signiture/Affiliation)	Date 2/7/08 Time 10:45AM	1. Received by (Signiture/Affiliation)	Date Time
2. Relinquished by (Signiture/Affiliation)	Date Time	2. Received by (Signiture/Affiliation)	Date Time
3. Relinquished by (Signiture/Affiliation)	Date Time	3. Received by (Signiture/Affiliation)	Date 2/8/08 Time 10:20

Geosyntec consultants 10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

5°C

Columbia Analytical Services, Inc.
Cooler Receipt Form

Client/Project: Geosyntec Service Request: E800129

Received: 2/8/08 Opened (Date/Time): 2/8/08 10:20 By: [signature]

1. Samples were received via? *US Mail* (*Fedex*) *UPS* *DHL* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Other*_____ *NA*
3. Were custody seals present on coolers? Y (N) If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Is shipper's air-bill filed? NA (Y) N If not, record air bill number:_____
5. Temperature of cooler(s) upon receipt (°C): 5°C
6. If applicable, list Chain of Custody numbers: 2341
7. Were custody papers properly filled our (ink, signed, etc.)? NA (Y) N
8. Packing material used: *Inserts* (*Bubble Wrap*) (*Blue Ice*) (*Wet Ice*) *Sleeves* *Other*_____
9. Were the correct types of bottles used for the tests indicated? (Y) N
   Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* (Y) N

Sample ID	Bottle Count	Bottle Type	Out of Temp	Broken	Initials

10. Were all bottle labels complete (i.e. analysis, ID, etc.)? (Y) N
    Did all bottle labels and tags agree with custody papers? *Indicate in the table below.* (Y) N

Sample ID on Bottle	Sample ID on COC		Sample ID on Bottle	Sample ID on COC

11. Additional notes, discrepancies, and resolutions:_____

SAMPLE ACCEPTANCE POLICY

Custody Seals (desirable, mandatory if specified in SAP):

- ✓ On outside of cooler
- ✓ Seals intact, signed and dated

Chain-of-Custody documentation (mandatory):

- ✓ Properly filled out in ink & signed by the client
- ✓ Sign and date the coc for CAS/HOU upon cooler receipt
- ✓ Coc must list method number
- ✓ If no coc was submitted with the samples, complete a CAS/HOU coc for the client

Sample Integrity (mandatory):

- ✓ Sample containers must arrive in good condition (not broken)
- ✓ Sample IDs on the bottles must match the sample IDs on the coc
- ✓ The correct type of sample bottle must be used for the method requested
- ✓ The correct number of sample containers received must agree with the documentation on the coc
- ✓ The correct sample matrix must appear on the coc
- ✓ An appropriate sample volume or weight must be received

Temperature Preservatives (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at $4\pm2^{\circ}C$
- ✓ Tissue samples must be shipped and stored frozen, at $\leq -10^{\circ}C$
- ✓ Air samples can be shipped and stored at ambient temperature, $\sim 23^{\circ}C$
- ✓ The sample temperature must be recorded on the coc
- ✓ Notify a Project Chemist if PCB samples are outside the acceptance temperature – client must decide re: replacement sample submittal

Cooler Receipt Form, CRF (mandatory):

- ✓ Cooler receipt forms must be completed for each coc & SR#
- ✓ Sample integrity issues must be documented on the CRF
- ✓ A scan of the carrier and the airbill number must be recorded in LIMS

Sample Integrity Issues/Resolutions (mandatory):

- ✓ Sample integrity issues are documented on the CRF and given to the Project Chemist for resolution with the client
- ✓ Client resolution is documented in writing (i.e. email) and filed in the project folder(s)

Service Request Summary

Folder #: **E0800129**
Client Name: GeoSyntec Consultants
Project Name: PCB Congeners - TDY
Project Number: SC0307

Report To: Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road
Suite 200
San Diego, CA 92127
Phone Number: 858 674-6559
Cell Number:
Fax Number:
E-mail: bhitchens@geosyntec.com

Project Chemist: Jane Freemyer
Originating Lab: HOUSTON
Logged By: AENNIS
Date Received: 02/08/2008
Internal Due Date: 02/26/2008
QAPP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: N
Report to MDL?: Y
P.O. Number: 09/21/07
EDD: BASIC_WQC_CASNo

2 - 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserv

Location: E-Disposed, SMO

CAS Samp No.	Client Samp No.	Matrix	Collected		SVM Cl Biphen Cong/ 1668A
E0800129-001	54SEEP-18S-CB63	Water	2/6/08	1330	IV

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Folder Comments:

Remove solids prior to extraction

Report Total Homologs and Total PCBs only.

Preparation Information Benchsheet

Prep Run#: 62438
Team: Semivoa GCMS

Prep WorkFlow: OrgExtAq(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 02/11/2008 03:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Sample Description
1	EQ0800073-01	MB		1668A/Cl Biphen Cong		Liquid	1000mL	
2	EQ0800073-02	LCS		1668A/Cl Biphen Cong		Liquid	1000mL	
3	EQ0800073-03	DLCS		1668A/Cl Biphen Cong		Liquid	1000mL	
4	E0800089-001RE	MWCL-8	.02	1668A/Cl Biphen Cong		Water	1060mL	Yellow/orange liquid
5	E0800129-001	54SEEP-18S-CB63	.01	1668A/Cl Biphen Cong		Water	1100mL	Colorless, clear liquid

Spiking Solutions

Name: 1668A Working Matrix Standard | Inventory ID 3349 | Logbook Ref: B1-91-2 | Expires On: 01/27/2018

EQ0800073-02 1,000.00uL EQ0800073-03 1,000.00uL

Name: 1668A Labeled Working Standard | Inventory ID 3499 | Logbook Ref: B1-94-2 | Expires On: 02/10/2018

E0800089-001 1,000.00uL E0800129-001 1,000.00uL EQ0800073-01 1,000.00uL EQ0800073-02 1,000.00uL EQ0800073-03 1,000.00uL

28 Oct 31

Name: 1668A Clean Up Working Standard | Inventory ID 3502 | Logbook Ref: B1-93-4 | Expires On: 02/10/2018 28

E0800089-001 100.00uL E0800129-001 100.00uL EQ0800073-01 100.00uL EQ0800073-02 100.00uL EQ0800073-03 100.00uL

Preparation Materials

Silica Gel Reagent Grade	C2-6-004 (3305)	Glass Wool	C2-1-004 (3060)	Acetone 99.5% Minimum	C1-124-004 (3063)
Nonane (n-Nonane) 99%	C2-4-003 (3304)	Sodium Sulfate Anhydrous Reage	C2-6-005 (3307)	Dichloromethane (Methylene Chl	C2-8-001 (3354)
Toluene 99.9% Minimum	C2-7-007 (3359)	Ethyl Acetate 99.9% Minimum	C2-1-005 (3059)	Hexane (n-Hexane) 98.5% Minin	C2-7-006 (3356)
Sulfuric Acid Reagent Grade	C2-7-005 (3357)				

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/11/08 15:00	Started:	2/12/08 08:00	Started:	2/12/08 14:00	Started:	2/14/08 08:00
Finished:	2/11/08 17:00	Finished:	2/12/08 09:00	Finished:	2/12/08 16:00	Finished:	2/14/08 08:45
By:	ABIDDLE	By:	ABIDDLE	By:	ABIDDLE	By:	ABIDDLE

Reviewed By: _____ Date: 3/7/08

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

5090 Caterpillar Road Redding, California 96003 (530) 244-5227 (530) 244-4109 fax

Columbia Analytical Services INC.
An Employee - Owned Company

June 29, 2006 Service Request No: D0600697

Brian Hitchens
GeoSyntec Consultants
11305 Rancho Bernardo Road
Suite 101
San Diego, CA 92127

RE: TDY/SC0307

Dear Brian:

Enclosed are the results of the sample(s) submitted to our laboratory on June 16, 2006. For your reference, these analyses have been assigned our service request number D0600697.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is . You may also contact me via email at EWilson@canoga.caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Ed Wilson
Project Chemist

TABLE OF CONTENTS

CAS Service Request: D0600697
CAS Tier Level: IV

Current CAS Redding Accreditation Programs

Federal and National Programs

- U.S Air Force, Air Force Center for Environmental Excellence (AFCEE)
  Approved laboratory for Wastewater and Hazardous Waste
- U.S. Army Corps of Engineers – MRD, HTRW Mandatory Center of Expertise
  Validated for Wastewater and Hazardous Waste
- Department of the Navy, Naval Facilities Engineering Service Center (NFESC)
  Approved laboratory for Wastewater and Hazardous Waste

State and Local Programs

- State of Alaska, Department of Environmental Conservation
  Approved Laboratory for Contaminated Sites
  Lab ID UST-001
- State of Arizona, Department of Health Services, Office of Laboratory Licensure
  Approved Laboratory for Drinking Water, Wastewater, and Hazardous Waste
  Lab ID AZ0604
- State of California, Department of Health Services, National Environmental Laboratory Accreditation Program **(NELAP)**
  Approved Laboratory for Drinking Water, Wastewater and Hazardous Waste
  Lab ID 01105CA
  - Los Angeles County Sanitation District
    Approved Laboratory for Wastewater
    Lab ID 10243
- State of California, Department of Health Services, Environmental Laboratory Accreditation Program (ELAP)
  Approved Laboratory for Microbiology of Drinking Water and Wastewater
  Lab ID 2635
- State of Florida, Department of Health, Bureau of Laboratories **(NELAP)**
  Approved Environmental Testing Laboratory for Wastewater and Hazardous Waste
  Lab ID E87203
- State of Kansas, Department of Health and Environment **(NELAP)**
  Approved Laboratory for Hazardous Waste
  Lab ID E-10323
- State of Massachusetts, Department of Environmental Protection
  Approved laboratory for Drinking Water and Wastewater
  Lab ID M-CA025
- State of Oklahoma, Department of Environmental Quality
  Approved Laboratory for General Water Quality/Sludge Testing
  Lab ID 9952
- State of Oregon, Environmental Laboratory Accreditation Program **(ORELAP)**
  Approved Laboratory for Drinking Water, Wastewater, and Hazardous Waste
  Lab ID CA200004
- State of Utah, Department of Health, Bureau of Laboratory Improvement **(NELAP)**
  Approved Laboratory for Wastewater and Hazardous Waste
  Lab ID QUAL1
- State of Washington, Department of Ecology
  Approved Laboratory for Wastewater and Hazardous Waste
  Lab ID C1234
- State of Wisconsin, Department of Natural Resources
  Approved Laboratory for Wastewater and Hazardous Waste
  Lab ID 999767340

Data Qualifiers for Organic Analyses

A -- This qualifier indicates that a Tentatively Identified Compound (TIC) is a suspected aldol-condensation product.

B -- This qualifier is used when the analyte is found in the associated blank as well as the sample, indicating possible blank contamination. The data user should carefully evaluate the qualified analyte and the reported concentrations.

C -- This qualifier indicates the presence of this compound has been confirmed by the GC/MS analysis.

D -- This qualifier is used for all the analytes identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.

E -- This qualifier indicates that the value reported exceeds the linear calibration range for that analyte. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.

J -- Indicates an estimated value. This qualifier is used when the data indicates the presence of a target analyte below the reporting limit or the presence of a Tentatively Identified Compound (TIC).

N -- This qualifier indicates presumptive evidence of an analyte. This flag is only used for Tentatively Identified Compounds (TIC) where the identification is based on a mass spectral library research. It is applied to all TIC results. For generic characterization of a TIC, such as a chlorinated hydrocarbon, the "N" qualifier is not used.

P -- This qualifier is used for target analytes when there is a greater than 40% difference for detected concentrations between the two columns or detectors. The concentration value is reported on Form I and flagged with a "P".

U -- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

DL -- Diluted reanalysis. "DL" indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. A digit to indicate multiple dilutions of the sample or extract may follow the "DL" suffix. The results of more than one diluted reanalysis may be reported.

MS -- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).

MSD -- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).

R -- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. It may be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE -- Re-extraction and reanalysis. The sample was re-extracted and reanalyzed. It may be followed by a digit to indicate multiple re-extracted analysis of the same sample at the same dilution.

Data Qualifiers for Metals and Wet Chemistry Analyses

B or **J**-- The reported value obtained was less than the MRL/CRDL, but greater than or equal to the MDL/IDL.

U -- The value was less than the MDL/IDL or was not detected.

E -- The reported value is estimate because of interference.

N -- Spiked sample recovery not within control limits.

ND -- Not detected at or above the MRL/CRDL.

* -- Duplicate analysis not within control limits.

Client: GeoSyntec Consultants
Project: TDY/SC0307

Service Request: D0600697

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
D0600697-001	OUTFALL-54	06/15/06	06:30
D0600697-002	CB63-30W	06/15/06	06:45
D0600697-003	A-63E-30	06/15/06	07:05
D0600697-004	CB63-264	06/15/06	07:32
D0600697-005	CB63-18	06/15/06	08:46
D0600697-006	QCTB	06/15/06	09:47

CASE NARRATIVE

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	GeoSyntec Consultants	**Service Request No.:**	D0600697
Project:	TDY	**Date Received:**	June 16, 2006
Sample Matrix:	Soil and Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV validation deliverables.

Sample Receipt

Six water and soil samples were received for analysis at Columbia Analytical Services on June 16, 2006.

Limited soil was received for A-63-30. The sample was prioritized for PCB analysis, and the Particle Size analysis was not performed. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Dissolved Metals

No exceptions were noted during this analysis.

PCB Aroclors by EPA Method 8082

Continuing Calibration Verification Exceptions:
The primary evaluation criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) C0627007: Aroclor 1016. The sample associated with this CCV was analyzed at a dilution for Aroclor 1260 only. Aroclor 1260 met all quality control criteria. No further corrective action was required.

Elevated Method Reporting Limits:
The reporting limit is elevated for analytes in sample A63E-30. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. Clean-up of the extract was performed within the scope of the method, but the sample was unable to be separated from the sulfuric acid portion. A dilution was performed in order to be able to perform a sample clean-up. Sample CB63-18 required dilution due to the presence of elevated levels of Aroclor 1260. The reporting limits are adjusted to reflect the dilution.

Batch QC was run along with sample A63E-30. These results have been provided for informational purposes only. The Method Blank and Laboratory Control Samples were within control criteria. No anomalies were encountered during this analysis.

Volatile Organic Compounds by EPA Method 8260B

Lab Control Sample Exceptions:
The lower control criterion was exceeded for the following analytes in Laboratory Control Sample Duplicate (M0619W01LCSD): Acetone and Methylene chloride. The error associated with reduced recovery equates to a low bias; thus, a reporting limit standard was analyzed prior to sample analysis to confirm detection of these compounds at the reporting limit.

Approved by: _____ **Date:** 6/29/06

Relative Percent Difference Exceptions:
The Relative Percent Difference (RPD) for Acetone in the Laboratory Control Sample and Laboratory Control Sample Duplicate (M0619W01LCS/LCSD) was outside control criteria. No corrective action was appropriate.

Semivolatile Organic Compounds by EPA Method 8270C

Lab Control Sample Exception:
The current upper control criterion was exceeded for 3,3'-Dichlorobenzidine in Duplicate Laboratory Control Sample (DLCS) LWG0600612-2. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Relative Percent Difference (RPD) Ecxeptions:
The relative percent different (RPD) for the several analytes in the replicate LCS analyses (LWG0600612-1 and LWG0600612-2) was outside control criteria. The high RPD can be attributed to an identified problem with the LCS that did not have an impact on the associated samples. The spike recoveries for those several analytes were lower but within the control criteria in LCS sample. The quality of the sample data has not been significantly affected. No further corrective action was taken

Approved by: _____ **Date:** 6/29/06

CHAIN OF CUSTODY DOCUMENTATION

Document Number: 1955

Analysis Request and Chain of Custody Record

[redacted]

White copy: to accompany samples

Yellow copy: field copy

Project Name	Project Number
TDY	SC0307
Samplers Names: R. RODRIGUEZ (NRC), R. RUBALCAVA	Project Contact: B. HITCHENS
Laboratory Name: COLUMBIA	Lab Contact: E. WILSON
Lab Address: CANOGA PARK	Lab Phone: 818-316-0907
	Carrier/Waybill No.: lab p.ch up

Required Analyses

VOCs by 8260	Metals TITLE 22	SVOCs by 8270	PCBs	Cr 6+					

Bottle Type and Volume/Preservative

3 VOA HCl	500 mL P –	1L AMBER –	1L AMBER –	500 mL P –					

Number of Containers

Sample Name	Date	Time	Sample Type	Comments	Lab Use Only: Condition of Bottles
OUTFALL-54	6/15/06	6:30	H_2O	3 1 1 1 1	*Soil Sample
CB63-30W	6/15/06	6:45	H_2O	3 1	collected in 8oz
A-63E-30 *	6/15/06	7:05	Soil	1	Jar
CB63-264	6/15/06	7:32	H_2O	3 1 1	
CB63-18	6/15/06	8:46	H_2O	3 1 1	
QCTB	6/15/06	9:47	H_2O	2	

Special Instructions: Metals will need to be filtered & preserved upon arrival.

Turn-around Time: 72 HR

~~Normal~~ X Rush:

1. Relinquished by (Signature/Affiliation): GeoSyntec	Date: 6/15/06 Time: 1130	1. Received by (Signature/Affiliation): CAS	Date: 6/15/06 Time: 1130
2. Relinquished by (Signature/Affiliation):	Date: Time:	2. Received by (Signature/Affiliation): L. Gordon CAS	Date: 6/16/06 Time: 0930
3. Relinquished by (Signature/Affiliation):	Date: Time:	3. Received by (Signature/Affiliation):	Date: Time:

Columbia Analytical Services
5090 Caterpillar Rd.
Redding, CA 96003
530-244-5227 phone
530-244-4109 fax

CHAIN of CUSTODY

Page ___ of ___

Client: CAS

Project:

Project Manager: Ed Wilson

Telephone No.: 530-244-5227

Fax No.: 530-244-4109

Method of Shipment:

Special Detection Limit/Reporting

Please report PQL/MDL

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Matrix: Water	Matrix: Air	Matrix: Other	Prsv.: Yes	Prsv.: No	Sampling Date	Sampling Time	Hexavalent Chromium EPA 218.8	HOLD (see remarks)	Turn Around Time: Standard
OUTFALL - 5Y		1		X				X	6/15/06	0630	X		

Special QA/QC

Tier IV

Sub-contract:

To: Calscience

Cr6+ - 24 hr ht

REMARKS

PO# D0600697

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinq. by sampler (Sign & Print Name) NIKOLAI BUENAVENTA	Date 6/15/06	Time 1508	Received by (Sign & Print Name)
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory

Date: 6.15.06 Time: 1508

Lab Work No.

Columbia Analytical Services inc.
An Employee-Owned Company

5090 Caterpillar Road
Redding, CA 96003
Phone: (530) 244-5262

[redacted]

COOLER RECEIPT FORM

Project/Client: TDY / Geosyntec Bat[redacted]

1. Cooler(s)/Sample(s) received on: 6/16/06 Shipped via: GSO
   Shipping Bill # (s): 104279874 # of Coolers/Packages 1
2. Radiological Screening by: YS (Acceptable) Rejected
3. Custody seals on outside of cooler: YES (NO) N/A
   If yes, where? Front_____ Rear_____ Lt Side_____ Rt Side_____
   Seals intact: YES (NO)

COOLER/SAMPLE PROCESSING

4. Sample Processing/Tagging by: Napham
5. Cooler(s)/Sample(s) Temp's: _____ _____ _____ _____ _____
   (or)
   Temp. Blank (if included): 2°C _____ _____ _____ _____
6. Type of packing material (circle): (Ice) Blue Ice Bubble Wrap (Bubble Bags) (Zip Locks) Webbing
   Other:_____
7. Custody papers properly filled out (ink, signed, dated, released, etc.)? (YES) NO
8. Containers arrived in good condition (not broken, leaking, etc.)? (YES) NO
9. Samples received with adequate holding time remaining to conduct analysis? YES (NO)
10. Container labels complete (i.e. analysis, preservation, date/time, etc.)? (YES) NO
11. Container labels and tags agree with custody papers? YES (NO)
12. Correct types of containers used for the tests indicated? (YES) NO
    a.) Adequate sample received? If not, note on Exception Report. YES (NO)
13. Containers supplied by: (CAS) Other
14. Preserved containers received with the appropriate preservative? (YES) NO N/A
    pH: HCl pres per doc (or) See pH log.
15. VOA vials free of air bubbles? (YES) NO N/A
16. Trip Blank preparation date: 6/15/06 CAS (Other) N/A
17. Volatile Soil samples: Encores or Plugs in Vials
    Freezer or GC/MS Date:_____ Time:_____ (N/A)

See Exception Report for discrepancies.

Rev. 8/18/2004/ds

Columbia Analytical Services INC.
An Employee - Owned Company

5090 Caterpillar Road
Redding, CA 96003
530-244-5227
FAX 530-244-4109

BATCH:
CLIENT:
PROJECT: [redacted]

SAMPLE RECEIPT EXCEPTION REPORT

Issue Type Legend	
	1) Holding Time
	2) Temperature
	3) COC/Label
	4) Container
	5) Other

SMO Technician / Date: NCPham 06/16/06
Project Chemist / Date:
Client Contact(s):

Item #	Issue Type	DESCRIPTION
1	1	Missing 24 hr holding time for metals filter and HexCr for sample OUTFALL-54 Dropped off at CalScience by CAS Courier
2	A	limited sample for A-63E-30 ✓ less than 1/4 full (8 oz jar); needed for ~~PCB~~ PCBs and % moisture
3	A	missing a container for OUTFall-54 HexCr analysis; sent directly to Cal Science. NOT MISSING

Corrective Actions Taken

1	Drop Particle Size on Soil Sample DN 6/19/06

Metals

Sample Results

COLUMBIA ANALYTICAL SERVICES/REDDING

Analytical Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: 06/15/2006
Date Received: 06/16/2006

Trace Metals

Sample Name: OUTFALL-54
Lab Code: D0600697-001
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MDL	PQL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	Dissolved	SW6010	11.0	45.0	1	06/19/2006	06/20/2006	20.0	B
Arsenic	Dissolved	SW6020	0.05	0.50	1	06/19/2006	06/22/2006	61	
Barium	Dissolved	SW6010	5.0	25.0	1	06/19/2006	06/20/2006	43.0	
Beryllium	Dissolved	SW6010	1.0	5.0	1	06/19/2006	06/20/2006	ND	U
Cadmium	Dissolved	SW6010	1.0	5.0	1	06/19/2006	06/20/2006	ND	U
Chromium	Dissolved	SW6010	5.0	10.0	1	06/19/2006	06/20/2006	ND	U
Cobalt	Dissolved	SW6010	5.0	15.0	1	06/19/2006	06/20/2006	9.3	B
Copper	Dissolved	SW6010	2.0	10.0	1	06/19/2006	06/20/2006	5.7	B
Lead	Dissolved	SW6010	18.0	50.0	1	06/19/2006	06/20/2006	ND	U
Mercury	Dissolved	SW7470	0.100	0.200	1	06/18/2006	06/19/2006	ND	U
Molybdenum	Dissolved	SW6010	3.0	15.0	1	06/19/2006	06/20/2006	12.0	B
Nickel	Dissolved	SW6010	8.0	20.0	1	06/19/2006	06/20/2006	ND	U
Selenium	Dissolved	SW6020	0.14	1.0	1	06/19/2006	06/22/2006	60	
Silver	Dissolved	SW6010	2.0	10.0	1	06/19/2006	06/20/2006	ND	U
Thallium	Dissolved	SW6020	0.010	0.10	1	06/19/2006	06/22/2006	0.024	B
Vanadium	Dissolved	SW6010	2.0	10.0	1	06/19/2006	06/20/2006	5.5	B
Zinc	Dissolved	SW6010	1.0	20.0	1	06/19/2006	06/20/2006	ND	U

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QA Report

Client:	GeoSyntec Consultants	**Service Request:**	D0600697
Project:	TDY	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Trace Metals

Sample Name: Method Blank
Lab Code: PBW-0618
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MDL	PQL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Mercury	Dissolved	SW7470	0.10	0.20	1	06/18/2006	06/19/2006	ND	U

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QA Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: NA
Date Received: NA

Trace Metals

Sample Name: Method Blank
Lab Code: PBW-0619
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MDL	PQL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	Dissolved	SW6010	11.0	45.0	1	06/19/2006	06/20/2006	ND	U
Arsenic	Dissolved	SW6020	0.050	0.500	1	06/19/2006	06/22/2006	ND	U
Barium	Dissolved	SW6010	5.0	25.0	1	06/19/2006	06/20/2006	ND	U
Beryllium	Dissolved	SW6010	1.0	5.0	1	06/19/2006	06/20/2006	ND	U
Cadmium	Dissolved	SW6010	1.0	5.0	1	06/19/2006	06/20/2006	ND	U
Chromium	Dissolved	SW6010	5.0	10.0	1	06/19/2006	06/20/2006	ND	U
Cobalt	Dissolved	SW6010	5.0	15.0	1	06/19/2006	06/20/2006	ND	U
Copper	Dissolved	SW6010	2.0	10.0	1	06/19/2006	06/20/2006	ND	U
Lead	Dissolved	SW6010	18.0	50.0	1	06/19/2006	06/20/2006	ND	U
Molybdenum	Dissolved	SW6010	3.0	15.0	1	06/19/2006	06/20/2006	ND	U
Nickel	Dissolved	SW6010	8.0	20.0	1	06/19/2006	06/20/2006	ND	U
Selenium	Dissolved	SW6020	0.140	1.000	1	06/19/2006	06/22/2006	ND	U
Silver	Dissolved	SW6010	2.0	10.0	1	06/19/2006	06/20/2006	ND	U
Thallium	Dissolved	SW6020	0.010	0.100	1	06/19/2006	06/22/2006	ND	U
Vanadium	Dissolved	SW6010	2.0	10.0	1	06/19/2006	06/20/2006	ND	U
Zinc	Dissolved	SW6010	1.0	20.0	1	06/19/2006	06/20/2006	7.6	B

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client:	GeoSyntec Consultants	**Service Request:**	D0600697
Project:	TDY	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	06/18/2006
		Date Analyzed:	06/19/2006

Trace Metals

LCS Sample Name:	Lab Control Sample	DLCS Sample	Lab Control Sample Duplicate
Lab Code:	LCSW-0618 / LCSDW-0618	Units:	ug/L (ppb)
Test Notes:		Basis:	NA

Analyte	Prep Method	Analysis Method	PQL	Spike Level	Spike Result LCS	Spike Result DLCS	Spike % Rec LCS	Spike % Rec DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Mercury	Dissolved	SW7470	0.20	2.00	2.16	2.13	108	106	87-117	1	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: NA
Date Received: NA
Date Extracted: 06/19/2006
Date Analyzed: 06/20/2006

Trace Metals

LCS Sample Name: Lab Control Sample
Lab Code: LCSW-0619 / LCSDW-0619
Test Notes:

DLCS Sample: Lab Control Sample Duplicate
Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Spike Level	Spike Result LCS	Spike Result DLCS	Spike % Rec LCS	Spike % Rec DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Antimony	Dissolved	SW6010	45.0	1000.0	1110.0	1110.0	111	111	80-120	0	
Arsenic	Dissolved	SW6020	0.50	20.0	19.20	18.50	96	92	86-108	4	
Barium	Dissolved	SW6010	25.0	1000.0	1110.0	1120.0	111	112	89-120	1	
Beryllium	Dissolved	SW6010	5.0	1000.0	1110.0	1110.0	111	111	87-120	0	
Cadmium	Dissolved	SW6010	5.0	1000.0	1130.0	1130.0	113	113	85-121	0	
Chromium	Dissolved	SW6010	10.0	500.0	577.0	576.0	115	115	89-120	0	
Cobalt	Dissolved	SW6010	15.0	1000.0	1130.0	1130.0	113	113	90-120	0	
Copper	Dissolved	SW6010	10.0	1000.0	1140.0	1140.0	114	114	88-120	0	
Lead	Dissolved	SW6010	50.0	1000.0	1150.0	1130.0	115	113	89-118	2	
Selenium	Dissolved	SW6020	1.00	100.0	89.30	88.80	89	89	80-110	1	
Molybdenum	Dissolved	SW6010	15.0	1000.0	1110.0	1120.0	111	112	87-120	1	
Nickel	Dissolved	SW6010	20.0	500.0	566.0	555.0	113	111	90-125	2	
Silver	Dissolved	SW6010	10.0	250.0	249.0	247.0	100	99	81-124	1	
Vanadium	Dissolved	SW6010	10.0	1000.0	1100.0	1100.0	110	110	90-119	0	
Zinc	Dissolved	SW6010	20.0	1000.0	1120.0	1130.0	112	113	88-122	1	
Thallium	Dissolved	SW6020	0.10	20.0	19.90	20.00	100	100	88-111	1	

QC Summary

METALS

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Initial Calibration Source: CPI

Continuing Calibration Source: CPI

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV1									
	Antimony	974	1000	97	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Barium	201	200	100	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Beryllium	198	200	99	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Cadmium	194	200	97	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Chromium	513	500	103	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Cobalt	206	200	103	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Copper	204	200	102	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Lead	1050	1000	105	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Molybdenum	509	500	102	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Nickel	498	500	100	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Vanadium	203	200	102	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
	Zinc	203	200	102	90.0 - 110.0	P	6/20/2006	09:00	062006TJA
ICV1									
	Silver	500	500	100	90.0 - 110.0	P	6/20/2006	09:04	062006TJA
CCV1									
	Antimony	1990	2000	100	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Barium	2040	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Beryllium	2050	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Cadmium	2040	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Chromium	2070	2000	104	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Cobalt	2070	2000	104	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Copper	2040	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Lead	2080	2000	104	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Molybdenum	2030	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Nickel	2020	2000	101	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Silver	777	800	97	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Vanadium	2050	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA
	Zinc	2050	2000	102	90.0 - 110.0	P	6/20/2006	10:08	062006TJA

METALS

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Initial Calibration Source: CPI

Continuing Calibration Source: CPI

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV2									
	Antimony	1990	2000	100	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Barium	2120	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Beryllium	2130	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Cadmium	2120	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Chromium	2170	2000	108	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Cobalt	2130	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Copper	2120	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Lead	2090	2000	104	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Molybdenum	2140	2000	107	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Nickel	2080	2000	104	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Silver	804	800	100	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Vanadium	2130	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
	Zinc	2110	2000	106	90.0 - 110.0	P	6/20/2006	14:42	062006TJA
CCV3									
	Antimony	1900	2000	95	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Barium	2000	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Beryllium	1990	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Cadmium	2000	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Chromium	2020	2000	101	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Cobalt	2000	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Copper	2010	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Lead	1990	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Molybdenum	2000	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Nickel	1950	2000	98	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Silver	763	800	95	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Vanadium	2000	2000	100	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
	Zinc	1980	2000	99	90.0 - 110.0	P	6/20/2006	15:49	062006TJA
ICV1									
	Mercury	5.0	5.0	100	80.0 - 120.0	CV	6/19/2006	17:15	V060619
CCV1									
	Mercury	4.4	4.0	110	80.0 - 120.0	CV	6/19/2006	18:41	V060619

METALS

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Initial Calibration Source: CPI

Continuing Calibration Source: CPI

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV2									
	Mercury	4.3	4.0	108	80.0 - 120.0	CV	6/19/2006	19:07	V060619
CCV3									
	Mercury	4.1	4.0	102	80.0 - 120.0	CV	6/19/2006	19:34	V060619
CCV4									
	Mercury	4.4	4.0	110	80.0 - 120.0	CV	6/19/2006	19:57	V060619

METALS

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Initial Calibration Source: IV

Continuing Calibration Source: IV

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV1									
	Arsenic	10.3	10.0	103	90.0 - 110.0	MS	6/22/2006	15:49	062206A
	Selenium	51.0	50.0	102	90.0 - 110.0	MS	6/22/2006	15:49	062206A
	Thallium	9.4	10.0	94	90.0 - 110.0	MS	6/22/2006	15:49	062206A
CCV1									
	Arsenic	19.9	20.0	100	90.0 - 110.0	MS	6/22/2006	16:33	062206A
	Selenium	102.0	100.0	102	90.0 - 110.0	MS	6/22/2006	16:33	062206A
	Thallium	19.3	20.0	96	90.0 - 110.0	MS	6/22/2006	16:33	062206A
CCV2									
	Arsenic	20.0	20.0	100	90.0 - 110.0	MS	6/22/2006	21:59	062206A
	Selenium	96.6	100.0	97	90.0 - 110.0	MS	6/22/2006	21:59	062206A
	Thallium	19.6	20.0	98	90.0 - 110.0	MS	6/22/2006	21:59	062206A
CCV3									
	Arsenic	20.1	20.0	100	90.0 - 110.0	MS	6/22/2006	22:31	062206A
	Selenium	95.8	100.0	96	90.0 - 110.0	MS	6/22/2006	22:31	062206A
	Thallium	19.3	20.0	96	90.0 - 110.0	MS	6/22/2006	22:31	062206A

METALS

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CRDL STANDARD FOR AA & ICP

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** _____ **SAS No.:** _____

AA CRDL Standard Source: _____

ICP CRDL Standard Source: CPI

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Advisory Limits (%R)	M	Analysis Date	Analysis Time	Run Number
RLS									
	Antimony	56	45	124	50 - 150	P	6/20/2006	09:09	062006TJA
	Beryllium	5	5	100	50 - 150	P	6/20/2006	09:09	062006TJA
	Cadmium	4	5	80	50 - 150	P	6/20/2006	09:09	062006TJA
	Chromium	15	10	150	50 - 150	P	6/20/2006	09:09	062006TJA
	Cobalt	19	15	127	50 - 150	P	6/20/2006	09:09	062006TJA
	Copper	11	10	110	50 - 150	P	6/20/2006	09:09	062006TJA
	Lead	53	50	106	50 - 150	P	6/20/2006	09:09	062006TJA
	Molybdenum	14	15	93	50 - 150	P	6/20/2006	09:09	062006TJA
	Nickel	18	20	90	50 - 150	P	6/20/2006	09:09	062006TJA
	Silver	11	10	110	50 - 150	P	6/20/2006	09:09	062006TJA
	Vanadium	11	10	110	50 - 150	P	6/20/2006	09:09	062006TJA
	Zinc	21	20	105	50 - 150	P	6/20/2006	09:09	062006TJA
RLS									
	Barium	28	25	112	50 - 150	P	6/20/2006	09:14	062006TJA

METALS

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CRDL STANDARD FOR AA & ICP

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: SAS No.:

AA CRDL Standard Source:

ICP CRDL Standard Source: Spex

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Advisory Limits (%R)	M	Analysis Date	Analysis Time	Run Number
RLS									
	Arsenic	0.49	0.5	98	50 - 150	MS	6/22/2006	16:11	062206A
	Selenium	1.10	1.0	110	50 - 150	MS	6/22/2006	16:11	062206A
	Thallium	0.09	0.1	90	50 - 150	MS	6/22/2006	16:11	062206A

METALS

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	MDL	PQL	M	Analysis Date	Analysis Time	Run
ICB1										
	Antimony	11.0	+/-45.0	U	11.0	45.0	P	6/20/2006	09:06	062006TJA
	Barium	5.0	+/-25.0	U	5.0	25.0	P	6/20/2006	09:06	062006TJA
	Beryllium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	09:06	062006TJA
	Cadmium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	09:06	062006TJA
	Chromium	5.0	+/-10.0	U	5.0	10.0	P	6/20/2006	09:06	062006TJA
	Cobalt	5.0	+/-15.0	U	5.0	15.0	P	6/20/2006	09:06	062006TJA
	Copper	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	09:06	062006TJA
	Lead	18.0	+/-50.0	U	18.0	50.0	P	6/20/2006	09:06	062006TJA
	Molybdenum	4.9	+/-15.0	B	3.0	15.0	P	6/20/2006	09:06	062006TJA
	Nickel	8.0	+/-20.0	U	8.0	20.0	P	6/20/2006	09:06	062006TJA
	Silver	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	09:06	062006TJA
	Vanadium	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	09:06	062006TJA
	Zinc	1.0	+/-20.0	U	1.0	20.0	P	6/20/2006	09:06	062006TJA
CCB1										
	Antimony	11.0	+/-45.0	U	11.0	45.0	P	6/20/2006	10:14	062006TJA
	Barium	5.0	+/-25.0	U	5.0	25.0	P	6/20/2006	10:14	062006TJA
	Beryllium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	10:14	062006TJA
	Cadmium	-1.2	+/-5.0	B	1.0	5.0	P	6/20/2006	10:14	062006TJA
	Chromium	5.0	+/-10.0	U	5.0	10.0	P	6/20/2006	10:14	062006TJA
	Cobalt	5.0	+/-15.0	U	5.0	15.0	P	6/20/2006	10:14	062006TJA
	Copper	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	10:14	062006TJA
	Lead	18.0	+/-50.0	U	18.0	50.0	P	6/20/2006	10:14	062006TJA
	Molybdenum	6.1	+/-15.0	B	3.0	15.0	P	6/20/2006	10:14	062006TJA
	Nickel	8.0	+/-20.0	U	8.0	20.0	P	6/20/2006	10:14	062006TJA
	Silver	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	10:14	062006TJA
	Vanadium	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	10:14	062006TJA
	Zinc	1.0	+/-20.0	U	1.0	20.0	P	6/20/2006	10:14	062006TJA

METALS

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	MDL	PQL	M	Analysis Date	Analysis Time	Run
CCB2										
	Antimony	11.0	+/-45.0	U	11.0	45.0	P	6/20/2006	14:48	062006TJA
	Barium	5.0	+/-25.0	U	5.0	25.0	P	6/20/2006	14:48	062006TJA
	Beryllium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	14:48	062006TJA
	Cadmium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	14:48	062006TJA
	Chromium	5.0	+/-10.0	U	5.0	10.0	P	6/20/2006	14:48	062006TJA
	Cobalt	5.0	+/-15.0	U	5.0	15.0	P	6/20/2006	14:48	062006TJA
	Copper	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	14:48	062006TJA
	Lead	18.0	+/-50.0	U	18.0	50.0	P	6/20/2006	14:48	062006TJA
	Molybdenum	4.9	+/-15.0	B	3.0	15.0	P	6/20/2006	14:48	062006TJA
	Nickel	8.0	+/-20.0	U	8.0	20.0	P	6/20/2006	14:48	062006TJA
	Silver	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	14:48	062006TJA
	Vanadium	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	14:48	062006TJA
	Zinc	6.8	+/-20.0	B	1.0	20.0	P	6/20/2006	14:48	062006TJA
CCB3										
	Antimony	11.0	+/-45.0	U	11.0	45.0	P	6/20/2006	15:53	062006TJA
	Barium	5.0	+/-25.0	U	5.0	25.0	P	6/20/2006	15:53	062006TJA
	Beryllium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	15:53	062006TJA
	Cadmium	1.0	+/-5.0	U	1.0	5.0	P	6/20/2006	15:53	062006TJA
	Chromium	5.0	+/-10.0	U	5.0	10.0	P	6/20/2006	15:53	062006TJA
	Cobalt	5.0	+/-15.0	U	5.0	15.0	P	6/20/2006	15:53	062006TJA
	Copper	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	15:53	062006TJA
	Lead	18.0	+/-50.0	U	18.0	50.0	P	6/20/2006	15:53	062006TJA
	Molybdenum	3.6	+/-15.0	B	3.0	15.0	P	6/20/2006	15:53	062006TJA
	Nickel	8.0	+/-20.0	U	8.0	20.0	P	6/20/2006	15:53	062006TJA
	Silver	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	15:53	062006TJA
	Vanadium	2.0	+/-10.0	U	2.0	10.0	P	6/20/2006	15:53	062006TJA
	Zinc	4.8	+/-20.0	B	1.0	20.0	P	6/20/2006	15:53	062006TJA
ICB1										
	Arsenic	0.05	+/-0.50	U	0.05	0.50	MS	6/22/2006	15:58	062206A
	Selenium	0.14	+/-1.00	U	0.14	1.00	MS	6/22/2006	15:58	062206A
	Thallium	0.01	+/-0.10	U	0.01	0.10	MS	6/22/2006	15:58	062206A

METALS

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	MDL	PQL	M	Analysis Date	Analysis Time	Run
CCB1										
	Arsenic	0.05	+/-0.50	U	0.05	0.50	MS	6/22/2006	16:41	062206A
	Selenium	0.14	+/-1.00	B	0.14	1.00	MS	6/22/2006	16:41	062206A
	Thallium	0.01	+/-0.10	U	0.01	0.10	MS	6/22/2006	16:41	062206A
CCB2										
	Arsenic	0.05	+/-0.50	U	0.05	0.50	MS	6/22/2006	22:07	062206A
	Selenium	0.14	+/-1.00	U	0.14	1.00	MS	6/22/2006	22:07	062206A
	Thallium	0.01	+/-0.10	U	0.01	0.10	MS	6/22/2006	22:07	062206A
CCB3										
	Arsenic	0.19	+/-0.50	B	0.05	0.50	MS	6/22/2006	22:39	062206A
	Selenium	0.24	+/-1.00	B	0.14	1.00	MS	6/22/2006	22:39	062206A
	Thallium	0.01	+/-0.10	U	0.01	0.10	MS	6/22/2006	22:39	062206A
ICB1										
	Mercury	0.10	+/-0.20	U	0.10	0.20	CV	6/19/2006	17:17	V060619
CCB1										
	Mercury	0.10	+/-0.20	U	0.10	0.20	CV	6/19/2006	18:43	V060619
CCB2										
	Mercury	0.10	+/-0.20	U	0.10	0.20	CV	6/19/2006	19:09	V060619
CCB3										
	Mercury	0.10	+/-0.20	U	0.10	0.20	CV	6/19/2006	19:36	V060619
CCB4										
	Mercury	0.10	+/-0.20	U	0.10	0.20	CV	6/19/2006	19:59	V060619

METALS

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INTERFERENCE CHECK SAMPLE

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

ICS Source: CPI **Instrument ID:** TJA61

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window	Analysis Date	Analysis Time	Run Number
ICS-A1								
	Antimony	21				6/20/2006	09:16	062006TJA
	Barium	2				6/20/2006	09:16	062006TJA
	Beryllium	0				6/20/2006	09:16	062006TJA
	Cadmium	3				6/20/2006	09:16	062006TJA
	Chromium	6				6/20/2006	09:16	062006TJA
	Cobalt	17				6/20/2006	09:16	062006TJA
	Copper	3				6/20/2006	09:16	062006TJA
	Lead	114				6/20/2006	09:16	062006TJA
	Molybdenum	9				6/20/2006	09:16	062006TJA
	Nickel	6				6/20/2006	09:16	062006TJA
	Silver	6				6/20/2006	09:16	062006TJA
	Vanadium	7				6/20/2006	09:16	062006TJA
	Zinc	7				6/20/2006	09:16	062006TJA
ICS-AB1								
	Antimony	2145	2000	107	80 - 120%	6/20/2006	09:19	062006TJA
	Barium	1019	1000	102	80 - 120%	6/20/2006	09:19	062006TJA
	Beryllium	1019	1000	102	80 - 120%	6/20/2006	09:19	062006TJA
	Cadmium	2057	2000	103	80 - 120%	6/20/2006	09:19	062006TJA
	Chromium	1002	1000	100	80 - 120%	6/20/2006	09:19	062006TJA
	Cobalt	993	1000	99	80 - 120%	6/20/2006	09:19	062006TJA
	Copper	1022	1000	102	80 - 120%	6/20/2006	09:19	062006TJA
	Lead	2097	2000	105	80 - 120%	6/20/2006	09:19	062006TJA
	Molybdenum	2049	2000	102	80 - 120%	6/20/2006	09:19	062006TJA
	Nickel	1891	2000	95	80 - 120%	6/20/2006	09:19	062006TJA
	Silver	1924	2000	96	80 - 120%	6/20/2006	09:19	062006TJA
	Vanadium	1033	1000	103	80 - 120%	6/20/2006	09:19	062006TJA
	Zinc	2043	2000	102	80 - 120%	6/20/2006	09:19	062006TJA

METALS

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INTERFERENCE CHECK SAMPLE

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

ICS Source: IV **Instrument ID:** ELAN 9000

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window	Analysis Date	Analysis Time	Run Number
ICSA								
	Arsenic	0.5				6/22/2006	16:18	062206A
	Selenium	0.1				6/22/2006	16:18	062206A
	Thallium	0.0				6/22/2006	16:18	062206A
ICSAB								
	Arsenic	20.3	20.0	102	80 - 120%	6/22/2006	16:24	062206A
	Selenium	97.4	100.0	97	80 - 120%	6/22/2006	16:24	062206A
	Thallium	19.7	20.0	98	80 - 120%	6/22/2006	16:24	062206A

METALS
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SAMPLE PREPARATION SUMMARY

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Method:** P

Case No.: _____ **SAS No.:** _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	ICPW1						
PBW	PBW	MB	WATER	6/19/06	50.0	50.0	
LCSW	LCSW	LCS	WATER	6/19/06	50.0	50.0	
LCSWD	LCSWD	LCSD	WATER	6/19/06	50.0	50.0	
D0600697-001	OUTFALL-54	SAM	WATER	6/19/06	50.0	50.0	

METALS
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SAMPLE PREPARATION SUMMARY

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Method:** MS

Case No.: _____ **SAS No.:** _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	ICPMSW1						
PBW	PBW	MB	WATER	6/19/06	50.0	50.0	
LCSW	LCSW	LCS	WATER	6/19/06	50.0	50.0	
LCSWD	LCSWD	LCSD	WATER	6/19/06	50.0	50.0	
D0600697-001	OUTFALL-54	SAM	WATER	6/19/06	50.0	50.0	

METALS
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SAMPLE PREPARATION SUMMARY

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Method:** CV

Case No.: _____ **SAS No.:** _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	CVAAW1						
LCSW	LCSW	LCS	WATER	6/18/06	20.0	20.0	
LCSWD	LCSWD	LCSD	WATER	6/18/06	20.0	20.0	
PBW	PBW	MB	WATER	6/18/06	20.0	20.0	
D0600697-001	OUTFALL-54	SAM	WATER	6/18/06	20.0	20.0	

METALS

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ANALYSIS RUN LOG

Client: GeoSyntec Consultants Contract: TDY

Lab Code: RDD Case No.: SAS No.: SDG No.: D0600697

Instrument ID Number: TJA61 Method: P Run Number: 062006TJA

Start Date: 6/20/2006 End Date: 6/20/2006

EPA Sample No.	D/F	Time	% R	Analytes																											
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN	
CB	1.00	0824			X		X	X	X		X	X	X		X							X			X	X		*
STD	1.00	0826			X		X	X	X		X	X	X		X										X	X		*
STD1	1.00	0829																				X									
CB	1.00	0843																	X												
STD	1.00	0845																	X												
ICV1	1.00	0900			X		X	X	X		X	X	X		X				X						X	X		*
ICV1	1.00	0904																				X									
ICB1	1.00	0906			X		X	X	X		X	X	X		X				X			X			X	X		*
RLS	1.00	0909			X			X	X		X	X	X		X				X			X			X	X		*
RLS	1.00	0914					X																								
ICS-A1	1.00	0916			X		X	X	X		X	X	X		X				X			X			X	X		*
ICS-AB1	1.00	0919			X		X	X	X		X	X	X		X				X			X			X	X		*
CCV1	1.00	1008			X		X	X	X		X	X	X		X				X			X			X	X		*
CCB1	1.00	1014			X		X	X	X		X	X	X		X				X			X			X	X		*
CCV2	1.00	1442			X		X	X	X		X	X	X		X				X			X			X	X		*
CCB2	1.00	1448			X		X	X	X		X	X	X		X				X			X			X	X		*
PBW	1.00	1501			X		X	X	X		X	X	X		X				X			X			X	X		*
LCSW	1.00	1505			X		X	X	X		X	X	X		X				X			X			X	X		*
LCSWD	1.00	1510			X		X	X	X		X	X	X		X				X			X			X	X		*
OUTFALL-54	1.00	1514			X		X	X	X		X	X	X		X				X			X			X	X		*
CCV3	1.00	1549			X		X	X	X		X	X	X		X				X			X			X	X		*
CCB3	1.00	1553			X		X	X	X		X	X	X		X				X			X			X	X		*

METALS

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ANALYSIS RUN LOG

Client: GeoSyntec Consultants Contract: TDY

Lab Code: RDD Case No.: SAS No.: SDG No.: D0600697

Instrument ID Number: TJA61 Method: P Run Number: D0600697

Start Date: 6/20/2006 End Date: 6/20/2006

EPA Sample No.	D/F	Time	% R	Analytes																								
				B	AU	LI	MO	OS	PD	P	PT	SI	S	SN	SR	TI	U	W	IN									
CB	1.00	08:24					X																					
STD	1.00	08:26					X																					
STD1	1.00	08:29																										
CB	1.00	08:43																										
STD	1.00	08:45																										
ICV1	1.00	09:00					X																					
ICV1	1.00	09:04																										
ICB1	1.00	09:06					X																					
RLS	1.00	09:09					X																					
RLS	1.00	09:14																										
ICS-A1	1.00	09:16					X																					
ICS-AB1	1.00	09:19					X																					
CCV1	1.00	10:08					X																					
CCB1	1.00	10:14					X																					
CCV2	1.00	14:42					X																					
CCB2	1.00	14:48					X																					
PBW	1.00	15:01					X																					
LCSW	1.00	15:05					X																					
LCSWD	1.00	15:10					X																					
OUTFALL-54	1.00	15:14					X																					
CCV3	1.00	15:49					X																					
CCB3	1.00	15:53					X																					

METALS
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ANALYSIS RUN LOG

Client: GeoSyntec Consultants Contract: TDY

Lab Code: RDD Case No.: SAS No.: SDG No.: D0600697

Instrument ID Number: ELAN 9000 Method: MS Run Number: 062206A

Start Date: 6/22/2006 End Date: 6/22/2006

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.00	1539				X															X			X			
Standard 1	1.00	1543				X															X			X			
ICV1	1.00	1549				X															X			X			
ICB1	1.00	1558				X															X			X			
RLS	1.00	1611				X															X			X			
ICSA	1.00	1618				X															X			X			
ICSAB	1.00	1624				X															X			X			
CCV1	1.00	1633				X															X			X			
CCB1	1.00	1641				X															X			X			
CCV2	1.00	2159				X															X			X			
CCB2	1.00	2207				X															X			X			
PBW	1.00	2214				X															X			X			
LCSW	1.00	2217				X															X			X			
LCSWD	1.00	2221				X															X			X			
OUTFALL-54	1.00	2224				X															X			X			
CCV3	1.00	2231				X															X			X			
CCB3	1.00	2239				X															X			X			

METALS
14
ANALYSIS RUN LOG

Client: GeoSyntec Consultants Contract: TDY

Lab Code: RDD Case No.: SAS No.: SDG No.: D0600697

Instrument ID Number: PE FIMS Method: CV Run Number: V060619

Start Date: 6/19/2006 End Date: 6/19/2006

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CALIB BLANK	1.00	1659																X								
STANDARD 1	1.00	1701																X								
STANDARD 2	1.00	1704																X								
STANDARD 3	1.00	1706																X								
STANDARD 4	1.00	1709																X								
STANDARD 5	1.00	1711																X								
ICV1	1.00	1715																X								
ICB1	1.00	1717																X								
CCV1	1.00	1841																X								
CCB1	1.00	1843																X								
LCSW	1.00	1850																X								
LCSWD	1.00	1853																X								
PBW	1.00	1904																X								
CCV2	1.00	1907																X								
CCB2	1.00	1909																X								
CCV3	1.00	1934																X								
CCB3	1.00	1936																X								
OUTFALL-54	1.00	1952																X								
CCV4	1.00	1957																X								
CCB4	1.00	1959																X								

Verification of Instrument Parameters

METALS
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METHOD DETECTION LIMITS

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Analyte	Mass	MDL ug/L	PQL ug/L
ELAN 9000			**Date:** 11/21/2005
Arsenic	75	0.05	0.50
Selenium	82	0.14	1.0
Thallium	205	0.01	0.10
PE FIMS			**Date:** 11/5/2005
Mercury	253.70	0.10	0.20
TJA61			**Date:** 8/2/2005
Antimony	206.83	11	45
Barium	493.41	5.0	25
Beryllium	313.04	1.0	5.0
Cadmium	226.50	1.0	5.0
Chromium	267.72	5.0	10
Cobalt	228.62	5.0	15
Copper	324.75	2.0	10
Lead	220.35	18	50
Molybdenum	202.03	3.0	15
Nickel	231.60	8.0	20
Silver	328.07	2.0	10
Vanadium	292.40	2.0	10
Zinc	213.86	1.0	20

METALS
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ICP INTERELEMENT CORRECTION FACTORS

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: _____ SAS No.: _____

Instrument ID: TJA61 Date: 1/26/2006

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0005100	0.0000000	-0.0001300	0.0000700	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.68	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.50	0.0000000	0.0000000	-0.0001600	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0005700	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	-0.0000400	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000200	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	271.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	-0.0020800	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	-0.0002300	0.0000100	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000400	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	-0.0009700	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	-0.0001100	0.0000000	0.0000000
Sodium	330.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0012000	0.0000000	0.0002700	-0.0000500	0.0000000
Tin	189.98	0.0000000	0.0000000	0.0000000	0.0001700	0.0000000
Vanadium	292.40	-0.0000300	0.0000000	-0.0004000	0.0000000	0.0000000
Zinc	213.85	0.0000000	0.0000000	-0.0000400	0.0000300	0.0000000

METALS
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ICP INTERELEMENT CORRECTION FACTORS

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: _____ SAS No.: _____

Instrument ID: TJA61 Date: 1/26/2006

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	B	Ba	Be	Cd
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0004600	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.68	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.50	0.0326900	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000800	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	271.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0001300	0.0000000	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0002900	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	-0.0014400	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	330.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0008800	0.0000000
Tin	189.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.85	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METALS
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ICP INTERELEMENT CORRECTION FACTORS

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: _____ SAS No.: _____

Instrument ID: TJA61 Date: 1/26/2006

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Co	Cr	Cu	Mn	Mo
Aluminum	308.22	-0.0009200	0.0000000	0.0000000	0.0014700	0.0130000
Antimony	206.84	-0.0011900	0.0139400	0.0000000	0.0000000	0.0104700
Arsenic	189.04	0.0000000	0.0075900	0.0000000	0.0000000	0.0039900
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.68	0.0016600	0.0000000	0.0000000	0.0000000	-0.0004500
Cadmium	226.50	0.0022100	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0001500	-0.0016400
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0005300
Iron	271.44	0.0000000	0.0000000	0.0000000	-0.0003100	0.0000000
Lead	220.35	0.0004400	-0.0019300	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0032200
Manganese	257.61	0.0000000	0.0001100	0.0000000	0.0000000	-0.0000600
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0002600	0.0000000	0.0000000	0.0000000	-0.0021900
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	-0.0032100	0.0000000	0.0000000	0.0000000	-0.0181500
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0001100	-0.0002500
Sodium	330.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0018800
Thallium	190.86	0.0059300	0.0000000	0.0000000	0.0010300	0.0059800
Tin	189.98	0.0000000	0.0000000	0.0000000	-0.0159500	-0.0005000
Vanadium	292.40	0.0000000	0.0002100	0.0000000	0.0000000	-0.0372200
Zinc	213.85	0.0000000	-0.0005800	0.0033500	0.0000000	-0.0031400

METALS
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: _____ SAS No.: _____

Instrument ID: TJA61 Date: 1/26/2006

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	-0.0052200	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.68	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.50	0.0000000	0.0006900	0.0000000	-0.0004700	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0002400	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	271.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	-0.0010100	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	-0.0001100	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	330.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0006000	0.0000000	0.0000000
Tin	189.98	0.0000000	0.0000000	-0.0001500	-0.0033600	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.85	0.0000000	0.0040100	0.0000000	-0.0011200	0.0000000

METALS
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: _____ SAS No.: _____

Instrument ID: TJA61 Date: 1/26/2006

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Si	Sn	Sr	Ti	Tl
Aluminum	308.22	0.0003100	0.0007000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0001000	0.0036200	0.0000000	0.0015800	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.68	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.50	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0025400	0.0833000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0017200	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0001700	0.0000000
Iron	271.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0005300
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	330.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Tin	189.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.85	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METALS
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: GeoSyntec Consultants SDG No.: D0600697

Contract: TDY Lab Code: RDD Case No.: _____ SAS No.: _____

Instrument ID: TJA61 Date: 1/26/2006

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: V	Zn	La		
Aluminum	308.22	0.0128500	0.0000000	0.0000000		
Antimony	206.84	0.0005500	-0.0010100	0.0000000		
Arsenic	189.04	0.0004100	0.0000000	0.0000000		
Barium	493.41	0.0000000	0.0000000	0.0000000		
Beryllium	313.04	0.0037000	0.0000000	0.0000000		
Boron	249.68	0.0000000	0.0000000	0.0000000		
Cadmium	226.50	0.0000000	0.0000000	0.0000000		
Calcium	317.93	0.0050600	0.0000000	0.0000000		
Chromium	267.72	0.0003100	0.0000000	0.0000000		
Cobalt	228.62	0.0000000	0.0000000	0.0000000		
Copper	324.75	0.0000000	0.0000000	0.0000000		
Iron	271.44	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	0.0000000	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Molybdenum	202.03	0.0000000	0.0000800	0.0000000		
Nickel	231.60	-0.0002200	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.03	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	0.0000000	0.0000000		
Sodium	330.22	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0000000	0.0000000		
Tin	189.98	0.0000000	0.0000000	0.0000000		
Vanadium	292.40	0.0000000	0.0000000	0.0000000		
Zinc	213.85	0.0000000	0.0000000	0.0000000		

METALS

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LINEAR RANGES

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** _____ **SAS No.:** _____

Instrument ID: TJA61 **Date:** 1/27/2006

Analyte	Integration Time (sec)	LDR ug/L
Antimony	10.00	100000
Barium	10.00	100000
Beryllium	10.00	5000
Cadmium	10.00	100000
Chromium	10.00	100000
Cobalt	10.00	100000
Copper	10.00	100000
Lead	10.00	100000
Molybdenum	10.00	100000
Nickel	10.00	100000
Silver	10.00	10000
Vanadium	10.00	10000
Zinc	10.00	100000

METALS

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LINEAR RANGES

Client: GeoSyntec Consultants **SDG No.:** D0600697

Contract: TDY **Lab Code:** RDD **Case No.:** **SAS No.:**

Instrument ID: ELAN 9000 **Date:** 10/7/2005

Analyte	Integration Time (sec)	LDR ug/L
Arsenic	10.00	1000
Selenium	10.00	1000
Thallium	10.00	1000

Support Documentation

Method: 6010_06A Standard: CB
Run Time: 06/20/06 08:24:11

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Avge	.0650	-.0010	.1040	.0010	.0055	-.0015	.0000
SDev	.0226	.0042	.0156	.0000	.0007	.0021	.0000
%RSD	34.81	424.3	14.96	.0000	12.86	141.4	.0000
#1	.0810	-.0040	.0930	.0010	.0050	.0000	.0000
#2	.0490	.0020	.1150	.0010	.0060	-.0030	.0000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Avge	.0065	.0035	.0080	.0265	-.0120	.0040	.0000
SDev	.0035	.0050	.0000	.0035	.0099	.0028	.0000
%RSD	54.39	141.4	.0000	13.34	82.50	70.71	.0000
#1	.0040	.0000	.0080	.0290	-.0190	.0020	.0000
#2	.0090	.0070	.0080	.0240	-.0050	.0060	.0000

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Avge	.0020	-.0010	-.2655	.0040	.0110	.0065	.2260
SDev	.0014	.0028	.0021	.0085	.0014	.0064	.0028
%RSD	70.71	282.8	.7990	212.1	12.86	97.91	1.252
#1	.0010	.0010	-.2640	.0100	.0100	.0020	.2240
#2	.0030	-.0030	-.2670	-.0020	.0120	.0110	.2280

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Avge	.0025	.0000	.0005	.1065	.0000	-.0015	.0010
SDev	.0007	.0000	.0021	.0092	.0014	.0092	.0000
%RSD	28.28	.0000	424.3	8.631	.0000	612.8	.0000
#1	.0030	.0000	.0020	.1130	.0010	.0050	.0010
#2	.0020	.0000	-.0010	.1000	-.0010	-.0080	.0010

Elem	Li6707	HardC
Avge	.0010	.0000
SDev	.0014	.0000
%RSD	141.4	.0000
#1	.0000	.0000
#2	.0020	.0000

Method: 6010_06A Standard: STD
Run Time: 06/20/06 08:26:23

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Avge	40.93	1.866	3.312	14.29	16.94	15.26	14.27
SDev	.71	.031	.074	.27	.32	.22	.25
%RSD	1.731	1.667	2.220	1.900	1.895	1.469	1.744
#1	40.43	1.844	3.260	14.10	16.71	15.10	14.09
#2	41.43	1.888	3.364	14.48	17.17	15.41	14.44

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Avge	20.30	16.16	8.292	335.8	3.780	102.9	13.24
SDev	.37	.29	.161	6.3	.050	1.7	.23
%RSD	1.801	1.777	1.936	1.866	1.328	1.641	1.757
#1	20.04	15.95	8.179	331.4	3.745	101.7	13.08
#2	20.56	16.36	8.406	340.2	3.816	104.1	13.41

Elem	Mo2020	Ni2316	K_7664	Se1960	Na5895	Tl1908	V_2924
Avge	4.118	12.43	2.205	1.573	38.48	3.268	9.010
SDev	.086	.17	.039	.047	.64	.044	.136
%RSD	2.077	1.343	1.764	3.011	1.671	1.342	1.515
#1	4.058	12.31	2.177	1.540	38.02	3.237	8.913
#2	4.179	12.55	2.232	1.607	38.93	3.299	9.106

Elem	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215	HardC
Avge	8.887	4.877	30.77	8.413	3.951	13.35	14.27
SDev	.148	.084	.59	.172	.088	.25	.25
%RSD	1.671	1.725	1.923	2.043	2.237	1.860	1.744
#1	8.782	4.818	30.35	8.291	3.889	13.17	14.09
#2	8.992	4.937	31.19	8.534	4.014	13.52	14.44

Method: 6010_06A Standard: STD1
Run Time: 06/20/06 08:29:34

Elem	Ag3280
Avge	3.589
SDev	.001
%RSD	.0197
#1	3.588
#2	3.589

Method: 6010_06A Sample Name: ICV Operator: EG
Run Time: 06/20/06 08:33:06
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.041	1.024	.9941	.2080	.2083	.2013	3.159
SDev	.016	.015	.0089	.0017	.0013	.0004	.035
%RSD	.7807	1.499	.8941	.8326	.6026	.2116	1.099
#1	2.029	1.013	.9878	.2068	.2074	.2010	3.135
#2	2.052	1.035	1.000	.2093	.2092	.2016	3.184
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	1.000	1.000	.2000	.2000	.2000	3.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5352	.2143	.2108	3.231	1.057	3.194	.2102
SDev	.0023	.0022	.0004	.015	.022	.017	.0013
%RSD	.4239	1.021	.2012	.4693	2.099	.5376	.6333
#1	.5336	.2127	.2105	3.220	1.042	3.181	.2092
#2	.5368	.2158	.2111	3.242	1.073	3.206	.2111
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.2000	.2000	3.000	1.000	3.000	.2000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5226	Q.5512	12.22	.9580	.0768	4.062	1.063
SDev	.0052	.0082	.34	.0152	.0012	.017	.036
%RSD	.9869	1.492	2.812	1.589	1.548	.4075	3.349
#1	.5190	.5454	11.97	.9472	.0759	4.074	1.038
#2	.5263	Q.5570	12.46	.9687	.0776	4.051	1.088
Errors	QC Pass	QC Fail	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass
Value	.5000	.5000	12.00	1.000		4.000	1.000
Range	10.00	10.00	10.00	10.00		10.00	10.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2126	.2128	1.037	Q2.228	.2065	1.063	.5167
SDev	.0006	.0024	.013	.021	.0017	.028	.0016
%RSD	.2695	1.124	1.260	.9198	.8139	2.654	.3077
#1	.2122	.2111	1.028	Q2.214	.2054	1.043	.5155
#2.	.2130	.2145	1.046	Q2.243	.2077	1.083	.5178
Errors	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass
Value	.2000	.2000	1.000	2.000	.2000	1.000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Li6707	HardC

Units	ppm	ppm
Avge	Q.0774	27.20
SDev	.0018	.22
%RSD	2.318	.8265
#1	Q.0762	27.04
#2	Q.0787	27.36
Errors	QC Fail	NOCHECK
Value	.2000	
Range	10.00	

Method: 6010_06A Standard: CB
Run Time: 06/20/06 08:43:57

Elem	Ni2316
Avge	.0025
SDev	.0035
%RSD	141.4
#1	.0050
#2	.0000

Method: 6010_06A Standard: STD
Run Time: 06/20/06 08:45:02

Elem	Ni2316
Avge	12.76
SDev	.18
%RSD	1.429
#1	12.64
#2	12.89

Method: 6010_06A Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ni2316	231.604	STD	CB	.391150	-.000978	06/20/06 08:45:02

Method: 6010_06A Sample Name: ICV Operator: EG
Run Time: 06/20/06 09:00:59
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.963	.9739	.9746	.2010	.1979	.1940	3.022
SDev	.013	.0135	.0056	.0003	.0004	.0003	.000
%RSD	.6728	1.389	.5745	.1231	.2101	.1546	.0007
#1	1.972	.9643	.9707	.2012	.1982	.1938	3.022
#2	1.954	.9834	.9786	.2009	.1977	.1942	3.022
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	1.000	1.000	.2000	.2000	.2000	3.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5133	.2059	.2041	3.104	1.053	3.054	.2019
SDev	.0002	.0004	.0004	.008	.031	.001	.0008
%RSD	.0331	.2135	.2086	.2511	2.977	.0453	.3956
#1	.5132	.2062	.2044	3.109	1.031	3.053	.2024
#2	.5134	.2056	.2038	3.098	1.075	3.055	.2013
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.2000	.2000	3.000	1.000	3.000	.2000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5086	.4979	11.88	.9530	.0754	3.893	1.031
SDev	.0026	.0019	.01	.0044	.0008	.039	.048
%RSD	.5069	.3831	.1205	.4587	1.051	.9914	4.615
#1	.5104	.4965	11.87	.9561	.0759	3.921	.9978
#2	.5068	.4992	11.89	.9499	.0748	3.866	1.065
Errors	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass
Value	.5000	.5000	12.00	1.000		4.000	1.000
Range	10.00	10.00	10.00	10.00		10.00	10.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2033	.2025	1.015	2.139	.2009	1.006	.4985
SDev	.0008	.0004	.008	.005	.0004	.019	.0019
%RSD	.4178	.1972	.7866	.2440	.2084	1.839	.3720
#1	.2039	.2022	1.021	2.142	.2006	.9934	.4998
#2	.2027	.2028	1.009	2.135	.2012	1.020	.4972
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.2000	.2000	1.000	2.000	.2000	1.000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Li6707	HardC

Units	ppm	ppm
Avge	Q.0753	26.02
SDev	.0003	.01
%RSD	.4338	.0217
#1	Q.0750	26.02
#2	Q.0755	26.02
Errors	QC Fail	NOCHECK
Value	.2000	
Range	10.00	

Method: 6010_06A Sample Name: Ag ICV Operator: EG
Run Time: 06/20/06 09:04:22
Comment: METHOD 6010/200.7
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	-.0083	-.0301	.0002	.0004	.0010	-.0036
SDev	.0028	.0077	.0156	.0003	.0000	.0012	.0149
%RSD	38.37	92.69	51.98	141.4	.8652	124.9	418.7
#1	.0053	-.0028	-.0190	.0003	.0004	.0001	-.0141
#2	.0093	-.0137	-.0411	-.0000	.0004	.0018	.0070

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0049	.0019	.0039	.0118	.0039	.0462	.0002
SDev	.0002	.0037	.0004	.0017	.0074	.0089	.0003
%RSD	3.624	200.5	10.92	14.32	187.5	19.38	140.4
#1	.0050	-.0008	.0036	.0106	-.0013	.0398	.0000
#2	.0048	.0045	.0042	.0130	.0092	.0525	.0004

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0030	.0060	.2834	.0230	.4995	.0013	.0370
SDev	.0026	.0028	.5296	.0194	.0043	.0294	.0000
%RSD	84.85	45.63	186.9	84.44	.8704	2273.	.0400
#1	.0049	.0041	-.0911	.0093	.4964	-.0195	.0370
#2	.0012	.0080	.6579	.0367	.5026	.0221	.0370

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	.0025	.0036	.0036	.0003	-.0038	-.0002
SDev	.0010	.0004	.0000	.0038	.0004	.0097	.0003
%RSD	87.44	14.76	.2046	103.5	143.5	257.8	141.4
#1	.0004	.0022	.0036	.0010	-.0000	.0031	-.0004
#2	.0019	.0028	.0036	.0063	.0006	-.0106	.0000

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0006	.1879
SDev	.0005	.1029
%RSD	84.85	54.78
#1	.0002	.1151
#2	.0009	.2607

Method: 6010_06A Sample Name: ICB Operator: EG
Run Time: 06/20/06 09:06:55
Comment: METHOD 6010/200.7
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0056	.0040	-.0135	-.0002	.0001	.0003	-.0106
SDev	.0018	.0020	.0011	.0002	.0000	.0000	.0249
%RSD	32.33	49.66	8.293	141.4	3.184	13.23	234.8
#1	.0069	.0053	-.0127	-.0003	.0001	.0002	.0070
#2	.0043	.0026	-.0143	-.0000	.0001	.0003	-.0282

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0021	.0019	.0003	-.0004	.0059	.0141	-.0002
SDev	.0021	.0002	.0004	.0008	.0157	.0309	.0003
%RSD	99.21	11.84	143.2	188.5	266.6	219.6	141.4
#1	.0036	.0017	.0006	.0001	.0170	-.0078	-.0004
#2	.0006	.0020	-.0000	-.0010	-.0052	.0359	-.0000

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0049	-.0018	-.3239	-.0106	.0008	-.0104	.0227
SDev	.0034	.0011	.3865	.0109	.0012	.0018	.0131
%RSD	70.71	62.73	119.3	102.5	141.1	17.72	57.70
#1	.0024	-.0010	-.5972	-.0183	.0017	-.0091	.0134
#2	.0073	-.0025	-.0506	-.0029	.0000	-.0117	.0319

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	-.0003	-.0000	.0021	.0003	.0174	-.0004
SDev	.0013	.0004	.0022	.0042	.0004	.0044	.0000
%RSD	176.3	151.3	241400.	202.5	144.2	25.19	.0000
#1	-.0002	.0000	.0015	.0051	.0006	.0143	-.0004
#2	.0016	-.0005	-.0015	-.0009	-.0000	.0205	-.0004

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0009	.0247
SDev	.0003	.0169
%RSD	35.36	68.56
#1	.0012	.0127
#2	.0007	.0366

Method: 6010_06A Sample Name: RLS Operator: EG
Run Time: 06/20/06 09:09:18
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0678	.0557	.0409	Q.0052	.0051	.0044	.5102
SDev	.0053	.0021	.0022	.0000	.0000	.0003	.0050
%RSD	7.757	3.695	5.476	.0000	.0292	7.150	.9768
#1	.0716	.0571	.0424	Q.0052	.0051	.0042	.5137
#2	.0641	.0542	.0393	Q.0052	.0051	.0046	.5066
Errors	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass
Value	.0600	.0450	.0450	.0250	.0050	.0050	.5000
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0145	.0186	.0109	.1068	.0530	.2210	.0051
SDev	.0002	.0002	.0008	.0000	.0360	.0199	.0003
%RSD	1.205	1.174	7.859	.0001	67.87	9.012	5.235
#1	.0144	.0188	.0103	.1068	.0276	.2070	.0049
#2	.0147	.0184	.0115	.1068	Q.0785	.2351	.0053
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.0100	.0150	.0100	.1000	.0500	.2000	.0050
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0140	.0178	Q.3239	.0584	.0112	.4926	.0518
SDev	.0009	.0044	.4151	.0216	.0016	.0073	.0024
%RSD	6.147	24.88	128.2	36.92	14.13	1.492	4.627
#1	.0134	.0209	Q.0304	.0736	.0101	.4874	.0535
#2	.0146	.0146	.6174	Q.0432	.0123	.4978	.0501
Errors	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass	QC Pass
Value	.0150	.0200	1.000	.1000	.0100	.5000	.0500
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0106	.0214	.1026	.2509	.0054	.0612	.0030
SDev	.0004	.0008	.0036	.0026	.0000	.0238	.0000
%RSD	3.824	3.790	3.536	1.030	.0193	38.81	.0000
#1	.0103	.0209	.1052	.2491	.0054	.0444	.0030
#2	.0109	.0220	.1001	.2528	.0054	Q.0780	.0030
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.0100	.0200	.1000	.2000	.0050	.0450	.0050
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Li6707	HardC

Units	ppm	ppm
Avge	Q.0023	3.186
SDev	.0000	.060
%RSD	.0000	1.880
#1	Q.0023	3.143
#2	Q.0023	3.228
Errors	QC Fail	NOCHECK
Value	.0050	
Range	50.00	

Method: 6010_06A Sample Name: Ba RLS Operator: EG
Run Time: 06/20/06 09:14:14
Comment: METHOD 6010/200.7
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0300	-.0070	.0031	.0280	.0003	.0001	.0351
SDev	.0028	.0020	.0156	.0000	.0002	.0000	.0001
%RSD	9.192	28.15	510.2	.0000	72.04	60.73	.2050
#1	.0320	-.0084	.0141	.0280	.0004	.0000	.0351
#2	.0281	-.0056	-.0080	.0280	.0001	.0001	.0352

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0117	.0022	.0015	.0405	.0092	.0520	.0008
SDev	.0017	.0011	.0004	.0002	.0074	.0021	.0000
%RSD	14.91	50.50	28.20	.5199	79.98	3.959	.0169
#1	.0129	.0029	.0018	.0407	.0040	.0535	.0008
#2	.0104	.0014	.0012	.0404	.0144	.0505	.0008

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	.0082	.1215	-.0015	.0020	.0221	-.0051
SDev	.0017	.0031	.1288	.0669	.0012	.0073	.0024
%RSD	141.3	37.08	106.1	4454.	60.51	33.26	46.31
#1	-.0000	.0104	.0304	-.0488	.0028	.0273	-.0034
#2	-.0024	.0061	.2126	.0458	.0011	.0169	-.0068

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0021	.0112	.0046	.0257	.0006	.0081	-.0004
SDev	.0004	.0000	.0014	.0013	.0008	.0000	.0000
%RSD	20.99	.0844	31.48	4.857	140.5	.0892	.0000
#1	.0024	.0112	.0036	.0248	.0012	.0081	-.0004
#2	.0018	.0112	.0056	.0266	.0000	.0081	-.0004

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0008	.3836
SDev	.0002	.0083
%RSD	20.20	2.162
#1	.0007	.3894
#2	.0009	.3777

Method: 6010_06A Sample Name: ICSA Operator: EG
Run Time: 06/20/06 09:16:35
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	529.5	.0211	.0910	.0016	.0003	.0025	503.0
SDev	1.3	.0043	.0675	.0003	.0002	.0033	.2
%RSD	.2546	20.34	74.25	15.71	62.63	130.1	.0356
#1	528.5	.0181	.1387	.0014	.0004	.0002	502.9
#2	530.4	.0242	.0432	.0017	.0002	.0048	503.1
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	500.0						500.0
Range	20.00						20.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0062	.0169	.0030	198.3	.1137	534.4	.0042
SDev	.0072	.0127	.0008	.4	.0314	1.1	.0006
%RSD	114.9	75.12	27.90	.2131	27.63	.1981	14.83
#1	.0113	.0259	.0036	198.0	.0915	533.7	.0037
#2	.0012	.0079	.0024	198.6	.1359	535.2	.0046
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				200.0		500.0	
Range				20.00		20.00	

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0091	.0063	-.5972	.0202	.0062	.0026	.0283
SDev	.0258	.0141	.5153	.0497	.0008	.0203	.0883
%RSD	284.0	225.3	86.29	246.4	13.48	784.8	312.5
#1	.0273	.0162	-.9615	.0553	.0056	-.0118	.0907
#2	-.0092	-.0037	-.2328	-.0150	.0067	.0169	-.0342
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0070	.0071	-.0052	.5982	.0156	.1624	.0071
SDev	.0109	.0000	.0094	.0021	.0005	.0371	.0000
%RSD	154.8	.5010	182.8	.3511	2.923	22.84	.0000
#1	.0147	.0072	.0015	.5997	.0153	.1887	.0071
#2	-.0007	.0071	-.0118	.5968	.0159	.1362	.0071
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Li6707	HardC

Units	ppm	ppm
Avge	.0007	4429.
SDev	.0006	5.
%RSD	94.28	.1163
#1	.0012	4426.
#2	.0002	4433.
Errors	NOCHECK	NOCHECK
Value		
Range		

Method: 6010_06A Sample Name: ICSAB Operator: EG
Run Time: 06/20/06 09:19:02
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	531.7	2.145	2.110	1.019	1.019	2.057	499.9
SDev	.4	.030	.047	.002	.002	.006	.5
%RSD	.0688	1.388	2.224	.1943	.1771	.2848	.0916
#1	531.4	2.124	2.144	1.020	1.021	2.053	500.2
#2	531.9	2.166	2.077	1.017	1.018	2.062	499.6
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	502.0	2.000	2.000	1.000	1.000	2.000	500.2
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.002	.9935	1.022	197.7	2.097	534.9	1.002
SDev	.011	.0070	.000	.0	.030	.2	.001
%RSD	1.060	.7066	.0424	.0211	1.444	.0347	.1070
#1	1.010	.9984	1.021	197.7	2.076	535.1	1.003
#2	.9950	.9885	1.022	197.7	2.118	534.8	1.002
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.000	1.000	1.000	200.2	2.000	500.2	1.000
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.049	1.891	-.5769	2.103	1.924	2.237	2.067
SDev	.012	.005	.2290	.032	.000	.009	.062
%RSD	.5872	.2486	39.70	1.526	.0209	.4098	3.010
#1	2.057	1.887	-.7389	2.080	1.924	2.244	2.111
#2	2.040	1.894	-.4150	2.125	1.923	2.231	2.023
Errors	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000		2.000	2.000	2.000	2.000
Range	20.00	20.00		20.00	20.00	20.00	20.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.033	2.043	2.125	1.006	.0147	.1488	.0071
SDev	.022	.004	.012	.003	.0005	.1134	.0000
%RSD	2.112	.1743	.5469	.3148	3.448	76.18	.0000
#1	1.048	2.041	2.116	1.004	.0151	.2289	.0071
#2	1.018	2.046	2.133	1.008	.0144	.0686	.0071
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	1.000	2.000					
Range	20.00	20.00					

Elem	Li6707	HardC

Units	ppm	ppm
Avge	.0007	4418.
SDev	.0003	3.
%RSD	47.14	.0633
#1	.0009	4420.
#2	.0005	4416.
Errors	NOCHECK	NOCHECK
Value		
Range		

Method: 6010_06A Sample Name: CCV Operator: EG
Run Time: 06/20/06 10:08:51
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.122	1.994	1.967	2.044	2.052	2.044	41.10
SDev	.003	.019	.013	.008	.008	.001	.08
%RSD	.0366	.9684	.6798	.3873	.3659	.0352	.1926
#1	8.120	2.007	1.958	2.050	2.058	2.044	41.15
#2	8.124	1.980	1.977	2.039	2.047	2.045	41.04
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	8.000	2.000	2.000	2.000	2.000	2.000	40.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.068	2.071	2.039	41.51	2.083	40.72	2.059
SDev	.009	.002	.007	.09	.005	.09	.006
%RSD	.4186	.1063	.3357	.2116	.2221	.2330	.2849
#1	2.074	2.069	2.044	41.57	2.087	40.79	2.063
#2	2.062	2.072	2.034	41.45	2.080	40.65	2.054
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	2.000	40.00	2.000	40.00	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.030	2.020	20.18	2.040	.7766	40.55	2.045
SDev	.023	.016	.04	.018	.0004	.21	.068
%RSD	1.143	.7812	.2128	.8626	.0513	.5078	3.310
#1	2.014	2.009	20.21	2.027	.7769	40.70	1.997
#2	2.047	2.031	20.15	2.052	.7763	40.41	2.093
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	20.00	2.000	.8000	40.00	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.052	2.047	2.041	4.127	2.087	2.071	2.038
SDev	.009	.002	.007	.015	.005	.025	.008
%RSD	.4343	.1171	.3554	.3669	.2414	1.196	.3770
#1	2.059	2.045	2.046	4.116	2.091	2.088	2.043
#2	2.046	2.049	2.036	4.138	2.084	2.053	2.033
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	2.000	4.000	2.000	2.000	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Li6707	HardC

Units	ppm	ppm
Avge	Q.7781	350.2
SDev	.0096	.7
%RSD	1.238	.2120
#1	Q.7713	350.7
#2	Q.7849	349.6
Errors	QC Fail	NOCHECK
Value	4.000	
Range	10.00	

Method: 6010_06A Sample Name: CCB Operator: EG
Run Time: 06/20/06 10:14:10
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0023	-.0097	-.0008	.0003	.0006	-.0012	-.0176
SDev	.0067	.0020	.0257	.0000	.0002	.0008	.0149
%RSD	287.3	20.52	3036.	.0000	35.19	72.73	84.51
#1	-.0070	-.0111	.0173	.0003	.0007	-.0017	-.0282
#2	.0024	-.0083	-.0190	.0003	.0004	-.0006	-.0071

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0039	-.0023	.0018	.0071	.0104	.0398	.0000
SDev	.0016	.0009	.0000	.0019	.0092	.0124	.0000
%RSD	39.74	37.69	.0464	26.52	88.46	31.05	29.54
#1	.0051	-.0029	.0018	.0085	.0039	.0486	.0000
#2	.0028	-.0017	.0018	.0058	.0170	.0311	.0000

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0061	-.0017	.0911	-.0335	-.0020	.0156	-.0101
SDev	.0017	.0011	.1431	.0345	.0004	.0312	.0095
%RSD	28.29	63.38	157.1	103.1	20.19	200.5	94.12
#1	.0073	-.0010	.1923	-.0578	-.0022	.0377	-.0034
#2	.0049	-.0025	-.0101	-.0091	-.0017	-.0065	-.0169

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	.0003	.0031	.0050	.0003	-.0044	.0000
SDev	.0008	.0004	.0036	.0029	.0004	.0053	.0000
%RSD	52.39	136.6	117.7	58.25	144.9	120.0	.0000
#1	.0021	.0000	.0057	.0029	-.0000	-.0007	.0000
#2	.0010	.0006	.0005	.0071	.0006	-.0081	.0000

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0003	.0994
SDev	.0008	.0153
%RSD	235.7	15.36
#1	-.0002	.0886
#2	.0009	.1102

Method: 6010_06A Sample Name: CCV Operator: EG
Run Time: 06/20/06 14:42:04
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.466	1.987	2.069	2.123	2.131	2.120	42.38
SDev	.093	.152	.060	.026	.027	.022	.51
%RSD	1.096	7.665	2.895	1.224	1.265	1.028	1.192
#1	8.401	1.879	2.026	2.104	2.112	2.105	42.02
#2	8.532	2.095	2.111	2.141	2.151	2.135	42.73
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	8.000	2.000	2.000	2.000	2.000	2.000	40.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.168	2.132	2.122	42.60	2.088	42.91	2.145
SDev	.023	.023	.025	.53	.033	.41	.024
%RSD	1.047	1.077	1.186	1.235	1.558	.9669	1.121
#1	2.152	2.116	2.104	42.22	2.065	42.62	2.128
#2	2.184	2.148	2.140	42.97	2.111	43.20	2.162
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	2.000	40.00	2.000	40.00	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.137	2.080	21.68	2.055	.8036	42.44	Q2.277
SDev	.052	.033	.21	.020	.0084	.46	.012
%RSD	2.413	1.600	.9903	.9741	1.042	1.074	.5419
#1	2.100	2.057	21.83	2.069	.7977	42.12	Q2.269
#2	2.173	2.104	21.53	2.041	.8095	42.76	Q2.286
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail
Value	2.000	2.000	20.00	2.000	.8000	40.00	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.133	2.110	2.100	4.304	2.166	2.179	2.124
SDev	.021	.024	.037	.025	.029	.012	.027
%RSD	.9785	1.140	1.762	.5915	1.319	.5639	1.285
#1	2.118	2.093	2.073	4.286	2.146	2.171	2.105
#2	2.147	2.127	2.126	4.322	2.186	2.188	2.143
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	2.000	4.000	2.000	2.000	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Li6707	HardC

Units	ppm	ppm
Avge	Q.8135	364.9
SDev	.0111	4.0
%RSD	1.364	1.083
#1	Q.8057	362.1
#2	Q.8214	367.7
Errors	QC Fail	NOCHECK
Value	4.000	
Range	10.00	

Method: 6010_06A Sample Name: CCB Operator: EG
Run Time: 06/20/06 14:48:34
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0110	.0039	-.0198	.0007	.0006	.0007	.0105
SDev	.0025	.0019	.0078	.0000	.0002	.0005	.0149
%RSD	22.65	49.70	39.52	.0000	35.32	70.77	142.2
#1	.0127	.0053	-.0253	.0007	.0004	.0003	.0211
#2	.0092	.0025	-.0143	.0007	.0007	.0010	-.0001

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0025	-.0014	.0015	.0060	.0053	.0515	.0002
SDev	.0019	.0004	.0013	.0015	.0111	.0220	.0003
%RSD	77.32	31.36	85.12	24.75	210.8	42.74	142.1
#1	.0038	-.0011	.0024	.0070	-.0026	.0670	-.0000
#2	.0011	-.0017	.0006	.0049	.0131	.0359	.0004

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0049	-.0051	.1619	-.0350	.0014	.0377	.0202
SDev	.0034	.0041	.3006	.0409	.0012	.0404	.0000
%RSD	70.72	81.38	185.6	117.0	84.69	107.3	.1130
#1	.0024	-.0022	.3745	-.0061	.0022	.0091	.0202
#2	.0073	-.0080	-.0506	-.0639	.0006	.0663	.0201

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	.0068	.0103	.0133	.0006	.0261	.0004
SDev	.0005	.0000	.0022	.0074	.0000	.0079	.0000
%RSD	40.42	.4266	21.18	55.86	.4072	30.27	.0000
#1	.0009	.0068	.0118	.0081	.0006	.0317	.0004
#2	.0016	.0068	.0087	.0186	.0006	.0205	.0004

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0010	.2722
SDev	.0008	.1568
%RSD	78.57	57.60
#1	.0005	.3831
#2	.0016	.1613

Method: 6010_06A Sample Name: WSIC0619FLTRBLK Operator: EG
Run Time: 06/20/06 15:01:40
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	-.0096	-.0134	.0003	.0001	-.0001	.0210
SDev	.0025	.0059	.0056	.0000	.0000	.0007	.0000
%RSD	92.95	61.18	41.30	.0000	6.867	822.4	.1043
#1	-.0045	-.0138	-.0095	.0003	.0001	-.0005	.0210
#2	-.0009	-.0055	-.0174	.0003	.0002	.0004	.0210

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0034	.0019	.0003	-.0022	.0085	.0194	-.0000
SDev	.0026	.0020	.0013	.0013	.0028	.0192	.0000
%RSD	75.93	106.3	422.8	56.57	32.63	98.92	25.71
#1	.0053	.0005	.0012	-.0031	.0065	.0330	-.0000
#2	.0016	.0033	-.0006	-.0013	.0104	.0058	-.0000

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	.0053	-.0405	-.0473	.0006	.0325	-.0084
SDev	.0026	.0044	.4724	.0108	.0032	.0073	.0000
%RSD	141.5	83.94	1167.	22.88	566.3	22.61	.0271
#1	.0000	.0084	.2935	-.0397	-.0017	.0377	-.0084
#2	-.0036	.0021	-.3745	-.0550	.0028	.0273	-.0084

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	.0076	.0036	.0358	.0015	.0062	-.0004
SDev	.0027	.0004	.0014	.0054	.0004	.0061	.0000
%RSD	590.3	5.523	40.33	15.07	28.28	99.20	.0000
#1	.0024	.0073	.0026	.0396	.0012	.0105	-.0004
#2	-.0015	.0079	.0046	.0320	.0018	.0018	-.0004

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0012	.1870
SDev	.0000	.0792
%RSD	.0000	42.36
#1	.0012	.2431
#2	.0012	.1310

Method: 6010_06A Sample Name: LCSW1 Operator: EG
Run Time: 06/20/06 15:05:41
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.262	1.109	1.099	1.115	1.108	1.127	1.142
SDev	.005	.004	.035	.007	.008	.008	.019
%RSD	.2145	.3807	3.142	.6214	.6977	.7242	1.681
#1	2.259	1.112	1.074	1.110	1.102	1.121	1.129
#2	2.266	1.106	1.123	1.120	1.113	1.133	1.156

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5768	1.130	1.138	1.141	1.152	1.199	1.130
SDev	.0014	.016	.009	.008	.023	.020	.008
%RSD	.2461	1.396	.7497	.7384	2.003	1.657	.7296
#1	.5758	1.119	1.132	1.135	1.136	1.185	1.124
#2	.5778	1.142	1.144	1.147	1.168	1.213	1.136

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.114	.5664	11.78	1.069	.2488	2.335	1.145
SDev	.020	.0016	.24	.041	.0004	.024	.035
%RSD	1.775	.2890	2.065	3.877	.1609	1.022	3.095
#1	1.100	.5675	11.61	1.039	.2485	2.318	1.120
#2	1.128	.5652	11.95	1.098	.2491	2.352	1.170

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.097	1.119	1.114	2.303	1.145	2.209	1.138
SDev	.007	.010	.012	.016	.008	.034	.007
%RSD	.6481	.8939	1.106	.7011	.6951	1.559	.5822
#1	1.092	1.112	1.106	2.291	1.139	2.185	1.133
#2	1.102	1.126	1.123	2.314	1.151	2.233	1.142

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.4437	10.21
SDev	.0075	.17
%RSD	1.692	1.648
#1	.4384	10.09
#2	.4490	10.33

Method: 6010_06A Sample Name: LCSWDup1 Operator: EG
Run Time: 06/20/06 15:10:53
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.287	1.112	1.069	1.120	1.108	1.131	1.145
SDev	.016	.008	.023	.008	.006	.007	.006
%RSD	.7009	.7090	2.182	.7513	.5658	.6075	.4999
#1	2.276	1.117	1.052	1.114	1.103	1.127	1.150
#2	2.299	1.106	1.085	1.126	1.112	1.136	1.141

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5765	1.135	1.142	1.148	1.128	1.160	1.133
SDev	.0040	.004	.006	.007	.048	.012	.007
%RSD	.6996	.3271	.5597	.6420	4.259	1.013	.6574
#1	.5736	1.132	1.138	1.143	1.094	1.168	1.127
#2	.5793	1.138	1.147	1.154	1.162	1.151	1.138

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.121	.5553	11.44	1.049	.2471	2.342	1.127
SDev	.022	.0080	.44	.013	.0020	.040	.056
%RSD	1.994	1.448	3.880	1.276	.8021	1.725	4.940
#1	1.105	.5496	11.75	1.039	.2457	2.313	1.088
#2	1.136	.5609	11.12	1.058	.2485	2.370	1.167

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.099	1.129	1.117	2.307	1.150	2.252	1.140
SDev	.005	.006	.013	.008	.008	.033	.007
%RSD	.4853	.5308	1.170	.3363	.7280	1.479	.5810
#1	1.095	1.125	1.108	2.302	1.144	2.276	1.135
#2	1.103	1.133	1.126	2.313	1.156	2.228	1.145

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.4425	10.07
SDev	.0069	.07
%RSD	1.549	.7180
#1	.4377	10.12
#2	.4474	10.02

Method: 6010_06A Sample Name: WSD0600697-001 Operator: EG
Run Time: 06/20/06 15:14:54
Comment: METHOD 6010B
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0316	.0199	-.0107	.0430	.0003	-.0003	298.1
SDev	.0086	.0176	.0097	.0010	.0002	.0001	8.1
%RSD	27.29	88.70	90.63	2.300	69.65	29.13	2.717
#1	-.0255	.0074	-.0038	.0423	.0004	-.0004	292.4
#2	-.0376	.0323	-.0176	.0437	.0001	-.0003	303.8

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0093	.0057	-.0004	.0123	953.7	.0051
SDev	.0035	.0042	.0013	.0013	.0341	27.8	.0003
%RSD	582.1	44.83	22.32	283.8	276.8	2.917	5.706
#1	.0019	.0123	.0066	-.0013	-.0118	934.0	.0053
#2	-.0031	.0064	.0048	.0004	.0365	973.3	.0049

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0115	-.0209	306.1	.0308	-.0034	S20760.	-.0357
SDev	.0043	.0030	7.9	.0389	.0000	1.	.0045
%RSD	37.22	14.41	2.567	126.6	.0270	.0027	12.65
#1	.0146	-.0230	300.6	.0583	-.0034	S20760.	-.0325
#2	.0085	-.0188	311.7	.0032	-.0034	S20760.	-.0389

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0055	-.0085	3.382	3.240	.0057	.0364	5.443
SDev	.0047	.0012	.086	.093	.0008	.0240	.149
%RSD	85.22	14.61	2.533	2.861	13.67	65.93	2.735
#1	.0088	-.0076	3.321	3.174	.0052	.0534	5.338
#2	.0022	-.0093	3.442	3.305	.0063	.0195	5.549

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0497	5247.
SDev	.0018	150.
%RSD	3.609	2.867
#1	.0485	5140.
#2	.0510	5353.

Method: 6010_06A Sample Name: CCV Operator: EG
Run Time: 06/20/06 15:49:20
Comment: METHOD 6010/200.7
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.038	1.897	1.914	2.002	1.986	2.005	39.65
SDev	.043	.056	.018	.006	.003	.009	.11
%RSD	.5371	2.956	.9331	.3090	.1596	.4394	.2874
#1	8.007	1.857	1.901	1.998	1.984	1.999	39.57
#2	8.069	1.937	1.927	2.006	1.989	2.011	39.73
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	8.000	2.000	2.000	2.000	2.000	2.000	40.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.025	1.996	2.013	39.83	1.994	40.79	2.013
SDev	.004	.008	.002	.12	.005	.02	.005
%RSD	.2136	.4072	.0846	.2998	.2272	.0504	.2259
#1	2.028	2.002	2.012	39.75	1.997	40.78	2.010
#2	2.022	1.991	2.015	39.92	1.991	40.81	2.016
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	2.000	40.00	2.000	40.00	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.002	1.947	21.61	1.932	.7627	40.19	2.149
SDev	.009	.008	2.06	.084	.0024	.09	.025
%RSD	.4291	.4104	9.538	4.369	.3129	.2150	1.167
#1	1.996	1.953	Q23.07	1.872	.7610	40.12	2.167
#2	2.008	1.941	20.15	1.991	.7644	40.25	2.132
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	20.00	2.000	.8000	40.00	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.998	1.984	1.982	4.023	2.047	2.040	2.001
SDev	.007	.008	.003	.019	.007	.007	.006
%RSD	.3567	.4280	.1473	.4774	.3284	.3577	.2912
#1	2.003	1.978	1.980	4.009	2.043	2.035	1.997
#2	1.993	1.990	1.984	4.037	2.052	2.045	2.006
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	2.000	2.000	4.000	2.000	2.000	2.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Li6707	HardC

Units	ppm	ppm
Avge	Q.7852	344.0
SDev	.0041	.6
%RSD	.5197	.1718
#1	Q.7823	343.6
#2	Q.7881	344.5
Errors	QC Fail	NOCHECK
Value	4.000	
Range	10.00	

Method: 6010_06A Sample Name: CCB Operator: EG
Run Time: 06/20/06 15:53:58
Comment: METHOD 6010/200.7
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4554	Be3130	Cd2288	Ca3706
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	.0081	-.0127	.0003	.0006	.0004	.0034
SDev	.0014	.0000	.0246	.0000	.0002	.0001	.0050
%RSD	71.03	.1773	193.5	.0000	36.25	18.98	145.7
#1	.0029	.0081	.0047	.0003	.0007	.0004	-.0001
#2	.0010	.0081	-.0301	.0003	.0004	.0005	.0070

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg3832	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0046	.0011	.0015	.0071	.0150	.0413	.0002
SDev	.0003	.0040	.0004	.0010	.0046	.0172	.0003
%RSD	7.506	364.1	28.20	14.73	30.74	41.59	141.4
#1	.0043	-.0017	.0018	.0064	.0183	.0534	.0004
#2	.0048	.0039	.0012	.0079	.0118	.0291	.0000

Elem	Mo2020	Ni2316	K_7664	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0036	-.0035	.3036	-.0701	.0011	.0234	.0050
SDev	.0034	.0042	.0143	.0475	.0000	.0018	.0048
%RSD	94.32	118.2	4.714	67.78	.0638	7.887	95.05
#1	.0061	-.0006	.3138	-.0365	.0011	.0221	.0016
#2	.0012	-.0065	.2935	-.1037	.0011	.0247	.0084

Elem	V_2924	Zn2138	B_2496	Si2881	Ti3349	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	.0048	.0098	.0080	.0009	-.0093	.0002
SDev	.0010	.0004	.0029	.0035	.0004	.0000	.0003
%RSD	83.22	8.432	29.86	43.87	47.07	.0395	141.4
#1	.0005	.0045	.0118	.0055	.0012	-.0093	.0000
#2	.0019	.0051	.0077	.0105	.0006	-.0093	.0004

Elem	Li6707	HardC
Units	ppm	ppm
Avge	.0006	.1990
SDev	.0002	.0485
%RSD	28.28	24.39
#1	.0005	.2333
#2	.0007	.1646

Method 6020 - Summary Report

Sample ID: Blank

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 15:39:03
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\Blank.001
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	687912.680	2.929				ppb
	Ni	60	186.002	7.319				ppb
	Ni	62	-17829.625	1.975				ppb
	Cu	63	627.133	4.718				ppb
	Cu	65	278.449	3.712				ppb
>	Ge	74	269106.003	2.468				ppb
	As	75	158.001	6.129				ppb
	Se	82	333.117	6.621				ppb
	Se	78	27882.292	1.958				ppb
	Cd	114	40.398	10.939				ppb
	Cd	111	27.111	5.119				ppb
>	In	115	1629644.833	0.691				ppb
>	Lu	175	1571860.348	1.337				ppb
	Tl	205	66.445	10.298				ppb
	Tl	203	34.889	7.723				ppb
	Pb	208	344.895	3.405				ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45					
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74					
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115					
>	Lu	175					
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Method 6020 - Summary Report

Sample ID: Standard 1

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 15:43:19
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\Standard 1.002
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
⌈>	Sc	45	680587.945	0.572	680587.945			ppb
|	Ni	60	72461.370	3.034	0.106	25.00000	2.62	ppb
|	Ni	62	-45858.682	3.468	-0.041	25.00000	5.42	ppb
|	Cu	63	161597.621	1.597	0.237	25.00000	1.32	ppb
⌊	Cu	65	78848.915	0.410	0.115	25.00000	0.39	ppb
⌈>	Ge	74	260844.113	0.899	260844.113			ppb
|	As	75	47767.167	0.490	0.183	25.00000	1.00	ppb
|	Se	82	23282.022	3.554	0.088	125.00000	3.23	ppb
⌊	Se	78	85878.721	0.807	0.226	125.00000	2.32	ppb
⌈	Cd	114	140032.801	1.381	0.087	25.00000	1.45	ppb
|	Cd	111	57534.412	1.723	0.036	25.00000	2.60	ppb
⌊>	In	115	1610231.249	0.973	1610231.249			ppb
⌈>	Lu	175	1565049.460	0.333	1565049.460			ppb
|	Tl	205	440299.528	1.171	0.281	25.00000	1.20	ppb
|	Tl	203	184238.853	1.348	0.118	25.00000	1.51	ppb
⌊	Pb	208	309948.178	1.010	0.198	25.00000	1.34	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
⌈>	Sc	45					
|	Ni	60					
|	Ni	62					
|	Cu	63					
⌊	Cu	65					
⌈>	Ge	74					
|	As	75					
|	Se	82					
⌊	Se	78					
⌈	Cd	114					
|	Cd	111					
⌊>	In	115					
⌈>	Lu	175					
|	Tl	205					
|	Tl	203					
⌊	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Method 6020 - Summary Report

Sample ID: ICV

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 15:49:14
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\ICV.003
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	676217.063	1.668	676217.063			ppb
	Ni	60	29399.917	1.765	0.043	10.17274	1.71	ppb
	Ni	62	-14345.299	1.026	0.005	-2.83524	5.55	ppb
	Cu	63	68752.333	0.020	0.101	10.65217	1.69	ppb
	Cu	65	33712.405	1.661	0.049	10.71051	2.67	ppb
>	Ge	74	264724.658	0.507	264724.658			ppb
	As	75	20039.857	3.318	0.075	10.28694	3.34	ppb
	Se	82	9832.426	1.127	0.036	50.99114	0.64	ppb
	Se	78	51099.628	1.395	0.089	49.53320	2.77	ppb
	Cd	114	56267.660	0.996	0.035	10.02633	0.46	ppb
	Cd	111	23393.189	3.036	0.014	10.14206	3.06	ppb
>	In	115	1612577.572	1.114	1612577.572			ppb
>	Lu	175	1602660.310	2.114	1602660.310			ppb
	Tl	205	169876.991	0.614	0.106	9.42009	2.53	ppb
	Tl	203	70926.944	0.268	0.044	9.39776	1.83	ppb
	Pb	208	123994.408	1.258	0.077	9.75255	2.66	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		98.3			
	Ni	60	101.7				
	Ni	62	-28.4				
	Cu	63	106.5				
	Cu	65	107.1				
>	Ge	74		98.4			
	As	75	102.9				
	Se	82	102.0				
	Se	78					
	Cd	114	100.3				
	Cd	111	101.4				
>	In	115		99.0			
>	Lu	175		102.0			
	Tl	205	94.2				
	Tl	203	94.0				
	Pb	208	97.5				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
ICV	Ni	62	ICV is out of limits (±10%)

NF A 6-23-06

Method 6020 - Summary Report

Sample ID: ICB

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 15:58:34
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\ICB.004
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	667249.142	1.538	667249.142			ppb
	Ni	60	178.224	11.446	-0.000	-0.00083	764.40	ppb
	Ni	62	-18258.789	2.924	-0.001	0.87062	37.64	ppb
	Cu	63	640.245	1.693	0.000	0.00508	53.67	ppb
	Cu	65	292.449	1.147	0.000	0.00726	6.95	ppb
>	Ge	74	272524.790	1.902	272524.790			ppb
	As	75	162.668	8.319	0.000	0.00129	445.49	ppb
	Se	82	350.451	1.376	0.000	0.06840	14.80	ppb
	Se	78	27818.764	0.373	-0.002	-0.83822	102.87	ppb
	Cd	114	39.359	14.719	-0.000	-0.00009	1091.68	ppb
	Cd	111	26.000	5.128	-0.000	-0.00033	103.62	ppb
>	In	115	1607457.770	2.172	1607457.770			ppb
>	Lu	175	1560685.356	0.247	1560685.356			ppb
	Tl	205	64.889	5.068	-0.000	-0.00006	315.65	ppb
	Tl	203	41.333	8.065	0.000	0.00091	49.66	ppb
	Pb	208	338.451	4.671	-0.000	-0.00032	375.93	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		97.0			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		101.3			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		98.6			
>	Lu	175		99.3			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
ICB	Ni	62	ICB is out of limits (± 3* IDL or ± MDL)

NA 6/23/06

Method 6020 - Summary Report

Sample ID: RLS

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 16:11:12
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\RLS.006
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	679608.259	1.138	679608.259			ppb
	Ni	60	1562.801	1.740	0.002	0.47778	2.64	ppb
	Ni	62	-17833.074	0.646	-0.000	0.19514	90.22	ppb
	Cu	63	4155.839	3.185	0.005	0.55011	4.44	ppb
	Cu	65	1988.218	4.254	0.003	0.54607	6.02	ppb
>	Ge	74	266027.294	1.235	266027.294			ppb
	As	75	1111.846	1.928	0.004	0.49212	3.66	ppb
	Se	82	537.571	6.198	0.001	1.11307	18.11	ppb
	Se	78	27971.221	1.716	0.002	0.84748	44.89	ppb
	Cd	114	560.822	4.133	0.000	0.09348	4.58	ppb
	Cd	111	275.782	6.622	0.000	0.10878	7.28	ppb
>	In	115	1602862.946	0.513	1602862.946			ppb
>	Lu	175	1574723.401	0.475	1574723.401			ppb
	Tl	205	1701.715	3.829	0.001	0.09229	4.33	ppb
	Tl	203	727.140	1.336	0.000	0.09337	1.66	ppb
	Pb	208	6306.854	2.074	0.004	0.47842	2.51	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		98.8			
	Ni	60	95.6				
	Ni	62	39.0				
	Cu	63	110.0				
	Cu	65	109.2				
>	Ge	74		98.9			
	As	75	98.4				
	Se	82	111.3				
	Se	78					
	Cd	114	93.5				
	Cd	111	108.8				
>	In	115		98.4			
>	Lu	175		100.2			
	Tl	205	92.3				
	Tl	203	93.4				
	Pb	208	95.7				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
RLS	Ni	62	RLS is out of limits (±50%)

NR 6-23-06

Method 6020 - Summary Report

Sample ID: ICSA

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 16:18:09
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\ICSA.007
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	672549.722	2.737	672549.722			ppb
	Ni	60	1139.627	2.643	0.001	0.33534	2.63	ppb
	Ni	62	-413502.953	0.107	-0.589	355.27584	2.79	ppb
	Cu	63	3492.671	1.431	0.004	0.45277	3.13	ppb
	Cu	65	1635.925	2.674	0.002	0.43908	0.68	ppb
>	Ge	74	270195.697	0.518	270195.697			ppb
	As	75	1114.291	2.811	0.004	0.48444	3.88	ppb
	Se	82	359.118	2.692	0.000	0.12954	36.67	ppb
	Se	78	27070.595	1.173	-0.003	-1.89392	41.52	ppb
	Cd	114	1952.425	0.808	0.001	0.34095	1.48	ppb
	Cd	111	1233.417	1.686	0.001	0.52350	0.10	ppb
>	In	115	1613142.097	1.720	1613142.097			ppb
>	Lu	175	1552468.033	0.825	1552468.033			ppb
	Tl	205	48.667	10.873	-0.000	-0.00097	33.41	ppb
	Tl	203	30.444	19.627	-0.000	-0.00055	152.38	ppb
	Pb	208	1583.249	4.605	0.001	0.10113	5.29	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		97.8			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		100.4			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		99.0			
>	Lu	175		98.8			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
ICSA	Ni	62	ICSA is out of limits (±20%)

NR
6-23-06

Method 6020 - Summary Report

Sample ID: ICSAB

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 16:24:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\ICSAB.008
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	678440.102	1.373	678440.102			ppb
	Ni	60	61802.985	2.126	0.091	21.38271	1.74	ppb
	Ni	62	-417046.695	2.164	-0.589	355.08588	2.89	ppb
	Cu	63	138004.958	0.546	0.203	21.40741	1.70	ppb
	Cu	65	66256.598	1.338	0.097	21.06087	1.10	ppb
>	Ge	74	266230.460	1.255	266230.460			ppb
	As	75	39610.119	1.557	0.148	20.29474	0.31	ppb
	Se	82	18593.219	1.467	0.069	97.44857	2.58	ppb
	Se	78	74530.008	1.751	0.176	97.67522	1.12	ppb
	Cd	114	114609.005	1.552	0.071	20.47816	0.92	ppb
	Cd	111	48299.542	1.547	0.030	21.00550	2.51	ppb
>	In	115	1608701.402	1.027	1608701.402			ppb
>	Lu	175	1556792.934	0.356	1556792.934			ppb
	Tl	205	344769.541	2.086	0.221	19.67953	2.33	ppb
	Tl	203	144660.327	0.241	0.093	19.73230	0.29	ppb
	Pb	208	248012.565	0.802	0.159	20.10498	1.16	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		98.6			
	Ni	60	106.9				
	Ni	62	1775.4				
	Cu	63	107.0				
	Cu	65	105.3				
>	Ge	74		98.9			
	As	75	101.5				
	Se	82	97.4				
	Se	78					
	Cd	114	102.4				
	Cd	111	105.0				
>	In	115		98.7			
>	Lu	175		99.0			
	Tl	205	98.4				
	Tl	203	98.7				
	Pb	208	100.5				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
ICSAB	Ni	62	ICSAB is out of limits (±20%)

NR
6-23-06

Method 6020 - Summary Report

Sample ID: CCV

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 16:33:05
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\CCV.009
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	660696.088	1.850	660696.088			ppb
	Ni	60	57302.923	0.454	0.086	20.35921	1.74	ppb
	Ni	62	-10657.109	3.966	0.010	-5.89782	8.25	ppb
	Cu	63	133374.688	1.217	0.201	21.24306	1.05	ppb
	Cu	65	65054.646	1.689	0.098	21.24312	3.53	ppb
>	Ge	74	263217.968	0.879	263217.968			ppb
	As	75	38442.897	1.250	0.145	19.92352	2.10	ppb
	Se	82	19275.312	2.803	0.072	102.26645	3.73	ppb
	Se	78	74019.616	1.740	0.178	98.40098	3.91	ppb
	Cd	114	112592.941	1.288	0.069	19.93644	1.38	ppb
	Cd	111	46451.290	1.912	0.029	20.01790	2.76	ppb
>	In	115	1623533.170	1.743	1623533.170			ppb
>	Lu	175	1576038.613	0.598	1576038.613			ppb
	Tl	205	342200.040	1.974	0.217	19.29247	1.39	ppb
	Tl	203	143150.745	2.562	0.091	19.28772	2.48	ppb
	Pb	208	247363.057	1.722	0.157	19.80562	1.13	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		96.0			
	Ni	60	101.8				
	Ni	62	-29.5				
	Cu	63	106.2				
	Cu	65	106.2				
>	Ge	74		97.8			
	As	75	99.6				
	Se	82	102.3				
	Se	78					
	Cd	114	99.7				
	Cd	111	100.1				
>	In	115		99.6			
>	Lu	175		100.3			
	Tl	205	96.5				
	Tl	203	96.4				
	Pb	208	99.0				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
CCV	Ni	62	CCV is out of limits (±10%

NL 6-23-06

Method 6020 - Summary Report

Sample ID: CCB

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 16:41:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\CCB.010
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	668763.404	0.237	668763.404			ppb
	Ni	60	93.334	6.349	-0.000	-0.03080	6.53	ppb
	Ni	62	-18671.320	2.939	-0.002	1.20667	42.15	ppb
	Cu	63	400.676	9.325	-0.000	-0.03302	18.27	ppb
	Cu	65	191.780	3.953	-0.000	-0.02555	9.57	ppb
>	Ge	74	261917.238	0.972	261917.238			ppb
	As	75	201.780	2.200	0.000	0.02510	7.62	ppb
	Se	82	350.451	2.719	0.000	0.14229	35.75	ppb
	Se	78	27530.697	0.869	0.002	0.83841	125.32	ppb
	Cd	114	31.525	17.953	-0.000	-0.00160	64.84	ppb
	Cd	111	21.556	19.642	-0.000	-0.00243	78.19	ppb
>	In	115	1640327.819	1.232	1640327.819			ppb
>	Lu	175	1574583.895	1.538	1574583.895			ppb
	Tl	205	54.667	6.790	-0.000	-0.00067	38.61	ppb
	Tl	203	31.111	10.127	-0.000	-0.00052	82.09	ppb
	Pb	208	229.558	3.391	-0.000	-0.00930	9.82	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		97.2			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		97.3			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		100.7			
>	Lu	175		100.2			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
CCB	Ni	62	CCB is out of limits (± 3* IDL or ± MDL)

NR 6-23-06

Method 6020 - Summary Report

Sample ID: CCV

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 21:59:17
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\CCV.092
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	659222.003	0.989	659222.003			ppb
	Ni	60	55794.762	2.444	0.084	19.86425	2.90	ppb
	Ni	62	-9543.687	4.510	0.011	-6.90061	4.51	ppb
	Cu	63	130270.041	1.833	0.197	20.79377	2.59	ppb
	Cu	65	62606.510	2.876	0.095	20.48005	3.35	ppb
>	Ge	74	258084.510	1.247	258084.510			ppb
	As	75	37854.880	1.127	0.146	20.00828	1.30	ppb
	Se	82	17864.871	0.997	0.068	96.56372	1.80	ppb
	Se	78	72236.289	2.989	0.176	97.65406	4.45	ppb
	Cd	114	111827.689	1.888	0.070	20.05689	2.33	ppb
	Cd	111	46828.541	1.521	0.029	20.43861	1.89	ppb
>	In	115	1602761.286	0.530	1602761.286			ppb
>	Lu	175	1509004.310	0.814	1509004.310			ppb
	Tl	205	333401.595	2.662	0.221	19.63071	1.91	ppb
	Tl	203	141341.141	1.662	0.094	19.88935	1.03	ppb
	Pb	208	246498.711	1.389	0.163	20.61532	1.19	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		95.8			
	Ni	60	99.3				
	Ni	62	-34.5				
	Cu	63	104.0				
	Cu	65	102.4				
>	Ge	74		95.9			
	As	75	100.0				
	Se	82	96.6				
	Se	78					
	Cd	114	100.3				
	Cd	111	102.2				
>	In	115		98.4			
>	Lu	175		96.0			
	Tl	205	98.2				
	Tl	203	99.4				
	Pb	208	103.1				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
CCV	Ni	62	CCV is out of limits (±10%

NR
Dmc 6-23-06

Method 6020 - Summary Report

Sample ID: CCB

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:07:18
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\CCB.093
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	679233.682	1.241	679233.682			ppb
	Ni	60	140.668	10.087	-0.000	-0.01494	28.79	ppb
	Ni	62	-17986.162	1.246	-0.001	0.34125	103.97	ppb
	Cu	63	394.897	3.314	-0.000	-0.03492	3.88	ppb
	Cu	65	213.558	4.549	-0.000	-0.01954	19.35	ppb
>	Ge	74	266137.460	2.167	266137.460			ppb
	As	75	166.446	6.337	0.000	0.00532	130.07	ppb
	Se	82	322.450	7.504	-0.000	-0.03598	417.95	ppb
	Se	78	26964.231	2.057	-0.002	-1.26216	89.82	ppb
	Cd	114	29.012	17.194	-0.000	-0.00212	40.28	ppb
	Cd	111	18.889	25.040	-0.000	-0.00370	54.72	ppb
>	In	115	1664368.474	0.388	1664368.474			ppb
>	Lu	175	1569469.075	0.822	1569469.075			ppb
	Tl	205	60.445	16.848	-0.000	-0.00034	168.17	ppb
	Tl	203	33.778	13.863	-0.000	-0.00014	463.57	ppb
	Pb	208	222.225	2.722	-0.000	-0.00983	5.88	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		98.7			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		98.9			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		102.1			
>	Lu	175		99.8			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
CCB	Ni	62	CCB is out of limits (± 3* IDL or ± MDL)

NR
6-23-06

Method 6020 - Summary Report

Sample ID: WSD0600697-001FLRBLK1

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:14:39
Sample Type: Sample
Sample Description: 6020 WATERS
Number of Replicates: 3
Batch ID: 062206A
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\WSD0600697-001FLRBLK1.095
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	734603.663	1.767	734603.663			ppb
	Ni	60	920.713	4.945	0.001	0.23138	5.31	ppb
	Ni	62	-19073.238	0.726	-0.000	0.03211	1228.43	ppb
	Cu	63	1352.990	7.094	0.001	0.09824	11.73	ppb
	Cu	65	657.579	2.031	0.000	0.10619	2.66	ppb
>	Ge	74	272619.665	0.750	272619.665			ppb
	As	75	165.335	2.245	0.000	0.00265	70.35	ppb
	Se	82	253.115	2.841	-0.000	-0.43920	10.81	ppb
	Se	78	28421.055	0.572	0.001	0.35714	150.85	ppb
	Cd	114	-47.423	118.056	-0.000	-0.01496	61.90	ppb
	Cd	111	25.556	24.794	-0.000	-0.00135	187.28	ppb
>	In	115	1737862.633	0.304	1737862.633			ppb
>	Lu	175	1601141.925	1.256	1601141.925			ppb
	Tl	205	105.334	6.038	0.000	0.00209	17.32	ppb
	Tl	203	57.556	10.762	0.000	0.00292	27.57	ppb
	Pb	208	1328.319	0.116	0.001	0.07712	1.71	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		106.8			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		101.3			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		106.6			
>	Lu	175		101.9			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ni 62 RSD	Ni	62	Replicate RSD >20% NR
As 75 RSD	As	75	Replicate RSD >20% LRL
Cd 114 RSD	Cd	114	Replicate RSD >20%
Cd 111 RSD	Cd	111	Replicate RSD >20%

Tl 203 RSD	Tl	203	Replicate RSD >20%

6.23.06

Method 6020 - Summary Report

Sample ID: LCSICPMS0619LCS1

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:17:58
Sample Type: Spike - 1 of 66
Sample Description: 6020 WATERS
Number of Replicates: 3
Batch ID: 062206A
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\LCSICPMS0619LCS1.096
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	700569.826	1.557	700569.826			ppb
	Ni	60	59087.199	1.328	0.084	19.79820	2.86	ppb
	Ni	62	-10808.760	4.550	0.010	-6.32014	8.61	ppb
	Cu	63	133904.753	2.654	0.190	20.11523	4.24	ppb
	Cu	65	67017.533	2.246	0.095	20.62713	1.61	ppb
>	Ge	74	265809.471	0.706	265809.471			ppb
	As	75	37375.801	1.701	0.140	19.17841	2.38	ppb
	Se	82	17041.742	2.447	0.063	89.31001	3.22	ppb
	Se	78	71453.951	0.563	0.165	91.51930	1.24	ppb
	Cd	114	111286.476	0.404	0.066	18.99324	1.52	ppb
	Cd	111	46590.199	0.988	0.028	19.34898	1.23	ppb
>	In	115	1684419.861	1.508	1684419.861			ppb
>	Lu	175	1561711.911	0.556	1561711.911			ppb
	Tl	205	349858.650	1.550	0.224	19.90750	1.95	ppb
	Tl	203	147497.390	0.540	0.094	20.05609	0.52	ppb
	Pb	208	249582.466	0.866	0.160	20.16867	1.17	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		101.8			
	Ni	60			99.0		
	Ni	62			-31.6		
	Cu	63			100.6		
	Cu	65			103.1		
>	Ge	74		98.8			
	As	75			95.9		
	Se	82			89.3		
	Se	78					
	Cd	114			95.0		
	Cd	111			96.7		
>	In	115		103.4			
>	Lu	175		99.4			
	Tl	205			99.5		
	Tl	203			100.3		
	Pb	208			100.8		

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ni 62 RSD	Ni	62	Replicate RSD >20%
Ni 62 Spike	Ni	62	Spike recovery is out of limits ("N" Flag)
As 75 RSD	As	75	Replicate RSD >20%
Cd 114 RSD	Cd	114	Replicate RSD >20%

From Blk

Cd 111 RSD	Cd	111	Replicate RSD >20%
Tl 205 RSD	Tl	205	Replicate RSD >20%

1 For Blk
6.23.06

Sample ID: LCSICPMS0619LCS1
Report Date/Time: Thursday, June 22, 2006 22:19:35

Method 6020 - Summary Report

Sample ID: LCSICPMS0619LCS1D

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:21:16
Sample Type: Spike - 1 of 66
Sample Description: 6020 WATERS
Number of Replicates: 3
Batch ID: 062206A
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\LCSICPMS0619LCS1D.097
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	717145.417	3.866	717145.417			ppb
	Ni	60	61201.554	0.978	0.085	20.04293	3.00	ppb
	Ni	62	-10683.828	5.626	0.011	-6.62342	12.74	ppb
	Cu	63	139714.167	2.095	0.194	20.51926	4.94	ppb
	Cu	65	65715.112	0.658	0.091	19.77693	4.32	ppb
>	Ge	74	274399.990	1.428	274399.990			ppb
	As	75	37264.665	0.360	0.135	18.52062	1.51	ppb
	Se	82	17491.265	2.915	0.063	88.81002	4.44	ppb
	Se	78	72897.653	1.648	0.162	89.78040	2.91	ppb
	Cd	114	112050.618	1.840	0.065	18.76242	4.58	ppb
	Cd	111	46983.777	1.251	0.027	19.14185	3.82	ppb
>	In	115	1718348.972	3.596	1718348.972			ppb
>	Lu	175	1605560.513	0.404	1605560.513			ppb
	Tl	205	362218.435	1.150	0.226	20.04761	1.54	ppb
	Tl	203	149532.435	1.678	0.093	19.77823	2.03	ppb
	Pb	208	252073.487	1.151	0.157	19.81284	1.26	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		104.2			
	Ni	60			100.2		
	Ni	62			-33.1		
	Cu	63			102.6		
	Cu	65			98.9		
>	Ge	74		102.0			
	As	75			92.6		
	Se	82			88.8		
	Se	78					
	Cd	114			93.8		
	Cd	111			95.7		
>	In	115		105.4			
>	Lu	175		102.1			
	Tl	205			100.2		
	Tl	203			98.9		
	Pb	208			99.1		

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ni 62 RSD	Ni	62	Replicate RSD >20%
Ni 62 Spike	Ni	62	Spike recovery is out of limits ("N" Flag
As 75 RSD	As	75	Replicate RSD >20%
Cd 114 RSD	Cd	114	Replicate RSD >20%

Sample ID: LCSICPMS0619LCS1D
Report Date/Time: Thursday, June 22, 2006 22:22:53

Cd 111 RSD	Cd	111	Replicate RSD >20%
Tl 205 RSD	Tl	205	Replicate RSD >20%

I For Blk
6-23-06

Method 6020 - Summary Report

Sample ID: WSD0600697-001

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:24:35
Sample Type: Sample
Sample Description: 6020 WATERS
Number of Replicates: 3
Batch ID: 062206A
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\WSD0600697-001.098
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	426777.375	0.773	426777.375			ppb
	Ni	60	20972.387	0.996	0.049	11.50599	1.40	ppb
	Ni	62	6663.260	46.657	0.042	-25.03494	17.52	ppb
	Cu	63	443792.063	2.525	1.039	109.80696	1.85	ppb
	Cu	65	12171.258	3.033	0.028	6.08765	2.74	ppb
>	Ge	74	134171.985	0.400	134171.985			ppb
	As	75	59390.098	2.295	0.442	60.54072	2.38	ppb
	Se	82	5834.983	1.598	0.042	60.00818	1.90	ppb
	Se	78	13372.107	1.793	-0.004	-2.18775	38.30	ppb
	Cd	114	487.914	7.067	0.001	0.14873	7.72	ppb
	Cd	111	269.337	2.115	0.000	0.19775	2.56	ppb
>	In	115	900315.153	0.324	900315.153			ppb
>	Lu	175	846117.392	1.185	846117.392			ppb
	Tl	205	265.559	7.868	0.000	0.02412	7.84	ppb
	Tl	203	127.556	4.742	0.000	0.02730	4.89	ppb
	Pb	208	1023.170	14.810	0.001	0.12524	19.21	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		62.0			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		49.9			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		55.2			
>	Lu	175		53.8			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ni 62 Lower	Ni	62	RL = ±0.5ppb

NR 6-23-06

Method 6020 - Summary Report

Sample ID: CCV

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:31:37
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\CCV.100
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	660275.155	1.820	660275.155			ppb
	Ni	60	53083.209	1.110	0.080	18.87002	2.91	ppb
	Ni	62	-11204.978	3.342	0.009	-5.39662	4.14	ppb
	Cu	63	121491.644	2.499	0.183	19.35150	1.32	ppb
	Cu	65	59060.402	2.262	0.089	19.28221	1.61	ppb
>	Ge	74	248986.995	2.282	248986.995			ppb
	As	75	36628.551	2.022	0.147	20.07752	3.93	ppb
	Se	82	17106.528	1.959	0.067	95.83484	1.96	ppb
	Se	78	69675.724	0.422	0.176	97.67865	3.97	ppb
	Cd	114	104138.310	1.185	0.067	19.31648	0.32	ppb
	Cd	111	43710.416	2.061	0.028	19.73504	3.19	ppb
>	In	115	1549657.404	1.350	1549657.404			ppb
>	Lu	175	1457069.177	1.278	1457069.177			ppb
	Tl	205	317171.172	0.407	0.218	19.34392	0.90	ppb
	Tl	203	133749.925	2.918	0.092	19.48990	1.65	ppb
	Pb	208	227616.353	0.656	0.156	19.71563	1.51	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		96.0			
	Ni	60	94.4				
	Ni	62	-27.0				
	Cu	63	96.8				
	Cu	65	96.4				
>	Ge	74		92.5			
	As	75	100.4				
	Se	82	95.8				
	Se	78					
	Cd	114	96.6				
	Cd	111	98.7				
>	In	115		95.1			
>	Lu	175		92.7			
	Tl	205	96.7				
	Tl	203	97.4				
	Pb	208	98.6				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
CCV	Ni	62	CCV is out of limits (±10%)

NR
D 6.23.06

Method 6020 - Summary Report

Sample ID: CCB

User Name: dmetcalf
Sample Date/Time: Thursday, June 22, 2006 22:39:38
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\062206a.mth
Dataset File: C:\elandata\Dataset\June 06\062206A\CCB.101
Sample Prep Volume (mL):
Initial Sample Quantity, Wet (mg):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Net Intens. Mean	Conc. Mean	Conc. RSD	Units
>	Sc	45	620314.715	1.648	620314.715			ppb
	Ni	60	132.668	8.227	-0.000	-0.01327	34.65	ppb
	Ni	62	-18611.330	2.965	-0.004	2.46093	12.17	ppb
	Cu	63	564.906	6.422	-0.000	-0.00007	8837.93	ppb
	Cu	65	298.449	1.792	0.000	0.01656	17.92	ppb
>	Ge	74	244121.552	1.646	244121.552			ppb
	As	75	489.569	5.448	0.001	0.19421	6.96	ppb
	Se	82	343.340	2.239	0.000	0.24010	29.70	ppb
	Se	78	25859.048	0.821	0.002	1.29805	107.79	ppb
	Cd	114	35.618	8.038	-0.000	-0.00029	233.82	ppb
	Cd	111	21.556	11.709	-0.000	-0.00159	64.36	ppb
>	In	115	1498775.955	1.733	1498775.955			ppb
>	Lu	175	1401541.120	2.082	1401541.120			ppb
	Tl	205	198.891	7.207	0.000	0.00885	8.16	ppb
	Tl	203	84.000	8.362	0.000	0.00801	10.55	ppb
	Pb	208	377.786	11.073	0.000	0.00631	52.46	ppb

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		90.2			
	Ni	60					
	Ni	62					
	Cu	63					
	Cu	65					
>	Ge	74		90.7			
	As	75					
	Se	82					
	Se	78					
	Cd	114					
	Cd	111					
>	In	115		92.0			
>	Lu	175		89.2			
	Tl	205					
	Tl	203					
	Pb	208					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
CCB	Ni	62	CCB is out of limits (± 3* IDL or ± MDL)
CCB	As	75	CCB is out of limits (± 3* IDL or ± MDL)
CCB	Se	82	CCB is out of limits (± 3* IDL or ± MDL)

CRL
6.23.06

Method Name: 10WaterHg
Method Description: 10WaterHg
Element: Hg

Date: 06/19/2006
Technique:FI-MHS
Calibration Type:
Hg, Calc. Intercept : Linear
Wavelength: 253.7 nm
Sample Info Name: WATERHG.SIF Results Data Set Name: V060619

Element: Hg Seq. No.: 1 AS Loc.: 1 Date: 06/19/2006
Sample ID: Calib Blank

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.0009	-0.0006	0.0009	04:58:53	No
2			0.0007	-0.0016	0.0007	04:59:31	No
Mean:			0.0008				
SD :			0.0001				
%RSD:			13.5480				

Auto-zero performed.

Element: Hg Seq. No.: 2 AS Loc.: 2 Date: 06/19/2006
Sample ID: Standard 1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.0031	0.0174	0.0039	05:01:15	No
2			0.0034	0.0201	0.0042	05:01:50	No
Mean:			0.0032				
SD :			0.0002				
%RSD:			7.0150				

[Hg] Standard number 1 applied. [0.200]
Correlation Coefficient: 1.00000 Slope: 0.01617
Intercept : 0.00000

Element: Hg Seq. No.: 3 AS Loc.: 3 Date: 06/19/2006
Sample ID: Standard 2

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.0151	0.0742	0.0160	05:03:37	No
2			0.0143	0.0740	0.0151	05:04:12	No
Mean:			0.0147				
SD :			0.0006				
%RSD:			4.0423				

[Hg] Standard number 2 applied. [1.000]
Correlation Coefficient: 0.99979 Slope: 0.01462
Intercept : 0.00014

Element: Hg Seq. No.: 4 AS Loc.: 4 Date: 06/19/2006
Sample ID: Standard 3

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.0554	0.2759	0.0563	05:05:58	No
2			0.0566	0.2832	0.0574	05:06:33	No
Mean:			0.0560				
SD :			0.0008				
%RSD:			1.4983				

[Hg] Standard number 3 applied. [4.000]
Correlation Coefficient: 0.99992 Slope: 0.01394
Intercept : 0.00037

Element: Hg Seq. No.: 5 AS Loc.: 5 Date: 06/19/2006
Sample ID: Standard 4

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.0832	0.4125	0.0841	05:08:24	No
2			0.0821	0.4131	0.0829	05:09:00	No
Mean:			0.0826				
SD :			0.0008				
%RSD:			0.9897				

[Hg] Standard number 4 applied. [6.000]
Correlation Coefficient: 0.99992 Slope: 0.01376
Intercept : 0.00051

Element: Hg Seq. No.: 6 AS Loc.: 6 Date: 06/19/2006
Sample ID: Standard 5

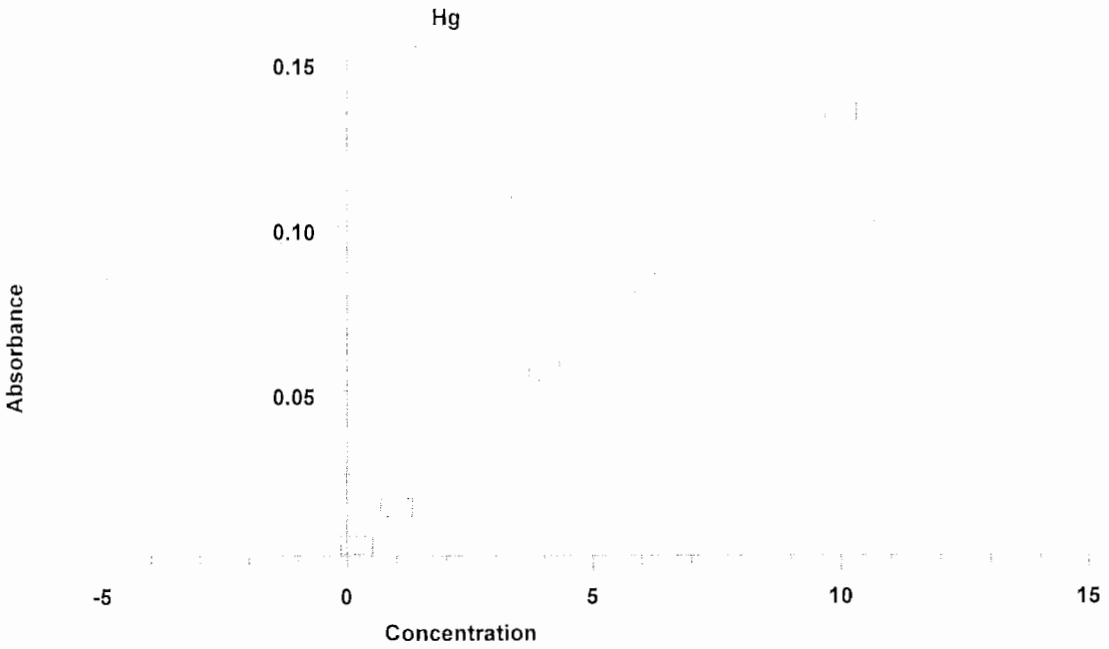
Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.1337	0.6661	0.1346	05:10:48	No
2			0.1355	0.6736	0.1363	05:11:23	No
Mean:			0.1346				
SD :			0.0013				
%RSD:			0.9342				

[Hg] Standard number 5 applied. [10.00]
Correlation Coefficient: 0.99985 Slope: 0.01347
Intercept : 0.00094

Calibration data for Hg

Standard ID	Mean Signal (Pk Height)	Entered Concentration (µg/L)	Calculated Concentration (µg/L)	Standard Deviation	%RSD
Calib Blank	0.0008	---	----	----	----
Standard 1	0.0032	0.200	0.170	0.0002	7.0
Standard 2	0.0147	1.000	1.023	0.0006	4.0
Standard 3	0.0560	4.000	4.089	0.0008	1.5
Standard 4	0.0826	6.000	6.065	0.0008	1.0
Standard 5	0.1346	10.000	9.924	0.0013	0.9

Correlation Coefficient: 0.99985 Slope: 0.01347 Intercept: 0.0009


Hg
0.15
0.10
0.05
Absorbance
-5
0
5
10
15
Concentration

Element: Hg Seq. No.: 7 AS Loc.: 9 Date: 06/19/2006
Sample ID: ICV1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	5.059	5.059	0.0691	0.3359	0.0699	05:14:50	No
2	4.872	4.872	0.0666	0.3333	0.0674	05:15:25	No
Mean:	4.965	4.965	0.0678				
SD :	0.1319	0.1319	0.0018				
%RSD:	2.7	2.7	2.6203				

Element: Hg Seq. No.: 8 AS Loc.: 10 Date: 06/19/2006
Sample ID: ICB1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.100	-0.100	-0.0004	-0.0061	0.0004	05:17:08	No
2	-0.049	-0.049	0.0003	0.0067	0.0011	05:17:43	No
Mean:	-0.074	-0.074	-0.0001				
SD :	0.0358	0.0358	0.0005				
%RSD:	48.2	48.2	859.7706				

Element: Hg Seq. No.: 9 AS Loc.: 11 Date: 06/19/2006
Sample ID: DIHG0618BLK1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.091	-0.091	-0.0003	-0.0007	0.0005	05:19:27	No
2	-0.046	-0.046	0.0003	0.0065	0.0012	05:20:02	No
Mean:	-0.069	-0.069	0.0000				
SD :	0.0317	0.0317	0.0004				
%RSD:	46.3	46.3	1964.6326				

Element: Hg Seq. No.: 10 AS Loc.: 12 Date: 06/19/2006
Sample ID: LFHG0618LCS1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.962	1.962	0.0274	0.1334	0.0282	05:21:47	No
2	1.992	1.992	0.0278	0.1416	0.0286	05:22:21	No
Mean:	1.977	1.977	0.0276				
SD :	0.0210	0.0210	0.0003				
%RSD:	1.1	1.1	1.0262				

Element: Hg Seq. No.: 11 AS Loc.: 13 Date: 06/19/2006
Sample ID: LFHG0618LCS1D

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.086	2.086	0.0290	0.1369	0.0299	05:24:08	No
2	2.052	2.052	0.0286	0.1314	0.0294	05:24:44	No
Mean:	2.069	2.069	0.0288				
SD :	0.0239	0.0239	0.0003				
%RSD:	1.2	1.2	1.1170				

Element: Hg Seq. No.: 12 AS Loc.: 14 Date: 06/19/2006
Sample ID: WTD0600644-003L

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.376	-0.075	-0.0001	0.0008	0.0008	05:26:31	No
2	-0.253	-0.051	0.0003	0.0013	0.0011	05:27:09	No

Element: Hg Seq. No.: 14 AS Loc.: 16 Date: 06/19/2006
Sample ID: WTD0600644-003A

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.080	2.080	0.0290	0.1433	0.0298	05:35:32	No
2	2.028	2.028	0.0283	0.1365	0.0291	05:36:07	No
Mean:	2.054	2.054	0.0286				
SD :	0.0373	0.0373	0.0005				
%RSD:	1.8	1.8	1.7581				

Element: Hg Seq. No.: 15 AS Loc.: 17 Date: 06/19/2006
Sample ID: WTD0600644-003MS

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.047	2.047	0.0285	0.1382	0.0293	05:37:54	No
2	-0.095	-0.095	-0.0003	-0.0020	0.0005	05:38:29	No
Mean:	0.976	0.976	0.0141				
SD :	1.514	1.514	0.0204				
%RSD:	155.2	155.2	144.7669				

Precision (%RSD or SD) greater than specified limit.

Element: Hg Seq. No.: 16 AS Loc.: 18 Date: 06/19/2006
Sample ID: WTD0600644-003MSD

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.015	2.015	0.0281	0.1431	0.0289	05:40:13	No
2	1.974	1.974	0.0275	0.1452	0.0284	05:40:48	No
Mean:	1.995	1.995	0.0278				
SD :	0.0291	0.0291	0.0004				
%RSD:	1.5	1.5	1.4096				

Element: Hg Seq. No.: 17 AS Loc.: 17 Date: 06/19/2006
Sample ID: WTD0600644-003MS

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.034	2.034	0.0283	0.1414	0.0292	05:43:28	No
2	2.052	2.052	0.0286	0.1434	0.0294	05:44:03	No
Mean:	2.043	2.043	0.0285				
SD :	0.0130	0.0130	0.0002				
%RSD:	0.6	0.6	0.6173				

Element: Hg Seq. No.: 18 AS Loc.: 19 Date: 06/19/2006
Sample ID: WTD0600644-001

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.025	-0.025	0.0006	0.0046	0.0014	05:45:46	No
2	-0.013	-0.013	0.0008	0.0035	0.0016	05:46:21	No
Mean:	-0.019	-0.019	0.0007				
SD :	0.0086	0.0086	0.0001				
%RSD:	44.8	44.8	16.9185				

Element: Hg Seq. No.: 19 AS Loc.: 20 Date: 06/19/2006
Sample ID: CCV1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	3.938	3.938	0.0540	0.2726	0.0548	05:48:04	No

2	4.064	4.064	0.0557	0.2669	0.0565	05:48:42	No
Mean:	4.001	4.001	0.0548				
SD :	0.0892	0.0892	0.0012				
%RSD:	2.2	2.2	2.1914				

Element: Hg Seq. No.: 20 AS Loc.: 21 Date: 06/19/2006
Sample ID: CCB1

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.026	-0.026	0.0006	0.0029	0.0014	05:50:25	No
2	-0.042	-0.042	0.0004	0.0067	0.0012	05:51:00	No
Mean:	-0.034	-0.034	0.0005				
SD :	0.0109	0.0109	0.0001				
%RSD:	31.9	31.9	30.3963				

Element: Hg Seq. No.: 21 AS Loc.: 22 Date: 06/19/2006
Sample ID: WTD0600644-002

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.026	0.026	0.0013	0.0153	0.0021	05:52:44	No
2	-0.035	-0.035	0.0005	-0.0031	0.0013	05:53:20	No
Mean:	-0.005	-0.005	0.0009				
SD :	0.0430	0.0430	0.0006				
%RSD:	886.9	886.9	65.8548				

Element: Hg Seq. No.: 22 AS Loc.: 23 Date: 06/19/2006
Sample ID: WTD0600644-004

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.035	0.035	0.0014	0.0154	0.0022	05:55:05	No
2	-0.057	-0.057	0.0002	-0.0036	0.0010	05:55:39	No
Mean:	-0.011	-0.011	0.0008				
SD :	0.0647	0.0647	0.0009				
%RSD:	600.6	600.6	109.0493				

Element: Hg Seq. No.: 23 AS Loc.: 24 Date: 06/19/2006
Sample ID: WTD0600644-005

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.011	-0.011	0.0008	0.0048	0.0016	05:57:24	No
2	-0.004	-0.004	0.0009	0.0094	0.0017	05:58:00	No
Mean:	-0.007	-0.007	0.0008				
SD :	0.0049	0.0049	0.0001				
%RSD:	65.5	65.5	7.7370				

Element: Hg Seq. No.: 24 AS Loc.: 25 Date: 06/19/2006
Sample ID: WTD0600644-006

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.010	-0.010	0.0008	0.0075	0.0016	05:59:46	No
2	-0.043	-0.043	0.0004	0.0047	0.0012	06:00:21	No
Mean:	-0.026	-0.026	0.0006				
SD :	0.0232	0.0232	0.0003				
%RSD:	87.9	87.9	53.1907				

Element: Hg Seq. No.: 25 AS Loc.: 26 Date: 06/19/2006
Sample ID: WTD0600644-007

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.032	-0.032	0.0005	0.0061	0.0013	06:02:11	No
2	-0.028	-0.028	0.0006	-0.0010	0.0014	06:02:46	No
Mean:	-0.030	-0.030	0.0005				
SD :	0.0028	0.0028	0.0000				
%RSD:	9.4	9.4	6.8580				

Element: Hg Seq. No.: 26 AS Loc.: 27 Date: 06/19/2006
Sample ID: WTD0600644-008

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.009	0.009	0.0011	0.0077	0.0019	06:04:33	No
2	-0.001	-0.001	0.0009	0.0095	0.0018	06:05:08	No
Mean:	0.004	0.004	0.0010				
SD :	0.0072	0.0072	0.0001				
%RSD:	198.7	198.7	9.7299				

Element: Hg Seq. No.: 27 AS Loc.: 28 Date: 06/19/2006
Sample ID: WTD0600644-009

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.025	-0.025	0.0006	0.0042	0.0014	06:06:55	No
2	-0.038	-0.038	0.0004	0.0005	0.0013	06:07:29	No
Mean:	-0.032	-0.032	0.0005				
SD :	0.0091	0.0091	0.0001				
%RSD:	28.5	28.5	23.6540				

Element: Hg Seq. No.: 28 AS Loc.: 29 Date: 06/19/2006
Sample ID: WTD0600644-010

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.029	-0.029	0.0006	0.0042	0.0014	06:09:18	No
2	-0.006	-0.006	0.0009	0.0015	0.0017	06:09:54	No
Mean:	-0.017	-0.017	0.0007				
SD :	0.0162	0.0162	0.0002				
%RSD:	92.8	92.8	30.7318				

Element: Hg Seq. No.: 29 AS Loc.: 30 Date: 06/19/2006
Sample ID: WTD0600644-011

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.020	0.020	0.0012	0.0086	0.0020	06:11:41	No
2	0.031	0.031	0.0014	0.0064	0.0022	06:12:15	No
Mean:	0.025	0.025	0.0013				
SD :	0.0079	0.0079	0.0001				
%RSD:	31.3	31.3	8.3114				

Element: Hg Seq. No.: 30 AS Loc.: 31 Date: 06/19/2006
Sample ID: CCV2

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.178	4.178	0.0572	0.2814	0.0580	06:14:03	No

2	4.190	4.190	0.0574	0.2836	0.0582	06:14:40	No
Mean:	4.184	4.184	0.0573				
SD :	0.0089	0.0089	0.0001				
%RSD:	0.2	0.2	0.2088				

Element: Hg Seq. No.: 31 AS Loc.: 32 Date: 06/19/2006
Sample ID: CCB2

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.030	-0.030	0.0005	0.0034	0.0014	06:16:25	No
2	-0.024	-0.024	0.0006	0.0051	0.0015	06:16:59	No
Mean:	-0.027	-0.027	0.0006				
SD :	0.0044	0.0044	0.0001				
%RSD:	16.4	16.4	10.2500				

Element: Hg Seq. No.: 32 AS Loc.: 33 Date: 06/19/2006
Sample ID: WTD0600644-012

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.036	-0.036	0.0005	0.0060	0.0013	06:18:41	No
2	-0.026	-0.026	0.0006	0.0039	0.0014	06:19:17	No
Mean:	-0.031	-0.031	0.0005				
SD :	0.0067	0.0067	0.0001				
%RSD:	21.8	21.8	17.1092				

Element: Hg Seq. No.: 33 AS Loc.: 34 Date: 06/19/2006
Sample ID: WTD0600644-013

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.040	-0.040	0.0004	0.0061	0.0012	06:20:58	No
2	-0.022	-0.022	0.0006	0.0023	0.0015	06:21:33	No
Mean:	-0.031	-0.031	0.0005				
SD :	0.0126	0.0126	0.0002				
%RSD:	40.2	40.2	32.5786				

Element: Hg Seq. No.: 34 AS Loc.: 35 Date: 06/19/2006
Sample ID: WTD0600644-014

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.011	-0.011	0.0008	0.0068	0.0016	06:23:16	No
2	0.010	0.010	0.0011	0.0075	0.0019	06:23:50	No
Mean:	-0.001	-0.001	0.0009				
SD :	0.0144	0.0144	0.0002				
%RSD:	2446	2446	20.7076				

Element: Hg Seq. No.: 35 AS Loc.: 36 Date: 06/19/2006
Sample ID: WTD0600644-015

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.063	-0.063	0.0001	-0.0029	0.0009	06:25:35	No
2	0.045	0.045	0.0016	0.0137	0.0024	06:26:11	No
Mean:	-0.009	-0.009	0.0008				
SD :	0.0765	0.0765	0.0010				
%RSD:	847.7	847.7	125.1828				

Element: Hg Seq. No.: 39 AS Loc.: 40 Date: 06/19/2006
Sample ID: WTD0600622-001A

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.011	2.011	0.0280	0.1394	0.0289	06:35:59	No
2	2.062	2.062	0.0287	0.1397	0.0295	06:36:34	No
Mean:	2.036	2.036	0.0284				
SD :	0.0358	0.0358	0.0005				
%RSD:	1.8	1.8	1.7004				

Element: Hg Seq. No.: 40 AS Loc.: 41 Date: 06/19/2006
Sample ID: WTD0600622-001MS

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.180	2.180	0.0303	0.1481	0.0311	06:38:20	No
2	2.266	2.266	0.0315	0.1597	0.0323	06:38:55	No
Mean:	2.223	2.223	0.0309				
SD :	0.0614	0.0614	0.0008				
%RSD:	2.8	2.8	2.6786				

Element: Hg Seq. No.: 41 AS Loc.: 42 Date: 06/19/2006
Sample ID: CCV3

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.417	4.417	0.0605	0.3017	0.0613	06:40:40	No
2	4.447	4.447	0.0609	0.2922	0.0617	06:41:15	No
Mean:	4.432	4.432	0.0607				
SD :	0.0213	0.0213	0.0003				
%RSD:	0.5	0.5	0.4735				

Element: Hg Seq. No.: 42 AS Loc.: 43 Date: 06/19/2006
Sample ID: CCB3

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.085	-0.085	-0.0002	-0.0019	0.0006	06:43:02	No
2	-0.082	-0.082	-0.0002	-0.0038	0.0007	06:43:37	No
Mean:	-0.084	-0.084	-0.0002				
SD :	0.0017	0.0017	0.0000				
%RSD:	2.1	2.1	12.7468				

Element: Hg Seq. No.: 43 AS Loc.: 44 Date: 06/19/2006
Sample ID: WTD0600622-001MSD

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.105	2.105	0.0293	0.1442	0.0301	06:45:24	No
2	2.220	2.220	0.0308	0.1491	0.0317	06:45:58	No
Mean:	2.162	2.162	0.0301				
SD :	0.0811	0.0811	0.0011				
%RSD:	3.8	3.8	3.6347				

Element: Hg Seq. No.: 44 AS Loc.: 45 Date: 06/19/2006
Sample ID: CAHG0618BLK2

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.022	0.022	0.0012	0.0144	0.0021	06:47:46	No
2	0.079	0.079	0.0020	0.0070	0.0028	06:48:22	No

Sample ID: WTD0600521-013

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.131	0.131	0.0027	0.0236	0.0035	07:01:47	No
2	0.103	0.103	0.0023	0.0156	0.0032	07:02:22	No
Mean:	0.117	0.117	0.0025				
SD :	0.0201	0.0201	0.0003				
%RSD:	17.2	17.2	10.7367				

Element: Hg Seq. No.: 51 AS Loc.: 52 Date: 06/19/2006
Sample ID: WTWSHG0618BLK3

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.043	-0.043	0.0004	0.0069	0.0012	07:04:07	No
2	-0.037	-0.037	0.0004	-0.0024	0.0013	07:04:42	No
Mean:	-0.040	-0.040	0.0004				
SD :	0.0039	0.0039	0.0001				
%RSD:	9.7	9.7	12.8720				

Element: Hg Seq. No.: 52 AS Loc.: 53 Date: 06/19/2006
Sample ID: CCV4

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.304	4.304	0.0589	0.2863	0.0598	07:06:25	No
2	4.305	4.305	0.0589	0.2974	0.0598	07:07:00	No
Mean:	4.304	4.304	0.0589				
SD :	0.0003	0.0003	0.0000				
%RSD:							

Element: Hg Seq. No.: 53 AS Loc.: 54 Date: 06/19/2006
Sample ID: CCB4

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.047	-0.047	0.0003	0.0009	0.0011	07:08:44	No
2	-0.052	-0.052	0.0002	0.0030	0.0011	07:09:19	No
Mean:	-0.050	-0.050	0.0003				
SD :	0.0036	0.0036	0.0000				
%RSD:	7.3	7.3	17.5279				

Element: Hg Seq. No.: 54 AS Loc.: 55 Date: 06/19/2006
Sample ID: WTL0600849-001L

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.201	-0.040	0.0004	0.0034	0.0012	07:11:03	No
2	-0.111	-0.022	0.0006	0.0058	0.0015	07:11:37	No
Mean:	-0.156	-0.031	0.0005				
SD :	0.0638	0.0128	0.0002				
%RSD:	40.9	40.9	32.7384				

Element: Hg Seq. No.: 55 AS Loc.: 56 Date: 06/19/2006
Sample ID: WTL0600849-001

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.002	0.002	0.0010	0.0098	0.0018	07:13:21	No
2	-0.003	-0.003	0.0009	0.0017	0.0017	07:13:56	No

Mean:	0.290	0.290	0.0049
SD :	0.5814	0.5814	0.0078
%RSD:	200.5	200.5	161.4295

Precision (%RSD or SD) greater than specified limit.

Element: Hg Seq. No.: 62 AS Loc.: 63 Date: 06/19/2006
Sample ID: WTD0600614-005

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.002	-0.002	0.0009	0.0039	0.0017	07:31:22	No
2	0.053	0.053	0.0017	0.0104	0.0025	07:31:57	No
Mean:	0.025	0.025	0.0013				
SD :	0.0386	0.0386	0.0005				
%RSD:	152.4	152.4	40.4128				

Element: Hg Seq. No.: 63 AS Loc.: 64 Date: 06/19/2006
Sample ID: CCV5

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.043	4.043	0.0554	0.2847	0.0562	07:33:38	No
2	4.151	4.151	0.0569	0.2790	0.0577	07:34:13	No
Mean:	4.097	4.097	0.0561				
SD :	0.0768	0.0768	0.0010				
%RSD:	1.9	1.9	1.8420				

Element: Hg Seq. No.: 64 AS Loc.: 65 Date: 06/19/2006
Sample ID: CCB5

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.045	-0.045	0.0003	-0.0030	0.0012	07:35:54	No
2	-0.027	-0.027	0.0006	0.0047	0.0014	07:36:29	No
Mean:	-0.036	-0.036	0.0005				
SD :	0.0130	0.0130	0.0002				
%RSD:	36.3	36.3	37.9672				

Element: Hg Seq. No.: 65 AS Loc.: 66 Date: 06/19/2006
Sample ID: WTD0600614-007

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.033	-0.033	0.0005	0.0021	0.0013	07:38:10	No
2	0.028	0.028	0.0013	0.0045	0.0021	07:38:46	No
Mean:	-0.003	-0.003	0.0009				
SD :	0.0432	0.0432	0.0006				
%RSD:	1497	1497	64.1883				

Element: Hg Seq. No.: 66 AS Loc.: 67 Date: 06/19/2006
Sample ID: WTD0600614-008

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.014	-0.014	0.0008	0.0057	0.0016	07:40:27	No
2	0.007	0.007	0.0010	0.0079	0.0019	07:41:01	No
Mean:	-0.003	-0.003	0.0009				
SD :	0.0154	0.0154	0.0002				
%RSD:	445.8	445.8	23.0565				

Element: Hg Seq. No.: 67 AS Loc.: 68 Date: 06/19/2006
Sample ID: WTD0600614-009

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.025	-0.025	0.0006	0.0027	0.0014	07:42:45	No
2	-0.031	-0.031	0.0005	0.0026	0.0014	07:43:21	No
Mean:	-0.028	-0.028	0.0006				
SD :	0.0043	0.0043	0.0001				
%RSD:	15.2	15.2	10.2060				

Element: Hg Seq. No.: 68 AS Loc.: 69 Date: 06/19/2006
Sample ID: WTD0600614-010

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.352	0.352	0.0057	0.0399	0.0065	07:45:04	No
2	0.352	0.352	0.0057	0.0382	0.0065	07:45:39	No
Mean:	0.352	0.352	0.0057				
SD :	0.0001	0.0001	0.0000				
%RSD:							

Element: Hg Seq. No.: 69 AS Loc.: 70 Date: 06/19/2006
Sample ID: WTD0600617-003

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.675	0.675	0.0100	0.0632	0.0109	07:47:23	No
2	0.550	0.550	0.0083	0.0509	0.0092	07:48:02	No
Mean:	0.612	0.612	0.0092				
SD :	0.0885	0.0885	0.0012				
%RSD:	14.5	14.5	12.9775				

Element: Hg Seq. No.: 70 AS Loc.: 71 Date: 06/19/2006
Sample ID: WTD0600617-004

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.004	-0.004	0.0009	0.0036	0.0017	07:49:50	No
2	0.002	0.002	0.0010	0.0071	0.0018	07:50:25	No
Mean:	-0.001	-0.001	0.0009				
SD :	0.0045	0.0045	0.0001				
%RSD:	353.4	353.4	6.5720				

Element: Hg Seq. No.: 71 AS Loc.: 72 Date: 06/19/2006
Sample ID: WSD0600697-001

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.013	-0.013	0.0008	0.0065	0.0016	07:52:10	No
2	-0.025	-0.025	0.0006	0.0042	0.0014	07:52:45	No
Mean:	-0.019	-0.019	0.0007				
SD :	0.0081	0.0081	0.0001				
%RSD:	42.8	42.8	15.7917				

Element: Hg Seq. No.: 72 AS Loc.: 73 Date: 06/19/2006
Sample ID: WTD0600641-001

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.079	-0.079	-0.0001	-0.0013	0.0007	07:54:30	No

2	-0.064	-0.064	0.0001	0.0007	0.0009	07:55:09	No
Mean:	-0.071	-0.071	0.0000				
SD :	0.0102	0.0102	0.0001				
%RSD:	14.3	14.3	876.1891				

Element: Hg Seq. No.: 73 AS Loc.: 75 Date: 06/19/2006
Sample ID: CCV6

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.406	4.406	0.0603	0.3003	0.0611	07:56:54	No
2	4.360	4.360	0.0597	0.2914	0.0605	07:57:29	No
Mean:	4.383	4.383	0.0600				
SD :	0.0323	0.0323	0.0004				
%RSD:	0.7	0.7	0.7259				

Element: Hg Seq. No.: 74 AS Loc.: 76 Date: 06/19/2006
Sample ID: CCB6

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.047	-0.047	0.0003	-0.0007	0.0011	07:59:16	No
2	-0.051	-0.051	0.0003	-0.0065	0.0011	07:59:50	No
Mean:	-0.049	-0.049	0.0003				
SD :	0.0027	0.0027	0.0000				
%RSD:	5.5	5.5	13.1992				

Method:

- 200.2 - Total Recoverable Metals/200.7/200.8
- 3005 - Dissolved Metals
- X 3010 - Total Metals/ICP
- 3020 - Total Metals/GFAA/ICP-MS
- 3050B - Total Metals/ICP/GFAA/ICP-MS
- CLP - ILM 4.0

METALS DIGESTION LOG

Analysis Lot #: 061906 ICP
Hot Plate Temp: (90 - 95°C)
Mod Block Temp: 91°C (90 - 95°C)

Prepared: SB Date: 6/19/06
Spike Witness: Marquerite 6/19/0
Reviewed:
Received:

Sample Type	Digestion Code	Reference Number	Sample Amount	Final Volume	Acid Conc.	Completed Date	Comments
Water	Dig2	D0600614 - 3 (.01)	5ml	50ml	11%	6/19/06	D0600614-2 - empty SB 06/19/06
		-4	↓				
		-5	50ml				
		-7	5ml				
		-8	↓				
		-9	50ml				
		-10	0.98g→1ml				
	Dig7	D0600697-1	50ml				
	Dig2	L0600873 - 1 (.12)					
		-2					
		-2ms					2 2.5ml xW5[SPK14]146
		-2msd					3 1.25ml xW5[SPK3]14C
		-4					
		-5					
		-13					
		-14					
		-15					
		-16					
		-17					
	Dig27	WT1CP0619BLK1	↓				
	↓	LCS1CP0619LCS1	2.5ml				22.5ml xW5[1-29]141
	↓	LCS1CP0619LCS1dup	↓				5
↓	Dig7	WT1LP0619PLTBLK	50ml				
		SB 6/19/06					

Reagents:	Lot#:	Received:	Opened:
HNO3	B491053	5/11/06	6/9/06
HCl	B33039	1/24/06	6/12/06

hw65 6/1/06

Method:	
	200.2 - Total Recoverable Metals/200.7/200.8
	3005 - Dissolved Metals
	3010 - Total Metals/ICP
X	3020 - Total Metals/GFAA/ICP-MS
	3050B - Total Metals/ICP/GFAA/ICP-MS
	CLP - ILM 4.0

METALS DIGESTION LOG

Analysis Lot #: 061906 ICPMS
Hot Plate Temp: (90 - 95°C)
Mod Block Temp: 91°C (90 - 95°C)

Prepared: SB	Date: 6/19/06
Spike Witness: Marquesta	6/19/06
Reviewed:	
Received:	

Sample Type	Digestion Code	Reference Number	Sample Amount	Final Volume	Acid Conc.	Completed Date	Comments
Water	Dig 2	~~D0600614 - 2(.01)~~		~~50ml~~	2%		empty SB 6/19/06
		D0600614 - 3(10)	5ml	50ml	2%	6/19/06	
		-4	↓				
		-5	50ml				
		-7	5ml				
		-8	↓				
		-9	50ml				
		-10	0.99g→1ml				
		D0600661 - 1(.17)	50ml				
		-2					
		-2ms					0.5ml XWS [MS spk] 145
		-2msd					
		-3					
		-4					
		-5					
	Dig 7	D0600697 - 1					
	Dig 2	L0600886 - 2(.02)					
	↓	D0600684 - 4(.01)					
	Dig 2,7	WTICPMS0619BLK1	↓				
		LCS1CPMS0619LCS1	0.5ml				0.5ml XWS [MS spk] 145
		LCS1CPMS0619LCS1dup	↓				
	Dig 7	WTICPMS0619F1TBLK	50ml				
		SB 6/19/06					

Reagents:	Lot#:	Received:	Opened:
HNO3	BLA053	5/11/06	6/9/06
H2O2	45253545	1/24/06	5/25/06

Twice 5/10/06

MERCURY WATER CALIBRATION LOG

Method:		
	X	SW-846 7470A - Hg Water - CVAA
		EPA 245.1 - Hg Water - CVAA
		CLP - ILM 4.0

Water Bath: 95°C
Warm Up bath: 1230-1350
Warm Up tubes: 1350-1400
Cook: 1400-1600
Cool Down: 1600-1700

Solution	Id. #
$KMnO_4$	R1-57-3
$K_2S_2O_8$	R1-56-15
Hydroxylamine	R1-56-27
$SnCl_2$	R1-56-5

Initials: LAS Date: 06-18-06

Sample Type	Concentration (ppb)	Reference Number	Standard Volume	Final Volume	Acid Amounts HNO_3	Acid Amounts H_2SO_4	Reagent Amounts $KMnO_4$	Reagent Amounts $K_2S_2O_8$	Reagent Amounts Hydroxyl-amine	Reagent Amounts $SnCl_2$	Standard Soln
Water	0.2	Calibration 1	0.2ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	HgWSL 4D
	1	Calibration 2	1.0ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	↓
	4	Calibration 3	0.4ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	HgWSH 4D
	6	Calibration 4	0.6ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	↓
	10	Calibration 5	1.0ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	↓
	5	Initial Cal. Ver.	0.5ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	HgWSICV 4D
↓	4	Cont. Cal. Ver.	0.4ml	20ml	0.5ml	1.0ml	3.0ml	1.5ml	2.0ml	FIMS	HgWSH 4D

LAS
06-18-06

Acids	J.T.Baker Lot #	Received	Opened
HNO_3	B49053	05-11-06	06-14-06
H_2SO_4	B09039	05-31-05	06-18-06

Columbia Analytical Services Inc.
Redding, CA

MERCURY WATER PREPARATION LOG

Method:		
	X	SW-846 7470A - Hg Water - CVAA
		EPA 245.1 - Hg Water - CVAA
		CLP - ILM 4.0

Water Bath: 95°C
Warm Up bath: 1230-1350
Warm Up tubes: 1350-1400
Cook: 1400-1600
Cool Down: 1600-1700

Solution	Id. #
$KMnO_4$	R1-57-3
$K_2S_2O_8$	R1-56-15
Hydroxylamine	R1-56-27
$SnCl_2$	R1-57-5

Initials: LAS Date: 06-18-06

Sample Type	Digestion Code	Reference Number	Sample Amount	Final Volume	Acid Amounts HNO_3	Acid Amounts H_2SO_4	Reagent Amounts $KMnO_4$	Reagent Amounts $K_2S_2O_8$	Reagent Amounts Hydroxyl-amine	Reagent Amounts $SnCl_2$	Comments
Water	7470A-HG	D0600622-1	2.5 ~~20~~ml	20ml	0.5ml	1.0ml	6 ~~3.0~~ml	1.5ml	2.0ml	FIMS	CCT
		-1MS									
		-1MSD									
		D0600521-5									
		-7									
		-8									
		-13									
		CAHG0618BLK1									
		CAHG0618BLK2									
		LFHG0618 LCS 2 day	20ml				3ml				
WT		L0600849-1									
		-1MS									
		-1MSD									
WT		D0600614-2	1ml				6ml				1:20 dil.
		-3	2ml				3ml				1:10 dil.
		-4									
		-5	20ml 1:500								1:500 dil.
		-7	2ml								1:10 dil.
		-8					6ml				
		-9	20ml 1:500				3ml				1:500 dil.
		-10	2ml								1:10 dil. red
WT		D0600617-3	2ml								dil. 1:10 Sludge
		-4	20ml								
WS		D0600697-1									
	245-1	WT D0600646-1									
		WT [illegible]									

Acids	J.T. Baker Lot #	Received	Opened
HNO_3	B49053	05-11-06	06-14-06
H_2SO_4	B09039	05-31-05	06-18-06

*LCS Spiking Solution: HgWSLCS 4D
* Spiking Solution: HgWSH 4D

GC ORGANOCHLORINE PCBS

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697

Cover Page - Analysis Data Package
PolyChlorinated Biphenyls (PCBs)

Sample Name	Lab Code	Date Collected	Date Received
OUTFALL-54	D0600697-001	06/15/2006	06/16/2006
A-63E-30	D0600697-003	06/15/2006	06/16/2006
CB63-264	D0600697-004	06/15/2006	06/16/2006
CB63-18	D0600697-005	06/15/2006	06/16/2006

I certify this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wida Ang
Date: 6/27/06

Name: WIDA ANG
Title: Organic Manager

COLUMBIA ANALYTICAL SERVICES/REDDING

Analytical Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: 06/15/2006
Date Received: 06/16/2006

PolyChlorinated Biphenyls (PCBs)

Sample Name: OUTFALL-54
Lab Code: D0600697-001

Extraction SW3520
Analysis Method: SW8082

Units: ug/L (ppb)
Basis: NA

Analyte	Result	Q	MDL	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor-1016	ND	U	0.24	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1221	ND	U	0.22	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1232	ND	U	0.20	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1242	ND	U	0.043	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1248	ND	U	0.12	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1254	ND	U	0.063	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1260	ND	U	0.081	1.0	1	06/19/2006	06/22/2006	PWB10619	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl - SS	61	10-110	06/22/2006	

Comments: _____

COLUMBIA ANALYTICAL SERVICES/REDDING

Analytical Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Soil

Service Request: D0600697
Date Collected: 06/15/2006
Date Received: 06/16/2006

PolyChlorinated Biphenyls (PCBs)

Sample Name: A-63E-30
Lab Code: D0600697-003

Extraction SW3550
Analysis Method: SW8082

Units: mg/Kg (ppm
Basis: Wet
Level: LOW

Analyte	Result	Q	MDL	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor-1016	ND	U	0.60	5.4	100	06/19/2006	06/20/2006	PSB10619	
Aroclor-1221	ND	U	0.80	5.4	100	06/19/2006	06/20/2006	PSB10619	
Aroclor-1232	ND	U	0.48	5.4	100	06/19/2006	06/20/2006	PSB10619	
Aroclor-1242	ND	U	0.73	5.4	100	06/19/2006	06/20/2006	PSB10619	
Aroclor-1248	ND	U	0.44	5.4	100	06/19/2006	06/20/2006	PSB10619	
Aroclor-1254	**44**		0.17	5.4	100	06/19/2006	06/20/2006	PSB10619	
Aroclor-1260	ND	U	0.63	5.4	100	06/19/2006	06/20/2006	PSB10619	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl - SS	0	28-119	06/20/2006	*

Comments: _____

COLUMBIA ANALYTICAL SERVICES/REDDING

Analytical Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: 06/15/2006
Date Received: 06/16/2006

PolyChlorinated Biphenyls (PCBs)

Sample Name: CB63-264
Lab Code: D0600697-004

Extraction SW3520
Analysis Method: SW8082

Units: ug/L (ppb)
Basis: NA

Analyte	Result	Q	MDL	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor-1016	ND	U	0.24	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1221	ND	U	0.22	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1232	ND	U	0.20	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1242	ND	U	0.043	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1248	ND	U	0.12	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1254	ND	U	0.063	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1260	ND	U	0.081	1.0	1	06/19/2006	06/22/2006	PWB10619	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl - SS	63	10-110	06/22/2006	

Comments: _____

COLUMBIA ANALYTICAL SERVICES/REDDING

Analytical Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: 06/15/2006
Date Received: 06/16/2006

PolyChlorinated Biphenyls (PCBs)

Sample Name: CB63-18
Lab Code: D0600697-005

Extraction SW3520
Analysis Method: SW8082

Units: ug/L (ppb)
Basis: NA

Analyte	Result	Q	MDL	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor-1016	ND	U	0.24	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1221	ND	U	0.22	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1232	ND	U	0.20	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1242	ND	U	0.043	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1248	ND	U	0.12	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1254	ND	U	0.063	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1260	**53**	D	0.81	10	10	06/19/2006	06/27/2006	PWB10619	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl - SS	48	10-110	06/22/2006	

Comments: _____

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Soil

Service Request: D0600697
Date Collected: NA
Date Received: NA

PolyChlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: PSB10619

Extraction SW3550
Analysis Method: SW8082

Units: mg/Kg (ppm
Basis: Wet
Level: LOW

Analyte	Result	Q	MDL	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor-1016	ND	U	0.0037	0.033	1	06/19/2006	06/24/2006	PSB10619	
Aroclor-1221	ND	U	0.0049	0.033	1	06/19/2006	06/24/2006	PSB10619	
Aroclor-1232	ND	U	0.0030	0.033	1	06/19/2006	06/24/2006	PSB10619	
Aroclor-1242	ND	U	0.0045	0.033	1	06/19/2006	06/24/2006	PSB10619	
Aroclor-1248	ND	U	0.0027	0.033	1	06/19/2006	06/24/2006	PSB10619	
Aroclor-1254	ND	U	0.0010	0.033	1	06/19/2006	06/24/2006	PSB10619	
Aroclor-1260	**0.025**	J	0.0039	0.033	1	06/19/2006	06/24/2006	PSB10619	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl - SS	103	28-119	06/24/2006	

Comments: _____

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Collected: NA
Date Received: NA

PolyChlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: PWB10619

Extraction SW3520
Analysis Method: SW8082

Units: ug/L (ppb)
Basis: NA

Analyte	Result	Q	MDL	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor-1016	ND	U	0.24	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1221	ND	U	0.22	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1232	ND	U	0.20	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1242	ND	U	0.043	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1248	ND	U	0.12	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1254	ND	U	0.063	1.0	1	06/19/2006	06/22/2006	PWB10619	
Aroclor-1260	**0.35**	J	0.081	1.0	1	06/19/2006	06/22/2006	PWB10619	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl - SS	78	10-110	06/22/2006	

Comments: _____

QC Summary

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Soil

Service Request: D0600697

Surrogate Recovery Summary
PolyChlorinated Biphenyls (PCBs)

Prep Method: SW3550
Analysis Method: SW8082

Units: Percent

Sample Name	Lab Code	Q	S1
A-63E-30	D0600697-003	D	0
Laboratory Control Sample	PSB10619LCS		103
Method Blank	PSB10619		103
BatchQC	D0600711-005MS	*	297
BatchQC	D0600711-005MSD	*	356

Surrogate Recovery Control Limits (%)

S1: Decachlorobiphenyl - SS 28-119

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697

Surrogate Recovery Summary
PolyChlorinated Biphenyls (PCBs)

Prep Method: SW3520
Analysis Method: SW8082

Units: Percent

Sample Name	Lab Code	Q	S1
Laboratory Control Sample	PWB10619LCS		82
Laboratory Control Sample Duplicate	PWB10619LCSD		79
Method Blank	PWB10619		78
OUTFALL-54	D0600697-001		61
CB63-264	D0600697-004		63
CB63-18	D0600697-005		48

Surrogate Recovery Control Limits (%)

S1: Decachlorobiphenyl - SS 10-110

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client:	GeoSyntec Consultants	**Service Request:**	D0600697
Project:	TDY	**Date Collected:**	06/14/2006
Sample Matrix:	Soil	**Date Received:**	06/17/2006
		Date Extracted:	06/19/2006
		Date Analyzed:	06/25/2006

Matrix Spike/Duplicate Matrix Spike Summary
PolyChlorinated Biphenyls (PCBs)

MS Sample Name:	BatchQC	**DMS Sample**	BatchQC
Lab Code:	D0600711-005	**Units:**	mg/Kg (ppm
Test Notes:		**Basis:**	Wet

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Sample Result	Spike Result MS	Spike Result MSD	Spike % Rec MS	Spike % Rec MSD	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Aroclor-1016	SW3550	SW8082	0.033	0.1653	ND	2.119	0.1930	999	117	59-127	167	*
Aroclor-1260	SW3550	SW8082	0.033	0.1653	ND	8.588	0.1502	999	91	55-136	193	*

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client:	GeoSyntec Consultants	**Service Request:**	D0600697
Project:	TDY	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
		Date Extracted:	06/19/2006
		Date Analyzed:	06/24/2006

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
PolyChlorinated Biphenyls (PCBs)

LCS Sample	Lab Control Sample
Lab Code:	PSB10619LCS
Test Notes:	

Units: mg/Kg (ppm

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Spike Result LCS	Spike % Rec LCS	CAS Acceptance Limits	Result Notes
Aroclor-1016	SW3550	SW8082	0.033	0.1651	0.1412	86	59-127	
Aroclor-1260	SW3550	SW8082	0.033	0.1651	0.1545	94	55-136	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client:	GeoSyntec Consultants	**Service Request:**	D0600697
Project:	TDY	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	06/19/2006
		Date Analyzed:	06/22/2006

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
PolyChlorinated Biphenyls (PCBs)

LCS Sample	Lab Control Sample	**DLCS Sample**	Lab Control Sample Duplicate
Lab Code:	PWB10619LCS	**Units:**	ug/L (ppb)
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Spike Result LCS	Spike Result LCSD	Spike % Rec LCS	Spike % Rec LCSD	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Aroclor-1016	SW3520	SW8082	1.0	5.000	4.502	4.260	90	85	69-119	6	
Aroclor-1260	SW3520	SW8082	1.0	5.000	4.485	4.246	90	85	58-135	5	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client:	GeoSyntec Consultants	**Service Request:**	D0600697
Project:	TDY	**Date Extracted:**	06/19/2006
Sample Matrix:	Soil	**Date Analyzed:**	06/24/2006
		Time Analyzed:	22:39

Method Blank Summary
PolyChlorinated Biphenyls (PCBs)

Extaction Method: SW3550
Analysis Method: SW8082

Extraction Lot: PSB10619

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
A-63E-30	D0600697-003	C0620010	06/20/2006	18:15
Laboratory Control Sample	PSB10619LCS	C0624018A	06/24/2006	22:08
BatchQC	D0600711-005MS	C0624025A	06/25/2006	01:46
BatchQC	D0600711-005MSD	C0624026A	06/25/2006	02:17

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Extracted: 06/19/2006
Date Analyzed: 06/22/2006
Time Analyzed: 17:48

Method Blank Summary
PolyChlorinated Biphenyls (PCBs)

Extaction Method: SW3520
Analysis Method: SW8082

Extraction Lot: PWB10619

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Laboratory Control Sample	PWB10619LCS	C0622005	06/22/2006	16:46
Laboratory Control Sample Duplicate	PWB10619LCSD	C0622006	06/22/2006	17:17
OUTFALL-54	D0600697-001	C0622010	06/22/2006	19:22
CB63-264	D0600697-004	C0622011	06/22/2006	19:53
CB63-18	D0600697-005	C0622012	06/22/2006	20:24
CB63-18DL	D0600697-005DL	C0627005	06/27/2006	11:12

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
ICAL Date: 06/02/2006

Initial Calibration Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC

Column: RTX-CLP2

Level ID	File ID	Level ID	File ID
A	C0602011	F	C0602016
B	C0602012		
C	C0602013		
D	C0602014		
E	C0602015		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Decachlorobiphenyl - SS	A	0.010	3147	B	0.020	2861	C	0.050	2526	D	0.100	2347	E	0.150	2214
	F	0.200	2128												
Tetrachloro-m-xylene	A	0.010	3633	B	0.020	3448	C	0.050	3247	D	0.100	3096	E	0.150	2905
	F	0.200	2848												
Aroclor-1221										D	0.500	547			
Aroclor-1232										D	0.500	382.1			
Aroclor-1242										D	0.500	730.7			
Aroclor-1248										D	0.500	1364			
Aroclor-1254										D	0.500	1572			

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
ICAL Date: 06/02/2006

Initial Calibration Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC

Column: RTX-CLP2

Level ID	File ID
A	C0602011
B	C0602012
C	C0602013
D	C0602014
E	C0602015

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Aroclor-1016	A	0.050	150.1	B	0.100	135.0	C	0.250	119.0	D	0.500	109.1	E	0.750	100.2
	F	1.000	98.57												
Aroclor-1260	A	0.050	170.3	B	0.100	161.6	C	0.250	142.0	D	0.500	135.6	E	0.750	128.8
	F	1.000	125.6												

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
ICAL Date: 06/02/2006

Initial Calibration Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
Mean RSD: 9.60

Column: RTX-CLP2

			Calibration Evaluation			
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**
Decachlorobiphenyl - SS	SUR	AverageRF	% RSD	15.6		20.0
Tetrachloro-m-xylene	TRG	AverageRF	% RSD	9.6		20.0
Aroclor-1221	TRG	AverageRF	% RSD	0.0		20.0
Aroclor-1232	TRG	AverageRF	% RSD	0.0		20.0
Aroclor-1242	TRG	AverageRF	% RSD	0.0		20.0
Aroclor-1248	TRG	AverageRF	% RSD	0.0		20.0
Aroclor-1254	TRG	AverageRF	% RSD	0.0		20.0

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
ICAL Date: 06/02/2006

Initial Calibration Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
Mean RSD: 14.05

Column: RTX-CLP2

Analyte Name	Compound Type	Fit Type	Calibration Evaluation: Eval.	Eval. Result	Q	Control Criteria
Aroclor-1016	TRG	AverageRF	% RSD	17.1		20.0
Aroclor-1260	TRG	AverageRF	% RSD	11.0		20.0

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/03/2006

Second Source Calibration Verification
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0602017

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.100	0.092	2537	2330	-8.20	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.500	0.471	118.7	111.2	-5.80	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.500	0.457	144.0	132.5	-8.63	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.100	0.097	3196	3088	-3.40	NA	+/- 15.0	AverageRF	

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/20/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0620006

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.100	0.108	2537	2731	7.60	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.500	0.505	118.7	119.7	0.93	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.500	0.515	144.0	147.4	3.03	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.100	0.110	3196	3515	10.00	NA	+/- 15.0	AverageRF	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/20/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0620019

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.150	0.148	2537	2494	-1.70	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.750	0.706	118.7	111.8	-5.80	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.750	0.806	144.0	143.9	7.47	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.150	0.159	3196	3390	6.10	NA	+/- 15.0	AverageRF	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/22/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0622014

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.150	0.154	2537	2602	2.60	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.750	0.725	118.7	114.4	-3.33	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.750	0.750	144.0	142.9	0.00	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.150	0.158	3196	3370	5.40	NA	+/- 15.0	AverageRF	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/24/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0624016

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.150	0.146	2537	2463	-2.90	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.750	0.674	118.7	106.3	-10.10	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.750	0.716	144.0	134.8	-4.50	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.150	0.146	3196	3110	-2.70	NA	+/- 15.0	AverageRF	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/25/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0624028

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.100	0.097	2537	2458	-3.10	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.500	0.465	118.7	110.3	-7.07	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.500	0.445	144.0	128.5	-11.00	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.100	0.101	3196	3234	1.20	NA	+/- 15.0	AverageRF	

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/27/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0627003

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.100	0.092	2537	2344	-7.60	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.500	0.444	118.7	105.3	-11.20	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.500	0.454	144.0	130.1	-9.27	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.100	0.098	3196	3127	-2.20	NA	+/- 15.0	AverageRF	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY

Service Request: D0600697
Date Analyzed: 06/27/2006

Continuing Calibration Verification Summary
PolyChlorinated Biphenyls (PCBs)

ICAL ID: 06/02/2006GCC
Instrument ID: GCC
File ID: C0627007

Column: RTX-CLP2

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%	Criteria	Curve Fit	Q
Decachlorobiphenyl - SS	0.150	0.136	2537	2291	-9.70	NA	+/- 15.0	AverageRF	
Aroclor-1016	0.750	0.628	118.7	99.25	-16.23	NA	+/- 15.0	AverageRF	
Aroclor-1260	0.750	0.669	144.0	127.2	-10.77	NA	+/- 15.0	AverageRF	
Tetrachloro-m-xylene	0.150	0.139	3196	2960	-7.40	NA	+/- 15.0	AverageRF	

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants **Service Request:** D0600697
Project: TDY

Analysis Run Log
PolyChlorinated Biphenyls (PCBs)

Analysis Method: SW8082 **Instrument ID:** GCC
Column: RTX-CLP2

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
C0602004	OSTD4 1221	OSTD4 1221	06/02/2006	17:28		06/02/2006	17:58
C0602005	OSTD4 1232	OSTD4 1232	06/02/2006	17:59		06/02/2006	18:29
C0602006	OSTD4 1242	OSTD4 1242	06/02/2006	18:31		06/02/2006	19:01
C0602007	OSTD4 1248	OSTD4 1248	06/02/2006	19:02		06/02/2006	19:32
C0602008	OSTD4 1254	OSTD4 1254	06/02/2006	19:33		06/02/2006	20:03
C0602011	OSTD1 1660	OSTD1 1660	06/02/2006	21:07		06/02/2006	21:37
C0602012	OSTD2 1660	OSTD2 1660	06/02/2006	21:38		06/02/2006	22:08
C0602013	OSTD3 1660	OSTD3 1660	06/02/2006	22:09		06/02/2006	22:39
C0602014	OSTD4 1660	OSTD4 1660	06/02/2006	22:40		06/02/2006	23:10
C0602015	OSTD5 1660	OSTD5 1660	06/02/2006	23:12		06/02/2006	23:42
C0602016	OSTD6 1660	OSTD6 1660	06/02/2006	23:43		06/03/2006	00:13
C0602017	QCALTSTD	OSTD4 1660	06/03/2006	00:14		06/03/2006	00:44
C0620006	OSTD4 1660	OSTD4 1660	06/20/2006	16:11		06/20/2006	16:41
C0620010	A-63E-30	D0600697-003	06/20/2006	18:15		06/20/2006	18:45
C0620019	OSTD5 1660	OSTD5 1660	06/20/2006	22:56		06/20/2006	23:26
C0622003	OSTD4 1660	OSTD4 1660	06/22/2006	15:44		06/22/2006	16:14
C0622005	Laboratory Control Sample	PWB10619LCS	06/22/2006	16:46		06/22/2006	17:16
C0622006	Laboratory Control Sample Duplicate	PWB10619LCSD	06/22/2006	17:17		06/22/2006	17:47
C0622007	Method Blank	PWB10619	06/22/2006	17:48		06/22/2006	18:18
C0622010	OUTFALL-54	D0600697-001	06/22/2006	19:22		06/22/2006	19:52
C0622011	CB63-264	D0600697-004	06/22/2006	19:53		06/22/2006	20:23
C0622012	CB63-18	D0600697-005	06/22/2006	20:24		06/22/2006	20:54
C0622014	OSTD5 1660	OSTD5 1660	06/22/2006	21:26		06/22/2006	21:56
C0624016	OSTD5 1660	OSTD5 1660	06/24/2006	21:06		06/24/2006	21:36
C0624018	Laboratory Control Sample	PSB10619LCS	06/24/2006	22:08		06/24/2006	22:38
C0624019	Method Blank	PSB10619	06/24/2006	22:39		06/24/2006	23:09
C0624025	BatchQC	D0600711-005MS	06/25/2006	01:46		06/25/2006	02:16
C0624026	BatchQC	D0600711-005MSD	06/25/2006	02:17		06/25/2006	02:47
C0624028	OSTD4 1660	OSTD4 1660	06/25/2006	03:19		06/25/2006	03:49
C0627003	OSTD4 1660	OSTD4 1660	06/27/2006	10:10		06/27/2006	10:40
C0627005	CB63-18DL	D0600697-005DL	06/27/2006	11:12		06/27/2006	11:42
C0627007	OSTD5 1660	OSTD5 1660	06/27/2006	12:14		06/27/2006	12:44

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Soil

Service Request: D0600697
Date Extracted: 06/19/2006

Extraction Prep Log
PolyChlorinated Biphenyls (PCBs)

Extaction Method: SW3550
Analysis Method: SW8082

Extraction Lot: PSB10619

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
Method Blank	PSB10619	NA	NA	30.07 G	10	NA	
A-63E-30	D0600697-003	06/15/2006	06/16/2006	18.38 G	10	NA	
Laboratory Control Sample	PSB10619LCS	NA	NA	30.28 G	10	NA	
BatchQC	D0600711-005MS	06/14/2006	06/17/2006	30.25 G	10	NA	
BatchQC	D0600711-005MSD	06/14/2006	06/17/2006	30.41 G	10	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Results

Client: GeoSyntec Consultants
Project: TDY
Sample Matrix: Water

Service Request: D0600697
Date Extracted: 06/19/2006

Extraction Prep Log
PolyChlorinated Biphenyls (PCBs)

Extaction Method: SW3520
Analysis Method: SW8082

Extraction Lot: PWB10619

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
Method Blank	PWB10619	NA	NA	1.000 L	10	NA	
Laboratory Control Sample	PWB10619LCS	NA	NA	1.000 L	10	NA	
Laboratory Control Sample Duplicate	PWB10619LCSD	NA	NA	1.000 L	10	NA	
OUTFALL-54	D0600697-001	06/15/2006	06/16/2006	1.030 L	10	NA	
CB63-264	D0600697-004	06/15/2006	06/16/2006	1.040 L	10	NA	
CB63-18	D0600697-005	06/15/2006	06/16/2006	1.040 L	10	NA	
CB63-18DL	D0600697-005DL	06/15/2006	06/16/2006	1.040 L	10	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES/REDDING

QA/QC Report

Client: GeoSyntec Consultants **Service Request:** D0600697
Project: TDY

Holding Time Summary
PolyChlorinated Biphenyls (PCBs)

Analysis Method: SW8082

Field Sample ID	Date Collected	Date Received	1st Date Prepared	Max. Holding Time 1	1st Time Held	2nd Date Prepared	Max. Holding Time 2	2nd Time Held	Date Analyzed	Max. Holding Time A	Time Held Anal.	Q
OUTFALL-54	06/15/2006	06/16/2006	06/19/2006	7	4	N/A	N/A	N/A	06/22/2006	40	3	
A-63E-30	06/15/2006	06/16/2006	06/19/2006	14	4	N/A	N/A	N/A	06/20/2006	40	1	
CB63-264	06/15/2006	06/16/2006	06/19/2006	7	4	N/A	N/A	N/A	06/22/2006	40	3	
CB63-18	06/15/2006	06/16/2006	06/19/2006	7	4	N/A	N/A	N/A	06/22/2006	40	3	
CB63-18DL	06/15/2006	06/16/2006	06/19/2006	7	4	N/A	N/A	N/A	06/27/2006	40	8	

Comments:

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-06-1001

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

PAGE 01

CAS CANOGA PARK 8185875555 06/15/2006 13:54

Columbia Analytical Services
5090 Caterpillar Rd.
Redding, CA 96003
530-244-5227 phone
530-244-4109 fax

CHAIN of CUSTODY

Page ___ of ___

1001

Client: CAS

Project:

Project Manager: Ed Wilson

Telephone No.: 530-244-5227

Fax No.: 530-244-4109

Method of Shipment:

Special Detection Limit/Reporting: Please report PQL/MDL

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	Hexavalent Chromium EPA 218.8													HOLD (see remarks)	Turn Around Time Standard
OUTFALL - 5Y		1		X				X	6/15/06	0630	X														

Special QA/QC: Tier IV

Sub-contract: To: Calscience

REMARKS: Cr6+ - 24 hr ht

PO# D0600

Sample Received Intact: Yes No

Temperature received: Ice No ice

Relinq. by sampler (Sign & Print Name) NIKOLAI BUENAVEDA	Date 6/15/06	Time 1505	Received by (Sign & Print Name)
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory — Date 6.15.06 Time 1505

Lab Work No.:

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 06 - 1001

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: CAS DATE: 6-15-06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.9 °C IR thermometer.
_____ Ambient temperature.

Initial: _____

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): _____

Initial: _____

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC		✓	
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: _____

COMMENTS:

19408 Park Row Suite 320 Houston, TX 77084 (713) 266-1599 (713) 266-0130 fax

Columbia Analytical Services INC.
An Employee - Owned Company

March 06, 2008

Service Request No: E0800089

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road
Suite 200
San Diego, CA 92127

RE: PCB Congeners - TDY/SC0307

Dear Brian:

Enclosed are the results of the sample(s) submitted to our laboratory on January 29, 2008. For your reference, these analyses have been assigned our service request number **E0800089**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please call if you have any questions. My extension is 2957. You may also contact me via email at JFreemyer@houston.caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Darren Biles for JF

Jane Freemyer
Project Chemist

Page 1 of _____

Columbia Analytical Services INC.

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Certificate of Analysis

19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

COLUMBIA ANALYTICAL SERVICES, INC

Client:	GeoSyntec Consultants	**Service Request No.:**	E0800089
Project:	PCB Congeners – TDY/SC0307	**Date Received:**	01/29/08
Sample Matrix:	Aqueous		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One aqueous sample was received for analysis at Columbia Analytical Services on 01/29/08.

The following discrepancies were noted upon initial sample inspection: no custody seals on cooler(s). The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The sample was received at 6°C in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

The sample was re-extracted because the solid particles were not removed before the first extraction. The solid particles were removed by filtration before re-extraction.

Data Validation Notes and Discussion

Y flags – Labeled Standards

Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Form 2s. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

Total Homologue Qualifiers

The qualifier flag assignment criterion is defined for individual congeners. Qualifier flags assigned to total homologues do not apply.

MS/MSD

EQ0800073: Laboratory Control Spike /Laboratory Control Spike Duplicate (LCS/LCSD) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch.

Approved by Xiangqiu Liang **Date** 3/7/08

Xiangqiu Liang, Laboratory Director

Detection Limits

Detection limits are calculated for each congener in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Approved by Xiangqiu Liang **Date** 3/7/08

Xiangqiu Liang, Laboratory Director

Client: GeoSyntec Consultants
Project: PCB Congeners - TDY/SC0307

Service Request: E0800089

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E0800089-001	MWCL-8	01/24/08	16:20

Superset Summary

Service Request: E0800089

SuperSet Reference: 08-0000069456 rev 00

1668A/Cl Biphen Cong

Calibrations: 12/13/07

Data Files:

Raw Data	*Begin CCAL*	*Method Blank*	*Lab ID*
U214206	U214205	U214206	EQ0800073-01
U214207	U214205	U214206	E0800089-001
U214213	U214205	U214206	EQ0800073-02
U214214	U214205	U214206	EQ0800073-03

ABBREVIATIONS, ACRONYMS

Abbreviations, acronyms and definitions

Cal	Calibration
Conc	Concentration
Dioxins	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated detection limit
EMPC	Estimated maximum possible concentration
Flags	Data qualifiers
Furans	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial calibration
ID	Identifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory control sample
LCSD	Laboratory control spike duplicate
MB	Method blank
MCL	Method calibration limit
MDL	Method detection limit
ML	Mililiters
MS	Matrix spike sample
MSD	Matrix spiked sample duplicate
NO	Number of peaks meeting all identification criteria
PCDD	Polychlorinated dibenzo-p-dioxin(s)
PCDF	Polychlorinated dibenzofuran(s)
ppm	Parts per million
ppb	Parts per billion
ppt	Parts per trillion
ppq	Parts per quadrillion
QC	Quality control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative percent difference
RRF	Relative response factor
RT	Retention time
SDG	Sample delivery group
S/N	Signal-to-noise ratio
TEF	Toxicity equivalence factor
TEQ	Toxicity equivalence

Data Qualifier Flags

- **B** Indicates the associated analyte is found in the method blank, as well as in the sample
- **C** Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225.) The results from both the DB-5 column and the DB-225 column are included in this data package. The results from the DB-225 analyses should be used to evaluate the 2378-TCDF in the samples. The confirmed result should be used in determining the TEQ value for TCDF.
- **E** Indicates an estimated value – used when the analyte concentration exceeds the upper end of the linear calibration range
- **J** Indicates an estimated value – used when the analyte concentration is below the method reporting limit (MRL) and above the detection limit (DL)
- **K** EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.
- **U** Indicates the compound was analyzed and not detected
- **Y** Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Form 2s. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.
- * Indicates concentration is reported as 'Not Detected'
- **S** Peak is saturated; data not reportable
- **Q** Lock-mass interference by ether compounds

CAS/HOU - Form Production, Peer Review & Project Review Signatures

SR# Unique ID: E0800089

First Level - Data Processing - to be filled by person generating the forms

Date	13 feb 08	Person 1	cee
Date		Person 2	

Second Level - Data Review – to be filled by person doing peer review

Date	02/26/08	Primary Data Reviewer	mc
Date	2/29/08	Secondary Data Reviewer	DB (RE)

Project Level - Review - to be filled by person doing project compliance review

Date	3/7/08	Reviewer	DB

Columbia Analytical Services INC.

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Analytical Results

19408 Park Row, Suite 320, Houston, TX 77084
Phone (713) 266-1599 Fax (713) 266-0130
www.casiab.com

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ0800073-01	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 20:30:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214206	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	ND	U	5.77	200			1
Total DiCB	**196**	J	8.03	500			1
Total TriCB	**103**	J	1.98	500			1
Total TetraCB	**57.7**	J	1.49	500			1
Total PentaCB	**26.8**	J	1.06	1000			1
Total HexaCB	**16.6**	J	0.624	1000			1
Total HeptaCB	**57.8**	J	1.00	1000			1
Total OctaCB	**37.8**	J	1.08	1000			1
Total NonaCB	ND	U	3.22	1000			1
PCB 209	ND	U	2.13	500			1
Total PCBs	**496**	J	0.624	1000			1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ0800073-01	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 20:30:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214206	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	337.798	17		15-150	3.30	0.742
PCB 3L	2000	348.423	17		15-150	3.26	0.872
PCB 4L	2000	404.201	20	Y	25-150	1.48	0.886
PCB 15L	2000	450.925	23	Y	25-150	1.58	1.225
PCB 19L	2000	408.102	20	Y	25-150	1.06	1.066
PCB 37L	2000	634.134	32		25-150	1.04	1.083
PCB 54L	2000	524.332	26		25-150	0.77	0.830
PCB 81L	2000	878.056	44		25-150	0.79	1.331
PCB 77L	2000	872.173	44		25-150	0.79	1.352
PCB 104L	2000	596.982	30		25-150	1.54	0.826
PCB 123L	2000	899.640	45		25-150	1.57	1.136
PCB 118L	2000	954.624	48		25-150	1.58	1.146
PCB 114L	2000	923.464	46		25-150	1.59	1.161
PCB 105L	2000	989.935	49		25-150	1.61	1.181
PCB 126L	2000	1183.889	59		25-150	1.54	1.271
PCB 155L	2000	598.183	30		25-150	1.22	0.802
PCB 167L	2000	997.154	50		25-150	1.30	1.071
PCBs 156L + 157L	4000	2247.630	56		25-150	1.27	1.098
PCB 169L	2000	1198.774	60		25-150	1.27	1.175
PCB 188L	2000	411.598	21	Y	25-150	1.02	0.731
PCB 189L	2000	722.232	36		25-150	1.03	0.961
PCB 202L	2000	502.068	25		25-150	0.90	0.830
PCB 205L	2000	972.457	49		25-150	0.88	1.009
PCB 208L	2000	837.905	42		25-150	0.76	0.952
PCB 206L	2000	987.844	49		25-150	0.77	1.040
PCB 209L	2000	1200.049	60		25-150	1.19	1.069
PCB 28L	2000	529.792	26	Y	30-135	1.04	0.932
PCB 111L	2000	866.469	43		30-135	1.56	1.078
PCB 178L	2000	956.496	48		30-135	1.03	1.010

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	01/24/2008
Sample Matrix:	Water	**Date Received:**	01/29/2008
Sample Name:	MWCL-8	**Units:**	pg/L
Lab Code:	E0800089-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 21:38:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1060mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214207	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**19.0**	J	4.93	189			1
Total DiCB	**350**	J	9.64	472			1
Total TriCB	**439**	J	2.32	472			1
Total TetraCB	**3510**		1.34	472			1
Total PentaCB	**1610**		1.05	943			1
Total HexaCB	**561**	J	0.392	943			1
Total HeptaCB	**380**	J	0.511	943			1
Total OctaCB	**106**	J	0.528	943			1
Total NonaCB	**7.94**	J	1.85	943			1
PCB 209	**4.61**	J	1.05	472	1.02	1.000	1
Total PCBs	**6990**		0.392	943			1

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	01/24/2008
Sample Matrix:	Water	**Date Received:**	01/29/2008
Sample Name:	MWCL-8	**Units:**	pg/L
Lab Code:	E0800089-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 21:38:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1060mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214207	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	258.959	13	Y	15-150	3.33	0.742
PCB 3L	2000	268.046	13	Y	15-150	3.26	0.872
PCB 4L	2000	312.905	16	Y	25-150	1.53	0.886
PCB 15L	2000	351.948	18	Y	25-150	1.56	1.226
PCB 19L	2000	304.420	15	Y	25-150	1.01	1.067
PCB 37L	2000	548.630	27		25-150	1.03	1.083
PCB 54L	2000	378.218	19	Y	25-150	0.75	0.831
PCB 81L	2000	814.950	41		25-150	0.79	1.331
PCB 77L	2000	808.556	40		25-150	0.79	1.353
PCB 104L	2000	488.244	24	Y	25-150	1.53	0.826
PCB 123L	2000	808.788	40		25-150	1.56	1.136
PCB 118L	2000	848.089	42		25-150	1.62	1.146
PCB 114L	2000	821.833	41		25-150	1.60	1.161
PCB 105L	2000	885.691	44		25-150	1.59	1.181
PCB 126L	2000	1098.970	55		25-150	1.53	1.271
PCB 155L	2000	529.342	26		25-150	1.21	0.803
PCB 167L	2000	930.036	47		25-150	1.27	1.071
PCBs 156L + 157L	4000	2105.383	53		25-150	1.27	1.099
PCB 169L	2000	1162.868	58		25-150	1.27	1.175
PCB 188L	2000	344.002	17	Y	25-150	1.03	0.732
PCB 189L	2000	670.983	34		25-150	1.05	0.962
PCB 202L	2000	440.883	22	Y	25-150	0.91	0.830
PCB 205L	2000	912.089	46		25-150	0.86	1.009
PCB 208L	2000	761.131	38		25-150	0.75	0.953
PCB 206L	2000	926.325	46		25-150	0.78	1.040
PCB 209L	2000	1118.326	56		25-150	1.21	1.069
PCB 28L	2000	373.138	19	Y	30-135	1.01	0.933
PCB 111L	2000	693.607	35		30-135	1.58	1.078
PCB 178L	2000	792.963	40		30-135	1.05	1.010

Comments:

Columbia Analytical Services INC.

An Employee - Owned Company

Accuracy & Precision Data

19408 Park Row, Suite 320, Houston, TX 77084
Phone(713)266-1599 Fax (713)266-0130
www.caslab.com

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoSyntec Consultants
Project: PCB Congeners - TDY/SC0307
Sample Matrix: Water

Service Request: E0800089

Sample Name: Lab Control Sample
Lab Code: EQ0800073-02

Units: pg/L
Basis: NA

Analytical Method: 1668A
Prep Method: Method

Analyte Name	Lab Control Sample Result	Expected	% Rec	Duplicate Lab Control Sample Result	Expected	% Rec	% Rec Limits	RPD	RPD Limi
PCB 1	952	1000	95	1040	1000	104	50 - 150	9	50
PCB 3	900	1000	90	948	1000	95	50 - 150	5	50
PCB 4	934	1000	93	1000	1000	100	50 - 150	7	50
PCB 15	943	1000	94	984	1000	98	50 - 150	4	50
PCB 19	921	1000	92	1030	1000	103	50 - 150	11	50
PCB 37	942	1000	94	1010	1000	101	50 - 150	7	50
PCB 54	920	1000	92	960	1000	96	50 - 150	4	50
PCB 81	906	1000	91	947	1000	95	50 - 150	4	50
PCB 77	926	1000	93	966	1000	97	50 - 150	4	50
PCB 104	917	1000	92	959	1000	96	50 - 150	4	50
PCB 123	932	1000	93	962	1000	96	50 - 150	3	50
PCB 118	908	1000	91	962	1000	96	50 - 150	6	50
PCB 114	991	1000	99	1040	1000	104	50 - 150	5	50
PCB 105	946	1000	95	991	1000	99	50 - 150	5	50
PCB 126	935	1000	94	977	1000	98	50 - 150	4	50
PCB 155	946	1000	95	994	1000	99	50 - 150	5	50
PCB 167	940	1000	94	1020	1000	102	50 - 150	8	50
PCBs 156 + 157	1880	2000	94	1970	2000	99	50 - 150	5	50
PCB 169	975	1000	98	1070	1000	107	50 - 150	9	50
PCB 188	977	1000	98	1020	1000	102	50 - 150	4	50
PCB 189	1040	1000	104	1090	1000	109	50 - 150	5	50
PCB 202	1040	1000	104	1090	1000	109	50 - 150	5	50
PCB 205	959	1000	96	997	1000	100	50 - 150	4	50
PCB 208	998	1000	100	1060	1000	106	50 - 150	6	50
PCB 206	992	1000	99	1050	1000	105	50 - 150	6	50
PCB 209	953	1000	95	1000	1000	100	50 - 150	5	50

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0800073-02	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 04:25:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214213	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	**952**		7.90	200	3.19	1.001	1
PCB 3	**900**		7.44	400	2.93	1.001	1
PCB 4	**934**		20.4	500	1.54	1.001	1
PCB 15	**943**		11.6	500	1.52	1.001	1
PCB 19	**921**		9.40	100	1.04	1.001	1
PCB 37	**942**		2.80	500	1.02	1.001	1
PCB 54	**920**		1.07	500	0.72	1.001	1
PCB 81	**906**		1.64	500	0.74	1.001	1
PCB 77	**926**		1.75	500	0.77	1.001	1
PCB 104	**917**		1.27	500	1.55	1.001	1
PCB 123	**932**		3.15	500	1.60	1.000	1
PCB 118	**908**		2.96	500	1.60	1.000	1
PCB 114	**991**		3.12	500	1.55	1.000	1
PCB 105	**946**		2.99	200	1.55	1.001	1
PCB 126	**935**		2.80	500	1.57	1.000	1
PCB 155	**946**	J	0.685	1000	1.17	1.001	1
PCB 167	**940**		0.921	500	1.22	1.000	1
PCBs 156 + 157	**1880**		1.39	1000	1.20	1.000	1
PCB 169	**975**		0.981	500	1.20	1.000	1
PCB 188	**977**		1.02	500	0.99	1.001	1
PCB 189	**1040**		1.19	500	1.01	1.000	1
PCB 202	**1040**		0.792	100	0.88	1.001	1
PCB 205	**959**	J	0.681	1000	0.86	1.001	1
PCB 208	**998**	J	1.21	1000	0.74	1.000	1
PCB 206	**992**	J	4.38	1000	0.76	1.001	1
PCB 209	**953**		0.421	500	1.18	1.000	1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0800073-02	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 04:25:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214213	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**1850**		7.44	200			1
Total DiCB	**1880**		11.6	500			1
Total TriCB	**1860**		2.80	500			1
Total TetraCB	**2750**		1.07	500			1
Total PentaCB	**5630**		1.27	1000			1
Total HexaCB	**4740**		0.685	1000			1
Total HeptaCB	**2020**		1.02	1000			1
Total OctaCB	**2000**		0.681	1000			1
Total NonaCB	**1990**		1.21	1000			1
Total PCBs	**25700**		0.421	1000			1

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0800073-02	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 04:25:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214213	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	159.552	8	Y	15-150	3.41	0.742
PCB 3L	2000	202.658	10	Y	15-150	3.36	0.872
PCB 4L	2000	254.688	13	Y	25-150	1.51	0.887
PCB 15L	2000	365.127	18	Y	25-150	1.59	1.227
PCB 19L	2000	290.570	15	Y	25-150	1.02	1.067
PCB 37L	2000	555.645	28		25-150	1.06	1.083
PCB 54L	2000	419.258	21	Y	25-150	0.74	0.831
PCB 81L	2000	761.372	38		25-150	0.80	1.331
PCB 77L	2000	778.022	39		25-150	0.79	1.353
PCB 104L	2000	505.458	25		25-150	1.57	0.827
PCB 123L	2000	767.379	38		25-150	1.56	1.137
PCB 118L	2000	809.615	40		25-150	1.58	1.147
PCB 114L	2000	772.705	39		25-150	1.55	1.162
PCB 105L	2000	840.875	42		25-150	1.63	1.181
PCB 126L	2000	1042.438	52		25-150	1.56	1.272
PCB 155L	2000	578.588	29		25-150	1.24	0.802
PCB 167L	2000	942.109	47		25-150	1.28	1.071
PCBs 156L + 157L	4000	2145.952	54		25-150	1.27	1.099
PCB 169L	2000	1211.488	61		25-150	1.32	1.175
PCB 188L	2000	362.836	18	Y	25-150	1.04	0.731
PCB 189L	2000	711.337	36		25-150	1.02	0.962
PCB 202L	2000	467.025	23	Y	25-150	0.90	0.830
PCB 205L	2000	954.059	48		25-150	0.89	1.009
PCB 208L	2000	826.473	41		25-150	0.79	0.953
PCB 206L	2000	1027.279	51		25-150	0.76	1.040
PCB 209L	2000	1280.874	64		25-150	1.20	1.069
PCB 28L	2000	567.149	28	Y	30-135	1.04	0.933
PCB 111L	2000	821.090	41		30-135	1.53	1.078
PCB 178L	2000	887.332	44		30-135	1.05	1.010

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample Dup	**Units:**	pg/L
Lab Code:	EQ0800073-03	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 05:33:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214214	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	**1040**		8.18	200	3.26	1.001	1
PCB 3	**948**		7.82	400	2.99	1.001	1
PCB 4	**1000**		21.8	500	1.62	1.002	1
PCB 15	**984**		10.1	500	1.53	1.001	1
PCB 19	**1030**		8.31	100	0.97	1.001	1
PCB 37	**1010**		3.69	500	1.02	1.001	1
PCB 54	**960**		1.95	500	0.72	1.001	1
PCB 81	**947**		2.29	500	0.78	1.001	1
PCB 77	**966**		2.41	500	0.76	1.000	1
PCB 104	**959**		1.27	500	1.49	1.001	1
PCB 123	**962**		3.12	500	1.61	1.000	1
PCB 118	**962**		2.99	500	1.62	1.000	1
PCB 114	**1040**		3.10	500	1.61	1.000	1
PCB 105	**991**		3.02	200	1.59	1.001	1
PCB 126	**977**		2.72	500	1.62	1.000	1
PCB 155	**994**	J	0.658	1000	1.16	1.001	1
PCB 167	**1020**		2.26	500	1.19	1.000	1
PCBs 156 + 157	**1970**		3.37	1000	1.19	1.000	1
PCB 169	**1070**		2.35	500	1.22	1.000	1
PCB 188	**1020**		0.741	500	1.00	1.001	1
PCB 189	**1090**		0.830	500	1.04	1.000	1
PCB 202	**1090**		0.763	100	0.88	1.000	1
PCB 205	**997**	J	0.627	1000	0.89	1.000	1
PCB 208	**1060**		1.17	1000	0.76	1.000	1
PCB 206	**1050**		5.11	1000	0.79	1.001	1
PCB 209	**1000**		0.946	500	1.16	1.000	1

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample Dup	**Units:**	pg/L
Lab Code:	EQ0800073-03	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 05:33:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214214	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**1990**		7.82	200			1
Total DiCB	**1990**		10.1	500			1
Total TriCB	**2040**		3.69	500			1
Total TetraCB	**2870**		1.95	500			1
Total PentaCB	**5890**		1.27	1000			1
Total HexaCB	**5050**		0.658	1000			1
Total HeptaCB	**2110**		0.741	1000			1
Total OctaCB	**2090**		0.627	1000			1
Total NonaCB	**2110**		1.17	1000			1
Total PCBs	**27100**		0.627	1000			1

Comments:

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample Dup	**Units:**	pg/L
Lab Code:	EQ0800073-03	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/21/08 05:33:0(
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214214	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	124.400	6	Y	15-150	3.38	0.742
PCB 3L	2000	156.240	8	Y	15-150	3.47	0.872
PCB 4L	2000	201.152	10	Y	25-150	1.53	0.886
PCB 15L	2000	277.131	14	Y	25-150	1.59	1.226
PCB 19L	2000	220.290	11	Y	25-150	0.97	1.067
PCB 37L	2000	421.353	21	Y	25-150	1.01	1.083
PCB 54L	2000	343.723	17	Y	25-150	0.77	0.831
PCB 81L	2000	589.341	29		25-150	0.80	1.331
PCB 77L	2000	600.119	30		25-150	0.76	1.353
PCB 104L	2000	414.808	21	Y	25-150	1.52	0.826
PCB 123L	2000	628.283	31		25-150	1.57	1.136
PCB 118L	2000	660.356	33		25-150	1.60	1.146
PCB 114L	2000	636.563	32		25-150	1.60	1.161
PCB 105L	2000	686.601	34		25-150	1.59	1.181
PCB 126L	2000	860.149	43		25-150	1.57	1.271
PCB 155L	2000	469.063	23	Y	25-150	1.24	0.802
PCB 167L	2000	778.446	39		25-150	1.34	1.071
PCBs 156L + 157L	4000	1778.028	44		25-150	1.28	1.098
PCB 169L	2000	994.270	50		25-150	1.27	1.175
PCB 188L	2000	298.668	15	Y	25-150	1.04	0.731
PCB 189L	2000	584.488	29		25-150	1.06	0.962
PCB 202L	2000	380.966	19	Y	25-150	0.88	0.831
PCB 205L	2000	807.990	40		25-150	0.88	1.009
PCB 208L	2000	677.813	34		25-150	0.77	0.953
PCB 206L	2000	858.176	43		25-150	0.79	1.040
PCB 209L	2000	1074.041	54		25-150	1.21	1.069
PCB 28L	2000	480.341	24	Y	30-135	1.05	0.933
PCB 111L	2000	705.252	35		30-135	1.58	1.078
PCB 178L	2000	789.184	39		30-135	1.02	1.010

Comments:

Columbia Analytical Services INC.

An Employee - Owned Company

Chain-of-Custody

19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

Document Number: 2316

Analysis Request and Chain of Custody Record

Project Name: TDY	Project Number: SC0307	Page 1 of 1
Samplers Names: D. SKIPPON	Project Contact: B. HITCHENS	
Laboratory Name: COLUMBIA	Lab Contact: J. FREEMYER	White copy: to accompany samples
Lab Address: 19408 PARK ROW SUITE 320 HOUSTON TX	Lab Phone: 1-281-994-2957	Yellow copy: field copy
	Carrier/Waybill No.: Fedex see comments	

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by ____	Metals	SVOCs by 8270	PCBs HI-RESOLUTION	Number of Containers	Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative			2x1L Amber			
MWCL-8	11/24/08	16:20	H2O				2			
										24

24 of 408

Special Instructions: ~~BSF #~~ Trk # 7988 6102 1342

Turn-around Time: ☒ Normal ☐ Rush: ____

1. Relinquished by (Signature/Affiliation) (GSC)	Date 11/28/08 Time 12:05 PM	1. Received by (Signature/Affiliation) Fedex	Date 11/28/08 Time 12:05 PM
2. Relinquished by (Signature/Affiliation)	Date Time	2. Received by (Signature/Affiliation)	Date Time
3. Relinquished by (Signature/Affiliation)	Date Time	3. Received by (Signature/Affiliation)	Date 11/29/08 Time 10:10

Geosyntec consultants 10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Columbia Analytical Services, Inc.
Cooler Receipt Form

Client/Project: Geosyntech Consultants Service Request: E800089

Received: 1/29/08 Opened: (Date/time): 1/29/08 10:10 By:

1. Samples were received via? *US Mail* (*Fedex*) *UPS* *DHL* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Other* _____ *NA*
3. Were custody seals present on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Is shipper's air-bill filed? NA (Y) N If not, record air bill number: _____

5. Temperature of cooler(s) upon receipt (°C): 6°C
6. If applicable, list Chain of Custody numbers: 2316
7. Were custody papers properly filled our (ink, signed, etc.)? NA (Y) N
8. Packing material used: *Inserts* (*Bubble Wrap*) *Blue Ice* (*Wet Ice*) *Sleeves* *Other* _____
9. Were the correct types of bottles used for the tests indicated? (Y) N
   Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* (Y) N

Sample ID	Bottle Count	Bottle Type	Out of Temp	Broken	Initials

10. Were all bottle labels complete (i.e. analysis, ID, etc.)? (Y) N
    Did all bottle labels and tags agree with custody papers? *Indicate in the table below.* (Y) N

Sample ID on Bottle	Sample ID on COC		Sample ID on Bottle	Sample ID on COC

11. Additional notes, discrepancies, and resolutions: _____

SAMPLE ACCEPTANCE POLICY

Custody Seals (desirable, mandatory if specified in SAP):

- ✓ On outside of cooler
- ✓ Seals intact, signed and dated

Chain-of-Custody documentation (mandatory):

- ✓ Properly filled out in ink & signed by the client
- ✓ Sign and date the coc for CAS/HOU upon cooler receipt
- ✓ Coc must list method number
- ✓ If no coc was submitted with the samples, complete a CAS/HOU coc for the client

Sample Integrity (mandatory):

- ✓ Sample containers must arrive in good condition (not broken)
- ✓ Sample IDs on the bottles must match the sample IDs on the coc
- ✓ The correct type of sample bottle must be used for the method requested
- ✓ The correct number of sample containers received must agree with the documentation on the coc
- ✓ The correct sample matrix must appear on the coc
- ✓ An appropriate sample volume or weight must be received

Temperature Preservatives (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at $4\pm2^{\circ}C$
- ✓ Tissue samples must be shipped and stored frozen, at $\leq -10^{\circ}C$
- ✓ Air samples can be shipped and stored at ambient temperature, ~23°C
- ✓ The sample temperature must be recorded on the coc
- ✓ Notify a Project Chemist if PCB samples are outside the acceptance temperature – client must decide re: replacement sample submittal

Cooler Receipt Form, CRF (mandatory):

- ✓ Cooler receipt forms must be completed for each coc & SR#
- ✓ Sample integrity issues must be documented on the CRF
- ✓ A scan of the carrier and the airbill number must be recorded in LIMS

Sample Integrity Issues/Resolutions (mandatory):

- ✓ Sample integrity issues are documented on the CRF and given to the Project Chemist for resolution with the client
- ✓ Client resolution is documented in writing (i.e. email) and filed in the project folder(s)

Service Request Summary

Folder #: **E0800089**
Client Name: GeoSyntec Consultants
Project Name: PCB Congeners - TDY
Project Number: SC0307

Report To: Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road
Suite 200
San Diego, CA 92127

Phone Number: 858 674-6559
Cell Number:
Fax Number:
E-mail: bhitchens@geosyntec.com

Project Chemist: Jane Freemyer
Originating Lab: HOUSTON
Logged By: AENNIS
Date Received: 01/29/2008
Internal Due Date: 02/26/2008
QAPP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: N
Report to MDL?: Y
P.O. Number: SC0307
EDD: BASIC_WQC_CASNo

2 - 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserv

Location: E-WIC01

CAS Samp No.	Client Samp No.	Matrix	Collected		SVM Cl Biphen Cong/ 1668A
E0800089-001	MWCL-8	Water	1/24/08	1620	IV

27 of 408

27

Folder Comments:

Report Total Homologs and Total PCBs only.

Preparation Information Benchsheet

Prep Run#: 62438
Team: Semivoa GCMS

Prep WorkFlow: OrgExtAq(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 02/11/2008 03:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Sample Description
1	EQ0800073-01	MB		1668A/Cl Biphen Cong		Liquid	1000mL	
2	EQ0800073-02	LCS		1668A/Cl Biphen Cong		Liquid	1000mL	
3	EQ0800073-03	DLCS		1668A/Cl Biphen Cong		Liquid	1000mL	
4	E0800089-001RE	MWCL-8	.02	1668A/Cl Biphen Cong		Water	1060mL	Yellow/orange liquid
5	E0800129-001	54SEEP-18S-CB63	.01	1668A/Cl Biphen Cong		Water	1100mL	Colorless, clear liquid

Spiking Solutions

Name: 1668A Working Matrix Standard | Inventory ID 3349 | Logbook Ref: B1-91-2 | Expires On: 01/27/2018

EQ0800073-02 1,000.00uL EQ0800073-03 1,000.00uL

Name: 1668A Labeled Working Standard | Inventory ID 3499 | Logbook Ref: B1-94-2 | Expires On: 02/10/2018

E0800089-001 1,000.00uL E0800129-001 1,000.00uL EQ0800073-01 1,000.00uL EQ0800073-02 1,000.00uL EQ0800073-03 1,000.00uL

Name: 1668A Clean Up Working Standard | Inventory ID 3502 | Logbook Ref: B1-93-4 | Expires On: 02/10/2018

E0800089-001 100.00uL E0800129-001 100.00uL EQ0800073-01 100.00uL EQ0800073-02 100.00uL EQ0800073-03 100.00uL

28 28 9408

Preparation Materials

Silica Gel Reagent Grade	C2-6-004 (3305)	Glass Wool	C2-1-004 (3060)	Acetone 99.5% Minimum	C1-124-004 (3063)
Nonane (n-Nonane) 99%	C2-4-003 (3304)	Sodium Sulfate Anhydrous Reage	C2-6-005 (3307)	Dichloromethane (Methylene Chl	C2-8-001 (3354)
Toluene 99.9% Minimum	C2-7-007 (3359)	Ethyl Acetate 99.9% Minimum	C2-1-005 (3059)	Hexane (n-Hexane) 98.5% Minim	C2-7-006 (3356)
Sulfuric Acid Reagent Grade	C2-7-005 (3357)				

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/11/08 15:00	Started:	2/12/08 08:00	Started:	2/12/08 14:00	Started:	2/14/08 08:00
Finished:	2/11/08 17:00	Finished:	2/12/08 09:00	Finished:	2/12/08 16:00	Finished:	2/14/08 08:45
By:	ABIDDLE	By:	ABIDDLE	By:	ABIDDLE	By:	ABIDDLE

Reviewed By: _____ Date: 3/7/08

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined: Yes No

Columbia Analytical Services, Inc.

Nonconformity and Corrective Action Report

NONCONFORMITY

PROCEDURE (SOP or METHOD): 1668A – Total Homologs + Total PCBs

EVENT:
- ☐ Missed Holding Time
- ☐ Method Blank Contamination
- ☐ Equipment Failure
- ☐ SOP Deviation
- ☐ QC Failure
- ☐ Login Error
- ☐ Unacceptable PT Sample Result
- ☐ Other (describe):
- ☐ Lab Error (spilled sample, spiking error, etc.)
- ☒ Project Management Error

SAMPLES / PROJECTS / CUSTOMERS / SYSTEMS AFFECTED

E0800089-001

DETAILED DESCRIPTION

Client needs solids removed – by the best available technology – preferably by centrifuge, but since that won't yield acceptable results with the light solids floating in the water, then filter the sample.

ORIGINATOR: Jane Freemyer DATE: 02/08/08

CORRECTIVE ACTION AND OUTCOME

Re-establishment of conformity must be demonstrated and documented. Describe the steps that were taken, or are planned to be taken, to correct the particular Nonconformity and prevent its reoccurrence. Include any Project Manager instructions here.

Is the data to be flagged in the Analytical Report with an appropriate qualifier? ☒ **No** ☐ **Yes**

APPROVAL AND NOTIFICATION

Supervisor Verification and Approval of Corrective Action JC Date: 2/7/08
Comments:

QA PM Verification and Approval of Corrective Action JF Date: 02/08/08
Comments:

Customer Notified by ☐ Telephone ☐ Fax ☒ E-mail ☒ Narrative ☐ Not notified

Project Manager Verification and Approval of Corrective Action JF Date: 02/08/08
Comments:

(Attach record or cite reference where record is located.) Project folder archives

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	01/24/2008
Sample Matrix:	Water	**Date Received:**	01/29/2008
Sample Name:	MWCL-8	**Units:**	pg/L
Lab Code:	E0800089-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 21:38:00
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1060mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214207	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**19.0**	J	4.93	189			1
Total DiCB	**350**	J	9.64	472			1
Total TriCB	**439**	J	2.32	472			1
Total TetraCB	**3510**		1.34	472			1
Total PentaCB	**1610**		1.05	943			1
Total HexaCB	**561**	J	0.392	943			1
Total HeptaCB	**380**	J	0.511	943			1
Total OctaCB	**106**	J	0.528	943			1
Total NonaCB	**7.94**	J	1.85	943			1
PCB 209	**4.61**	J	1.05	472	1.02	1.000	1
Total PCBs	**6990**		0.392	943			1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800089
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	01/24/2008
Sample Matrix:	Water	**Date Received:**	01/29/2008
Sample Name:	MWCL-8	**Units:**	pg/L
Lab Code:	E0800089-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 21:38:00
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1060mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214207	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	258.959	13	Y	15-150	3.33	0.742
PCB 3L	2000	268.046	13	Y	15-150	3.26	0.872
PCB 4L	2000	312.905	16	Y	25-150	1.53	0.886
PCB 15L	2000	351.948	18	Y	25-150	1.56	1.226
PCB 19L	2000	304.420	15	Y	25-150	1.01	1.067
PCB 37L	2000	548.630	27		25-150	1.03	1.083
PCB 54L	2000	378.218	19	Y	25-150	0.75	0.831
PCB 81L	2000	814.950	41		25-150	0.79	1.331
PCB 77L	2000	808.556	40		25-150	0.79	1.353
PCB 104L	2000	488.244	24	Y	25-150	1.53	0.826
PCB 123L	2000	808.788	40		25-150	1.56	1.136
PCB 118L	2000	848.089	42		25-150	1.62	1.146
PCB 114L	2000	821.833	41		25-150	1.60	1.161
PCB 105L	2000	885.691	44		25-150	1.59	1.181
PCB 126L	2000	1098.970	55		25-150	1.53	1.271
PCB 155L	2000	529.342	26		25-150	1.21	0.803
PCB 167L	2000	930.036	47		25-150	1.27	1.071
PCBs 156L + 157L	4000	2105.383	53		25-150	1.27	1.099
PCB 169L	2000	1162.868	58		25-150	1.27	1.175
PCB 188L	2000	344.002	17	Y	25-150	1.03	0.732
PCB 189L	2000	670.983	34		25-150	1.05	0.962
PCB 202L	2000	440.883	22	Y	25-150	0.91	0.830
PCB 205L	2000	912.089	46		25-150	0.86	1.009
PCB 208L	2000	761.131	38		25-150	0.75	0.953
PCB 206L	2000	926.325	46		25-150	0.78	1.040
PCB 209L	2000	1118.326	56		25-150	1.21	1.069
PCB 28L	2000	373.138	19	Y	30-135	1.01	0.933
PCB 111L	2000	693.607	35		30-135	1.58	1.078
PCB 178L	2000	792.963	40		30-135	1.05	1.010

Comments:

Calscience Environmental Laboratories, Inc.

February 01, 2007

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 07-01-1069**
Client Reference: TDY / SC-0307-03-22

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 1/19/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants	Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200	Work Order No:	07-01-1069
San Diego, CA 92127-2116	Preparation:	EPA 3545
	Method:	EPA 8082
	Units:	ug/kg

Project: TDY / SC-0307-03-22

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 1	**07-01-1069-1**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	39000	5000	100	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	2400	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	110	50-130			2,4,5,6-Tetrachloro-m-Xylene	92	50-130		

Sample 2	**07-01-1069-2**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	59000	5000	100	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	7500	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	122	50-130			2,4,5,6-Tetrachloro-m-Xylene	99	50-130		

Sample 3	**07-01-1069-3**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	3300	500	10	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	2100	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	125	50-130			2,4,5,6-Tetrachloro-m-Xylene	122	50-130		

Sample 4	**07-01-1069-4**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	2500	50		Aroclor-1248	36000	2500	50	
Aroclor-1221	ND	2500	50		Aroclor-1254	ND	2500	50	
Aroclor-1232	ND	2500	50		Aroclor-1260	ND	2500	50	
Aroclor-1242	ND	2500	50		Aroclor-1262	ND	2500	50	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	219	50-130		2	2,4,5,6-Tetrachloro-m-Xylene	98	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-01-1069
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC-0307-03-22

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 5	**07-01-1069-5**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50000	1000		Aroclor-1248	480000	50000	1000	
Aroclor-1221	ND	50000	1000		Aroclor-1254	ND	50000	1000	
Aroclor-1232	ND	50000	1000		Aroclor-1260	ND	50000	1000	
Aroclor-1242	ND	50000	1000		Aroclor-1262	ND	50000	1000	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	2608	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	204	50-130		1,2

Sample 6	**07-01-1069-6**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50000	1000		Aroclor-1248	480000	50000	1000	
Aroclor-1221	ND	50000	1000		Aroclor-1254	ND	50000	1000	
Aroclor-1232	ND	50000	1000		Aroclor-1260	200000	50000	1000	
Aroclor-1242	ND	50000	1000		Aroclor-1262	ND	50000	1000	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	810	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	2249	50-130		1,2

Sample 7	**07-01-1069-7**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50000	1000		Aroclor-1248	1000000	50000	1000	
Aroclor-1221	ND	50000	1000		Aroclor-1254	ND	50000	1000	
Aroclor-1232	ND	50000	1000		Aroclor-1260	360000	50000	1000	
Aroclor-1242	ND	50000	1000		Aroclor-1262	ND	50000	1000	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	1066	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	0	50-130		1,2

Sample 8	**07-01-1069-8**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	8700	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	105	50-130			2,4,5,6-Tetrachloro-m-Xylene	109	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-01-1069
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC-0307-03-22 Page 3 of 8

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 9	**07-01-1069-9**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	ND	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	9200	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	84	50-130			2,4,5,6-Tetrachloro-m-Xylene	107	50-130		

Sample 10	**07-01-1069-10**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	14000	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	50	50-130		1	2,4,5,6-Tetrachloro-m-Xylene	14	50-130		1,2

Sample 11	**07-01-1069-11**	**01/18/07**	**Solid**	**01/23/07**	**01/26/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	2500	50		Aroclor-1248	13000	2500	50	
Aroclor-1221	ND	2500	50		Aroclor-1254	ND	2500	50	
Aroclor-1232	ND	2500	50		Aroclor-1260	ND	2500	50	
Aroclor-1242	ND	2500	50		Aroclor-1262	ND	2500	50	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	124	50-130			2,4,5,6-Tetrachloro-m-Xylene	113	50-130		

Sample 12	**07-01-1069-12**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	6800	500	10	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	ND	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	95	50-130			2,4,5,6-Tetrachloro-m-Xylene	107	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/19/07
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: TDY / SC-0307-03-22

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 13	**07-01-1069-13**	**01/18/07**	**Solid**	**01/23/07**	**01/24/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	630	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	1400	250	5	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	91	50-130			2,4,5,6-Tetrachloro-m-Xylene	89	50-130		

Sample 14	**07-01-1069-14**	**01/18/07**	**Solid**	**01/30/07**	**02/01/07**	**070129L09**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	350	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	280	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	106	50-130			2,4,5,6-Tetrachloro-m-Xylene	104	50-130		

Sample 15	**07-01-1069-15**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	6400	500	10	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	2200	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	93	50-130			2,4,5,6-Tetrachloro-m-Xylene	106	50-130		

Sample 16	**07-01-1069-16**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	5000	100		Aroclor-1248	ND	5000	100	
Aroclor-1221	ND	5000	100		Aroclor-1254	55000	5000	100	
Aroclor-1232	ND	5000	100		Aroclor-1260	ND	5000	100	
Aroclor-1242	ND	5000	100		Aroclor-1262	ND	5000	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	346	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	146	50-130		1,2

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants	Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200	Work Order No:	07-01-1069
San Diego, CA 92127-2116	Preparation:	EPA 3545
	Method:	EPA 8082
	Units:	ug/kg

Project: TDY / SC-0307-03-22 Page 5 of 8

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 17	**07-01-1069-17**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	2400	500	10	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	ND	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	133	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	121	50-130		

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 18	**07-01-1069-18**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	15000	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	111	50-130			2,4,5,6-Tetrachloro-m-Xylene	102	50-130		

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 19	**07-01-1069-19**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	12000	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	115	50-130			2,4,5,6-Tetrachloro-m-Xylene	106	50-130		

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 20	**07-01-1069-20**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	16000	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	93	50-130			2,4,5,6-Tetrachloro-m-Xylene	93	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-01-1069
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC-0307-03-22

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 21	**07-01-1069-21**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	25000	500		Aroclor-1248	380000	25000	500	
Aroclor-1221	ND	25000	500		Aroclor-1254	200000	25000	500	
Aroclor-1232	ND	25000	500		Aroclor-1260	ND	25000	500	
Aroclor-1242	ND	25000	500		Aroclor-1262	ND	25000	500	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	630	50-130		2,1	2,4,5,6-Tetrachloro-m-Xylene	178	50-130		2,1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 22	**07-01-1069-22**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1000	20		Aroclor-1248	11000	1000	20	
Aroclor-1221	ND	1000	20		Aroclor-1254	ND	1000	20	
Aroclor-1232	ND	1000	20		Aroclor-1260	ND	1000	20	
Aroclor-1242	ND	1000	20		Aroclor-1262	ND	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	100	50-130			2,4,5,6-Tetrachloro-m-Xylene	101	50-130		

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 23	**07-01-1069-23**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	25000	500		Aroclor-1248	220000	25000	500	
Aroclor-1221	ND	25000	500		Aroclor-1254	ND	25000	500	
Aroclor-1232	ND	25000	500		Aroclor-1260	ND	25000	500	
Aroclor-1242	ND	25000	500		Aroclor-1262	ND	25000	500	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	170	50-130		2,1	2,4,5,6-Tetrachloro-m-Xylene	148	50-130		2,1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 24	**07-01-1069-24**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	5000	100		Aroclor-1248	ND	5000	100	
Aroclor-1221	ND	5000	100		Aroclor-1254	46000	5000	100	
Aroclor-1232	ND	5000	100		Aroclor-1260	ND	5000	100	
Aroclor-1242	ND	5000	100		Aroclor-1262	ND	5000	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	84	50-130			2,4,5,6-Tetrachloro-m-Xylene	150	50-130		2,1

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-01-1069
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC-0307-03-22 Page 7 of 8

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Sample 25	**07-01-1069-25**	**01/18/07**	**Solid**	**01/23/07**	**01/24/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	210	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	120	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	90	50-130			2,4,5,6-Tetrachloro-m-Xylene	100	50-130		

Sample 26	**07-01-1069-26**	**01/18/07**	**Solid**	**01/23/07**	**01/25/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	100	2		Aroclor-1248	2000	100	2	
Aroclor-1221	ND	100	2		Aroclor-1254	ND	100	2	
Aroclor-1232	ND	100	2		Aroclor-1260	ND	100	2	
Aroclor-1242	ND	100	2		Aroclor-1262	ND	100	2	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	91	50-130			2,4,5,6-Tetrachloro-m-Xylene	99	50-130		

Sample 17B	**07-01-1069-27**	**01/18/07**	**Solid**	**01/23/07**	**01/24/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	990	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	96	50-130			2,4,5,6-Tetrachloro-m-Xylene	96	50-130		

Method Blank	**099-07-009-1,003**	**N/A**	**Solid**	**01/23/07**	**01/24/07**	**070123L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	85	50-130			2,4,5,6-Tetrachloro-m-Xylene	106	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants	Date Received:	01/19/07
10875 Rancho Bernardo Road, Suite 200	Work Order No:	07-01-1069
San Diego, CA 92127-2116	Preparation:	EPA 3545
	Method:	EPA 8082
	Units:	ug/kg

Project: TDY / SC-0307-03-22 Page 8 of 8

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**099-07-009-1,005**	**N/A**	**Solid**	**01/23/07**	**01/24/07**	**070123L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	78	50-130		2,4,5,6-Tetrachloro-m-Xylene	95	50-130	

Method Blank	**099-07-009-1,007**	**N/A**	**Solid**	**01/29/07**	**01/30/07**	**070129L09**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	99	50-130		2,4,5,6-Tetrachloro-m-Xylene	98	50-130	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/19/07
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC-0307-03-22

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-01-1234-62	**Solid**	**GC 10**	**01/23/07**	**01/24/07**	**070123S03**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	112	101	50-135	11	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/19/07
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC-0307-03-22

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
Sample 13	**Solid**	**GC 10**	**01/23/07**	**01/24/07**	**070123S11**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	1159	2110	50-135	31	0-25	3,4

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/19/07
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC-0307-03-22

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-01-1124-5	**Solid**	**GC 10**	**01/29/07**	**01/30/07**	**070129S09**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	122	124	50-135	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC-0307-03-22

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-009-1,003	**Solid**	**GC 10**	**01/23/07**	**01/24/07**	**070123L03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	97	107	50-135	10	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC-0307-03-22

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-009-1,005	**Solid**	**GC 10**	**01/23/07**	**01/24/07**	**070123L11**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	96	98	50-135	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-01-1069
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC-0307-03-22

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-009-1,007	**Solid**	**GC 10**	**01/29/07**	**01/30/07**	**070129L09**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	99	107	50-135	8	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-01-1069

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 1671 (1069)

Analysis Request and Chain of Custody Record

Page 1 of 2

Project Name: TDY	Project Number: SC-0307-03-22
Samplers Names: S. Agdos/B. Hitchens	Project Contact: Brian Hitchens
Laboratory Name: Cal Science	Lab Contact: Steve Nowak
Lab Address: 7440 Lincoln Way, Garden Grove, CA 92841	Lab Phone: 714-895-5494
	Carrier/Waybill No.: Pick-up

White copy: to accompany samples

Yellow copy: field copy

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by ____	Metals	SVOCs by 8270	PCBs	grain size	TOC	Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative:			8oz jar				
				Number of Containers:							
Sample 1	1/19/07	1830	Soil				1	1	1		
Sample 2							1	1	1		
Sample 3							1	1	1		
Sample 4							1	1	1		
Sample 5							1	1	1		
Sample 6							1	1	1		
Sample 7							1	1	1		
Sample 8							1	1	1		
Sample 9							1	1	1		
Sample 10							1	1	1		
Sample 11							1	1	1		
Sample 12							1	1	1		

Special Instructions:

Turn-around Time: ☒ Normal ☐ Rush: 5 day

1. Relinquished by (Signature/Affiliation)	Date 1/19/06 Time 1115	1. Received by (Signature/Affiliation) CEL	Date 1/19/06 Time 1730
2. Relinquished by (Signature/Affiliation)	Date 1/19/07 Time 1610	2. Received by (Signature/Affiliation) CEL	Date 1/19/07 Time 1610
3. Relinquished by (Signature/Affiliation)	Date Time	3. Received by (Signature/Affiliation)	Date Time

GeoSyntec Consultants 11305 Rancho Bernardo Road, Suite 101, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Analysis Request and Chain of Custody Record

1069

Page 2 of 2

Continued from Document Number: 1671

Project Name: TDY

Project Number: SC-0307

White copy: to accompany samples

Yellow copy: field copy

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by ____	Metals	SVOCs by 8270	PCBs	Grain Size	TOC					Bottle Type and Volume/Preservative: 1 liter 250 ml	Number of Containers	Comments	Lab Use Only: Condition of Bottles
Sample 13	1/18/07	1830	Soil				1	1	1								
Sample 14							1	1	1								
Sample 15							1	1	1								
Sample 16							1	1	1								
Sample 17							1	1	1								
Sample 18							1	1	1								
Sample 19							1	1	1								
Sample 20							1	1	1								
Sample 21							1	1	1								
Sample 22							1	1	1								
Sample 23							1	1	1								
Sample 24							1	1	1								
Sample 25							1	1	1								
Sample 26							1	1	1								
Sample 17B							1	1	1								

GeoSyntec Consultants 11305 Rancho Bernardo Road, Suite 101, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07 - 01 - 1069

Cooler 1 of 2

SAMPLE RECEIPT FORM

CLIENT: Geosyntec **DATE:** 1/19/7

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- ✓ Chilled, cooler with temperature blank provided.
- _____ Chilled, cooler without temperature blank.
- _____ Chilled and placed in cooler with wet ice.
- _____ Ambient and placed in cooler with wet ice.
- _____ Ambient temperature.

3.5 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- _____ °C Temperature blank.
- _____ °C IR thermometer.
- _____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓	✓	
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

Recieved only 1 of 3 container for each sample. JV 01/19/07

PTS Laboratories

PTS File No: 37052
Client: Calscience

ORGANIC CARBON DATA - TOC

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

		METHOD:	WALKLEY-BLACK
SAMPLE ID.	DEPTH, ft.	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg
Sample 1	N/A	SOIL	11000
Sample 2	N/A	SOIL	30200
Sample 3	N/A	SOIL	14400
Sample 4	N/A	SOIL	43300
Sample 5	N/A	SOIL	43000
Sample 6	N/A	SOIL	106400
Sample 7	N/A	SOIL	46000
Sample 8	N/A	SOIL	5950
Sample 9	N/A	SOIL	173600
Sample 10	N/A	SOIL	44900
Sample 11	N/A	SOIL	27200
Sample 12	N/A	SOIL	23400
Sample 13	N/A	SOIL	12100
Sample 14	N/A	SOIL	36800
Sample 15	N/A	SOIL	12000
Sample 16	N/A	SOIL	169800
Sample 17	N/A	SOIL	1850
Sample 18	N/A	SOIL	25500
Sample 19	N/A	SOIL	6000
Sample 20	N/A	SOIL	18400
Sample 21	N/A	SOIL	291900
Sample 22	N/A	SOIL	93900

ORGANIC CARBON DATA - TOC

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

		METHOD:	WALKLEY-BLACK
SAMPLE ID.	DEPTH, ft.	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg
Sample 23	N/A	SOIL	83100
Sample 24	N/A	SOIL	121100
Sample 25	N/A	SOIL	17800
Sample 26	N/A	SOIL	23800
Sample 17B	N/A	SOIL	2950

PTS Laboratories, Inc.

Calscience
PTS File No: 37052

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
Sample 1	N/A	Medium sand	0.439	0.00	0.00	53.07	40.92	4.99	1.02	6.01
Sample 2	N/A	Fine sand	0.157	0.00	0.00	25.20	44.43	25.34	5.03	30.37
Sample 3	N/A	Fine sand	0.108	0.00	0.00	11.31	51.93	29.73	7.03	36.76
Sample 4	N/A	Silt	0.033	0.00	0.00	4.59	26.99	55.60	12.82	68.42
Sample 5	N/A	Silt	0.044	0.00	0.00	11.44	26.04	48.98	13.54	62.52
Sample 6	N/A	Fine sand	0.065	0.00	0.00	5.28	40.86	46.38	7.47	53.86
Sample 7	N/A	Fine sand	0.121	0.00	1.64	19.90	46.22	(2)	(2)	32.24
Sample 8	N/A	Coarse sand	0.531	26.38	4.19	25.52	34.46	(2)	(2)	9.46
Sample 9	N/A	Fine sand	0.106	0.00	0.00	12.47	46.77	33.12	7.63	40.75
Sample 10	N/A	Fine sand	0.086	0.00	0.00	24.93	27.88	36.22	10.96	47.18
Sample 11	N/A	Medium sand	0.549	0.00	3.56	62.19	27.49	(2)	(2)	6.76
Sample 12	N/A	Medium sand	0.551	0.00	6.74	59.92	25.12	(2)	(2)	8.22
Sample 13	N/A	Fine sand	0.106	0.00	7.62	10.98	39.63	(2)	(2)	41.77
Sample 14	N/A	Silt	0.039	0.00	0.00	1.74	30.56	55.50	12.20	67.70

(1) Based on Mean from Trask
(2) Mechanical sieve does not differentiate silt/clay fractions

PTS Laboratories, Inc.

Calscience
PTS File No: 37052

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
Sample 15	N/A	Medium sand	0.489	0.00	6.14	52.08	30.38	(2)	(2)	11.41
Sample 16	N/A	Fine sand	0.058	0.00	0.00	4.20	38.66	48.39	8.75	57.14
Sample 17	N/A	Fine sand	0.280	0.52	5.25	26.44	65.63	(2)	(2)	2.15
Sample 18	N/A	Fine sand	0.161	0.00	0.00	10.76	69.99	15.31	3.94	19.25
Sample 19	N/A	Fine sand	0.174	0.00	0.00	8.75	75.98	12.15	3.12	15.27
Sample 20	N/A	Fine sand	0.163	0.00	7.55	18.34	61.64	(2)	(2)	12.47
Sample 21	N/A	Fine sand	0.064	0.00	0.00	4.73	40.41	47.33	7.54	54.86
Sample 22	N/A	Fine sand	0.091	0.00	0.00	15.54	38.10	36.09	10.28	46.37
Sample 23	N/A	Fine sand	0.072	0.00	0.00	7.45	41.83	42.04	8.68	50.72
Sample 24	N/A	Medium sand	0.616	5.98	26.56	24.40	25.12	(2)	(2)	17.94
Sample 25	N/A	Fine sand	0.130	0.00	0.00	18.79	42.26	30.92	8.03	38.95
Sample 26	N/A	Fine sand	0.101	0.00	0.00	9.76	47.72	36.44	6.08	42.52
Sample 17B	N/A	Medium sand	0.431	1.58	7.23	42.80	46.80	(2)	(2)	1.58

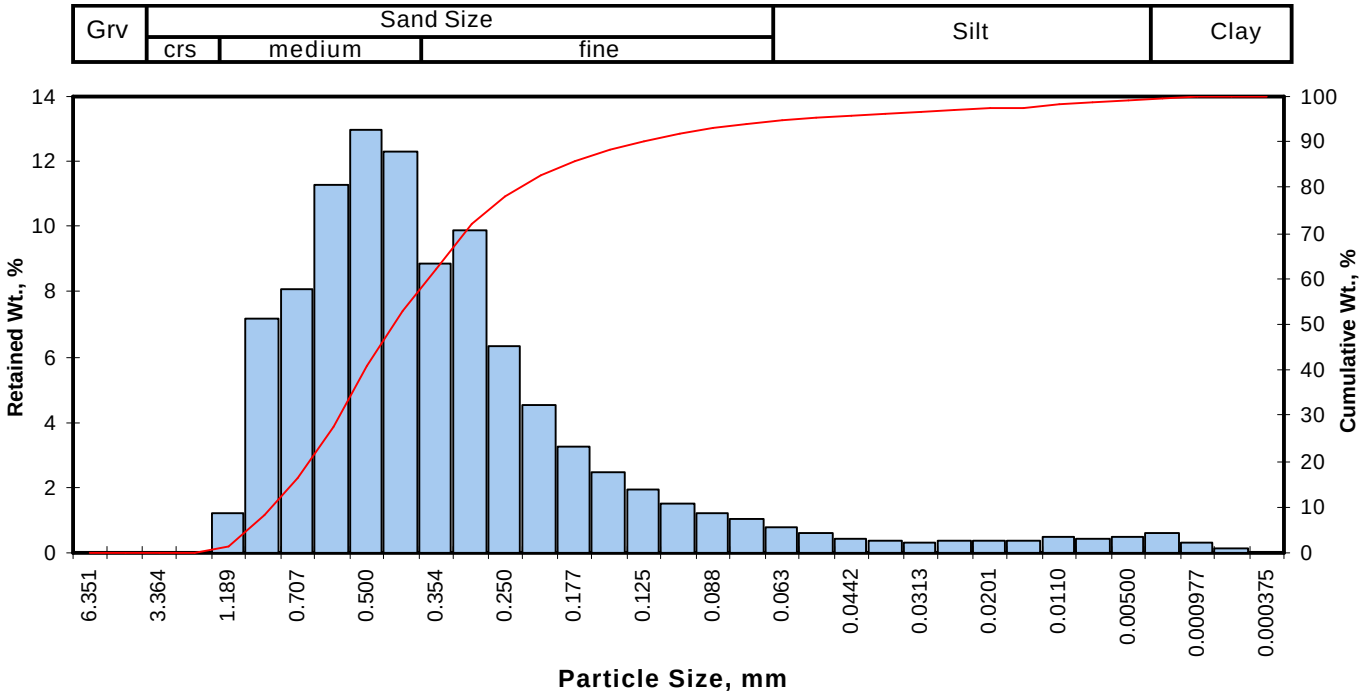
(1) Based on Mean from Trask
(2) Mechanical sieve does not differentiate silt/clay fractions

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 1
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.21	1.21	1.21
0.0331	0.841	0.25	20	7.20	7.19	8.40
0.0278	0.707	0.50	25	8.12	8.11	16.51
0.0234	0.595	0.75	30	11.30	11.29	27.80
0.0197	0.500	1.00	35	13.00	12.98	40.78
0.0166	0.420	1.25	40	12.30	12.29	53.07
0.0139	0.354	1.50	45	8.86	8.85	61.92
0.0117	0.297	1.75	50	9.93	9.92	71.83
0.0098	0.250	2.00	60	6.33	6.32	78.16
0.0083	0.210	2.25	70	4.51	4.50	82.66
0.0070	0.177	2.50	80	3.24	3.24	85.90
0.0059	0.149	2.75	100	2.46	2.46	88.35
0.0049	0.125	3.00	120	1.91	1.91	90.26
0.0041	0.105	3.25	140	1.50	1.50	91.76
0.0035	0.088	3.50	170	1.23	1.23	92.99
0.0029	0.074	3.75	200	1.00	1.00	93.99
0.0025	0.063	4.00	230	0.77	0.77	94.76
0.0021	0.053	4.25	270	0.58	0.58	95.34
0.00174	0.0442	4.50	325	0.45	0.45	95.79
0.00146	0.0372	4.75	400	0.38	0.38	96.16
0.00123	0.0313	5.00	450	0.33	0.33	96.49
0.000986	0.0250	5.32	500	0.38	0.38	96.87
0.000790	0.0201	5.64	635	0.36	0.36	97.23
0.000615	0.0156	6.00		0.38	0.38	97.61
0.000435	0.0110	6.50		0.47	0.47	98.08
0.000308	0.00781	7.00		0.43	0.43	98.51
0.000197	0.00500	7.65		0.47	0.47	98.98
0.000077	0.00195	9.00		0.60	0.60	99.58
0.000038	0.000977	10.00		0.28	0.28	99.86
0.000019	0.000488	11.00		0.14	0.14	100.00
0.000015	0.000375	11.38		0.00	0.00	100.00
TOTALS				**100.10**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.01	0.0390	0.991
10	0.30	0.0320	0.813
16	0.48	0.0281	0.715
25	0.69	0.0244	0.621
40	0.98	0.0199	0.505
50	1.19	0.0173	0.439
60	1.45	0.0145	0.367
75	1.88	0.0107	0.273
84	2.35	0.0077	0.196
90	2.97	0.0050	0.128
95	4.11	0.0023	0.058

Measure	Trask	Inman	Folk-Ward
Median, phi	1.19	1.19	1.19
Median, in.	0.0173	0.0173	0.0173
Median, mm	0.439	0.439	0.439
Mean, phi	1.16	1.42	1.34
Mean, in.	0.0176	0.0147	0.0155
Mean, mm	0.447	0.374	0.395
Sorting	1.509	0.935	1.087
Skewness	0.937	0.247	0.337
Kurtosis	0.254	1.189	1.413
Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	

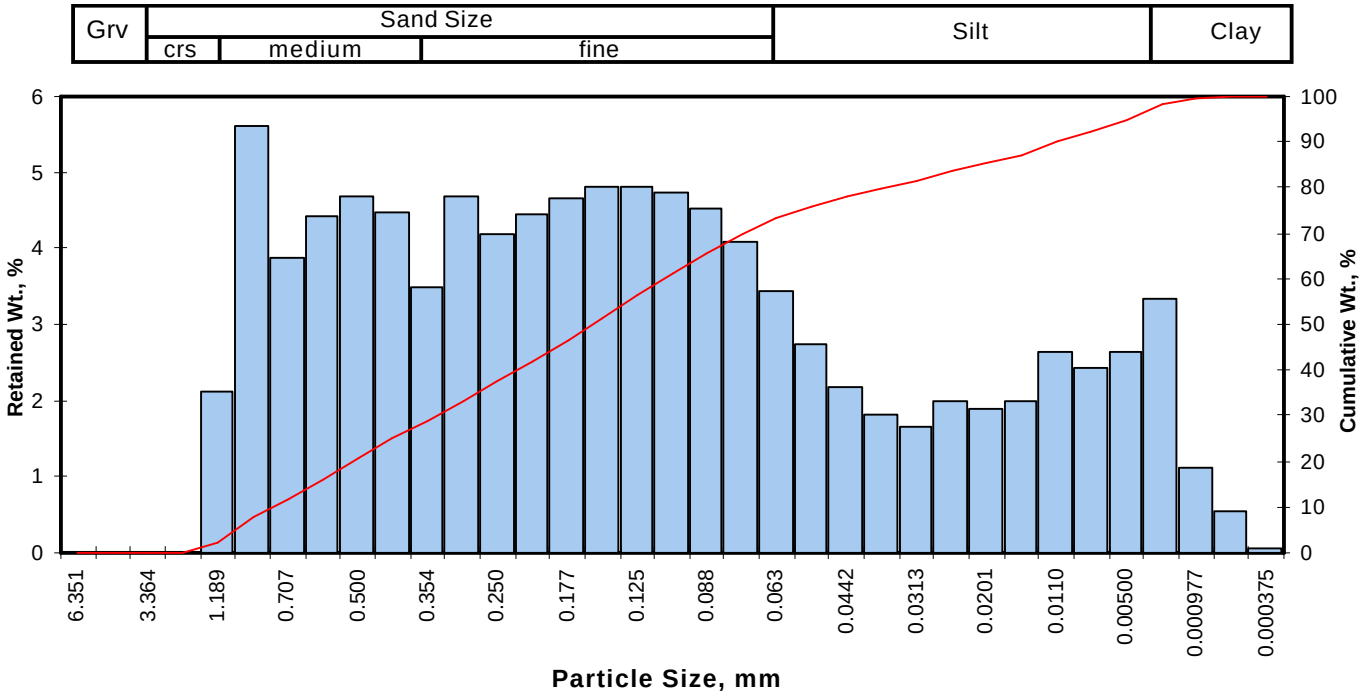
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	53.07
Fine Sand	200	40.92
Silt	>0.005 mm	4.99
Clay	<0.005 mm	1.02
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 2
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	2.13	2.13	2.13
0.0331	0.841	0.25	20	5.60	5.60	7.73
0.0278	0.707	0.50	25	3.88	3.88	11.61
0.0234	0.595	0.75	30	4.42	4.42	16.03
0.0197	0.500	1.00	35	4.69	4.69	20.72
0.0166	0.420	1.25	40	4.48	4.48	25.20
0.0139	0.354	1.50	45	3.48	3.48	28.68
0.0117	0.297	1.75	50	4.68	4.68	33.36
0.0098	0.250	2.00	60	4.18	4.18	37.55
0.0083	0.210	2.25	70	4.45	4.45	42.00
0.0070	0.177	2.50	80	4.66	4.66	46.66
0.0059	0.149	2.75	100	4.81	4.81	51.47
0.0049	0.125	3.00	120	4.82	4.82	56.29
0.0041	0.105	3.25	140	4.73	4.73	61.02
0.0035	0.088	3.50	170	4.52	4.52	65.54
0.0029	0.074	3.75	200	4.09	4.09	69.63
0.0025	0.063	4.00	230	3.44	3.44	73.07
0.0021	0.053	4.25	270	2.73	2.73	75.80
0.00174	0.0442	4.50	325	2.16	2.16	77.96
0.00146	0.0372	4.75	400	1.82	1.82	79.78
0.00123	0.0313	5.00	450	1.65	1.65	81.43
0.000986	0.0250	5.32	500	1.98	1.98	83.41
0.000790	0.0201	5.64	635	1.88	1.88	85.29
0.000615	0.0156	6.00		1.98	1.98	87.27
0.000435	0.0110	6.50		2.63	2.63	89.90
0.000308	0.00781	7.00		2.43	2.43	92.33
0.000197	0.00500	7.65		2.64	2.64	94.97
0.000077	0.00195	9.00		3.33	3.33	98.30
0.000038	0.000977	10.00		1.10	1.10	99.40
0.000019	0.000488	11.00		0.54	0.54	99.94
0.000015	0.000375	11.38		0.06	0.06	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.01	0.0392	0.996
10	0.40	0.0299	0.760
16	0.75	0.0234	0.595
25	1.24	0.0167	0.424
40	2.14	0.0089	0.227
50	2.67	0.0062	0.157
60	3.20	0.0043	0.109
75	4.18	0.0022	0.055
84	5.42	0.0009	0.023
90	6.52	0.0004	0.011
95	7.66	0.0002	0.005

Measure	Trask	Inman	Folk-Ward
Median, phi	2.67	2.67	2.67
Median, in.	0.0062	0.0062	0.0062
Median, mm	0.157	0.157	0.157
Mean, phi	2.06	3.08	2.95
Mean, in.	0.0094	0.0046	0.0051
Mean, mm	0.240	0.118	0.130
Sorting	2.768	2.336	2.327
Skewness	0.977	0.176	0.239
Kurtosis	0.246	0.637	1.067
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	25.20
Fine Sand	200	44.43
Silt	>0.005 mm	25.34
Clay	<0.005 mm	5.03
	Total	**100**

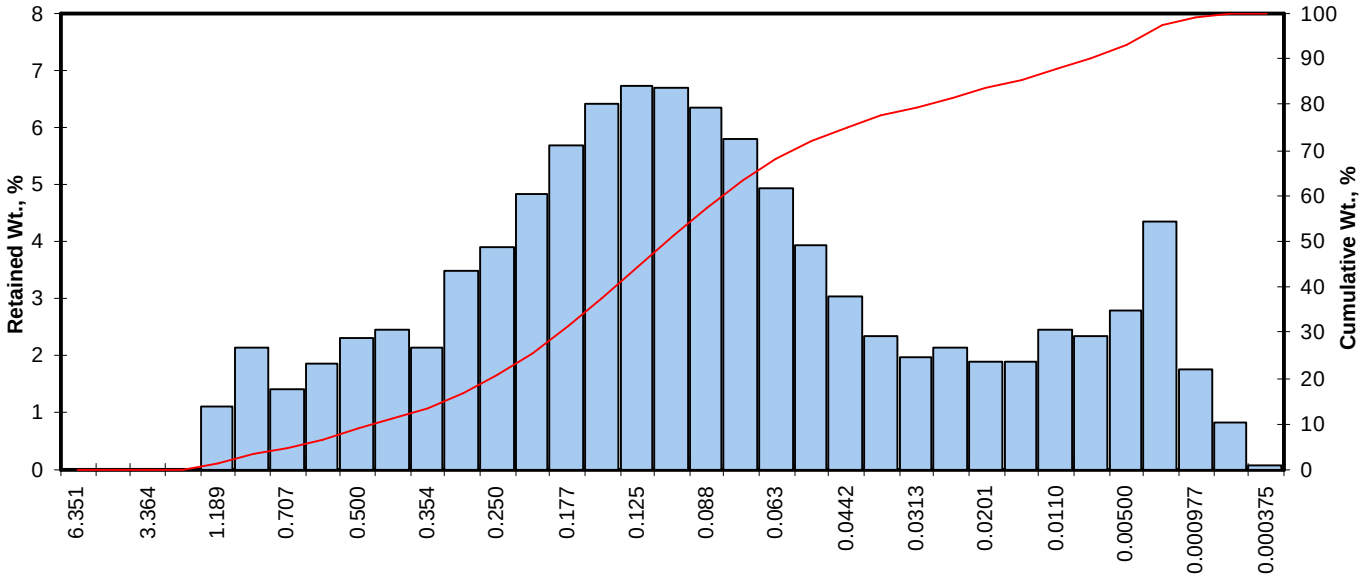
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 3
Depth, ft: N/A

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.12	1.12	1.12
0.0331	0.841	0.25	20	2.13	2.13	3.25
0.0278	0.707	0.50	25	1.43	1.43	4.68
0.0234	0.595	0.75	30	1.87	1.87	6.55
0.0197	0.500	1.00	35	2.31	2.31	8.86
0.0166	0.420	1.25	40	2.45	2.45	11.31
0.0139	0.354	1.50	45	2.13	2.13	13.44
0.0117	0.297	1.75	50	3.48	3.48	16.92
0.0098	0.250	2.00	60	3.88	3.88	20.80
0.0083	0.210	2.25	70	4.83	4.83	25.63
0.0070	0.177	2.50	80	5.68	5.68	31.31
0.0059	0.149	2.75	100	6.40	6.40	37.70
0.0049	0.125	3.00	120	6.72	6.72	44.42
0.0041	0.105	3.25	140	6.68	6.68	51.10
0.0035	0.088	3.50	170	6.36	6.36	57.46
0.0029	0.074	3.75	200	5.78	5.78	63.24
0.0025	0.063	4.00	230	4.93	4.93	68.17
0.0021	0.053	4.25	270	3.93	3.93	72.10
0.00174	0.0442	4.50	325	3.02	3.02	75.12
0.00146	0.0372	4.75	400	2.36	2.36	77.48
0.00123	0.0313	5.00	450	1.96	1.96	79.44
0.000986	0.0250	5.32	500	2.15	2.15	81.59
0.000790	0.0201	5.64	635	1.90	1.90	83.49
0.000615	0.0156	6.00		1.89	1.89	85.38
0.000435	0.0110	6.50		2.44	2.44	87.82
0.000308	0.00781	7.00		2.34	2.34	90.16
0.000197	0.00500	7.65		2.81	2.81	92.97
0.000077	0.00195	9.00		4.36	4.36	97.33
0.000038	0.000977	10.00		1.75	1.75	99.08
0.000019	0.000488	11.00		0.84	0.84	99.92
0.000015	0.000375	11.38		0.08	0.08	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.54	0.0270	0.686
10	1.12	0.0182	0.461
16	1.68	0.0123	0.311
25	2.22	0.0085	0.215
40	2.84	0.0055	0.140
50	3.21	0.0043	0.108
60	3.61	0.0032	0.082
75	4.49	0.0018	0.044
84	5.74	0.0007	0.019
90	6.97	0.0003	0.008
95	8.28	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.21	3.21	3.21
Median, in.	0.0043	0.0043	0.0043
Median, mm	0.108	0.108	0.108
Mean, phi	2.95	3.71	3.54
Mean, in.	0.0051	0.0030	0.0034
Mean, mm	0.130	0.076	0.086
Sorting	2.198	2.027	2.185
Skewness	0.904	0.248	0.279
Kurtosis	0.188	0.908	1.395

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

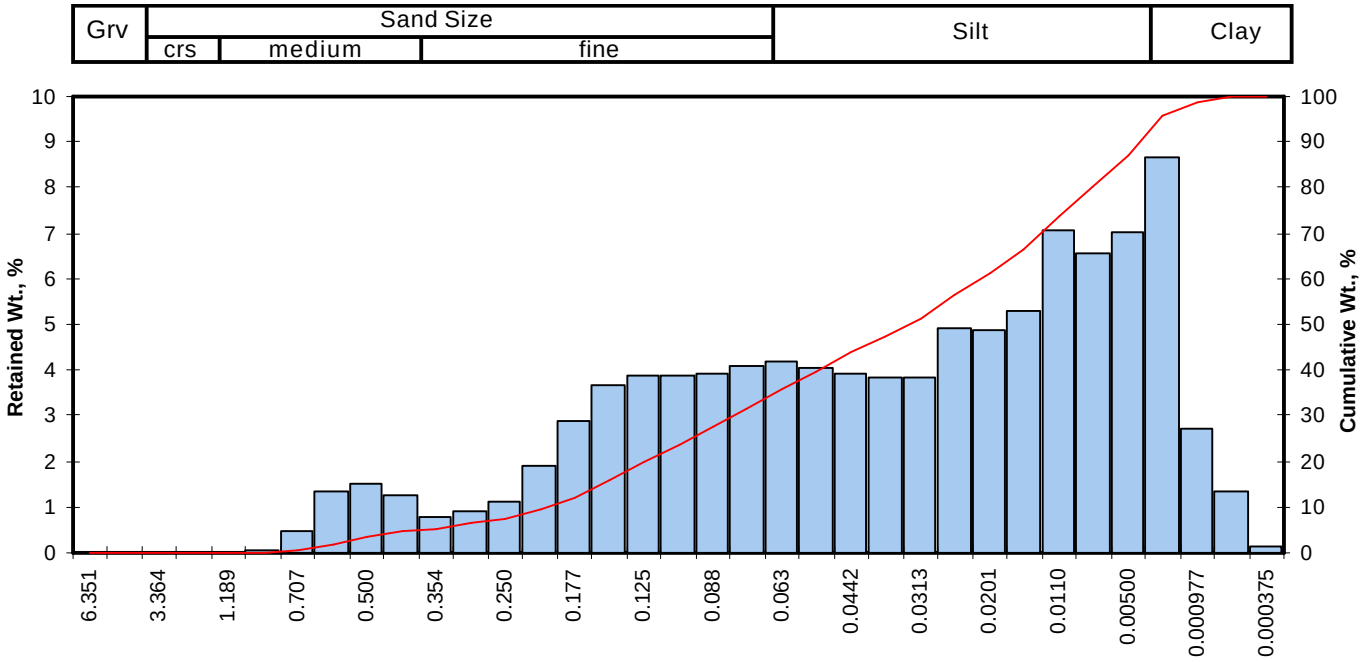
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	11.31
Fine Sand	200	51.93
Silt	>0.005 mm	29.73
Clay	<0.005 mm	7.03
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 4
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.03	0.03	0.03
0.0278	0.707	0.50	25	0.48	0.48	0.51
0.0234	0.595	0.75	30	1.33	1.33	1.84
0.0197	0.500	1.00	35	1.50	1.50	3.34
0.0166	0.420	1.25	40	1.25	1.25	4.59
0.0139	0.354	1.50	45	0.78	0.78	5.37
0.0117	0.297	1.75	50	0.92	0.92	6.29
0.0098	0.250	2.00	60	1.11	1.11	7.40
0.0083	0.210	2.25	70	1.90	1.90	9.30
0.0070	0.177	2.50	80	2.89	2.89	12.19
0.0059	0.149	2.75	100	3.65	3.65	15.84
0.0049	0.125	3.00	120	3.86	3.86	19.70
0.0041	0.105	3.25	140	3.86	3.86	23.56
0.0035	0.088	3.50	170	3.93	3.93	27.49
0.0029	0.074	3.75	200	4.09	4.09	31.58
0.0025	0.063	4.00	230	4.16	4.16	35.74
0.0021	0.053	4.25	270	4.07	4.07	39.81
0.00174	0.0442	4.50	325	3.94	3.94	43.75
0.00146	0.0372	4.75	400	3.85	3.85	47.60
0.00123	0.0313	5.00	450	3.83	3.83	51.43
0.000986	0.0250	5.32	500	4.90	4.90	56.33
0.000790	0.0201	5.64	635	4.89	4.89	61.22
0.000615	0.0156	6.00		5.29	5.29	66.51
0.000435	0.0110	6.50		7.08	7.08	73.59
0.000308	0.00781	7.00		6.55	6.55	80.14
0.000197	0.00500	7.65		7.04	7.04	87.18
0.000077	0.00195	9.00		8.65	8.65	95.83
0.000038	0.000977	10.00		2.71	2.71	98.54
0.000019	0.000488	11.00		1.32	1.32	99.86
0.000015	0.000375	11.38		0.14	0.14	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	1.38	0.0151	0.384
10	2.31	0.0079	0.202
16	2.76	0.0058	0.148
25	3.34	0.0039	0.099
40	4.26	0.0021	0.052
50	4.91	0.0013	0.033
60	5.56	0.0008	0.021
75	6.61	0.0004	0.010
84	7.35	0.0002	0.006
90	8.09	0.0001	0.004
95	8.87	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.91	4.91	4.91
Median, in.	0.0013	0.0013	0.0013
Median, mm	0.033	0.033	0.033
Mean, phi	4.20	5.06	5.01
Mean, in.	0.0021	0.0012	0.0012
Mean, mm	0.054	0.030	0.031
Sorting	3.102	2.297	2.283
Skewness	0.954	0.065	0.062
Kurtosis	0.223	0.630	0.940
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

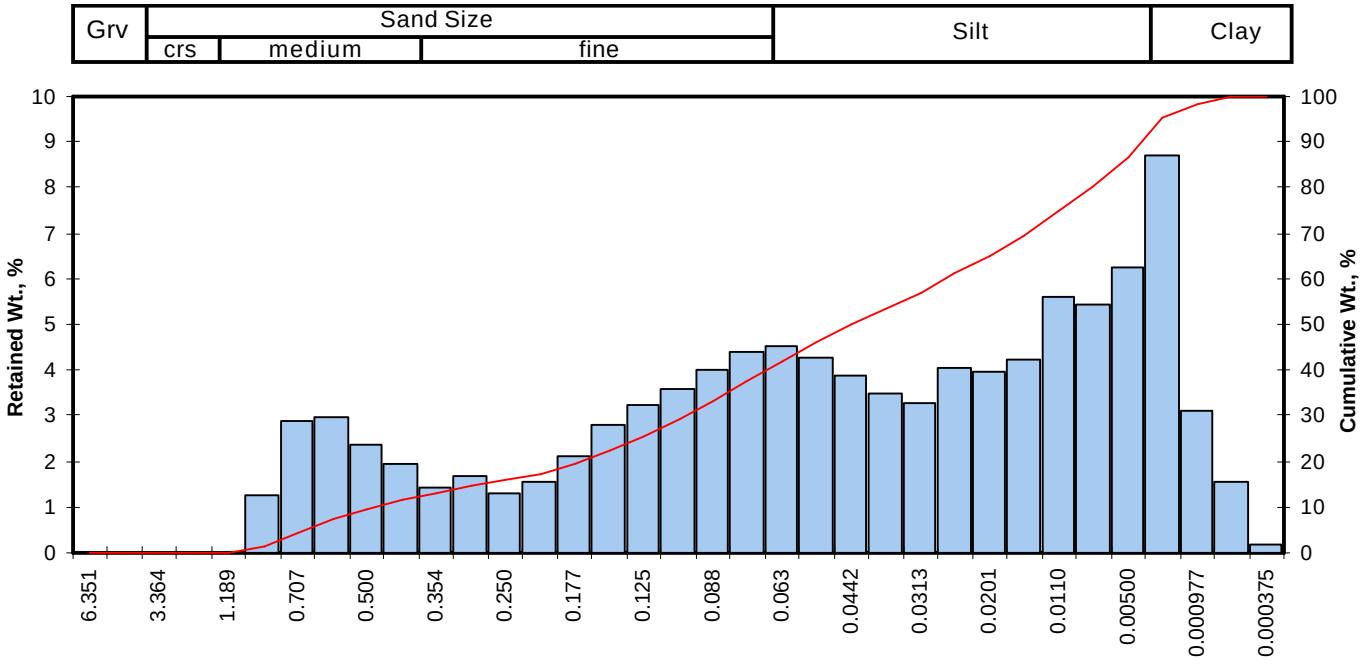
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	4.59
Fine Sand	200	26.99
Silt	>0.005 mm	55.60
Clay	<0.005 mm	12.82
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 5
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	1.27	1.27	1.27
0.0278	0.707	0.50	25	2.90	2.90	4.17
0.0234	0.595	0.75	30	2.97	2.97	7.14
0.0197	0.500	1.00	35	2.36	2.36	9.50
0.0166	0.420	1.25	40	1.94	1.94	11.44
0.0139	0.354	1.50	45	1.41	1.41	12.85
0.0117	0.297	1.75	50	1.67	1.67	14.52
0.0098	0.250	2.00	60	1.30	1.30	15.82
0.0083	0.210	2.25	70	1.53	1.53	17.35
0.0070	0.177	2.50	80	2.12	2.12	19.47
0.0059	0.149	2.75	100	2.80	2.80	22.27
0.0049	0.125	3.00	120	3.24	3.24	25.52
0.0041	0.105	3.25	140	3.58	3.58	29.10
0.0035	0.088	3.50	170	4.00	4.00	33.10
0.0029	0.074	3.75	200	4.38	4.38	37.48
0.0025	0.063	4.00	230	4.51	4.51	41.99
0.0021	0.053	4.25	270	4.28	4.28	46.27
0.00174	0.0442	4.50	325	3.88	3.88	50.15
0.00146	0.0372	4.75	400	3.50	3.50	53.65
0.00123	0.0313	5.00	450	3.29	3.29	56.94
0.000986	0.0250	5.32	500	4.06	4.06	61.00
0.000790	0.0201	5.64	635	3.98	3.98	64.98
0.000615	0.0156	6.00		4.21	4.21	69.19
0.000435	0.0110	6.50		5.61	5.61	74.80
0.000308	0.00781	7.00		5.41	5.41	80.22
0.000197	0.00500	7.65		6.24	6.24	86.46
0.000077	0.00195	9.00		8.71	8.71	95.17
0.000038	0.000977	10.00		3.10	3.10	98.27
0.000019	0.000488	11.00		1.57	1.57	99.84
0.000015	0.000375	11.38		0.16	0.16	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.57	0.0265	0.674
10	1.06	0.0188	0.478
16	2.03	0.0096	0.245
25	2.96	0.0051	0.128
40	3.89	0.0027	0.067
50	4.49	0.0018	0.044
60	5.24	0.0010	0.026
75	6.52	0.0004	0.011
84	7.39	0.0002	0.006
90	8.20	0.0001	0.003
95	8.97	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.49	4.49	4.49
Median, in.	0.0018	0.0018	0.0018
Median, mm	0.044	0.044	0.044
Mean, phi	3.84	4.71	4.64
Mean, in.	0.0027	0.0015	0.0016
Mean, mm	0.070	0.038	0.040
Sorting	3.432	2.681	2.614
Skewness	0.842	0.082	0.074
Kurtosis	0.124	0.567	0.968

Grain Size Description (ASTM-USCS Scale): Silt (based on Mean from Trask)

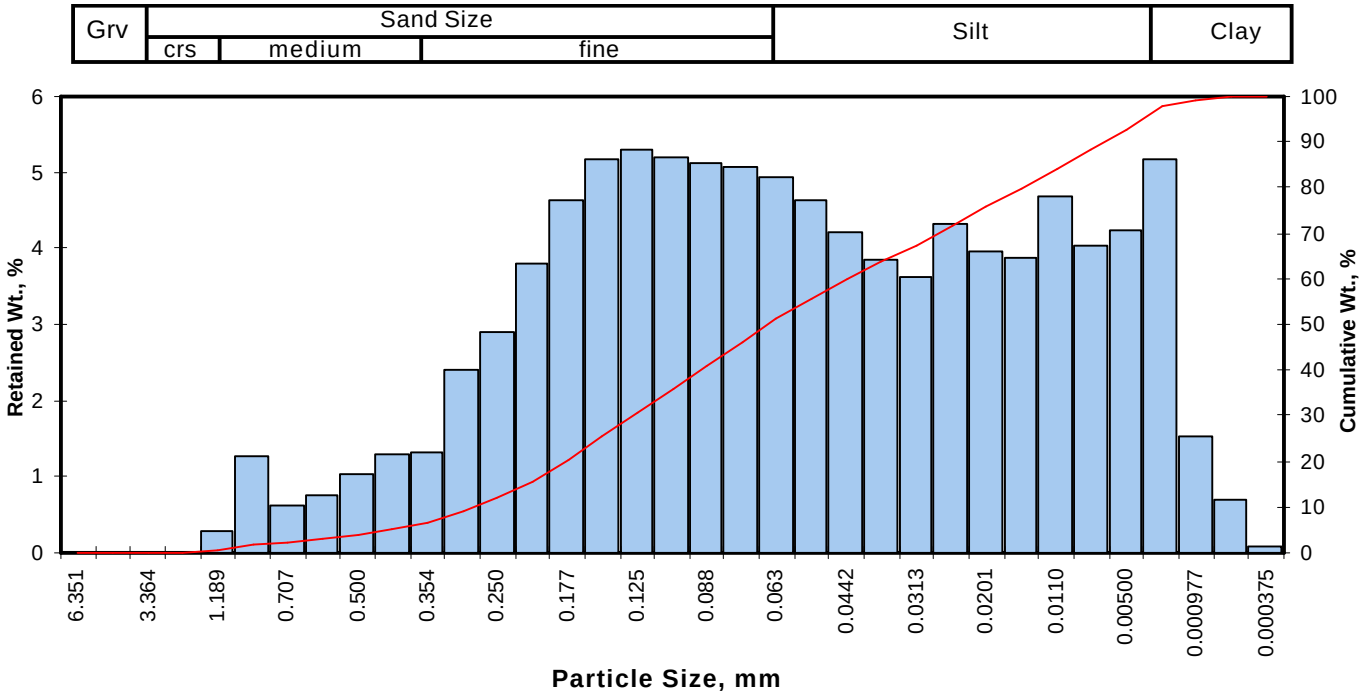
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	11.44
Fine Sand	200	26.04
Silt	>0.005 mm	48.98
Clay	<0.005 mm	13.54
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 6
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.29	0.29	0.29
0.0331	0.841	0.25	20	1.28	1.28	1.57
0.0278	0.707	0.50	25	0.63	0.63	2.20
0.0234	0.595	0.75	30	0.76	0.76	2.96
0.0197	0.500	1.00	35	1.03	1.03	3.99
0.0166	0.420	1.25	40	1.29	1.29	5.28
0.0139	0.354	1.50	45	1.31	1.31	6.59
0.0117	0.297	1.75	50	2.41	2.41	9.00
0.0098	0.250	2.00	60	2.89	2.89	11.89
0.0083	0.210	2.25	70	3.79	3.79	15.68
0.0070	0.177	2.50	80	4.62	4.62	20.30
0.0059	0.149	2.75	100	5.18	5.18	25.48
0.0049	0.125	3.00	120	5.29	5.29	30.77
0.0041	0.105	3.25	140	5.19	5.19	35.96
0.0035	0.088	3.50	170	5.11	5.11	41.07
0.0029	0.074	3.75	200	5.07	5.07	46.14
0.0025	0.063	4.00	230	4.94	4.94	51.08
0.0021	0.053	4.25	270	4.62	4.62	55.70
0.00174	0.0442	4.50	325	4.22	4.22	59.92
0.00146	0.0372	4.75	400	3.86	3.86	63.78
0.00123	0.0313	5.00	450	3.61	3.61	67.39
0.000986	0.0250	5.32	500	4.32	4.32	71.72
0.000790	0.0201	5.64	635	3.95	3.95	75.67
0.000615	0.0156	6.00		3.89	3.89	79.56
0.000435	0.0110	6.50		4.68	4.68	84.24
0.000308	0.00781	7.00		4.04	4.04	88.28
0.000197	0.00500	7.65		4.25	4.25	92.53
0.000077	0.00195	9.00		5.18	5.18	97.71
0.000038	0.000977	10.00		1.52	1.52	99.23
0.000019	0.000488	11.00		0.70	0.70	99.93
0.000015	0.000375	11.38		0.07	0.07	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	1.20	0.0172	0.437
10	1.84	0.0110	0.280
16	2.27	0.0082	0.208
25	2.73	0.0059	0.151
40	3.45	0.0036	0.092
50	3.95	0.0026	0.065
60	4.50	0.0017	0.044
75	5.59	0.0008	0.021
84	6.47	0.0004	0.011
90	7.26	0.0003	0.007
95	8.29	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.95	3.95	3.95
Median, in.	0.0026	0.0026	0.0026
Median, mm	0.065	0.065	0.065
Mean, phi	3.54	4.37	4.23
Mean, in.	0.0034	0.0019	0.0021
Mean, mm	0.086	0.048	0.053
Sorting	2.694	2.104	2.127
Skewness	0.864	0.202	0.214
Kurtosis	0.238	0.687	1.017
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

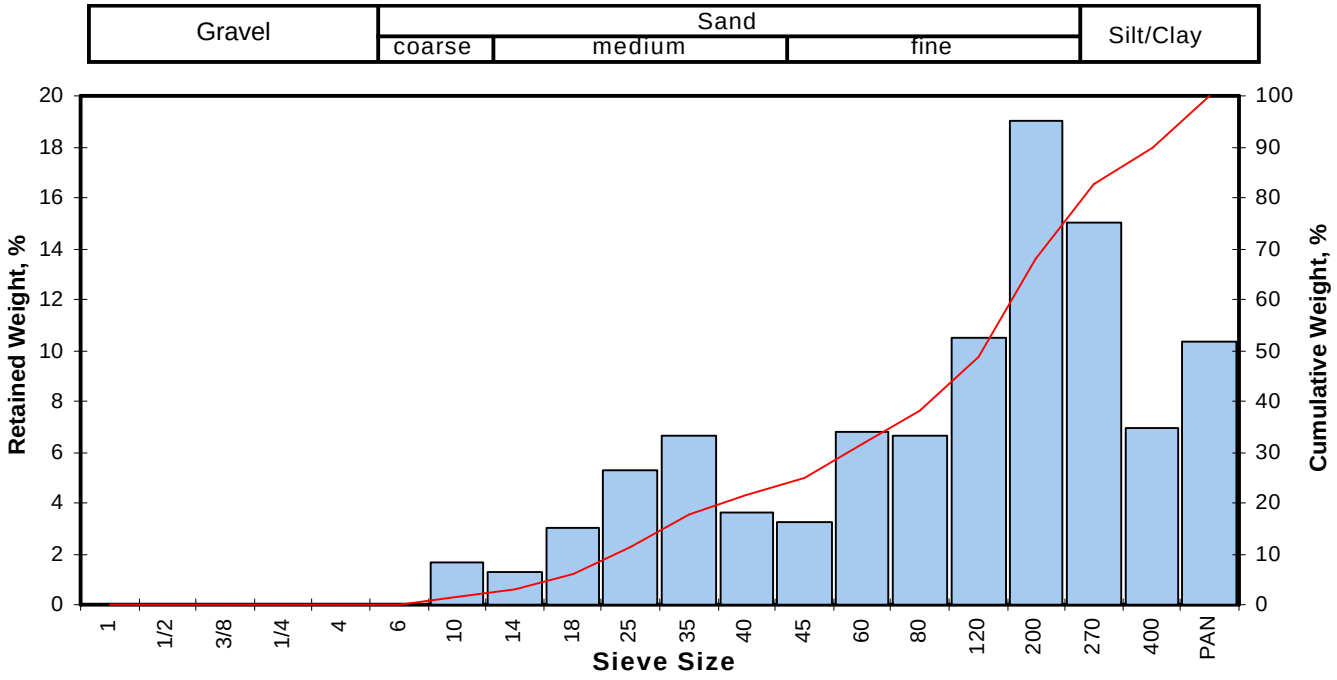
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	5.28
Fine Sand	200	40.86
Silt	>0.005 mm	46.38
Clay	<0.005 mm	7.47
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 7
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.13	1.64	1.64
0.0557	1.414	-0.50	14	0.10	1.26	2.90
0.0394	1.000	0.00	18	0.24	3.02	5.92
0.0278	0.707	0.50	25	0.42	5.29	11.21
0.0197	0.500	1.00	35	0.53	6.68	17.88
0.0166	0.420	1.25	40	0.29	3.65	21.54
0.0139	0.354	1.50	45	0.26	3.27	24.81
0.0098	0.250	2.00	60	0.54	6.80	31.61
0.0070	0.177	2.50	80	0.53	6.68	38.29
0.0049	0.125	3.00	120	0.83	10.45	48.74
0.0029	0.074	3.75	200	1.51	19.02	67.76
0.0021	0.053	4.25	270	1.19	14.99	82.75
0.0015	0.037	4.75	400	0.55	6.93	89.67
			PAN	0.82	10.33	100.00
TOTALS				7.94	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-0.15	0.0437	1.111
10	0.39	0.0301	0.765
16	0.86	0.0217	0.551
25	1.51	0.0138	0.350
40	2.58	0.0066	0.167
50	3.05	0.0048	0.121
60	3.44	0.0036	0.092
75	3.99	0.0025	0.063
84	4.34	0.0019	0.049
90	4.60	0.0016	0.041
95	2.30	0.0080	0.203

Measure	Trask	Inman	Folk-Ward
Median, phi	3.05	3.05	3.05
Median, in.	0.0048	0.0048	0.0048
Median, mm	0.121	0.121	0.121
Mean, phi	2.28	2.60	2.75
Mean, in.	0.0081	0.0065	0.0059
Mean, mm	0.207	0.165	0.149
Sorting	2.360	1.741	1.242
Skewness	1.229	-0.258	-0.935
Kurtosis	0.198	-0.296	0.406

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	1.64
Medium Sand	40	19.90
Fine Sand	200	46.22
Silt/Clay	<200	32.24
	Total	100

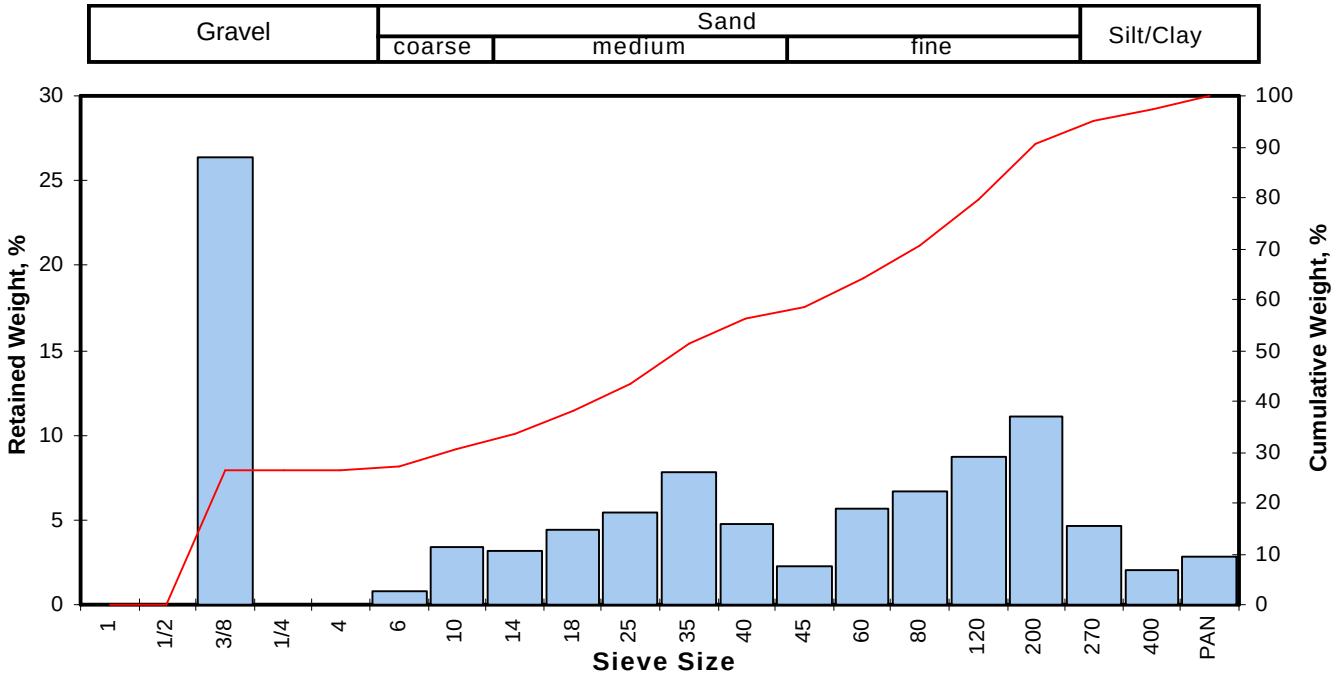
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 8
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	4.60	26.38	26.38
0.2500	6.351	-2.67	1/4	0.00	0.00	26.38
0.1873	4.757	-2.25	4	0.00	0.00	26.38
0.1324	3.364	-1.75	6	0.13	0.75	27.12
0.0787	2.000	-1.00	10	0.60	3.44	30.56
0.0557	1.414	-0.50	14	0.55	3.15	33.72
0.0394	1.000	0.00	18	0.77	4.42	38.13
0.0278	0.707	0.50	25	0.94	5.39	43.52
0.0197	0.500	1.00	35	1.37	7.86	51.38
0.0166	0.420	1.25	40	0.82	4.70	56.08
0.0139	0.354	1.50	45	0.40	2.29	58.37
0.0098	0.250	2.00	60	0.98	5.62	63.99
0.0070	0.177	2.50	80	1.17	6.71	70.70
0.0049	0.125	3.00	120	1.53	8.77	79.47
0.0029	0.074	3.75	200	1.93	11.07	90.54
0.0021	0.053	4.25	270	0.81	4.64	95.18
0.0015	0.037	4.75	400	0.35	2.01	97.19
			PAN	0.49	2.81	100.00
TOTALS				17.44	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-3.38	0.4098	10.409
10	-3.12	0.3412	8.667
16	-2.80	0.2739	6.957
25	-2.32	0.1970	5.003
40	0.17	0.0349	0.887
50	0.91	0.0209	0.531
60	1.64	0.0126	0.320
75	2.75	0.0059	0.149
84	3.31	0.0040	0.101
90	3.71	0.0030	0.076
95	4.23	0.0021	0.053

Measure	Trask	Inman	Folk-Ward
Median, phi	0.91	0.91	0.91
Median, in.	0.0209	0.0209	0.0209
Median, mm	0.531	0.531	0.531
Mean, phi	-1.37	0.25	0.47
Mean, in.	0.1014	0.0330	0.0284
Mean, mm	2.576	0.838	0.720
Sorting	5.791	3.053	2.679
Skewness	1.626	-0.216	-0.172
Kurtosis	0.282	0.246	0.615

Grain Size Description (ASTM-USCS Scale)	Coarse sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	26.38
Coarse Sand	10	4.19
Medium Sand	40	25.52
Fine Sand	200	34.46
Silt/Clay	<200	9.46
	Total	100

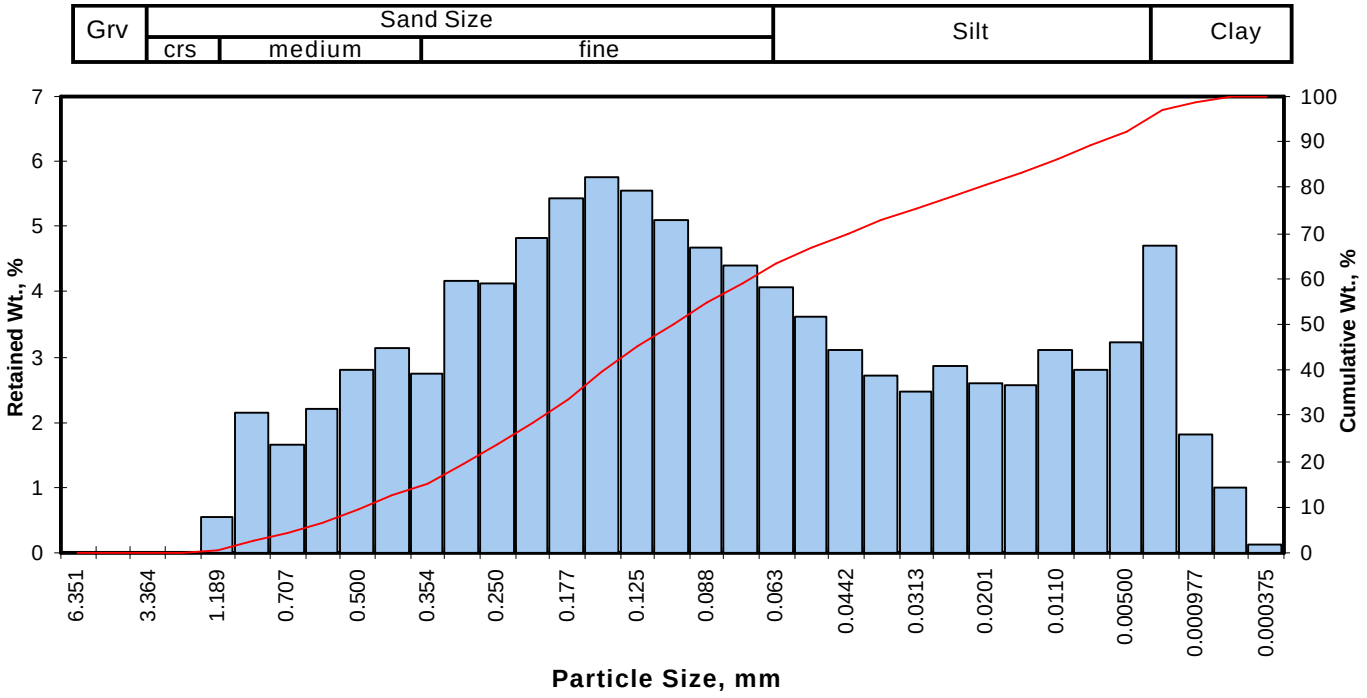
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 9
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.53	0.53	0.53
0.0331	0.841	0.25	20	2.13	2.13	2.66
0.0278	0.707	0.50	25	1.67	1.67	4.33
0.0234	0.595	0.75	30	2.20	2.20	6.53
0.0197	0.500	1.00	35	2.80	2.80	9.33
0.0166	0.420	1.25	40	3.14	3.14	12.47
0.0139	0.354	1.50	45	2.76	2.76	15.23
0.0117	0.297	1.75	50	4.15	4.15	19.38
0.0098	0.250	2.00	60	4.12	4.12	23.50
0.0083	0.210	2.25	70	4.82	4.82	28.32
0.0070	0.177	2.50	80	5.44	5.44	33.76
0.0059	0.149	2.75	100	5.75	5.75	39.51
0.0049	0.125	3.00	120	5.55	5.55	45.06
0.0041	0.105	3.25	140	5.10	5.10	50.17
0.0035	0.088	3.50	170	4.69	4.69	54.86
0.0029	0.074	3.75	200	4.39	4.39	59.25
0.0025	0.063	4.00	230	4.06	4.06	63.31
0.0021	0.053	4.25	270	3.61	3.61	66.92
0.00174	0.0442	4.50	325	3.12	3.12	70.04
0.00146	0.0372	4.75	400	2.72	2.72	72.76
0.00123	0.0313	5.00	450	2.46	2.46	75.22
0.000986	0.0250	5.32	500	2.87	2.87	78.09
0.000790	0.0201	5.64	635	2.60	2.60	80.69
0.000615	0.0156	6.00		2.55	2.55	83.24
0.000435	0.0110	6.50		3.10	3.10	86.34
0.000308	0.00781	7.00		2.81	2.81	89.15
0.000197	0.00500	7.65		3.22	3.22	92.37
0.000077	0.00195	9.00		4.70	4.70	97.07
0.000038	0.000977	10.00		1.82	1.82	98.89
0.000019	0.000488	11.00		1.00	1.00	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.58	0.0264	0.671
10	1.05	0.0190	0.482
16	1.55	0.0135	0.342
25	2.08	0.0093	0.237
40	2.77	0.0058	0.146
50	3.24	0.0042	0.106
60	3.80	0.0028	0.072
75	4.98	0.0012	0.032
84	6.12	0.0006	0.014
90	7.17	0.0003	0.007
95	8.40	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.24	3.24	3.24
Median, in.	0.0042	0.0042	0.0042
Median, mm	0.106	0.106	0.106
Mean, phi	2.90	3.83	3.64
Mean, in.	0.0053	0.0028	0.0032
Mean, mm	0.134	0.070	0.080
Sorting	2.732	2.288	2.330
Skewness	0.820	0.259	0.289
Kurtosis	0.216	0.710	1.106
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

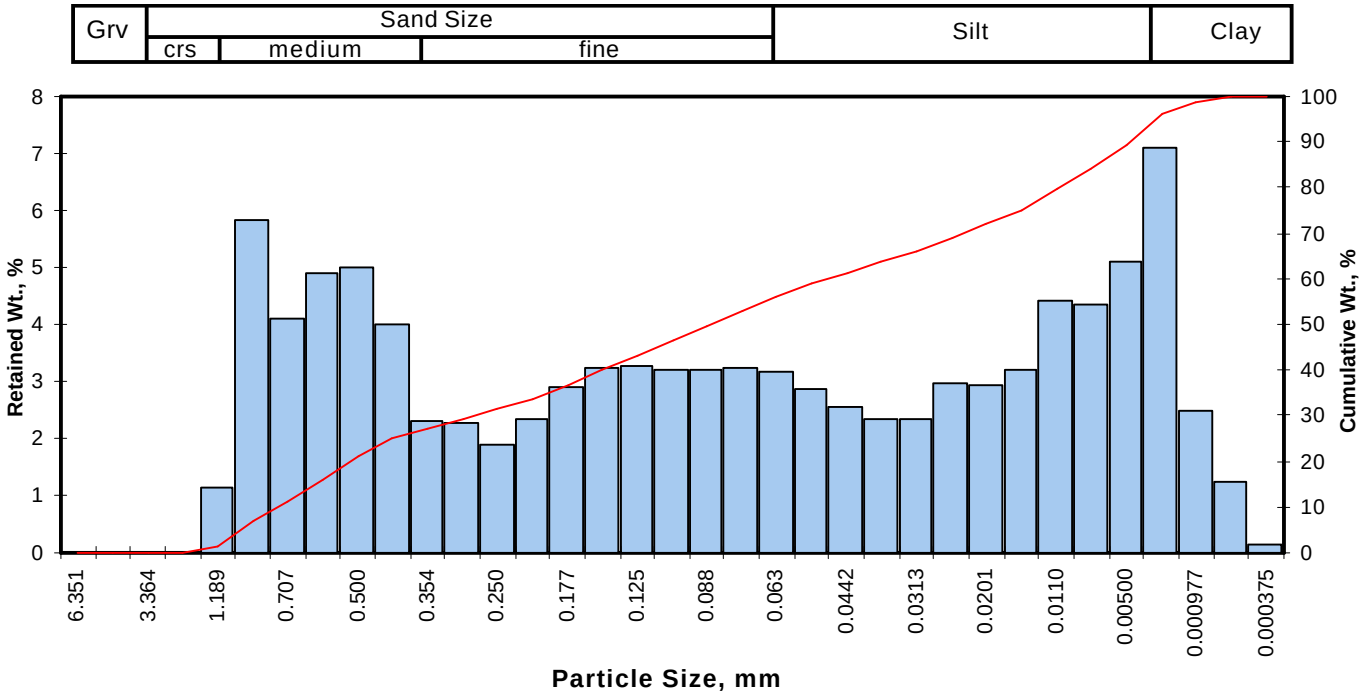
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	12.47
Fine Sand	200	46.77
Silt	>0.005 mm	33.12
Clay	<0.005 mm	7.63
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 10
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.13	1.13	1.13
0.0331	0.841	0.25	20	5.82	5.82	6.95
0.0278	0.707	0.50	25	4.09	4.09	11.04
0.0234	0.595	0.75	30	4.89	4.89	15.93
0.0197	0.500	1.00	35	5.01	5.01	20.94
0.0166	0.420	1.25	40	3.99	3.99	24.93
0.0139	0.354	1.50	45	2.31	2.31	27.24
0.0117	0.297	1.75	50	2.26	2.26	29.50
0.0098	0.250	2.00	60	1.90	1.90	31.40
0.0083	0.210	2.25	70	2.36	2.36	33.76
0.0070	0.177	2.50	80	2.89	2.89	36.65
0.0059	0.149	2.75	100	3.25	3.25	39.90
0.0049	0.125	3.00	120	3.28	3.28	43.18
0.0041	0.105	3.25	140	3.19	3.19	46.37
0.0035	0.088	3.50	170	3.19	3.19	49.56
0.0029	0.074	3.75	200	3.25	3.25	52.82
0.0025	0.063	4.00	230	3.17	3.17	55.99
0.0021	0.053	4.25	270	2.87	2.87	58.86
0.00174	0.0442	4.50	325	2.54	2.54	61.40
0.00146	0.0372	4.75	400	2.36	2.36	63.76
0.00123	0.0313	5.00	450	2.33	2.33	66.09
0.000986	0.0250	5.32	500	2.96	2.96	69.05
0.000790	0.0201	5.64	635	2.94	2.94	71.99
0.000615	0.0156	6.00		3.19	3.19	75.18
0.000435	0.0110	6.50		4.40	4.40	79.58
0.000308	0.00781	7.00		4.36	4.36	83.94
0.000197	0.00500	7.65		5.10	5.10	89.04
0.000077	0.00195	9.00		7.10	7.10	96.14
0.000038	0.000977	10.00		2.48	2.48	98.62
0.000019	0.000488	11.00		1.25	1.25	99.87
0.000015	0.000375	11.38		0.13	0.13	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.08	0.0372	0.944
10	0.44	0.0291	0.739
16	0.75	0.0234	0.593
25	1.26	0.0165	0.418
40	2.76	0.0058	0.148
50	3.53	0.0034	0.086
60	4.36	0.0019	0.049
75	5.98	0.0006	0.016
84	7.01	0.0003	0.008
90	7.83	0.0002	0.004
95	8.78	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	3.53	3.53	3.53
Median, in.	0.0034	0.0034	0.0034
Median, mm	0.086	0.086	0.086
Mean, phi	2.20	3.88	3.76
Mean, in.	0.0085	0.0027	0.0029
Mean, mm	0.217	0.068	0.074
Sorting	5.138	3.127	2.882
Skewness	0.943	0.111	0.159
Kurtosis	0.274	0.391	0.755

Grain Size Description (ASTM-USCS Scale): Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	24.93
Fine Sand	200	27.88
Silt	>0.005 mm	36.22
Clay	<0.005 mm	10.96
	Total	**100**

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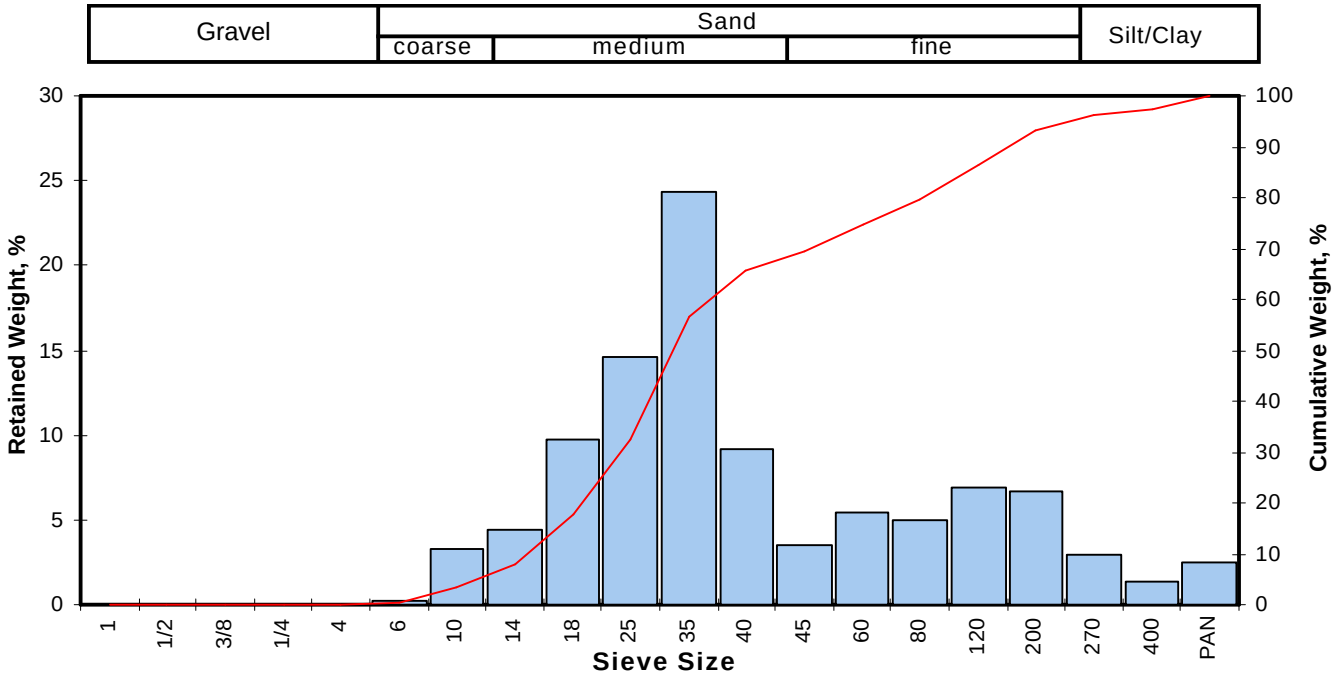
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 11
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.05	0.25	0.25
0.0787	2.000	-1.00	10	0.66	3.30	3.56
0.0557	1.414	-0.50	14	0.88	4.41	7.96
0.0394	1.000	0.00	18	1.95	9.76	17.73
0.0278	0.707	0.50	25	2.91	14.57	32.30
0.0197	0.500	1.00	35	4.85	24.29	56.58
0.0166	0.420	1.25	40	1.83	9.16	65.75
0.0139	0.354	1.50	45	0.71	3.56	69.30
0.0098	0.250	2.00	60	1.08	5.41	74.71
0.0070	0.177	2.50	80	0.99	4.96	79.67
0.0049	0.125	3.00	120	1.38	6.91	86.58
0.0029	0.074	3.75	200	1.33	6.66	93.24
0.0021	0.053	4.25	270	0.58	2.90	96.14
0.0015	0.037	4.75	400	0.28	1.40	97.55
			PAN	0.49	2.45	100.00
TOTALS				19.97	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-0.84	0.0703	1.785
10	-0.40	0.0518	1.316
16	-0.09	0.0419	1.063
25	0.25	0.0331	0.841
40	0.66	0.0249	0.634
50	0.86	0.0216	0.549
60	1.09	0.0185	0.469
75	2.03	0.0096	0.245
84	2.81	0.0056	0.142
90	3.39	0.0038	0.096
95	4.05	0.0024	0.060

Measure	Trask	Inman	Folk-Ward
Median, phi	0.86	0.86	0.86
Median, in.	0.0216	0.0216	0.0216
Median, mm	0.549	0.549	0.549
Mean, phi	0.88	1.36	1.20
Mean, in.	0.0214	0.0153	0.0172
Mean, mm	0.543	0.389	0.436
Sorting	1.853	1.451	1.466
Skewness	0.827	0.343	0.324
Kurtosis	0.244	0.685	1.126

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	3.56
Medium Sand	40	62.19
Fine Sand	200	27.49
Silt/Clay	<200	6.76
	Total	100

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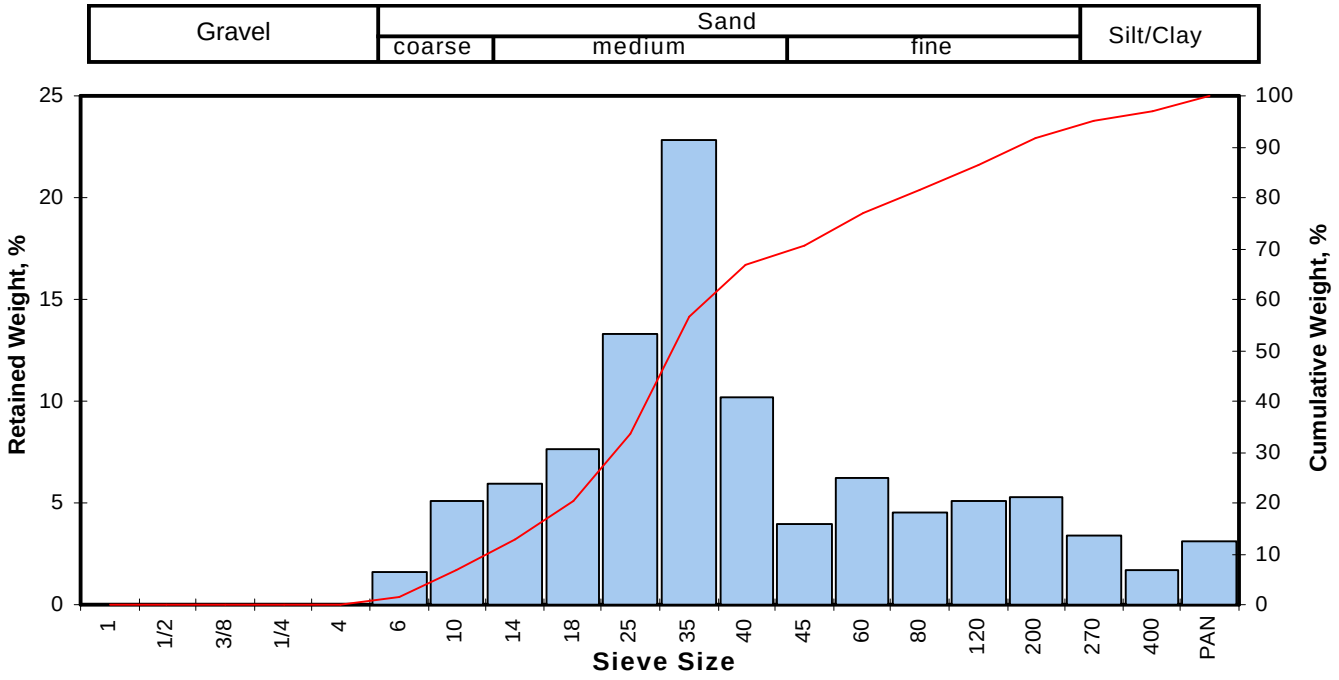
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 12
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.21	1.63	1.63
0.0787	2.000	-1.00	10	0.66	5.12	6.74
0.0557	1.414	-0.50	14	0.77	5.97	12.71
0.0394	1.000	0.00	18	0.99	7.67	20.39
0.0278	0.707	0.50	25	1.71	13.26	33.64
0.0197	0.500	1.00	35	2.94	22.79	56.43
0.0166	0.420	1.25	40	1.32	10.23	66.67
0.0139	0.354	1.50	45	0.51	3.95	70.62
0.0098	0.250	2.00	60	0.80	6.20	76.82
0.0070	0.177	2.50	80	0.59	4.57	81.40
0.0049	0.125	3.00	120	0.66	5.12	86.51
0.0029	0.074	3.75	200	0.68	5.27	91.78
0.0021	0.053	4.25	270	0.44	3.41	95.19
0.0015	0.037	4.75	400	0.22	1.71	96.90
			PAN	0.40	3.10	100.00
TOTALS				12.90	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.26	0.0940	2.388
10	-0.73	0.0652	1.656
16	-0.29	0.0480	1.219
25	0.17	0.0349	0.886
40	0.64	0.0253	0.642
50	0.86	0.0217	0.551
60	1.09	0.0185	0.471
75	1.85	0.0109	0.277
84	2.75	0.0058	0.148
90	3.50	0.0035	0.089
95	4.22	0.0021	0.054

Measure	Trask	Inman	Folk-Ward
Median, phi	0.86	0.86	0.86
Median, in.	0.0217	0.0217	0.0217
Median, mm	0.551	0.551	0.551
Mean, phi	0.78	1.23	1.11
Mean, in.	0.0229	0.0167	0.0183
Mean, mm	0.582	0.425	0.464
Sorting	1.790	1.520	1.590
Skewness	0.898	0.247	0.237
Kurtosis	0.195	0.801	1.337

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	6.74
Medium Sand	40	59.92
Fine Sand	200	25.12
Silt/Clay	<200	8.22
	Total	100

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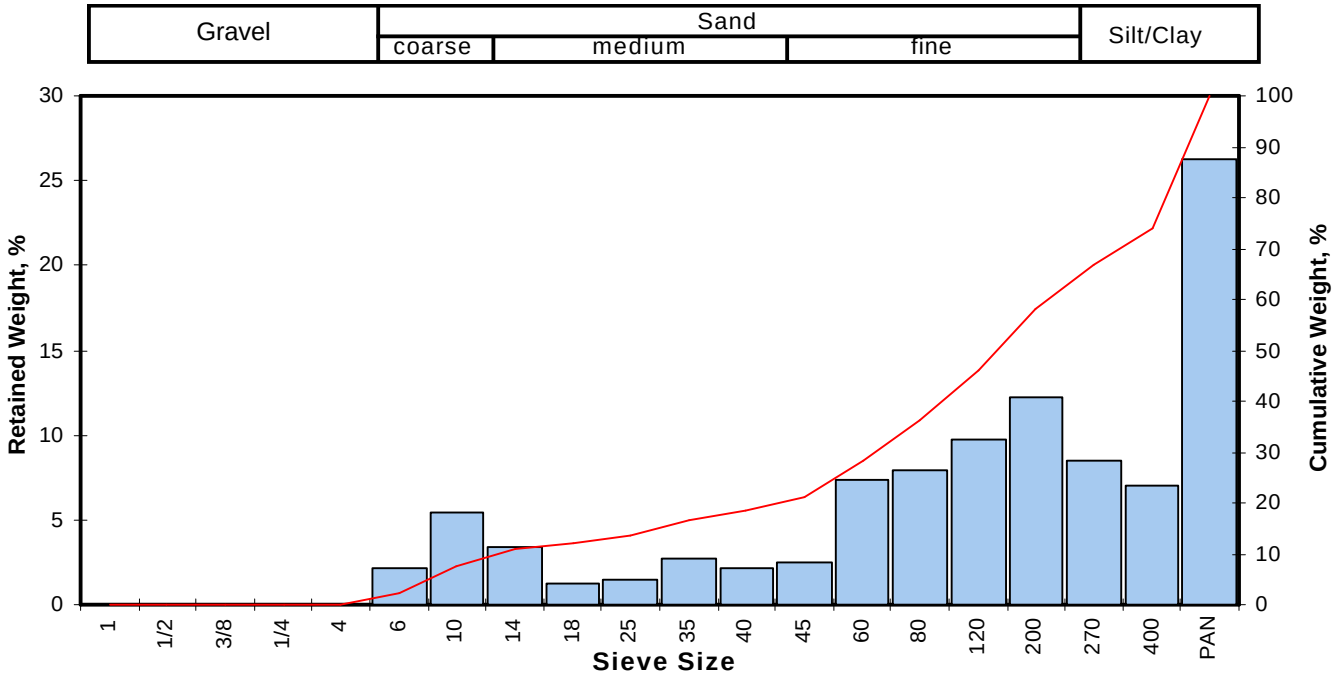
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 13
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.07	2.13	2.13
0.0787	2.000	-1.00	10	0.18	5.49	7.62
0.0557	1.414	-0.50	14	0.11	3.35	10.98
0.0394	1.000	0.00	18	0.04	1.22	12.20
0.0278	0.707	0.50	25	0.05	1.52	13.72
0.0197	0.500	1.00	35	0.09	2.74	16.46
0.0166	0.420	1.25	40	0.07	2.13	18.60
0.0139	0.354	1.50	45	0.08	2.44	21.04
0.0098	0.250	2.00	60	0.24	7.32	28.35
0.0070	0.177	2.50	80	0.26	7.93	36.28
0.0049	0.125	3.00	120	0.32	9.76	46.04
0.0029	0.074	3.75	200	0.40	12.20	58.23
0.0021	0.053	4.25	270	0.28	8.54	66.77
0.0015	0.037	4.75	400	0.23	7.01	73.78
			PAN	0.86	26.22	100.00
TOTALS				3.28	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.36	0.1009	2.564
10	-0.65	0.0616	1.564
16	0.92	0.0209	0.530
25	1.77	0.0115	0.293
40	2.69	0.0061	0.155
50	3.24	0.0042	0.106
60	3.85	0.0027	0.069
75	4.53	0.0017	0.043
84	2.90	0.0053	0.134
90	1.81	0.0112	0.285
95	0.91	0.0210	0.534

Measure	Trask	Inman	Folk-Ward
Median, phi	3.24	3.24	3.24
Median, in.	0.0042	0.0042	0.0042
Median, mm	0.106	0.106	0.106
Mean, phi	2.57	1.91	2.35
Mean, in.	0.0066	0.0105	0.0077
Mean, mm	0.168	0.267	0.196
Sorting	2.601	0.992	0.839
Skewness	1.067	-1.348	-2.207
Kurtosis	0.098	0.142	0.336

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	7.62
Medium Sand	40	10.98
Fine Sand	200	39.63
Silt/Clay	<200	41.77
	Total	100

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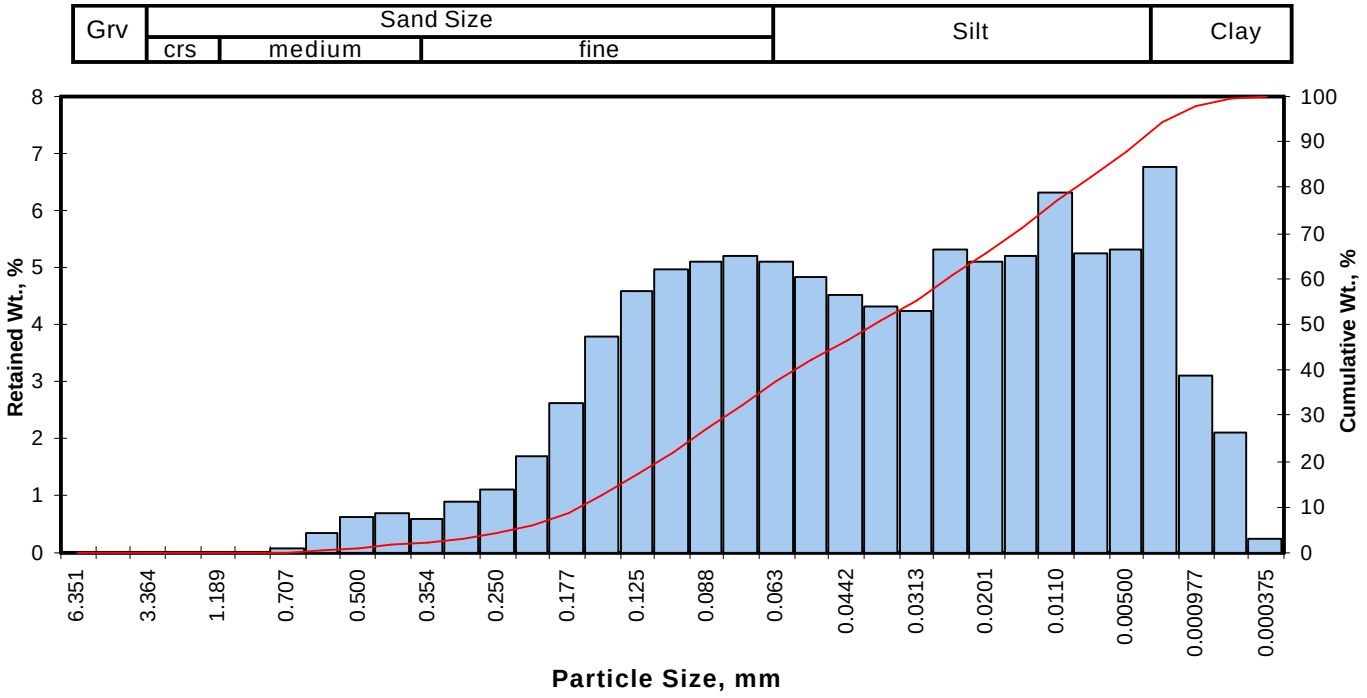
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 14
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.08	0.08	0.08
0.0234	0.595	0.75	30	0.34	0.34	0.42
0.0197	0.500	1.00	35	0.62	0.62	1.04
0.0166	0.420	1.25	40	0.70	0.70	1.74
0.0139	0.354	1.50	45	0.57	0.57	2.31
0.0117	0.297	1.75	50	0.91	0.91	3.22
0.0098	0.250	2.00	60	1.10	1.10	4.32
0.0083	0.210	2.25	70	1.69	1.69	6.01
0.0070	0.177	2.50	80	2.63	2.63	8.64
0.0059	0.149	2.75	100	3.79	3.79	12.43
0.0049	0.125	3.00	120	4.60	4.60	17.03
0.0041	0.105	3.25	140	4.96	4.96	21.99
0.0035	0.088	3.50	170	5.11	5.11	27.10
0.0029	0.074	3.75	200	5.20	5.20	32.30
0.0025	0.063	4.00	230	5.12	5.12	37.42
0.0021	0.053	4.25	270	4.82	4.82	42.24
0.00174	0.0442	4.50	325	4.51	4.51	46.75
0.00146	0.0372	4.75	400	4.31	4.31	51.06
0.00123	0.0313	5.00	450	4.24	4.24	55.31
0.000986	0.0250	5.32	500	5.31	5.31	60.62
0.000790	0.0201	5.64	635	5.10	5.10	65.72
0.000615	0.0156	6.00		5.22	5.22	70.94
0.000435	0.0110	6.50		6.31	6.31	77.25
0.000308	0.00781	7.00		5.25	5.25	82.50
0.000197	0.00500	7.65		5.30	5.30	87.80
0.000077	0.00195	9.00		6.75	6.75	94.55
0.000038	0.000977	10.00		3.09	3.09	97.64
0.000019	0.000488	11.00		2.12	2.12	99.76
0.000015	0.000375	11.38		0.24	0.24	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	2.10	0.0092	0.233
10	2.59	0.0065	0.166
16	2.94	0.0051	0.130
25	3.40	0.0037	0.095
40	4.13	0.0022	0.057
50	4.69	0.0015	0.039
60	5.28	0.0010	0.026
75	6.32	0.0005	0.013
84	7.18	0.0003	0.007
90	8.09	0.0001	0.004
95	9.15	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.69	4.69	4.69
Median, in.	0.0015	0.0015	0.0015
Median, mm	0.039	0.039	0.039
Mean, phi	4.22	5.06	4.94
Mean, in.	0.0021	0.0012	0.0013
Mean, mm	0.054	0.030	0.033
Sorting	2.756	2.119	2.127
Skewness	0.888	0.177	0.221
Kurtosis	0.254	0.662	0.987
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

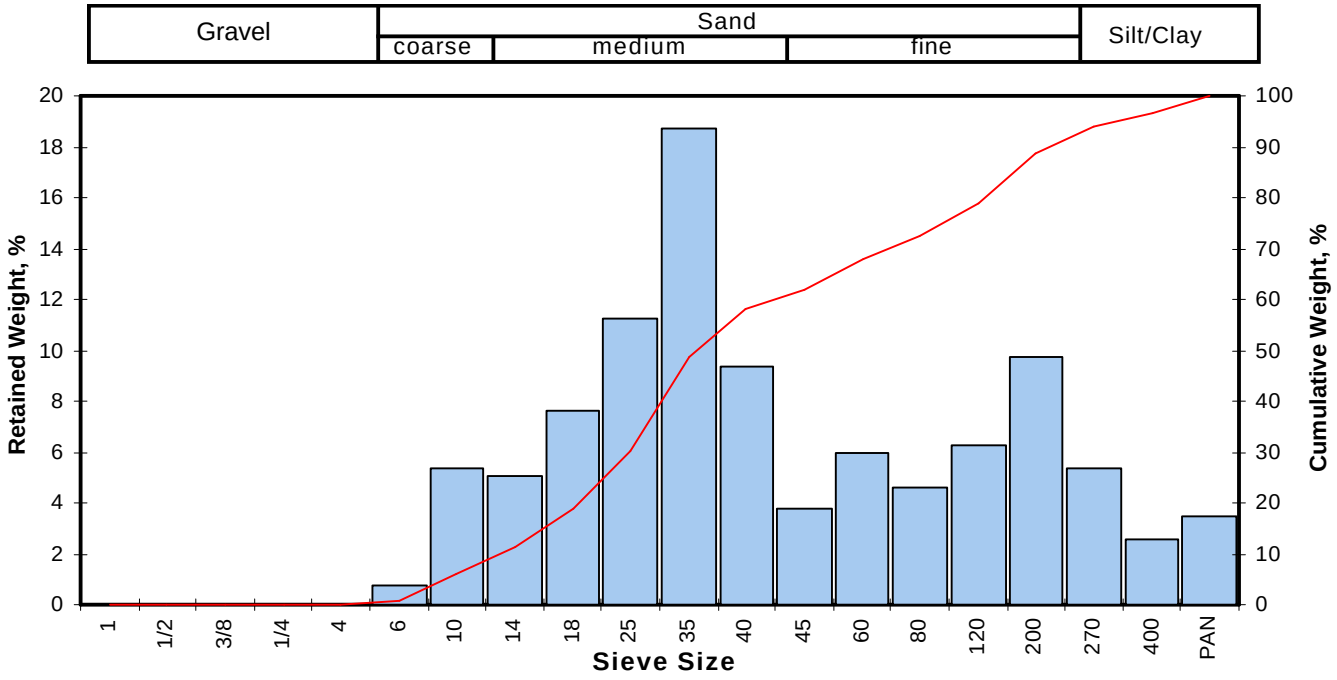
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	1.74
Fine Sand	200	30.56
Silt	>0.005 mm	55.50
Clay	<0.005 mm	12.20
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 15
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.15	0.76	0.76
0.0787	2.000	-1.00	10	1.06	5.38	6.14
0.0557	1.414	-0.50	14	1.00	5.07	11.21
0.0394	1.000	0.00	18	1.51	7.66	18.86
0.0278	0.707	0.50	25	2.22	11.26	30.12
0.0197	0.500	1.00	35	3.69	18.71	48.83
0.0166	0.420	1.25	40	1.85	9.38	58.22
0.0139	0.354	1.50	45	0.75	3.80	62.02
0.0098	0.250	2.00	60	1.18	5.98	68.00
0.0070	0.177	2.50	80	0.91	4.61	72.62
0.0049	0.125	3.00	120	1.23	6.24	78.85
0.0029	0.074	3.75	200	1.92	9.74	88.59
0.0021	0.053	4.25	270	1.06	5.38	93.97
0.0015	0.037	4.75	400	0.51	2.59	96.55
			PAN	0.68	3.45	100.00
TOTALS				19.72	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.16	0.0879	2.232
10	-0.62	0.0605	1.536
16	-0.19	0.0448	1.138
25	0.27	0.0326	0.828
40	0.76	0.0232	0.589
50	1.03	0.0193	0.489
60	1.37	0.0153	0.388
75	2.69	0.0061	0.155
84	3.40	0.0037	0.095
90	3.88	0.0027	0.068
95	4.45	0.0018	0.046

Measure	Trask	Inman	Folk-Ward
Median, phi	1.03	1.03	1.03
Median, in.	0.0193	0.0193	0.0193
Median, mm	0.489	0.489	0.489
Mean, phi	1.03	1.60	1.41
Mean, in.	0.0193	0.0129	0.0148
Mean, mm	0.491	0.329	0.375
Sorting	2.312	1.792	1.746
Skewness	0.732	0.320	0.270
Kurtosis	0.229	0.565	0.950

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	6.14
Medium Sand	40	52.08
Fine Sand	200	30.38
Silt/Clay	<200	11.41
	Total	100

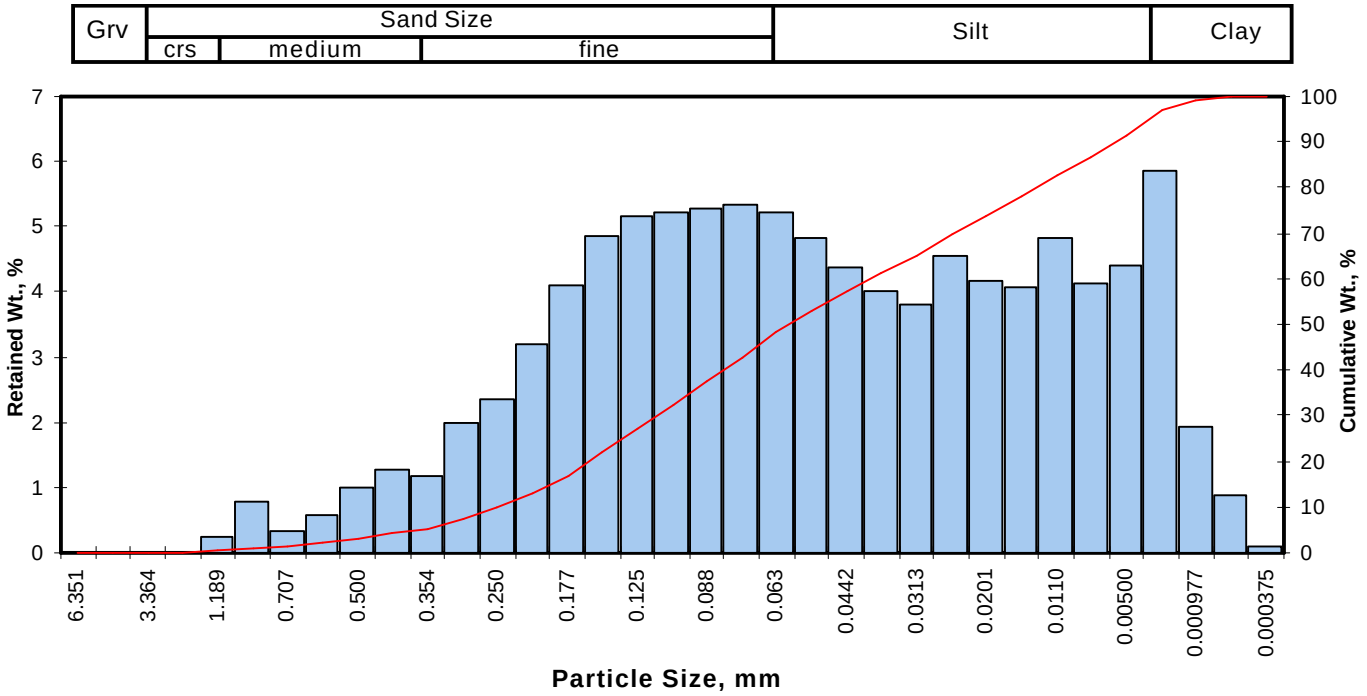
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 16
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.23	0.23	0.23
0.0331	0.841	0.25	20	0.79	0.79	1.02
0.0278	0.707	0.50	25	0.34	0.34	1.36
0.0234	0.595	0.75	30	0.58	0.58	1.94
0.0197	0.500	1.00	35	1.00	1.00	2.94
0.0166	0.420	1.25	40	1.26	1.26	4.20
0.0139	0.354	1.50	45	1.17	1.17	5.37
0.0117	0.297	1.75	50	1.99	1.99	7.36
0.0098	0.250	2.00	60	2.34	2.34	9.70
0.0083	0.210	2.25	70	3.19	3.19	12.89
0.0070	0.177	2.50	80	4.11	4.11	17.00
0.0059	0.149	2.75	100	4.86	4.86	21.86
0.0049	0.125	3.00	120	5.17	5.17	27.03
0.0041	0.105	3.25	140	5.22	5.22	32.25
0.0035	0.088	3.50	170	5.27	5.27	37.52
0.0029	0.074	3.75	200	5.34	5.34	42.86
0.0025	0.063	4.00	230	5.21	5.21	48.07
0.0021	0.053	4.25	270	4.83	4.83	52.90
0.00174	0.0442	4.50	325	4.38	4.38	57.28
0.00146	0.0372	4.75	400	4.02	4.02	61.30
0.00123	0.0313	5.00	450	3.80	3.80	65.10
0.000986	0.0250	5.32	500	4.56	4.56	69.66
0.000790	0.0201	5.64	635	4.15	4.15	73.81
0.000615	0.0156	6.00		4.07	4.07	77.88
0.000435	0.0110	6.50		4.82	4.82	82.70
0.000308	0.00781	7.00		4.13	4.13	86.83
0.000197	0.00500	7.65		4.42	4.42	91.25
0.000077	0.00195	9.00		5.85	5.85	97.10
0.000038	0.000977	10.00		1.93	1.93	99.03
0.000019	0.000488	11.00		0.88	0.88	99.91
0.000015	0.000375	11.38		0.09	0.09	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	1.42	0.0147	0.373
10	2.02	0.0097	0.246
16	2.44	0.0073	0.184
25	2.90	0.0053	0.134
40	3.62	0.0032	0.082
50	4.10	0.0023	0.058
60	4.67	0.0015	0.039
75	5.75	0.0007	0.019
84	6.66	0.0004	0.010
90	7.46	0.0002	0.006
95	8.51	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	4.10	4.10	4.10
Median, in.	0.0023	0.0023	0.0023
Median, mm	0.058	0.058	0.058
Mean, phi	3.71	4.55	4.40
Mean, in.	0.0030	0.0017	0.0019
Mean, mm	0.076	0.043	0.047
Sorting	2.679	2.109	2.129
Skewness	0.856	0.213	0.229
Kurtosis	0.240	0.681	1.022
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

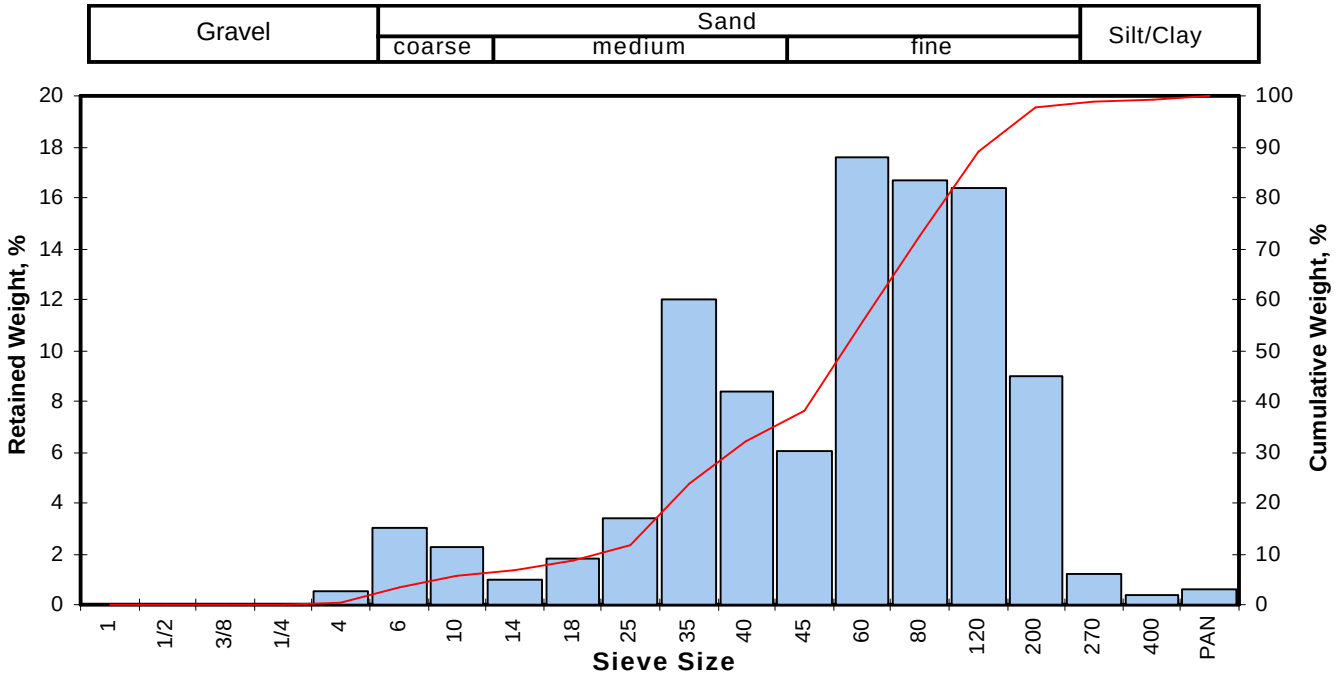
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	4.20
Fine Sand	200	38.66
Silt	>0.005 mm	48.39
Clay	<0.005 mm	8.75
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 17
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.06	0.52	0.52
0.1324	3.364	-1.75	6	0.35	3.01	3.53
0.0787	2.000	-1.00	10	0.26	2.24	5.77
0.0557	1.414	-0.50	14	0.11	0.95	6.72
0.0394	1.000	0.00	18	0.21	1.81	8.53
0.0278	0.707	0.50	25	0.39	3.36	11.89
0.0197	0.500	1.00	35	1.39	11.97	23.86
0.0166	0.420	1.25	40	0.97	8.35	32.21
0.0139	0.354	1.50	45	0.70	6.03	38.24
0.0098	0.250	2.00	60	2.04	17.57	55.81
0.0070	0.177	2.50	80	1.94	16.71	72.52
0.0049	0.125	3.00	120	1.90	16.37	88.89
0.0029	0.074	3.75	200	1.04	8.96	97.85
0.0021	0.053	4.25	270	0.14	1.21	99.05
0.0015	0.037	4.75	400	0.04	0.34	99.40
			PAN	0.07	0.60	100.00
TOTALS				11.61	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.26	0.0942	2.392
10	0.22	0.0338	0.859
16	0.67	0.0247	0.628
25	1.03	0.0192	0.488
40	1.55	0.0134	0.342
50	1.83	0.0110	0.280
60	2.13	0.0090	0.229
75	2.58	0.0066	0.168
84	2.85	0.0055	0.139
90	3.09	0.0046	0.117
95	3.51	0.0035	0.088

Measure	Trask	Inman	Folk-Ward
Median, phi	1.83	1.83	1.83
Median, in.	0.0110	0.0110	0.0110
Median, mm	0.280	0.280	0.280
Mean, phi	1.61	1.76	1.79
Mean, in.	0.0129	0.0116	0.0114
Mean, mm	0.328	0.295	0.290
Sorting	1.706	1.089	1.267
Skewness	1.021	-0.067	-0.182
Kurtosis	0.216	1.189	1.268

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.52
Coarse Sand	10	5.25
Medium Sand	40	26.44
Fine Sand	200	65.63
Silt/Clay	<200	2.15
	Total	100

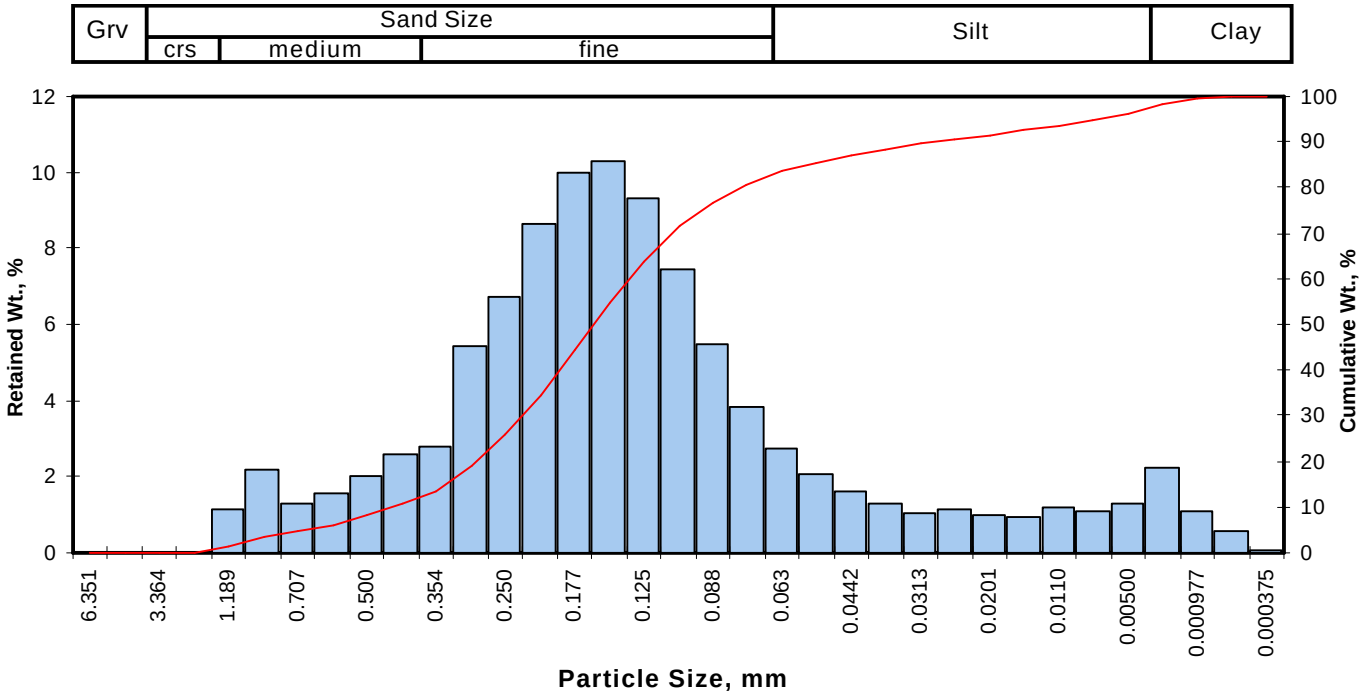
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 18
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.13	1.13	1.13
0.0331	0.841	0.25	20	2.15	2.15	3.28
0.0278	0.707	0.50	25	1.29	1.29	4.57
0.0234	0.595	0.75	30	1.56	1.56	6.13
0.0197	0.500	1.00	35	2.04	2.04	8.17
0.0166	0.420	1.25	40	2.59	2.59	10.76
0.0139	0.354	1.50	45	2.78	2.78	13.54
0.0117	0.297	1.75	50	5.45	5.45	18.99
0.0098	0.250	2.00	60	6.72	6.72	25.71
0.0083	0.210	2.25	70	8.66	8.66	34.37
0.0070	0.177	2.50	80	9.98	9.98	44.35
0.0059	0.149	2.75	100	10.30	10.30	54.65
0.0049	0.125	3.00	120	9.31	9.31	63.96
0.0041	0.105	3.25	140	7.47	7.47	71.43
0.0035	0.088	3.50	170	5.47	5.47	76.90
0.0029	0.074	3.75	200	3.85	3.85	80.75
0.0025	0.063	4.00	230	2.75	2.75	83.50
0.0021	0.053	4.25	270	2.05	2.05	85.55
0.00174	0.0442	4.50	325	1.59	1.59	87.14
0.00146	0.0372	4.75	400	1.27	1.27	88.41
0.00123	0.0313	5.00	450	1.05	1.05	89.46
0.000986	0.0250	5.32	500	1.13	1.13	90.59
0.000790	0.0201	5.64	635	0.96	0.96	91.55
0.000615	0.0156	6.00		0.93	0.93	92.48
0.000435	0.0110	6.50		1.17	1.17	93.65
0.000308	0.00781	7.00		1.10	1.10	94.75
0.000197	0.00500	7.65		1.31	1.31	96.06
0.000077	0.00195	9.00		2.21	2.21	98.27
0.000038	0.000977	10.00		1.09	1.09	99.36
0.000019	0.000488	11.00		0.58	0.58	99.94
0.000015	0.000375	11.38		0.06	0.06	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.57	0.0265	0.674
10	1.18	0.0174	0.442
16	1.61	0.0129	0.327
25	1.97	0.0100	0.255
40	2.39	0.0075	0.191
50	2.64	0.0063	0.161
60	2.89	0.0053	0.135
75	3.41	0.0037	0.094
84	4.06	0.0024	0.060
90	5.15	0.0011	0.028
95	7.12	0.0003	0.007

Measure	Trask	Inman	Folk-Ward
Median, phi	2.64	2.64	2.64
Median, in.	0.0063	0.0063	0.0063
Median, mm	0.161	0.161	0.161
Mean, phi	2.52	2.84	2.77
Mean, in.	0.0069	0.0055	0.0058
Mean, mm	0.174	0.140	0.147
Sorting	1.647	1.224	1.605
Skewness	0.962	0.163	0.266
Kurtosis	0.194	1.677	1.866
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

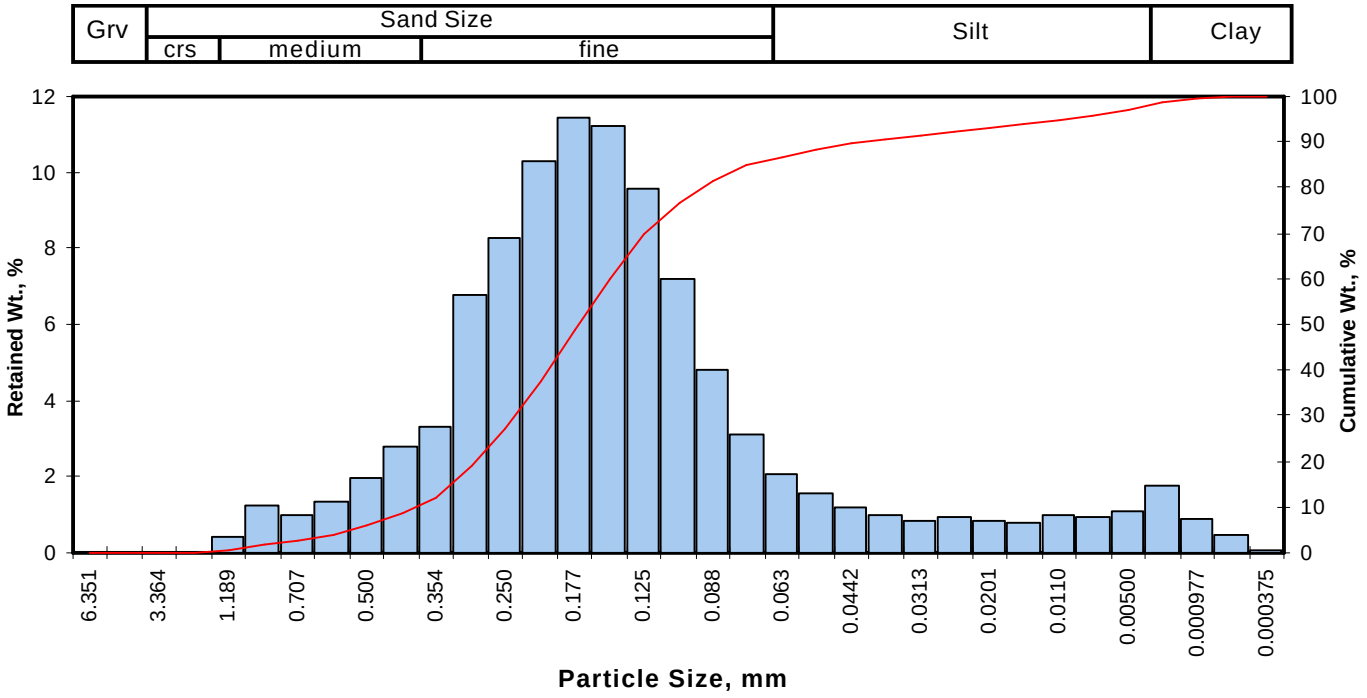
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	10.76
Fine Sand	200	69.99
Silt	>0.005 mm	15.31
Clay	<0.005 mm	3.94
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 19
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.41	0.41	0.41
0.0331	0.841	0.25	20	1.24	1.24	1.65
0.0278	0.707	0.50	25	0.98	0.98	2.63
0.0234	0.595	0.75	30	1.34	1.34	3.97
0.0197	0.500	1.00	35	1.96	1.96	5.94
0.0166	0.420	1.25	40	2.81	2.81	8.75
0.0139	0.354	1.50	45	3.30	3.30	12.05
0.0117	0.297	1.75	50	6.76	6.77	18.82
0.0098	0.250	2.00	60	8.26	8.27	27.09
0.0083	0.210	2.25	70	10.30	10.31	37.40
0.0070	0.177	2.50	80	11.40	11.41	48.81
0.0059	0.149	2.75	100	11.20	11.21	60.02
0.0049	0.125	3.00	120	9.58	9.59	69.61
0.0041	0.105	3.25	140	7.16	7.17	76.78
0.0035	0.088	3.50	170	4.83	4.84	81.62
0.0029	0.074	3.75	200	3.11	3.11	84.73
0.0025	0.063	4.00	230	2.08	2.08	86.81
0.0021	0.053	4.25	270	1.53	1.53	88.34
0.00174	0.0442	4.50	325	1.21	1.21	89.55
0.00146	0.0372	4.75	400	0.99	0.99	90.55
0.00123	0.0313	5.00	450	0.84	0.84	91.39
0.000986	0.0250	5.32	500	0.93	0.93	92.32
0.000790	0.0201	5.64	635	0.81	0.81	93.13
0.000615	0.0156	6.00		0.79	0.79	93.92
0.000435	0.0110	6.50		0.99	0.99	94.91
0.000308	0.00781	7.00		0.91	0.91	95.82
0.000197	0.00500	7.65		1.06	1.06	96.88
0.000077	0.00195	9.00		1.76	1.76	98.64
0.000038	0.000977	10.00		0.86	0.86	99.50
0.000019	0.000488	11.00		0.45	0.45	99.95
0.000015	0.000375	11.38		0.05	0.05	100.00
TOTALS				**99.90**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.88	0.0214	0.543
10	1.34	0.0155	0.394
16	1.65	0.0126	0.320
25	1.94	0.0103	0.261
40	2.31	0.0080	0.202
50	2.53	0.0068	0.174
60	2.75	0.0059	0.149
75	3.19	0.0043	0.110
84	3.69	0.0030	0.077
90	4.61	0.0016	0.041
95	6.55	0.0004	0.011

Measure	Trask	Inman	Folk-Ward
Median, phi	2.53	2.53	2.53
Median, in.	0.0068	0.0068	0.0068
Median, mm	0.174	0.174	0.174
Mean, phi	2.43	2.67	2.62
Mean, in.	0.0073	0.0062	0.0064
Mean, mm	0.185	0.157	0.163
Sorting	1.543	1.023	1.370
Skewness	0.975	0.139	0.279
Kurtosis	0.215	1.771	1.857
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

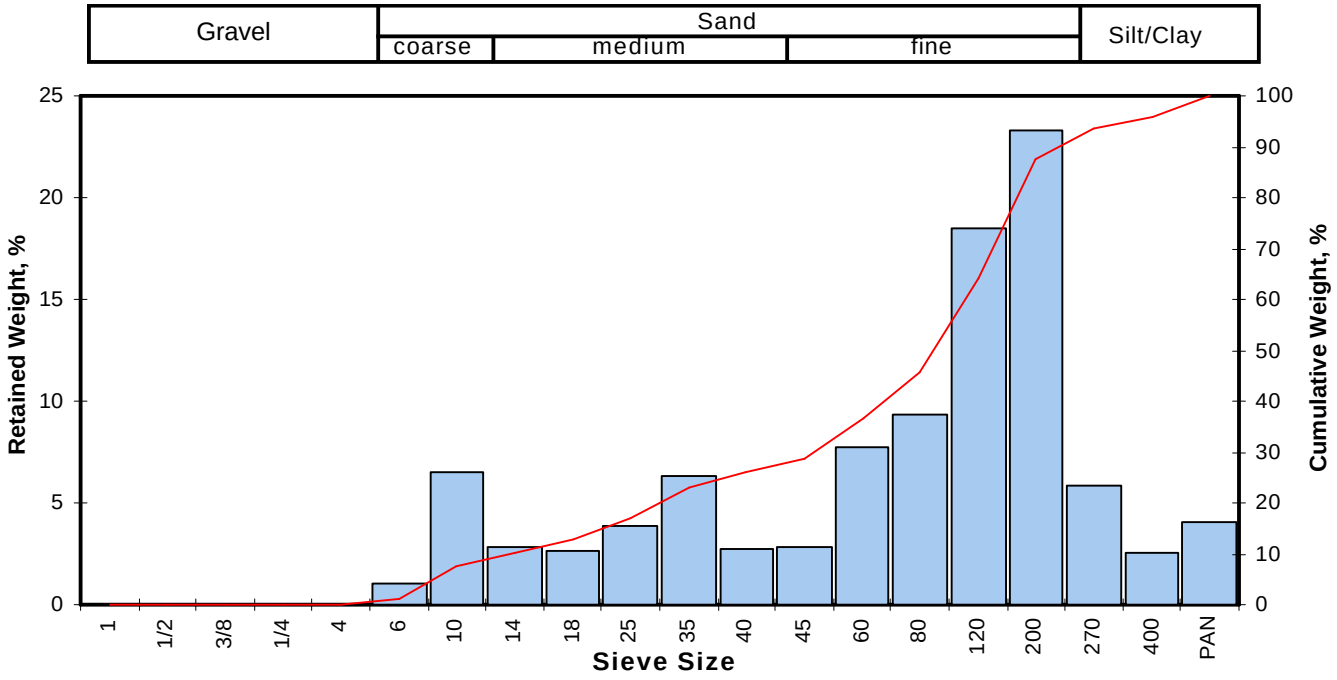
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	8.75
Fine Sand	200	75.98
Silt	>0.005 mm	12.15
Clay	<0.005 mm	3.12
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 20
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.10	1.05	1.05
0.0787	2.000	-1.00	10	0.62	6.50	7.55
0.0557	1.414	-0.50	14	0.27	2.83	10.38
0.0394	1.000	0.00	18	0.25	2.62	13.00
0.0278	0.707	0.50	25	0.37	3.88	16.88
0.0197	0.500	1.00	35	0.60	6.29	23.17
0.0166	0.420	1.25	40	0.26	2.73	25.89
0.0139	0.354	1.50	45	0.27	2.83	28.72
0.0098	0.250	2.00	60	0.74	7.76	36.48
0.0070	0.177	2.50	80	0.89	9.33	45.81
0.0049	0.125	3.00	120	1.76	18.45	64.26
0.0029	0.074	3.75	200	2.22	23.27	87.53
0.0021	0.053	4.25	270	0.56	5.87	93.40
0.0015	0.037	4.75	400	0.24	2.52	95.91
			PAN	0.39	4.09	100.00
TOTALS				9.54	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.29	0.0965	2.452
10	-0.57	0.0583	1.481
16	0.39	0.0301	0.765
25	1.17	0.0175	0.445
40	2.19	0.0086	0.219
50	2.61	0.0064	0.163
60	2.88	0.0053	0.135
75	3.35	0.0039	0.098
84	3.64	0.0032	0.080
90	3.96	0.0025	0.064
95	4.57	0.0017	0.042

Measure	Trask	Inman	Folk-Ward
Median, phi	2.61	2.61	2.61
Median, in.	0.0064	0.0064	0.0064
Median, mm	0.163	0.163	0.163
Mean, phi	1.88	2.01	2.21
Mean, in.	0.0107	0.0098	0.0085
Mean, mm	0.272	0.248	0.216
Sorting	2.127	1.625	1.701
Skewness	1.280	-0.371	-0.352
Kurtosis	0.122	0.804	1.103

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	7.55
Medium Sand	40	18.34
Fine Sand	200	61.64
Silt/Clay	<200	12.47
	Total	100

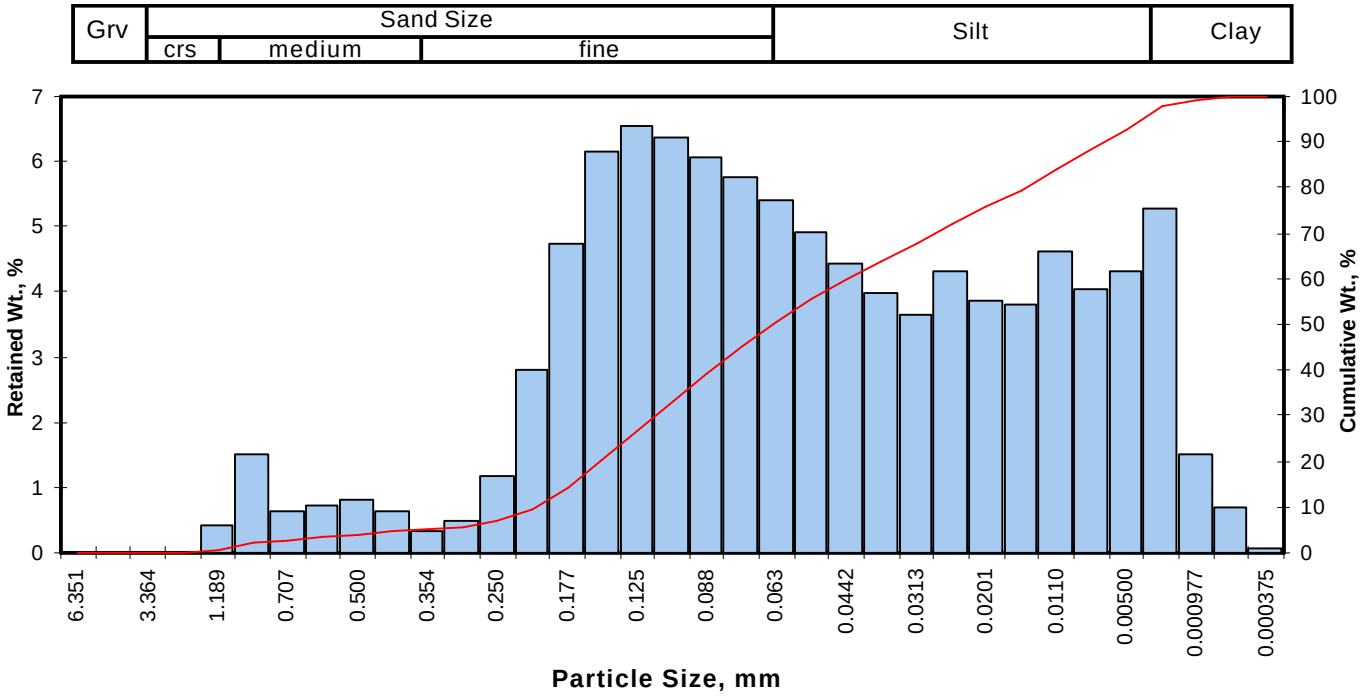
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 21
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.43	0.43	0.43
0.0331	0.841	0.25	20	1.51	1.51	1.94
0.0278	0.707	0.50	25	0.63	0.63	2.57
0.0234	0.595	0.75	30	0.71	0.71	3.28
0.0197	0.500	1.00	35	0.81	0.81	4.09
0.0166	0.420	1.25	40	0.64	0.64	4.73
0.0139	0.354	1.50	45	0.32	0.32	5.05
0.0117	0.297	1.75	50	0.47	0.47	5.52
0.0098	0.250	2.00	60	1.17	1.17	6.69
0.0083	0.210	2.25	70	2.81	2.81	9.50
0.0070	0.177	2.50	80	4.73	4.73	14.23
0.0059	0.149	2.75	100	6.15	6.15	20.38
0.0049	0.125	3.00	120	6.56	6.56	26.94
0.0041	0.105	3.25	140	6.38	6.38	33.32
0.0035	0.088	3.50	170	6.06	6.06	39.38
0.0029	0.074	3.75	200	5.76	5.76	45.14
0.0025	0.063	4.00	230	5.40	5.40	50.53
0.0021	0.053	4.25	270	4.93	4.93	55.46
0.00174	0.0442	4.50	325	4.44	4.44	59.90
0.00146	0.0372	4.75	400	3.99	3.99	63.89
0.00123	0.0313	5.00	450	3.66	3.66	67.55
0.000986	0.0250	5.32	500	4.30	4.30	71.85
0.000790	0.0201	5.64	635	3.86	3.86	75.71
0.000615	0.0156	6.00		3.80	3.80	79.51
0.000435	0.0110	6.50		4.61	4.61	84.12
0.000308	0.00781	7.00		4.04	4.04	88.16
0.000197	0.00500	7.65		4.30	4.30	92.46
0.000077	0.00195	9.00		5.28	5.28	97.74
0.000038	0.000977	10.00		1.51	1.51	99.25
0.000019	0.000488	11.00		0.68	0.68	99.93
0.000015	0.000375	11.38		0.07	0.07	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	1.46	0.0143	0.363
10	2.28	0.0081	0.206
16	2.57	0.0066	0.168
25	2.93	0.0052	0.132
40	3.53	0.0034	0.087
50	3.98	0.0025	0.064
60	4.51	0.0017	0.044
75	5.58	0.0008	0.021
84	6.49	0.0004	0.011
90	7.28	0.0003	0.006
95	8.30	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.98	3.98	3.98
Median, in.	0.0025	0.0025	0.0025
Median, mm	0.064	0.064	0.064
Mean, phi	3.71	4.53	4.34
Mean, in.	0.0030	0.0017	0.0019
Mean, mm	0.076	0.043	0.049
Sorting	2.509	1.957	2.014
Skewness	0.825	0.283	0.274
Kurtosis	0.277	0.746	1.055

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

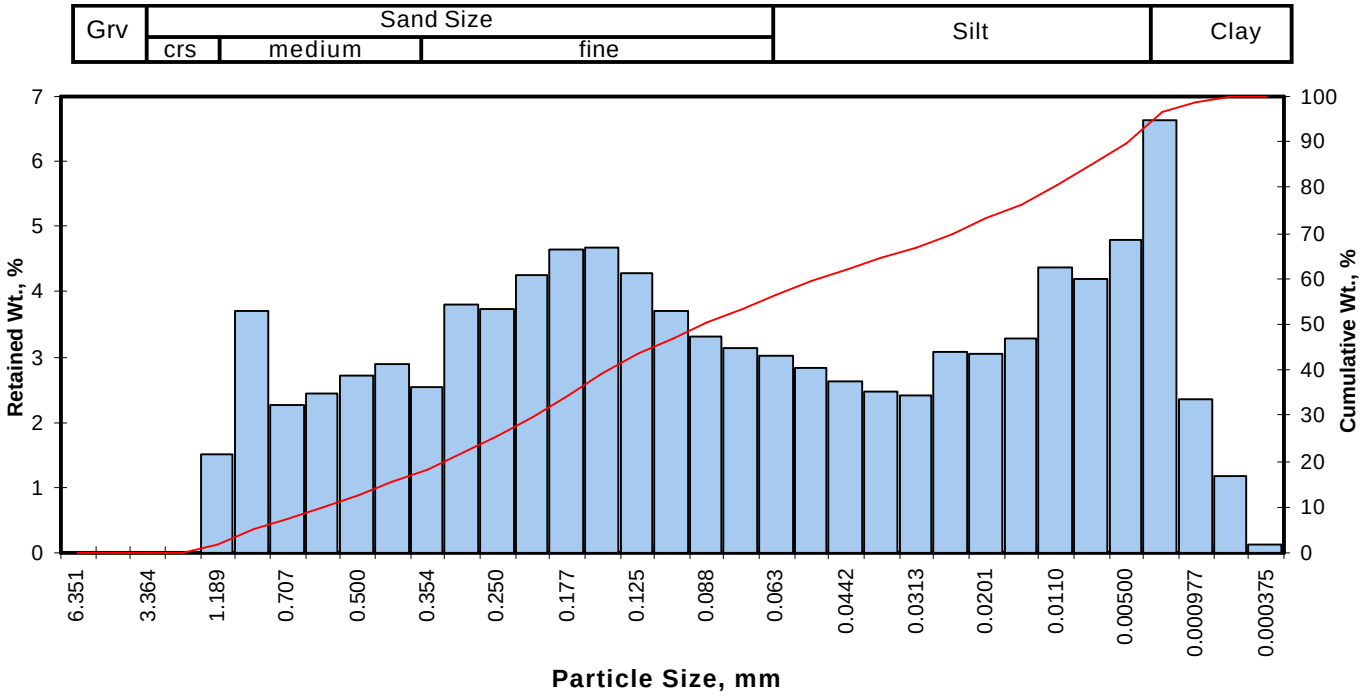
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	4.73
Fine Sand	200	40.41
Silt	>0.005 mm	47.33
Clay	<0.005 mm	7.54
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 22
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.51	1.51	1.51
0.0331	0.841	0.25	20	3.70	3.70	5.21
0.0278	0.707	0.50	25	2.26	2.26	7.47
0.0234	0.595	0.75	30	2.45	2.45	9.92
0.0197	0.500	1.00	35	2.72	2.72	12.64
0.0166	0.420	1.25	40	2.90	2.90	15.54
0.0139	0.354	1.50	45	2.54	2.54	18.08
0.0117	0.297	1.75	50	3.81	3.81	21.89
0.0098	0.250	2.00	60	3.73	3.73	25.62
0.0083	0.210	2.25	70	4.26	4.26	29.88
0.0070	0.177	2.50	80	4.66	4.66	34.54
0.0059	0.149	2.75	100	4.69	4.69	39.23
0.0049	0.125	3.00	120	4.27	4.27	43.50
0.0041	0.105	3.25	140	3.70	3.70	47.20
0.0035	0.088	3.50	170	3.31	3.31	50.50
0.0029	0.074	3.75	200	3.13	3.13	53.63
0.0025	0.063	4.00	230	3.01	3.01	56.64
0.0021	0.053	4.25	270	2.83	2.83	59.47
0.00174	0.0442	4.50	325	2.62	2.62	62.09
0.00146	0.0372	4.75	400	2.46	2.46	64.55
0.00123	0.0313	5.00	450	2.40	2.40	66.95
0.000986	0.0250	5.32	500	3.07	3.07	70.02
0.000790	0.0201	5.64	635	3.06	3.06	73.08
0.000615	0.0156	6.00		3.28	3.28	76.36
0.000435	0.0110	6.50		4.38	4.38	80.74
0.000308	0.00781	7.00		4.19	4.19	84.93
0.000197	0.00500	7.65		4.79	4.79	89.72
0.000077	0.00195	9.00		6.65	6.65	96.37
0.000038	0.000977	10.00		2.34	2.34	98.71
0.000019	0.000488	11.00		1.17	1.17	99.88
0.000015	0.000375	11.38		0.12	0.12	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.22	0.0338	0.858
10	0.76	0.0233	0.592
16	1.30	0.0160	0.407
25	1.96	0.0101	0.257
40	2.80	0.0057	0.144
50	3.46	0.0036	0.091
60	4.30	0.0020	0.051
75	5.85	0.0007	0.017
84	6.89	0.0003	0.008
90	7.70	0.0002	0.005
95	8.72	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	3.46	3.46	3.46
Median, in.	0.0036	0.0036	0.0036
Median, mm	0.091	0.091	0.091
Mean, phi	2.86	4.09	3.88
Mean, in.	0.0054	0.0023	0.0027
Mean, mm	0.137	0.059	0.068
Sorting	3.853	2.797	2.686
Skewness	0.736	0.225	0.231
Kurtosis	0.204	0.519	0.895
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

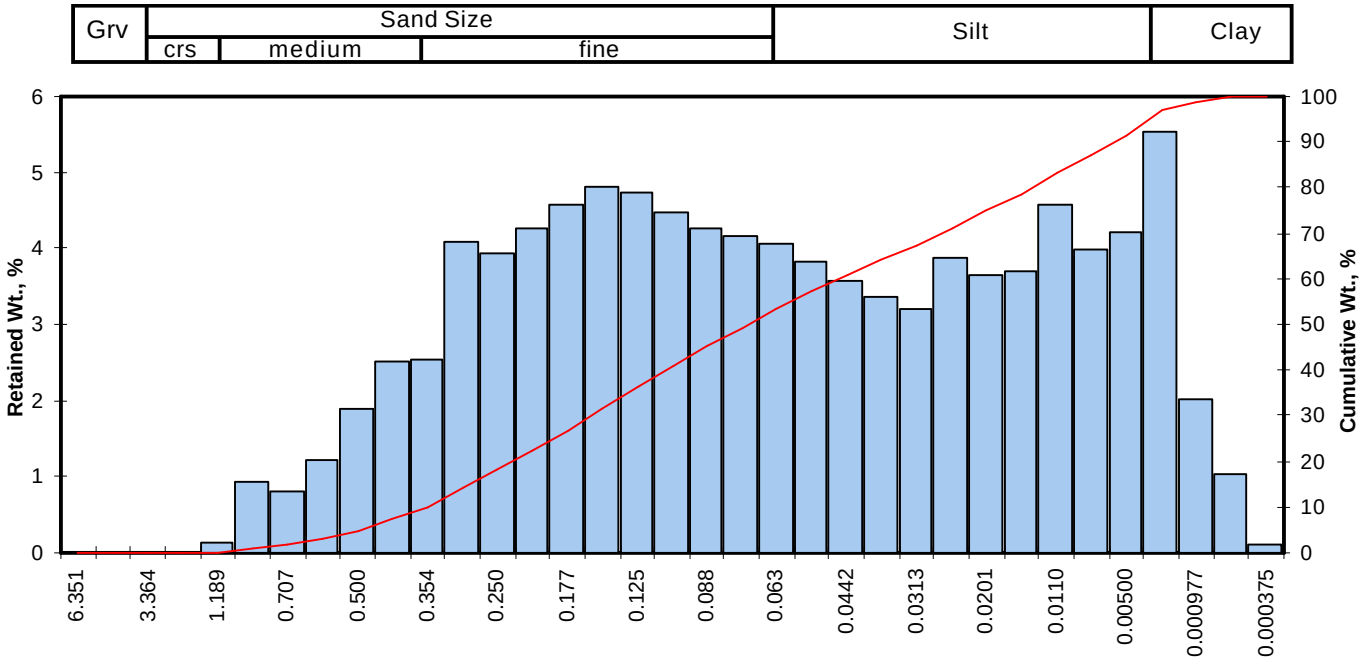
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	15.54
Fine Sand	200	38.10
Silt	>0.005 mm	36.09
Clay	<0.005 mm	10.28
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 23
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.12	0.12	0.12
0.0331	0.841	0.25	20	0.93	0.93	1.05
0.0278	0.707	0.50	25	0.79	0.79	1.84
0.0234	0.595	0.75	30	1.21	1.21	3.05
0.0197	0.500	1.00	35	1.88	1.88	4.93
0.0166	0.420	1.25	40	2.52	2.52	7.45
0.0139	0.354	1.50	45	2.53	2.53	9.98
0.0117	0.297	1.75	50	4.08	4.08	14.06
0.0098	0.250	2.00	60	3.93	3.93	17.99
0.0083	0.210	2.25	70	4.27	4.27	22.26
0.0070	0.177	2.50	80	4.58	4.58	26.84
0.0059	0.149	2.75	100	4.80	4.80	31.64
0.0049	0.125	3.00	120	4.72	4.72	36.36
0.0041	0.105	3.25	140	4.47	4.47	40.83
0.0035	0.088	3.50	170	4.28	4.28	45.11
0.0029	0.074	3.75	200	4.17	4.17	49.28
0.0025	0.063	4.00	230	4.05	4.05	53.33
0.0021	0.053	4.25	270	3.82	3.82	57.15
0.00174	0.0442	4.50	325	3.58	3.58	60.73
0.00146	0.0372	4.75	400	3.36	3.36	64.09
0.00123	0.0313	5.00	450	3.20	3.20	67.29
0.000986	0.0250	5.32	500	3.89	3.89	71.18
0.000790	0.0201	5.64	635	3.65	3.65	74.83
0.000615	0.0156	6.00		3.71	3.71	78.54
0.000435	0.0110	6.50		4.57	4.57	83.11
0.000308	0.00781	7.00		3.99	3.99	87.10
0.000197	0.00500	7.65		4.22	4.22	91.32
0.000077	0.00195	9.00		5.53	5.53	96.85
0.000038	0.000977	10.00		2.01	2.01	98.86
0.000019	0.000488	11.00		1.03	1.03	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	1.01	0.0196	0.498
10	1.50	0.0139	0.353
16	1.87	0.0107	0.273
25	2.40	0.0075	0.190
40	3.20	0.0043	0.109
50	3.79	0.0028	0.072
60	4.45	0.0018	0.046
75	5.66	0.0008	0.020
84	6.61	0.0004	0.010
90	7.44	0.0002	0.006
95	8.55	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.79	3.79	3.79
Median, in.	0.0028	0.0028	0.0028
Median, mm	0.072	0.072	0.072
Mean, phi	3.26	4.24	4.09
Mean, in.	0.0041	0.0021	0.0023
Mean, mm	0.105	0.053	0.059
Sorting	3.092	2.369	2.327
Skewness	0.851	0.189	0.225
Kurtosis	0.244	0.591	0.949
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

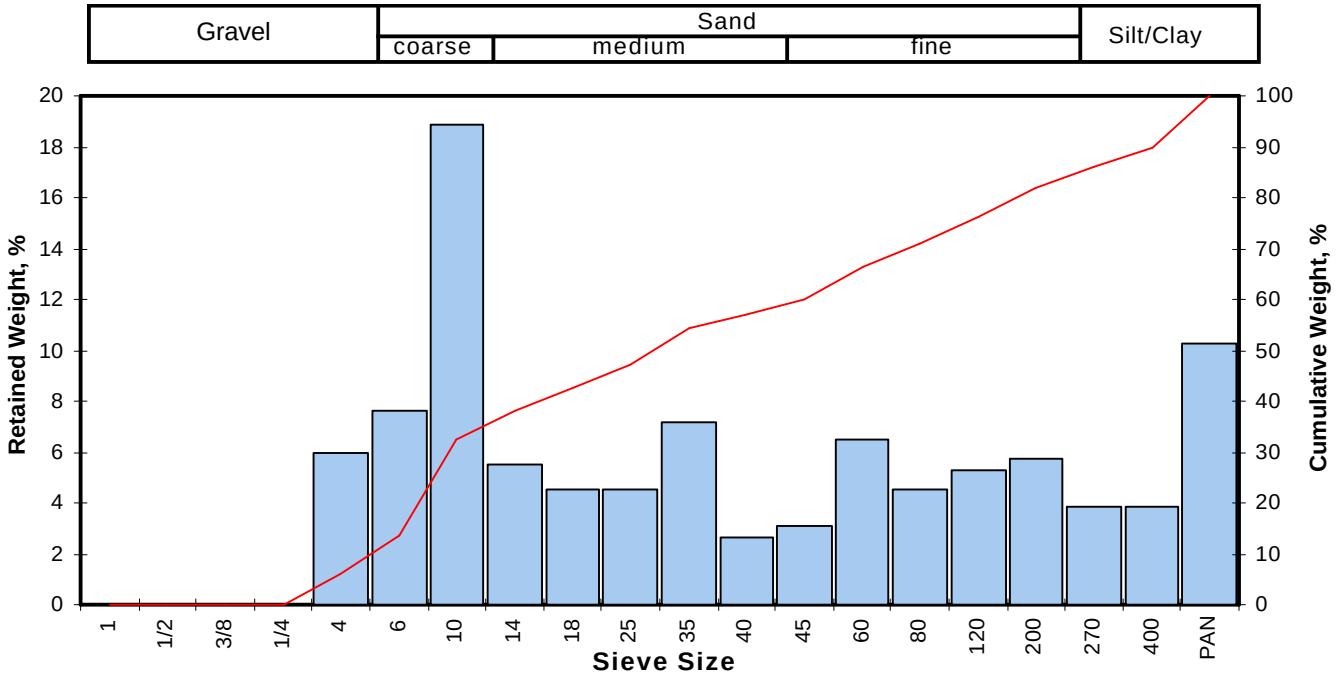
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	7.45
Fine Sand	200	41.83
Silt	>0.005 mm	42.04
Clay	<0.005 mm	8.68
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 24
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.25	5.98	5.98
0.1324	3.364	-1.75	6	0.32	7.66	13.64
0.0787	2.000	-1.00	10	0.79	18.90	32.54
0.0557	1.414	-0.50	14	0.23	5.50	38.04
0.0394	1.000	0.00	18	0.19	4.55	42.58
0.0278	0.707	0.50	25	0.19	4.55	47.13
0.0197	0.500	1.00	35	0.30	7.18	54.31
0.0166	0.420	1.25	40	0.11	2.63	56.94
0.0139	0.354	1.50	45	0.13	3.11	60.05
0.0098	0.250	2.00	60	0.27	6.46	66.51
0.0070	0.177	2.50	80	0.19	4.55	71.05
0.0049	0.125	3.00	120	0.22	5.26	76.32
0.0029	0.074	3.75	200	0.24	5.74	82.06
0.0021	0.053	4.25	270	0.16	3.83	85.89
0.0015	0.037	4.75	400	0.16	3.83	89.71
			PAN	0.43	10.29	100.00
TOTALS				4.18	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-2.32	0.1964	4.988
10	-1.99	0.1561	3.965
16	-1.66	0.1241	3.152
25	-1.30	0.0969	2.461
40	-0.28	0.0479	1.218
50	0.70	0.0242	0.616
60	1.50	0.0140	0.354
75	2.88	0.0054	0.136
84	4.00	0.0025	0.062
90	4.62	0.0016	0.041
95	2.31	0.0079	0.202

Measure	Trask	Inman	Folk-Ward
Median, phi	0.70	0.70	0.70
Median, in.	0.0242	0.0242	0.0242
Median, mm	0.616	0.616	0.616
Mean, phi	-0.38	1.17	1.02
Mean, in.	0.0511	0.0175	0.0195
Mean, mm	1.298	0.443	0.495
Sorting	4.249	2.830	2.116
Skewness	0.941	0.167	-0.069
Kurtosis	0.296	-0.182	0.454

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	5.98
Coarse Sand	10	26.56
Medium Sand	40	24.40
Fine Sand	200	25.12
Silt/Clay	<200	17.94
	Total	100

Phone: (562) 907-3607
Fax: (562) 907-3610

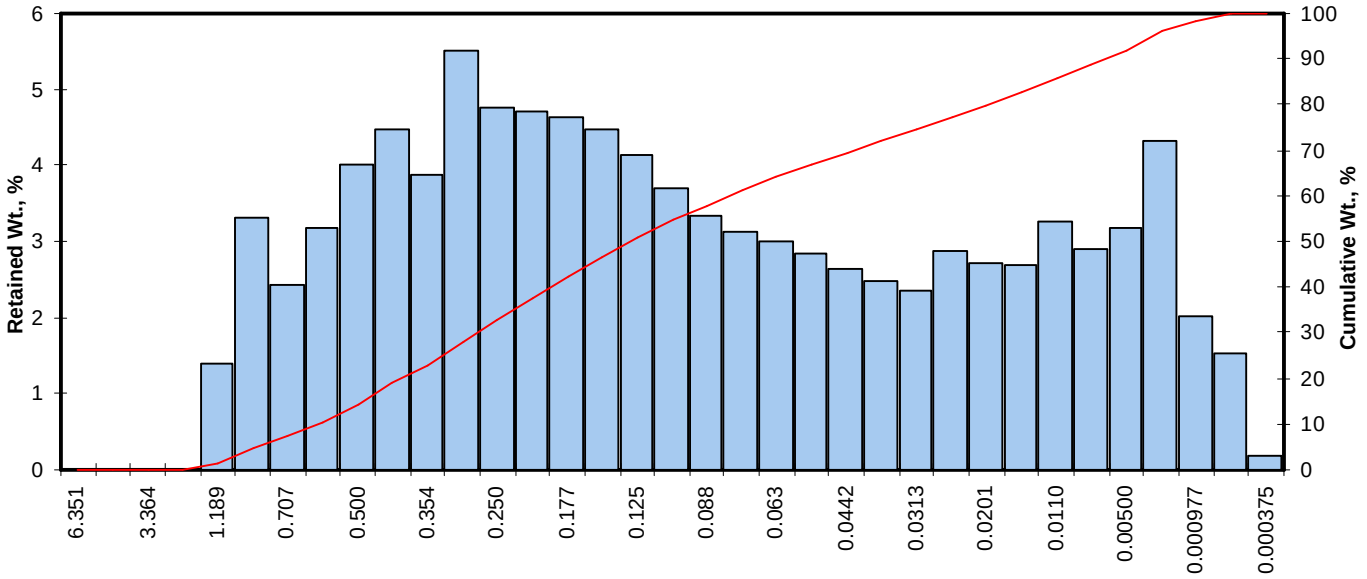
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 25
Depth, ft: N/A

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.39	1.39	1.39
0.0331	0.841	0.25	20	3.30	3.30	4.69
0.0278	0.707	0.50	25	2.43	2.43	7.12
0.0234	0.595	0.75	30	3.18	3.18	10.30
0.0197	0.500	1.00	35	4.01	4.01	14.31
0.0166	0.420	1.25	40	4.48	4.48	18.79
0.0139	0.354	1.50	45	3.89	3.89	22.68
0.0117	0.297	1.75	50	5.50	5.50	28.18
0.0098	0.250	2.00	60	4.75	4.75	32.93
0.0083	0.210	2.25	70	4.70	4.70	37.63
0.0070	0.177	2.50	80	4.62	4.62	42.25
0.0059	0.149	2.75	100	4.48	4.48	46.73
0.0049	0.125	3.00	120	4.14	4.14	50.87
0.0041	0.105	3.25	140	3.70	3.70	54.57
0.0035	0.088	3.50	170	3.34	3.34	57.91
0.0029	0.074	3.75	200	3.14	3.14	61.05
0.0025	0.063	4.00	230	3.01	3.01	64.06
0.0021	0.053	4.25	270	2.84	2.84	66.90
0.00174	0.0442	4.50	325	2.65	2.65	69.55
0.00146	0.0372	4.75	400	2.47	2.47	72.02
0.00123	0.0313	5.00	450	2.35	2.35	74.37
0.000986	0.0250	5.32	500	2.87	2.87	77.24
0.000790	0.0201	5.64	635	2.71	2.71	79.95
0.000615	0.0156	6.00		2.70	2.70	82.65
0.000435	0.0110	6.50		3.26	3.26	85.91
0.000308	0.00781	7.00		2.89	2.89	88.80
0.000197	0.00500	7.65		3.17	3.17	91.97
0.000077	0.00195	9.00		4.32	4.32	96.29
0.000038	0.000977	10.00		2.01	2.01	98.30
0.000019	0.000488	11.00		1.52	1.52	99.82
0.000015	0.000375	11.38		0.18	0.18	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.28	0.0324	0.823
10	0.73	0.0238	0.604
16	1.09	0.0184	0.468
25	1.61	0.0129	0.329
40	2.38	0.0076	0.192
50	2.95	0.0051	0.130
60	3.67	0.0031	0.079
75	5.07	0.0012	0.030
84	6.21	0.0005	0.014
90	7.24	0.0003	0.007
95	8.60	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	2.95	2.95	2.95
Median, in.	0.0051	0.0051	0.0051
Median, mm	0.130	0.130	0.130
Mean, phi	2.48	3.65	3.42
Mean, in.	0.0071	0.0031	0.0037
Mean, mm	0.179	0.080	0.094
Sorting	3.323	2.556	2.538
Skewness	0.763	0.275	0.317
Kurtosis	0.250	0.626	0.983
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	18.79
Fine Sand	200	42.26
Silt	>0.005 mm	30.92
Clay	<0.005 mm	8.03
	Total	**100**

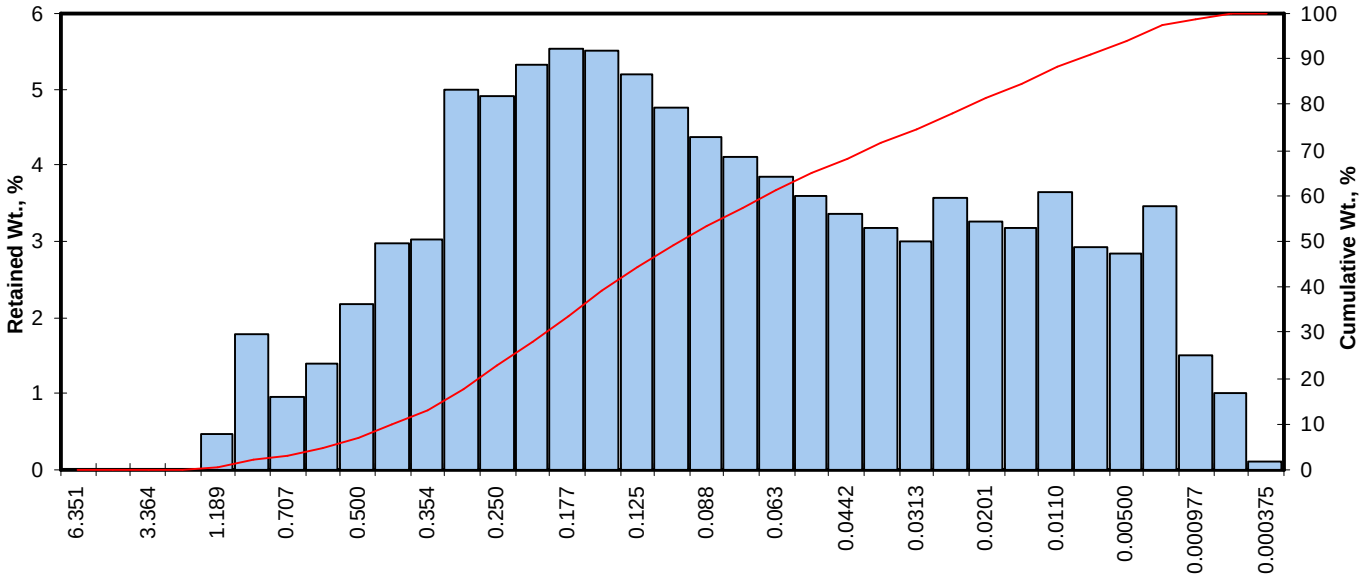
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 26
Depth, ft: N/A

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.47	0.47	0.47
0.0331	0.841	0.25	20	1.79	1.79	2.26
0.0278	0.707	0.50	25	0.96	0.96	3.22
0.0234	0.595	0.75	30	1.39	1.39	4.61
0.0197	0.500	1.00	35	2.18	2.18	6.79
0.0166	0.420	1.25	40	2.97	2.97	9.76
0.0139	0.354	1.50	45	3.02	3.02	12.78
0.0117	0.297	1.75	50	4.99	4.99	17.77
0.0098	0.250	2.00	60	4.91	4.91	22.68
0.0083	0.210	2.25	70	5.33	5.33	28.01
0.0070	0.177	2.50	80	5.54	5.54	33.55
0.0059	0.149	2.75	100	5.52	5.52	39.07
0.0049	0.125	3.00	120	5.19	5.19	44.26
0.0041	0.105	3.25	140	4.75	4.75	49.01
0.0035	0.088	3.50	170	4.37	4.37	53.38
0.0029	0.074	3.75	200	4.10	4.10	57.48
0.0025	0.063	4.00	230	3.86	3.86	61.34
0.0021	0.053	4.25	270	3.59	3.59	64.93
0.00174	0.0442	4.50	325	3.37	3.37	68.30
0.00146	0.0372	4.75	400	3.18	3.18	71.48
0.00123	0.0313	5.00	450	3.00	3.00	74.48
0.000986	0.0250	5.32	500	3.58	3.58	78.06
0.000790	0.0201	5.64	635	3.27	3.27	81.33
0.000615	0.0156	6.00		3.19	3.19	84.52
0.000435	0.0110	6.50		3.64	3.64	88.16
0.000308	0.00781	7.00		2.91	2.91	91.07
0.000197	0.00500	7.65		2.85	2.85	93.92
0.000077	0.00195	9.00		3.47	3.47	97.39
0.000038	0.000977	10.00		1.50	1.50	98.89
0.000019	0.000488	11.00		1.00	1.00	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.79	0.0227	0.576
10	1.27	0.0163	0.415
16	1.66	0.0124	0.316
25	2.11	0.0091	0.232
40	2.79	0.0057	0.144
50	3.31	0.0040	0.101
60	3.91	0.0026	0.066
75	5.05	0.0012	0.030
84	5.94	0.0006	0.016
90	6.82	0.0003	0.009
95	8.07	0.0001	0.004

Measure	Trask	Inman	Folk-Ward
Median, phi	3.31	3.31	3.31
Median, in.	0.0040	0.0040	0.0040
Median, mm	0.101	0.101	0.101
Mean, phi	2.93	3.80	3.64
Mean, in.	0.0052	0.0028	0.0032
Mean, mm	0.131	0.072	0.080
Sorting	2.768	2.140	2.172
Skewness	0.829	0.231	0.270
Kurtosis	0.248	0.699	1.015

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

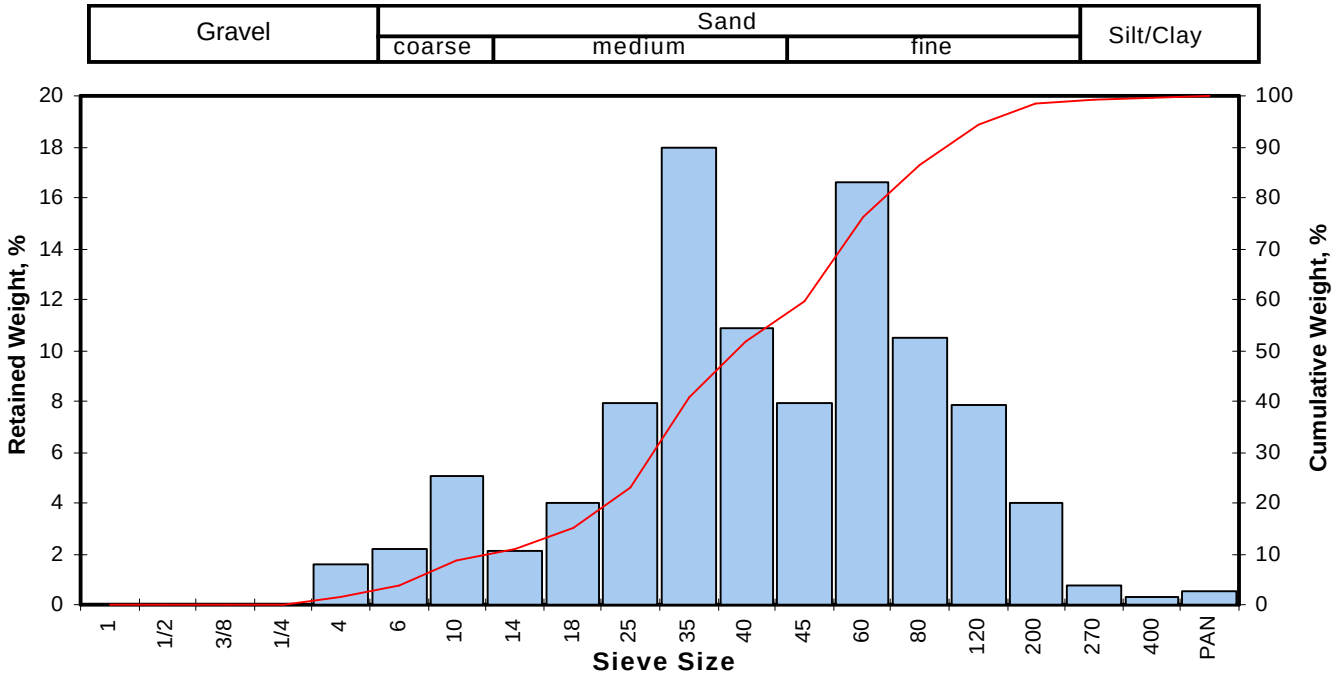
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	9.76
Fine Sand	200	47.72
Silt	>0.005 mm	36.44
Clay	<0.005 mm	6.08
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 17B
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.21	1.58	1.58
0.1324	3.364	-1.75	6	0.29	2.19	3.77
0.0787	2.000	-1.00	10	0.67	5.05	8.82
0.0557	1.414	-0.50	14	0.28	2.11	10.93
0.0394	1.000	0.00	18	0.53	3.99	14.92
0.0278	0.707	0.50	25	1.05	7.91	22.83
0.0197	0.500	1.00	35	2.38	17.94	40.77
0.0166	0.420	1.25	40	1.44	10.85	51.62
0.0139	0.354	1.50	45	1.05	7.91	59.53
0.0098	0.250	2.00	60	2.20	16.58	76.11
0.0070	0.177	2.50	80	1.39	10.47	86.59
0.0049	0.125	3.00	120	1.04	7.84	94.42
0.0029	0.074	3.75	200	0.53	3.99	98.42
0.0021	0.053	4.25	270	0.10	0.75	99.17
0.0015	0.037	4.75	400	0.04	0.30	99.47
			PAN	0.07	0.53	100.00
TOTALS				13.27	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.57	0.1166	2.963
10	-0.72	0.0648	1.647
16	0.07	0.0376	0.954
25	0.56	0.0267	0.678
40	0.98	0.0200	0.507
50	1.21	0.0170	0.431
60	1.51	0.0138	0.350
75	1.97	0.0101	0.256
84	2.38	0.0076	0.193
90	2.72	0.0060	0.152
95	3.11	0.0046	0.116

Measure	Trask	Inman	Folk-Ward
Median, phi	1.21	1.21	1.21
Median, in.	0.0170	0.0170	0.0170
Median, mm	0.431	0.431	0.431
Mean, phi	1.10	1.22	1.22
Mean, in.	0.0184	0.0169	0.0169
Mean, mm	0.467	0.429	0.430
Sorting	1.628	1.154	1.285
Skewness	0.965	0.008	-0.090
Kurtosis	0.141	1.025	1.363

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	1.58
Coarse Sand	10	7.23
Medium Sand	40	42.80
Fine Sand	200	46.80
Silt/Clay	<200	1.58
	Total	100

Phone: (562) 907-3607
Fax: (562) 907-3610

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 • FAX: (714) 894-7501

3705Q To: PTS

CHAIN OF CUSTODY RECORD

Date 1/23/07

Page 1 of 3

LABORATORY CLIENT:		CLIENT PROJECT NAME / NUMBER: 07-01-1069	P.O. NO.:
ADDRESS:		PROJECT CONTACT: Stephen Nowak	LAB USE ONLY ☐☐-☐☐☐☐
CITY / STATE / ZIP		SAMPLER(S): (PRINT)	COELT LOG CODE ☐☐☐☐
TEL:	E-MAIL:		COOLER RECEIPT TEMP = ____ °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) ☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ ____

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (G)	TRH (D) or ____	BTEX / MTBE (8260B) or	OXYGENATES (8260B)	VOCs (8260B)	5035 ENCORE PREP	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	CAC, T22 METALS (6010B) / 747	PNAs (8310) or (8270C)	VOCs (TO-14A) or (TO-15)	TPH(G) (TO-3M)	TOC	Grain Size			
	Sample 1		1/18/07	1830	S	1														X	X			
	2																							
	3																							
	4																							
	5																							
	6																							
	7																							
	8																							
	9																							
	10																							

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 1/23/07	Time: 3:40
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/10/06 Revision

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7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 • FAX: (714) 894-7501

3705 Tot. PTS

CHAIN OF CUSTODY RECORD

Date 1/23/07

Page 2 of 3

LABORATORY CLIENT:

ADDRESS:

CITY STATE ZIP

TEL: E-MAIL:

CLIENT PROJECT NAME / NUMBER: 07-01-1069

P.O. NO.:

PROJECT CONTACT: Stephen Niwa

LAB USE ONLY

SAMPLER(S): (PRINT)

COELT LOG CODE

COOLER RECEIPT

TEMP = °C

TURNAROUND TIME:

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ _____

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (G)	TPH (D) or ____	BTEX / MTBE (8260B) or ____	OXYGENATES (8260B)	VOCs (8260B)	5035 ENCORE PREP	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	CAC, T22 METALS (6010B) / 747 ____	PNAs (8310) or (8270C)	VOCs (TO-14A) or (TO-15)	TPH(G) (TO-3M)	TDC	Grain Size
	Sample 11		1/18/07	1830	S	1														X	X
	12																				
	13																				
	14																				
	15																				
	16																				
	17																				
	18																				
	19																				
	20																				

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Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

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05/10/06 Revision

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7440 LINCOLN WAY
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TEL: (714) 895-5494 • FAX: (714) 894-7501

37052 TO: PTS

CHAIN OF CUSTODY RECORD

Date 1/23/07

Page 3 of 3

LABORATORY CLIENT:

ADDRESS:

CITY STATE ZIP

TEL: E-MAIL:

CLIENT PROJECT NAME / NUMBER: 07-01-1069

PROJECT CONTACT: Stephen Nowak

SAMPLER(S): (PRINT)

P.O. NO.:

LAB USE ONLY

COELT LOG CODE

COOLER RECEIPT TEMP = °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (G)	TPH (D) or	BTEX / MTBE (8260B) or	OXYGENATES (8260B)	VOCs (8260B)	5035 ENCORE PREP	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	CAC, 7 22 METALS (6010B) / 747	PNAs (8310) or (8270C)	VOCs (TO-14A) or (TO-15)	TPH(G) (TO-3M)	TOC	Grain Size
	Sample 21		1/18/07	1830	S	1														X	X
	22																				
	23																				
	24																				
	25																				
	26																				
	17B																				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
		1/23/07	3:40
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/10/06 Revision

Calscience
Environmental
Laboratories, Inc.

February 09, 2007

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 07-02-0153**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/2/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	02/02/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-02-0153
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg
Project: TDY / SC0307			Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Filtersock-CB131	**07-02-0153-1**	**02/01/07**	**Solid**	**02/05/07**	**02/07/07**	**070205L07**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	5500	500	10	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	ND	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	108	50-130			2,4,5,6-Tetrachloro-m-Xylene	117	50-130		

Filtersock-CB133	**07-02-0153-2**	**02/01/07**	**Solid**	**02/05/07**	**02/07/07**	**070205L07**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	25000	500		Aroclor-1248	390000	25000	500	
Aroclor-1221	ND	25000	500		Aroclor-1254	ND	25000	500	
Aroclor-1232	ND	25000	500		Aroclor-1260	160000	25000	500	
Aroclor-1242	ND	25000	500		Aroclor-1262	ND	25000	500	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	814	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	0	50-130		1,2

Method Blank	**099-07-009-1,009**	**N/A**	**Solid**	**02/05/07**	**02/05/07**	**070205L07**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	101	50-130			2,4,5,6-Tetrachloro-m-Xylene	104	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 02/02/07
Work Order No: 07-02-0153
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-02-0184-2	**Solid**	**GC 10**	**02/05/07**	**02/05/07**	**070205S07**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	92	50	50-135	59	0-25	4

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-02-0153
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-009-1,009	**Solid**	**GC 10**	**02/05/07**	**02/05/07**	**070205L07**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	102	106	50-135	4	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-02-0153

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2004 0153

Analysis Request and Chain of Custody Record

Page 1 of 1

Project Name: TDY	Project Number: SC0307
Samplers Names: CL, CB	Project Contact: Brian Hitchens
Laboratory Name: Cal Science	Lab Contact: Steve Nowak
Lab Address: 7440 Lincoln Way, Garden Grove, CA	Lab Phone: 714-895-5494
	Carrier/Waybill No.

White copy: to accompany samples

Yellow copy: field copy

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by ____	Metals	SVOCs by 8270	PCBs	Grain Size	T.O.C.	Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative			8oz JAR	8oz JAR	8oz JAR		
				Number of Containers							
Filtersock-CB131	2/1/07	11:50	Soil				1	1	1		
Filtersock-CB133	2/1/07	12:30	Soil				1	1	1		

Special Instructions: Order of Analyses, PCBs 1st, Grain size 2nd, TOC 3rd.

Turn-around Time: ☒ Normal ☐ Rush: ____

1. Relinquished by (Signiture/Affiliation)	Date 2/2/07 Time 14:35	1. Received by (Signiture/Affiliation)	Date 02/02/07 Time 14:35
2. Relinquished by (Signiture/Affiliation)	Date 02/02/07 Time 17:10	2. Received by (Signiture/Affiliation)	Date 02/02/07 Time 17:10
3. Relinquished by (Signiture/Affiliation)	Date Time	3. Received by (Signiture/Affiliation)	Date Time

Geosyntec consultants
10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07 - 02 - 0153

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: GEOSYNTEC **DATE:** 02/02/07

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
✓ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

3.2 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: RD

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: RD

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.	✓		
Tedlar bag(s) free of condensation			✓

Initial: RD

COMMENTS:

PTS Laboratories

PTS File No: 37087
Client: Calscience

ORGANIC CARBON DATA - TOC

PROJECT NAME: N/A
PROJECT NO: 07-02-0153

		METHOD:	WALKLEY-BLACK
SAMPLE ID.	DEPTH, ft.	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg
Filtersock-CB131	N/A	SOIL	126900
Filtersock-CB133	N/A	SOIL	57000

PTS Laboratories, Inc.

Calscience
PTS File No: 37087

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422)

PROJECT NAME: N/A
PROJECT NO: 07-02-0153

Sample ID	Depth, ft.	Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent				
				Gravel	Sand Size			Silt/Clay
					Coarse	Medium	Fine	
Filtersock-CB131	N/A	Fine sand	0.221	0.74	3.85	32.01	37.22	26.18
Filtersock-CB133	N/A	Medium sand	0.224	2.77	10.99	22.42	38.40	25.42

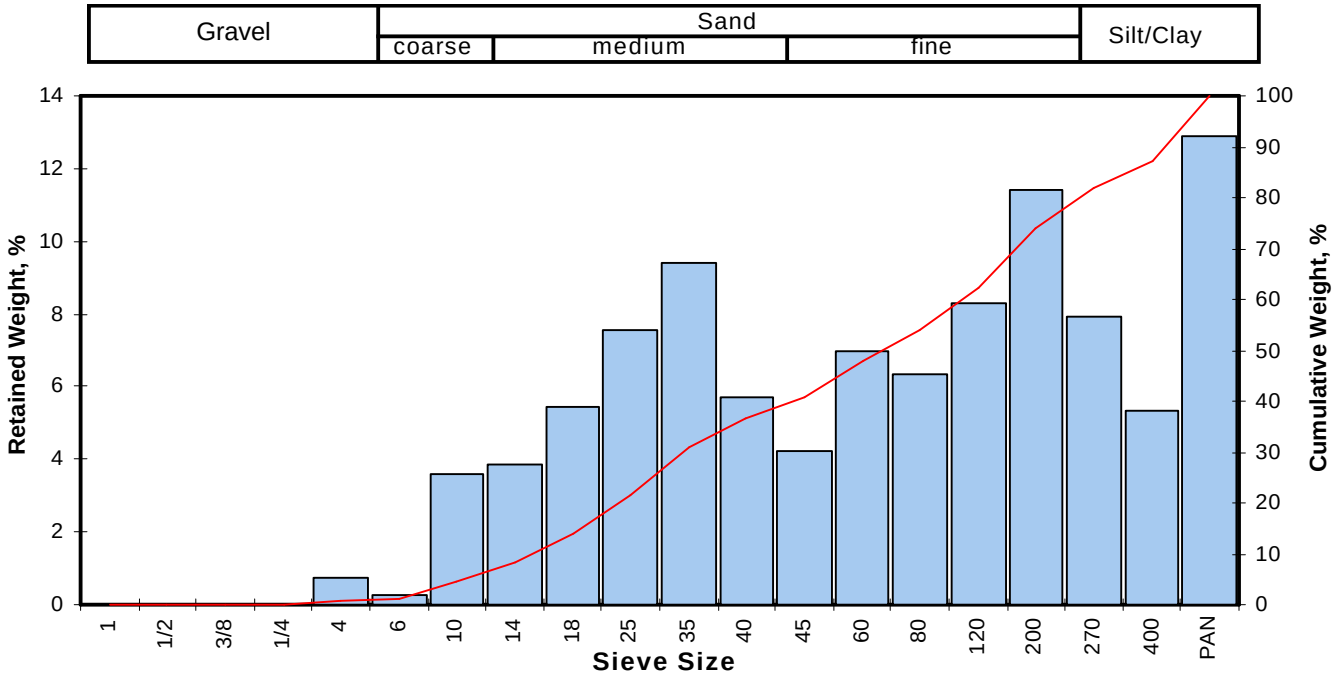
(1) based on Mean fromTrask

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-02-0153

PTS File No: 37087
Sample ID: Filtersock-CB131
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.06	0.74	0.74
0.1324	3.364	-1.75	6	0.02	0.25	0.99
0.0787	2.000	-1.00	10	0.29	3.60	4.59
0.0557	1.414	-0.50	14	0.31	3.85	8.44
0.0394	1.000	0.00	18	0.44	5.46	13.90
0.0278	0.707	0.50	25	0.61	7.57	21.46
0.0197	0.500	1.00	35	0.76	9.43	30.89
0.0166	0.420	1.25	40	0.46	5.71	36.60
0.0139	0.354	1.50	45	0.34	4.22	40.82
0.0098	0.250	2.00	60	0.56	6.95	47.77
0.0070	0.177	2.50	80	0.51	6.33	54.09
0.0049	0.125	3.00	120	0.67	8.31	62.41
0.0029	0.074	3.75	200	0.92	11.41	73.82
0.0021	0.053	4.25	270	0.64	7.94	81.76
0.0015	0.037	4.75	400	0.43	5.33	87.10
			PAN	1.04	12.90	100.00
TOTALS				8.06	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-0.95	0.0759	1.928
10	-0.36	0.0504	1.281
16	0.14	0.0358	0.908
25	0.69	0.0244	0.621
40	1.45	0.0144	0.366
50	2.18	0.0087	0.221
60	2.86	0.0054	0.138
75	3.82	0.0028	0.071
84	4.46	0.0018	0.045
90	3.68	0.0031	0.078
95	1.84	0.0110	0.279

Measure	Trask	Inman	Folk-Ward
Median, phi	2.18	2.18	2.18
Median, in.	0.0087	0.0087	0.0087
Median, mm	0.221	0.221	0.221
Mean, phi	1.53	2.30	2.26
Mean, in.	0.0136	0.0080	0.0082
Mean, mm	0.346	0.203	0.209
Sorting	2.966	2.160	1.503
Skewness	0.946	0.057	-0.592
Kurtosis	0.229	-0.355	0.364

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.74
Coarse Sand	10	3.85
Medium Sand	40	32.01
Fine Sand	200	37.22
Silt/Clay	<200	26.18
	Total	100

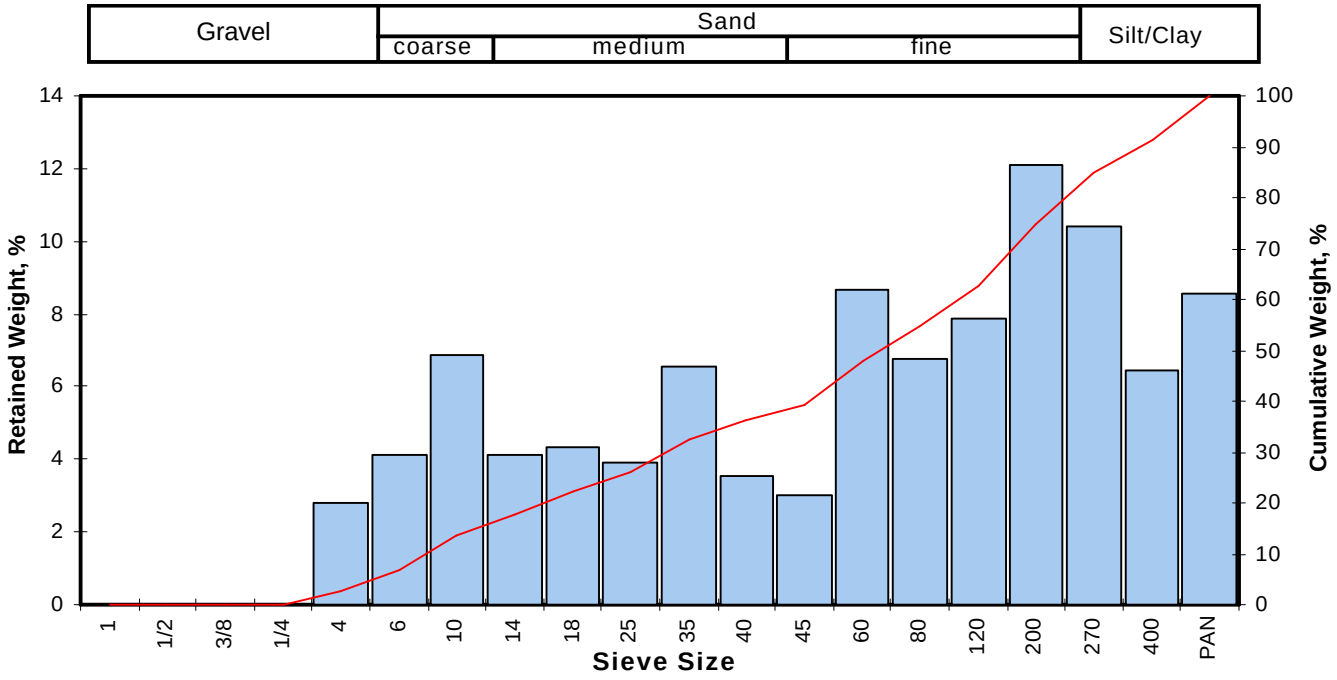
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client: Calscience
Project: N/A
Project No: 07-02-0153

PTS File No: 37087
Sample ID: Filtersock-CB133
Depth, ft: N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.25	2.77	2.77
0.1324	3.364	-1.75	6	0.37	4.11	6.88
0.0787	2.000	-1.00	10	0.62	6.88	13.76
0.0557	1.414	-0.50	14	0.37	4.11	17.87
0.0394	1.000	0.00	18	0.39	4.33	22.20
0.0278	0.707	0.50	25	0.35	3.88	26.08
0.0197	0.500	1.00	35	0.59	6.55	32.63
0.0166	0.420	1.25	40	0.32	3.55	36.18
0.0139	0.354	1.50	45	0.27	3.00	39.18
0.0098	0.250	2.00	60	0.78	8.66	47.84
0.0070	0.177	2.50	80	0.61	6.77	54.61
0.0049	0.125	3.00	120	0.71	7.88	62.49
0.0029	0.074	3.75	200	1.09	12.10	74.58
0.0021	0.053	4.25	270	0.94	10.43	85.02
0.0015	0.037	4.75	400	0.58	6.44	91.45
			PAN	0.77	8.55	100.00
TOTALS				9.01	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.98	0.1552	3.942
10	-1.41	0.1046	2.658
16	-0.73	0.0652	1.656
25	0.36	0.0307	0.779
40	1.55	0.0135	0.342
50	2.16	0.0088	0.224
60	2.84	0.0055	0.139
75	3.77	0.0029	0.073
84	4.20	0.0021	0.054
90	4.64	0.0016	0.040
95	2.78	0.0057	0.146

Measure	Trask	Inman	Folk-Ward
Median, phi	2.16	2.16	2.16
Median, in.	0.0088	0.0088	0.0088
Median, mm	0.224	0.224	0.224
Mean, phi	1.23	1.74	1.88
Mean, in.	0.0168	0.0118	0.0107
Mean, mm	0.426	0.300	0.272
Sorting	3.259	2.464	1.953
Skewness	1.068	-0.172	-0.456
Kurtosis	0.135	-0.035	0.572

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	2.77
Coarse Sand	10	10.99
Medium Sand	40	22.42
Fine Sand	200	38.40
Silt/Clay	<200	25.42
	Total	100

Phone: (562) 907-3607
Fax: (562) 907-3610

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 • FAX: (714) 894-7501

5 1081

TO: PTS

CHAIN OF CUSTODY RECORD

Date 2/5/07

Page 1 of 1

LABORATORY CLIENT:

ADDRESS:

CITY STATE ZIP

TEL: E-MAIL: Snowak@calscience.com

CLIENT PROJECT NAME / NUMBER: 07-02-0153

P.O. NO.:

PROJECT CONTACT: Stephen Nowak

LAB USE ONLY

SAMPLER(S): (PRINT)

COELT LOG CODE

COOLER RECEIPT TEMP = °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (G)	TPH (D) or	BTEX MTBE (8260B) or	OXYGENATES (8260B)	VOCs (8260B)	5035 ENCORE PREP	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	CAC, T22 METALS (6010B) / 747	PNAs (8310) or (8270C)	VOCs (TO-14A) or (TO-15)	TPH(G) (TO-3M)	Grain Size	TOC
	Filtersock-CB131		2/1/07	1150	S	1													X	X	
	Filtersock-CB133		↓	1230	↓	1													X	X	

Relinquished by: (Signature)	Received by: (Signature/Affiliation) Todd Legarcky	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.

05/10/06 Revision

EPA 8082
Raw Data

External Standard Report

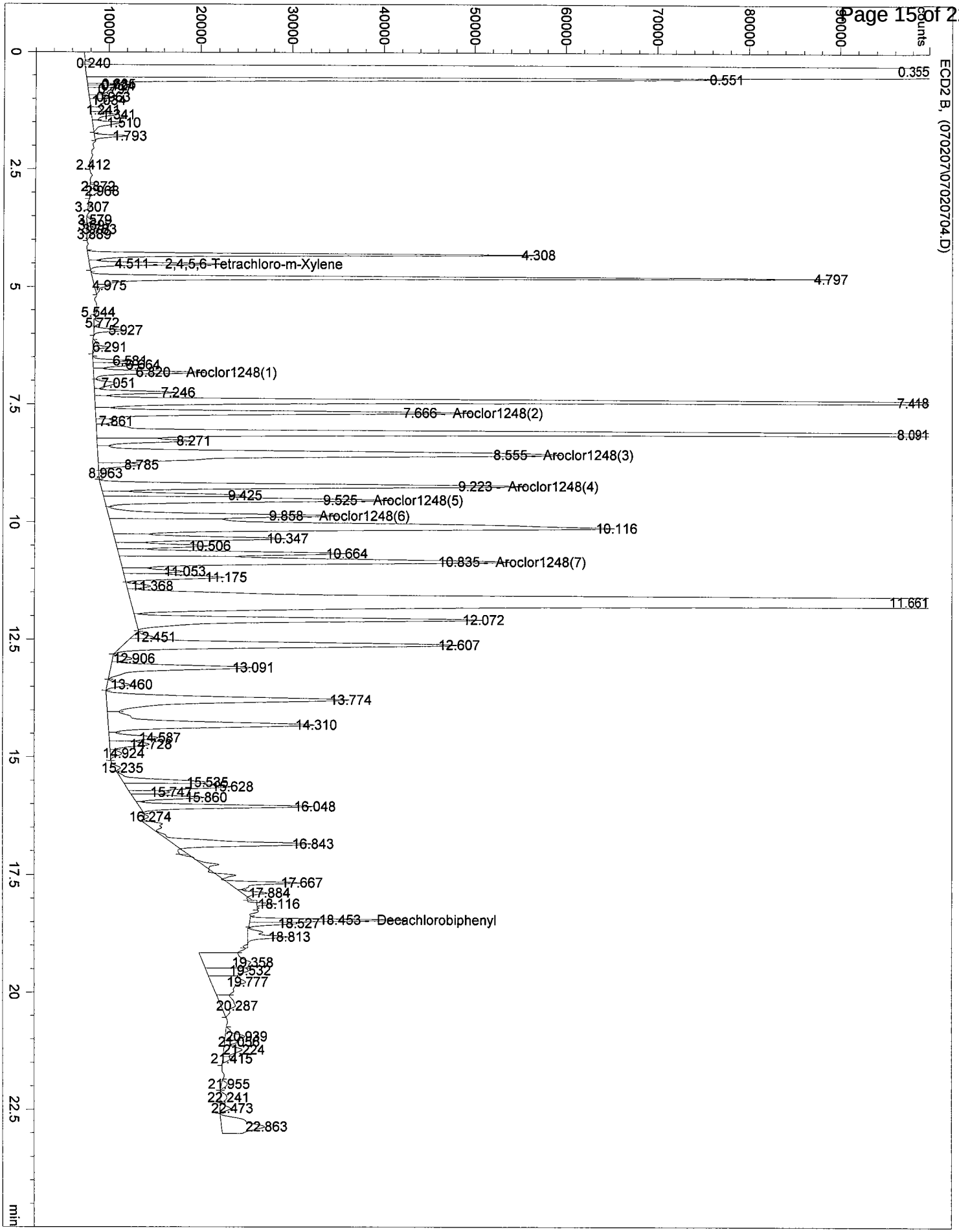
Data File Name : C:\HPCHEM\1\DATA\070207\07020704.D
Operator : JEANIE
Instrument : GC 10
Sample Name : 02-0153-1 10X
Run Time Bar Code:
Acquired on : 2/7/2007 00:45 pm
Report Created on: 07 Feb 07 01:36 pm
Calibrated on : 22 Aug 03 05:56 pm
Analysis Method : C:\HPCHEM\1\METHODS\1248PCB.M

Page Number :
Vial Number : Vial 4
Injection Number : 1
Sequence Line : 4
Instrument Method: 8082.M
Sample Amount :
Last Modified on : 02Nov06

Sig. ECD2 B, C:\HPCHEM\1\DATA\070207\07020704.D

Ret Time	Area	Is	ISWidth	Ref #	ppb	Name
4.511	57003		0.057		11.722	2,4,5,6-Tetrachloro-m-Xylene
6.820	56899		0.072		0.000	Aroclor1248(1)
7.666	215753		0.080		0.000	Aroclor1248(2)
8.555	447007		0.138		0.000	Aroclor1248(3)
9.223	278262		0.093		0.000	Aroclor1248(4)
9.525	188186		0.091		0.000	Aroclor1248(5)
9.858	154298		0.090		0.000	Aroclor1248(6)
10.835	326998		0.116		0.000	Aroclor1248(7)
18.453	61606		0.060		10.802	Decachlorobiphenyl

#	Comp.	Group	Nam	Respons	Amount


Counts
10000
20000
30000
40000
50000
60000
70000
80000
90000
ECD2 B, (07020707020704.D)
min
0
2.5
5
7.5
10
12.5
15
17.5
20
22.5
0.240
0.355
0.551
1.241
1.341
1.510
1.793
2.412
2.908
3.307
3.579
3.889
4.308
4.511 - 2,4,5,6-Tetrachloro-m-Xylene
4.797
4.975
5.544
5.772
5.927
6.291
6.820 - Aroclor1248(1)
7.051
7.246
7.418
7.666 - Aroclor1248(2)
7.861
8.091
8.271
8.555 - Aroclor1248(3)
8.785
8.963
9.223 - Aroclor1248(4)
9.425
9.525 - Aroclor1248(5)
9.858 - Aroclor1248(6)
10.116
10.347
10.506
10.664
10.835 - Aroclor1248(7)
11.053
11.175
11.368
11.661
12.072
12.451
12.607
12.906
13.091
13.460
13.774
14.310
14.587
14.728
14.924
15.235
15.535
15.628
15.747
15.860
16.048
16.274
16.843
17.667
17.884
18.116
18.453 - Decachlorobiphenyl
18.527
18.813
19.358
19.532
19.777
20.287
20.939
21.056
21.224
21.415
21.955
22.241
22.473
22.863

External Standard Report

Data File N e : C:\H PCHEM\1\DATA\070207\07020704.D
Operator : JEAN IE Page Number :
Instrument : GC 1 0 Vial Number : Vial 4
Sample Na : 02-0 153-1 10X Injection Number : 1
Run Time I Code: Sequence Line : 4
Acquired o : 2/7/ 2007 00:45 pm Instrument Method: 8082.M
Report Cre d on: 07 F eb 07 01:36 pm Sample Amount :
Calibrated : 22 A ug 03 05:56 pm Last Modified on : 02Nov06
Analysis M od : C:\H PCHEM\1\METHODS\1248PCB.M

Sig. C:\HPCHE \1\DATA\070207\07020704.D

Ret Time	Area	Is	ISWidth	Ref #	ppb	Name
4.511	57003	0.057		11.722		2,4,5,6-Tetrachloro-m-Xylene
6.82	56899	0.072		0.000		Aroclor1248(1)
7.666	215753	0.080		0.000		Aroclor1248(2)
8.555	447007	0.138		0.000		Aroclor1248(3)
9.223	278262	0.093		0.000		Aroclor1248(4)
9.525	188186	0.091		0.000		Aroclor1248(5)
9.858	154298	0.090		0.000		Aroclor1248(6)
10.835	326998	0.116		0.000		Aroclor1248(7)
18.453	61606	0.060		10.802		Decachlorobiphenyl

#	Comp.	C oup Nam	F spons	Amount

Calculations:

Components	Total Area	RF	Ave RF	Conc.(ppb)
PCB 1248	1667403		1529	1090.5

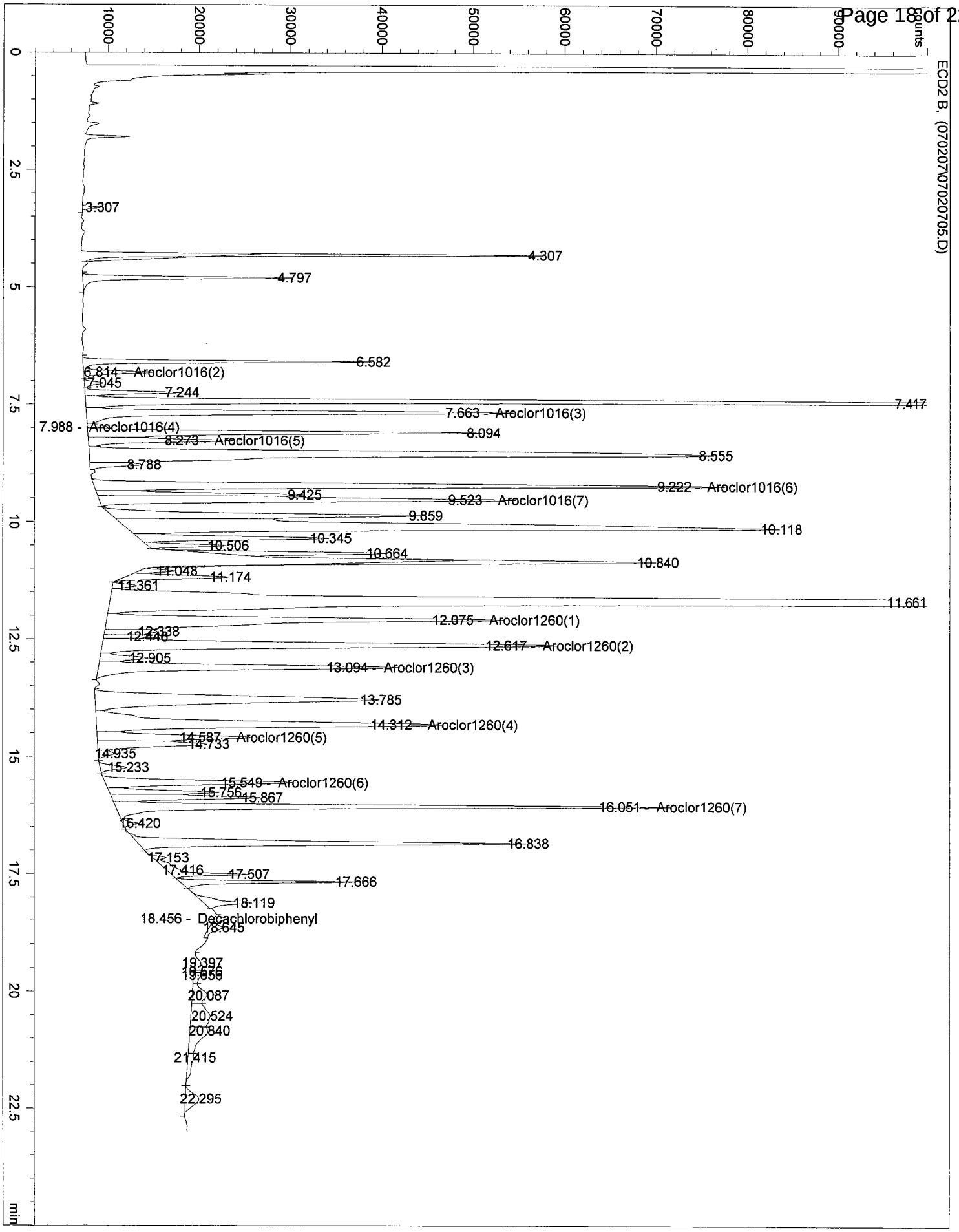
External Standard Report

Data File Name : C:\HPCHEM\1\DATA\070207\07020705.D
Operator : JEANIE
Page Number :
Instrument : GC 10
Vial Number : Vial 5
Sample Name : 02-0153-2 500X
Injection Number : 1
Run Time Bar Code:
Sequence Line : 5
Acquired on : 2/7/2007 01:11 pm
Instrument Method: 8082.M
Report Created on: 07 Feb 07 01:37 pm
Sample Amount :
Calibrated on : 22 Aug 03 05:56 pm
Last Modified on : 03Jan07
Analysis Method : C:\HPCHEM\1\METHODS\PCB1101.M

Sig. ECD2 B, C:\HPCHEM\1\DATA\070207\07020705.D

Ret Time	Area	Is	ISWidth	Ref #	ppb	Name
0.000	0		0.000		0.000	2,4,5,6-Tetrachloro-m-Xylene
0.000	0		0.000		0.000	Aroclor1016(1)
6.814	34658		0.071		0.000	Aroclor1016(2)
7.663	256994		0.082		0.000	Aroclor1016(3)
7.988	8459		0.058		0.000	Aroclor1016(4)
8.273	88818		0.082		0.000	Aroclor1016(5)
9.222	423181		0.095		0.000	Aroclor1016(6)
9.523	281812		0.092		0.000	Aroclor1016(7)
12.075	376777		0.125		0.000	Aroclor1260(1)
12.617	396013		0.123		0.000	Aroclor1260(2)
13.094	239426		0.112		0.000	Aroclor1260(3)
14.312	356975		0.142		0.000	Aroclor1260(4)
14.587	122400		0.107		0.000	Aroclor1260(5)
15.549	139791		0.103		0.000	Aroclor1260(6)
16.051	328652		0.081		0.000	Aroclor1260(7)
18.456	9277		0.088		1.627	Decachlorobiphenyl

#	Comp. Group Nam	Respons	Amount


10000
20000
30000
40000
50000
60000
70000
80000
90000
Counts
ECD2 B, (07020707020705.D)
0
2.5
5
7.5
10
12.5
15
17.5
20
22.5
min
3.307
4.307
4.797
6.582
6.814 - Aroclor1016(2)
7.045
7.244
7.417
7.663 - Aroclor1016(3)
7.988 - Aroclor1016(4)
8.094
8.273 - Aroclor1016(5)
8.555
8.788
9.222 - Aroclor1016(6)
9.425
9.523 - Aroclor1016(7)
9.859
10.118
10.345
10.506
10.664
10.840
11.048
11.174
11.361
11.661
12.075 - Aroclor1260(1)
12.446
12.617 - Aroclor1260(2)
12.905
13.094 - Aroclor1260(3)
13.785
14.312 - Aroclor1260(4)
14.587 - Aroclor1260(5)
14.733
14.935
15.233
15.549 - Aroclor1260(6)
15.756
15.867
16.051 - Aroclor1260(7)
16.420
16.838
17.153
17.416
17.507
17.666
18.119
18.456 - Decachlorobiphenyl
18.645
19.397
20.087
20.524
20.840
21.415
22.295

External Standard Report

Data File Name : C PCHEM\1\DATA\070207\07020705.D
Operator : JEAN IE Page Number :
Instrumen t : GC ' 0 Vial Number : Vial 5
Sample Na me : 02 153-2 500X Injection Number : 1
Run Time Bar Code: Sequence Line : 5
Acquired on : 2/7/ 2007 01:11 pm Instrument Method: 8082.M
Report Cr eated on: C eb 07 01:37 pm Sample Amount :
Calibrate d on : 22 ug 03 05:56 pm Last Modified on : 03Jan07
Analysis Method : C PCHEM\1\METHODS\PCB1101.M

Sig. C:\HPCHE \1\DATA\070207\07020705.D

Ret Time	Area	Is	ISWidth	Ref #	ppb	Name
0	0	0.000		0.000	0.000	2,4,5,6-Tetrachloro-m-Xylene
0	0	0.000		0.000	0.000	Aroclor1016(1)
6.814	34658	0.071		0.000	0.000	Aroclor1016(2)
7.663	256994	0.082		0.000	0.000	Aroclor1016(3)
7.988	8459	0.058		0.000	0.000	Aroclor1016(4)
8.273	88818	0.082		0.000	0.000	Aroclor1016(5)
9.222	423181	0.095		0.000	0.000	Aroclor1016(6)
9.523	281812	0.092		0.000	0.000	Aroclor1016(7)
12.075	376777	0.125		0.000	0.000	Aroclor1260(1)
12.617	396013	0.123		0.000	0.000	Aroclor1260(2)
13.094	239426	0.112		0.000	0.000	Aroclor1260(3)
14.312	356975	0.142		0.000	0.000	Aroclor1260(4)
14.587	122400	0.107		0.000	0.000	Aroclor1260(5)
15.549	139791	0.103		0.000	0.000	Aroclor1260(6)
16.051	328652	0.081		0.000	0.000	Aroclor1260(7)
18.456	9277	0.088		1.627		Decachlorobiphenyl

# Comp	. Group Na	spons Amount

Calculations:

Components	Total Area	RF	Ave RF	Conc.(ppb)
PCB 1260	1960034		3144	623.4

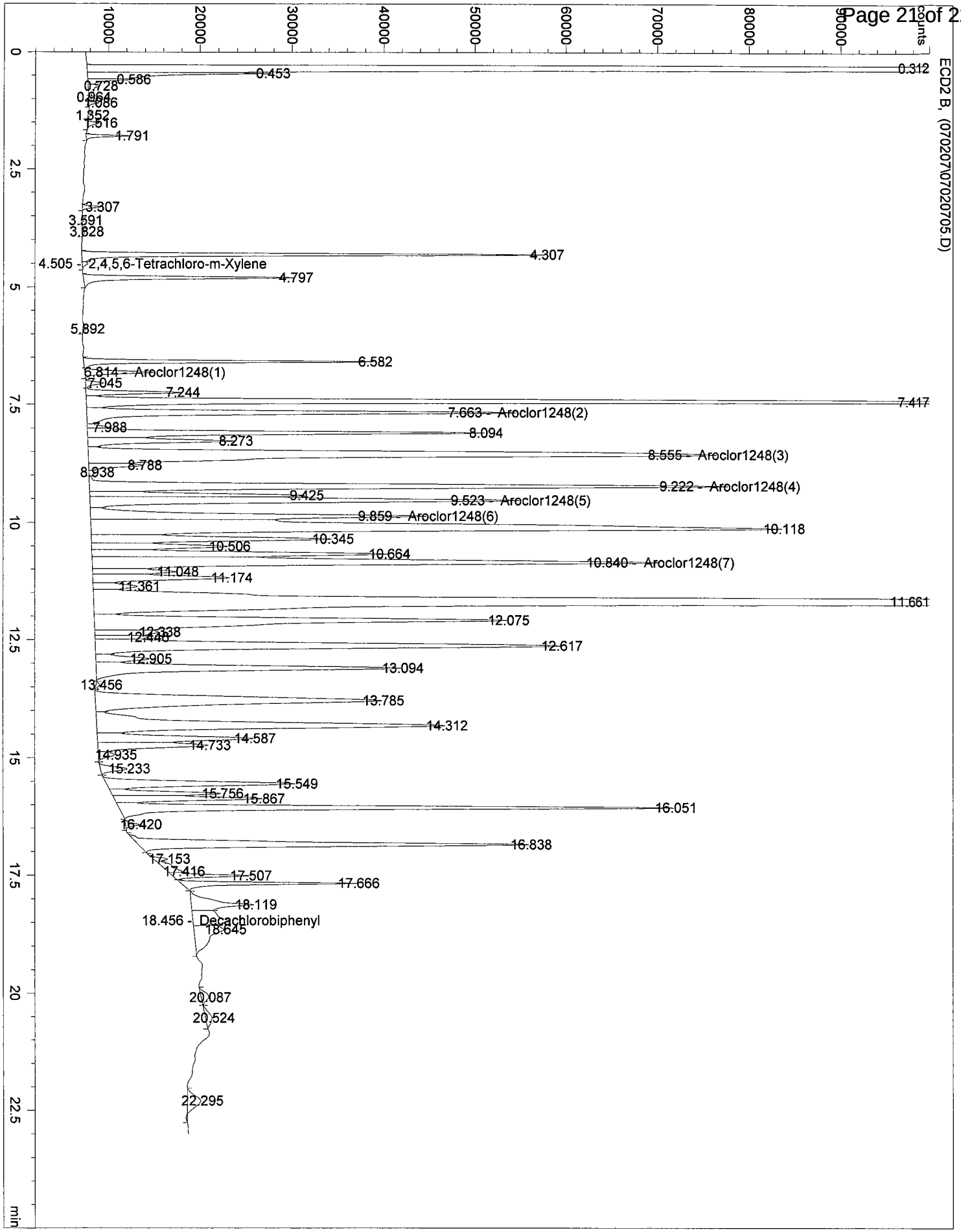
External Standard Report

Data File Name : C:\HPCHEM\1\DATA\070207\07020705.D
Operator : JEANIE
Page Number :
Instrument : GC 10
Vial Number : Vial 5
Sample Name : 02-0153-2 500X
Injection Number : 1
Run Time Bar Code:
Sequence Line : 5
Acquired on : 2/7/2007 01:11 pm
Instrument Method: 8082.M
Report Created on: 07 Feb 07 01:37 pm
Sample Amount :
Calibrated on : 22 Aug 03 05:56 pm
Last Modified on : 02Nov06
Analysis Method : C:\HPCHEM\1\METHODS\1248PCB.M

Sig. ECD2 B, C:\HPCHEM\1\DATA\070207\07020705.D

Ret Time	Area	Is	ISWidth	Ref #	ppb	Name
4.505	2796		0.067		0.575	2,4,5,6-Tetrachloro-m-Xylene
6.814	33515		0.070		0.000	Aroclor1248(1)
7.663	257451		0.082		0.000	Aroclor1248(2)
8.555	616134		0.140		0.000	Aroclor1248(3)
9.222	432156		0.096		0.000	Aroclor1248(4)
9.523	297064		0.094		0.000	Aroclor1248(5)
9.859	251493		0.100		0.000	Aroclor1248(6)
10.840	484231		0.115		0.000	Aroclor1248(7)
18.456	57993		0.185		10.169	Decachlorobiphenyl

#	Comp.	Group	Nam	Respons	Amount


10000
20000
30000
40000
50000
60000
70000
80000
90000
Counts
ECD2 B, (07020710702070S.D)
0.312
0.453
0.586
0.728
0.964
1.086
1.352
1.516
1.791
3.307
3.591
3.828
4.307
4.505 - 2,4,5,6-Tetrachloro-m-Xylene
4.797
5.892
6.582
6.814 - Aroclor1248(1)
7.045
7.244
7.417
7.663 - Aroclor1248(2)
7.988
8.094
8.273
8.555 - Aroclor1248(3)
8.788
8.938
9.222 - Aroclor1248(4)
9.425
9.523 - Aroclor1248(5)
9.859 - Aroclor1248(6)
10.118
10.345
10.506
10.664
10.840 - Aroclor1248(7)
11.048
11.174
11.361
11.661
12.075
12.338
12.448
12.617
12.905
13.094
13.456
13.785
14.312
14.587
14.733
14.935
15.233
15.549
15.756
15.867
16.051
16.420
16.838
17.153
17.416
17.507
17.666
18.119
18.456 - Decachlorobiphenyl
18.645
20.087
20.524
22.295
0
2.5
5
7.5
10
12.5
15
17.5
20
22.5
min

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\070207\07020705.D
Operator : JEANNE Page Number :
Instrument : GC 10 Vial Number : Vial 5
Sample Name: 02-01 53-2 500X Injection Number : 1
Run Time Code: Sequence Line : 5
Acquired on : 2/7/2007 01:11 pm Instrument Method: 8082.M
Report Created on: 07 Feb 07 01:37 pm Sample Amount :
Calibrated : 22 Aug 03 05:56 pm Last Modified on : 02Nov06
Analysis Method : C:\HPCHEM\1\METHODS\1248PCB.M

Sig. C:\HPCHE 1\DATA\070207\07020705.D

Ret Time	Area	Is	ISWidth	Ref #	ppb	Name
4.505	2796	0.067		0.575		2,4,5,6-Tetrachloro-m-Xylene
6.814	33515	0.070		0.000		Aroclor1248(1)
7.663	257451	0.082		0.000		Aroclor1248(2)
8.555	616134	0.140		0.000		Aroclor1248(3)
9.222	432156	0.096		0.000		Aroclor1248(4)
9.523	297064	0.094		0.000		Aroclor1248(5)
9.859	251493	0.100		0.000		Aroclor1248(6)
10.84	484231	0.115		0.000		Aroclor1248(7)
18.456	57993	0.185		10.169		Decachlorobiphenyl

#	Comp.	Group Name	Response	Amount

Calculations:

Components	Total Area	RF	Ave RF	Conc.(ppb)
PCB 1248	2372044		1529	1551.4

Calscience
Environmental
Laboratories, Inc.

Supplemental Report 1

March 14, 2007

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 07-03-0052**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/1/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 03/01/07
Work Order No: 07-03-0052
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
Filter Sock-64	**07-03-0052-1**	**02/28/07**	**Solid**	**GC 27**	**03/02/07**	**03/03/07**	**070302L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	500	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	97	50-130			2,4,5,6-Tetrachloro-m-Xylene	95	50-130		

Method Blank	**099-07-009-1,024**	**N/A**	**Solid**	**GC 27**	**03/02/07**	**03/02/07**	**070302L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	111	50-130			2,4,5,6-Tetrachloro-m-Xylene	112	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 03/01/07
Work Order No: 07-03-0052
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-03-0036-5	**Solid**	**GC 27**	**03/02/07**	**03/02/07**	**070302S03**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	125	125	50-135	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-03-0052
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-009-1,024	**Solid**	**GC 27**	**03/02/07**	**03/02/07**	**070302L03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	132	135	50-135	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-03-0052

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2019 0052

Analysis Request and Chain of Custody Record

Page 1 of 1

Project Name: TDY	Project Number: 510307
Samplers Names: Chris Lieder	Project Contact: Brian Hitchens
Laboratory Name: Calscience	Lab Contact: Steve Nowak
Lab Address: 7440 Lincoln Way, Garden Grove, CA 92841	Lab Phone: 714-895-5494
	Carrier/Waybill No.

White copy: to accompany samples

Yellow copy: field copy

Sample Name	Date	Time	Sample Type	VOCs by ___	Metals	SVOCs by 8270	PCBs	Grain Size						Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative			8oz	8oz							
				Number of Containers											
Filtersock-64	2/28/07	14:35	Soil				1	1							

Special Instructions:

Turn-around Time: 5 days
☒ Normal ☒ Rush: 3/6/07

1. Relinquished by (Signature/Affiliation)	Date 3/1/07 Time 1135	1. Received by (Signature/Affiliation) CEL	Date 3/1/07 Time 1135
2. Relinquished by (Signature/Affiliation)	Date 3/1/7 Time 1615	2. Received by (Signature/Affiliation)	Date 3/1/7 Time 1615
3. Relinquished by (Signature/Affiliation)	Date Time	3. Received by (Signature/Affiliation)	Date Time

Geosyntec consultants
10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07 - 03 - 0052

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec **DATE:** 3/1/7

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
✓ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

3.7 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

PTS Laboratories, Inc.

Calscience
PTS File No: 37183

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: N/A
PROJECT NO: 07-03-0052

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
Filter Sock-64	N/A	Fine sand	0.067	0.00	0.00	8.54	38.38	46.60	6.49	53.08

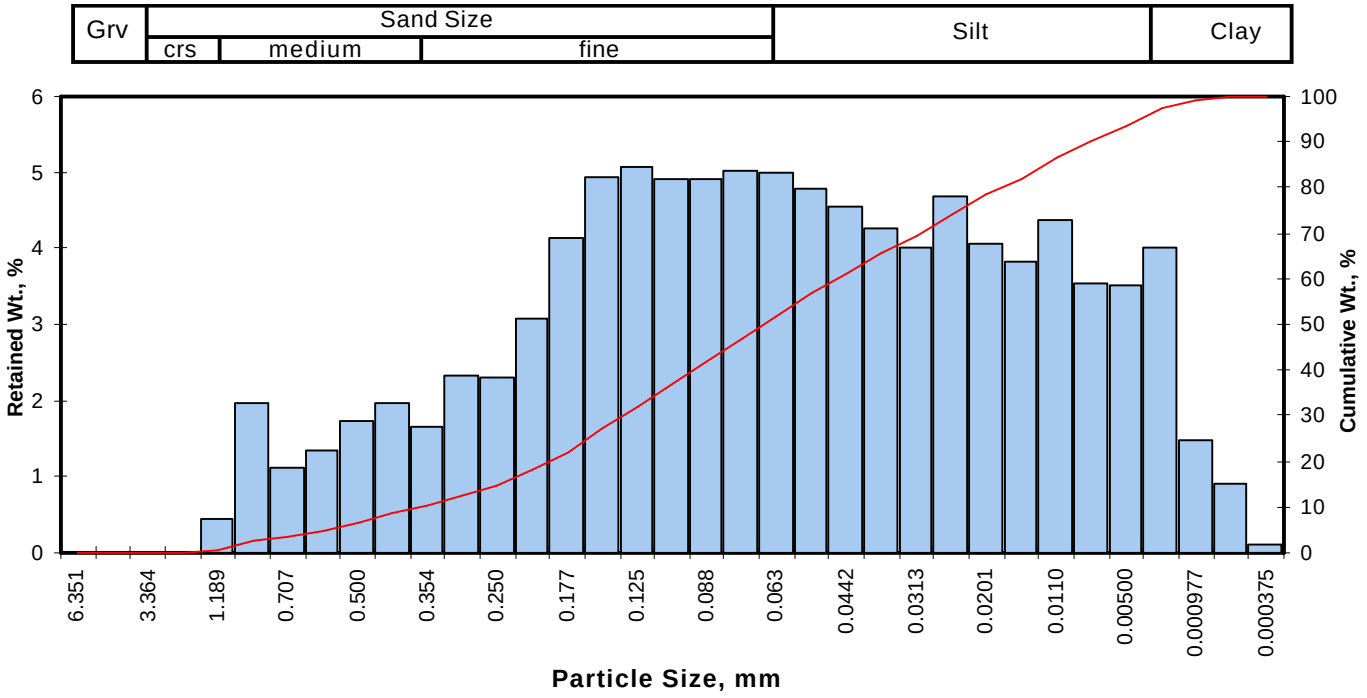
(1) Based on Mean from Trask

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-03-0052

PTS File No: 37183
Sample ID: Filter Sock-64
Depth, ft: N/A



Opening Inches	Opening Millimeters	Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.44	0.44	0.44
0.0331	0.841	0.25	20	1.97	1.97	2.41
0.0278	0.707	0.50	25	1.11	1.11	3.52
0.0234	0.595	0.75	30	1.34	1.34	4.86
0.0197	0.500	1.00	35	1.72	1.72	6.58
0.0166	0.420	1.25	40	1.96	1.96	8.54
0.0139	0.354	1.50	45	1.66	1.66	10.20
0.0117	0.297	1.75	50	2.32	2.32	12.52
0.0098	0.250	2.00	60	2.30	2.30	14.82
0.0083	0.210	2.25	70	3.09	3.09	17.91
0.0070	0.177	2.50	80	4.15	4.15	22.06
0.0059	0.149	2.75	100	4.95	4.95	27.01
0.0049	0.125	3.00	120	5.07	5.07	32.08
0.0041	0.105	3.25	140	4.92	4.92	37.00
0.0035	0.088	3.50	170	4.91	4.91	41.91
0.0029	0.074	3.75	200	5.01	5.01	46.92
0.0025	0.063	4.00	230	5.00	5.00	51.91
0.0021	0.053	4.25	270	4.79	4.79	56.70
0.00174	0.0442	4.50	325	4.54	4.54	61.24
0.00146	0.0372	4.75	400	4.28	4.28	65.52
0.00123	0.0313	5.00	450	4.01	4.01	69.53
0.000986	0.0250	5.32	500	4.67	4.67	74.20
0.000790	0.0201	5.64	635	4.06	4.06	78.26
0.000615	0.0156	6.00		3.83	3.83	82.09
0.000435	0.0110	6.50		4.36	4.36	86.45
0.000308	0.00781	7.00		3.55	3.55	90.00
0.000197	0.00500	7.65		3.51	3.51	93.51
0.000077	0.00195	9.00		4.01	4.01	97.52
0.000038	0.000977	10.00		1.47	1.47	98.99
0.000019	0.000488	11.00		0.91	0.91	99.90
0.000015	0.000375	11.38		0.10	0.10	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.77	0.0231	0.586
10	1.47	0.0142	0.361
16	2.10	0.0092	0.234
25	2.65	0.0063	0.159
40	3.40	0.0037	0.095
50	3.90	0.0026	0.067
60	4.43	0.0018	0.046
75	5.38	0.0009	0.024
84	6.22	0.0005	0.013
90	7.00	0.0003	0.008
95	8.15	0.0001	0.004

Measure	Trask	Inman	Folk-Ward
Median, phi	3.90	3.90	3.90
Median, in.	0.0026	0.0026	0.0026
Median, mm	0.067	0.067	0.067
Mean, phi	3.45	4.16	4.07
Mean, in.	0.0036	0.0022	0.0023
Mean, mm	0.092	0.056	0.059
Sorting	2.580	2.062	2.149
Skewness	0.926	0.123	0.137
Kurtosis	0.192	0.789	1.106
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	8.54
Fine Sand	200	38.38
Silt	>0.005 mm	46.60
Clay	<0.005 mm	6.49
	Total	**100**

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 • FAX: (714) 894-7501

37183

To: PTS

CHAIN OF CUSTODY RECORD

Date 3/6/07

Page 1 of 1

LABORATORY CLIENT:		CLIENT PROJECT NAME / NUMBER: 07-03-0052	P.O. NO.:
ADDRESS:		PROJECT CONTACT: Stephen Nowak	LAB USE ONLY ☐☐-☐☐☐☐
CITY / STATE / ZIP		SAMPLER(S): (PRINT)	COELT LOG CODE ☐☐☐☐ / COOLER RECEIPT TEMP = °C
TEL:	E-MAIL:		

TURNAROUND TIME: Normal
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ _____

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.
	Filtersock-64		2/26/06	1435	S	1

TPH (G) | TPH (D) or _____ | BTEX / MTBE (8260B) or _____ | OXYGENATES (8260B) | VOCs (8260B) | 5035 ENCORE PREP | SVOCs (8270C) | PEST (8081A) | PCBs (8082) | CAC, T22 METALS (6010B) / 747 | PNAs (8310) or (8270C) | VOCs (TO-14A) or (TO-15) | TPH(G) (TO-3M) | X Grain Size

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3-7-07	Time: 1440
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/10/06 Revision

Calscience
Environmental
Laboratories, Inc.

January 03, 2008

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 07-12-2047**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 12/26/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 12/26/07
Work Order No: 07-12-2047
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
FS-133-E	**07-12-2047-1-A**	**12/21/07**	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	140	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	103	50-130			2,4,5,6-Tetrachloro-m-Xylene	66	50-130		

FS-133-W	**07-12-2047-2-A**	**12/21/07**	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	92	50-130			2,4,5,6-Tetrachloro-m-Xylene	112	50-130		

FS-132-S	**07-12-2047-3-A**	**12/21/07**	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	250	5		Aroclor-1248	1400	250	5	
Aroclor-1221	ND	250	5		Aroclor-1254	ND	250	5	
Aroclor-1232	ND	250	5		Aroclor-1260	1600	250	5	
Aroclor-1242	ND	250	5		Aroclor-1262	ND	250	5	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	50	50-130			2,4,5,6-Tetrachloro-m-Xylene	68	50-130		

T4-N-BOTTOM	**07-12-2047-4-A**	**12/21/07**	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50000	1000		Aroclor-1248	160000	50000	1000	
Aroclor-1221	ND	50000	1000		Aroclor-1254	ND	50000	1000	
Aroclor-1232	ND	50000	1000		Aroclor-1260	ND	50000	1000	
Aroclor-1242	ND	50000	1000		Aroclor-1262	ND	50000	1000	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	0	50-130		1,2	2,4,5,6-Tetrachloro-m-Xylene	79	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	12/26/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-12-2047
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
FS-131-W	**07-12-2047-5-A**	**12/21/07**	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	500	10		Aroclor-1248	14000	2500	50	
Aroclor-1221	ND	500	10		Aroclor-1254	ND	500	10	
Aroclor-1232	ND	500	10		Aroclor-1260	4700	500	10	
Aroclor-1242	ND	500	10		Aroclor-1262	ND	500	10	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	66	50-130		2,4,5,6-Tetrachloro-m-Xylene	73	50-130	

Method Blank	**099-12-535-232**	**N/A**	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	88	50-130		2,4,5,6-Tetrachloro-m-Xylene	94	50-130	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 12/26/07
Work Order No: 07-12-2047
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
FS-133-W	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227S10**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	116	128	50-135	10	0-20	
Aroclor-1260	118	118	50-135	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-12-2047
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-535-232	**Solid**	**GC 16**	**12/27/07**	**12/29/07**	**071227L10**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	95	95	50-135	1	0-20	
Aroclor-1260	108	123	50-135	13	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-12-2047

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2244

Analysis Request and Chain of Custody Record

2047

Page 1 of 1

Project Name: TDY	Project Number: SC0307
Samplers Names: EB, SA, CL	Project Contact: Brian Hitchens
Laboratory Name: Calscience	Lab Contact: Steve Nowak
Lab Address: 7440 Lincoln Way Garden Grove CA	Lab Phone: 714-895-5494
	Carrier/Waybill No.

Required Analyses

VOCs by ____ | Metals | SVOCs by 8270 | PCBs

White copy: to accompany samples

Yellow copy: field copy

	Sample Name	Date	Time	Sample Type	Bottle Type and Volume/Preservative: 8oz JAR	Number of Containers	Comments	Lab Use Only: Condition of Bottles
1	FS-133-E	12/21/07	12:25	soil		1		
2	FS-133-W		12:35			1		
3	FS-132-S		13:55			1		
4	T4-N-Bottom		13:20			1		
5	FS-131-W		14:20			1		

Special Instructions:

Turn-around Time: ☒ Normal ☐ Rush: ____

1. Relinquished by (Signiture/Affiliation)	Date 12/26/07 Time 12:00
2. Relinquished by (Signiture/Affiliation)	Date 12/26/07 Time 1425
3. Relinquished by (Signiture/Affiliation)	Date Time
1. Received by (Signiture/Affiliation)	Date 12/26/07 Time 12:00
2. Received by (Signiture/Affiliation)	Date 12/26/07 Time 1425
3. Received by (Signiture/Affiliation)	Date Time

Geosyntec consultants
10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07-12-2047

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: GEOSYNTEC **DATE:** 12/26/07

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- _____ Chilled, cooler with temperature blank provided.
- _____ Chilled, cooler without temperature blank.
- ✓ Chilled and placed in cooler with wet ice.
- _____ Ambient and placed in cooler with wet ice.
- _____ Ambient temperature.

3.6 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- _____ °C Temperature blank.
- _____ °C IR thermometer.
- _____ Ambient temperature.

Initial: VD

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: VD

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC		✓	
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: VD

COMMENTS:

Calscience Environmental Laboratories, Inc.

February 15, 2008

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 08-02-0779**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/11/2008 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	02/11/08
10875 Rancho Bernardo Road, Suite 200		Work Order No:	08-02-0779
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC0307 — Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Filter Sock-N133-SE	**08-02-0779-1-A**	**02/06/08 16:55**	**Solid**	**GC 31**	**02/12/08**	**02/13/08 16:26**	**080212L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	250	5		Aroclor-1248	1400	250	5	
Aroclor-1221	ND	250	5		Aroclor-1254	ND	250	5	
Aroclor-1232	ND	250	5		Aroclor-1260	2600	250	5	
Aroclor-1242	ND	250	5		Aroclor-1262	ND	250	5	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	83	50-130			2,4,5,6-Tetrachloro-m-Xylene	79	50-130		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-535-266**	**N/A**	**Solid**	**GC 31**	**02/12/08**	**02/13/08 13:13**	**080212L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	106	50-130			2,4,5,6-Tetrachloro-m-Xylene	107	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 02/11/08
Work Order No: 08-02-0779
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-02-0863-1	**Solid**	**GC 31**	**02/12/08**	**02/13/08**	**080212S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	70	80	50-135	12	0-20	
Aroclor-1260	80	86	50-135	8	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-02-0779
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-535-266	**Solid**	**GC 31**	**02/12/08**	**02/13/08**	**080212L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	89	96	50-135	8	0-20	
Aroclor-1260	92	101	50-135	10	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-02-0779

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2340

Analysis Request and Chain of Custody Record

0779

Page 1 of 1

Project Name: TDY	Project Number: SC0307
Samplers Names: CC	Project Contact: Brian Hitchens
Laboratory Name: CalScience	Lab Contact: Steve Nowak
Lab Address: 7440 Lincoln Ave, Garden Grove CA	Lab Phone: 714-895-5494
	Carrier/Waybill No.

White copy: to accompany samples

Yellow copy: field copy

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by ____	Metals	SVOCs by 8270	PCBs							Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative			8oz								
				Number of Containers											
FilterSock-N133-SE	2/6/08	16:55	Soil				1								

Special Instructions:

Turn-around Time: ☒ Normal ☐ Rush: ____

1. Relinquished by (Signiture/Affiliation)	Date 2/11/08 Time 11:50	1. Received by (Signiture/Affiliation) CEL	Date 2/11/8 Time 1150
2. Relinquished by (Signiture/Affiliation)	Date 2/11/8 Time 1635	2. Received by (Signiture/Affiliation) Dannyle (CEL)	Date 2/11/8 Time 1635
3. Relinquished by (Signiture/Affiliation)	Date Time	3. Received by (Signiture/Affiliation)	Date Time

Geosyntec consultants 10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08 - 02 - 0779

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec **DATE:** 2/11/8

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- _____ Chilled, cooler with temperature blank provided.
- _____ Chilled, cooler without temperature blank.
- ✓ Chilled and placed in cooler with wet ice.
- _____ Ambient and placed in cooler with wet ice.
- _____ Ambient temperature.
- 3.7 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- _____ °C Temperature blank.
- _____ °C IR thermometer.
- _____ Ambient temperature.

Initial: _____

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: _____

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: _____

COMMENTS:

Calscience
Environmental
Laboratories, Inc.

April 21, 2008

Chris Lieder
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 08-04-1261**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/14/2008 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	04/14/08
10875 Rancho Bernardo Road, Suite 200		Work Order No:	08-04-1261
San Diego, CA 92127-2116		Preparation:	EPA 3545
		Method:	EPA 8082
		Units:	ug/kg

Project: TDY / SC0307 — Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
FS-131-W	**08-04-1261-1-A**	**04/11/08 10:55**	**Solid**	**GC 16**	**04/15/08**	**04/17/08 12:44**	**080415L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	250000	5000		Aroclor-1248	1700000	250000	5000	
Aroclor-1221	ND	250000	5000		Aroclor-1254	ND	250000	5000	
Aroclor-1232	ND	250000	5000		Aroclor-1260	ND	250000	5000	
Aroclor-1242	ND	250000	5000		Aroclor-1262	ND	250000	5000	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	5535	50-130		1	2,4,5,6-Tetrachloro-m-Xylene	0	50-130		2,1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-535-315**	**N/A**	**Solid**	**GC 16**	**04/15/08**	**04/16/08 14:31**	**080415L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	50	1		Aroclor-1248	ND	50	1	
Aroclor-1221	ND	50	1		Aroclor-1254	ND	50	1	
Aroclor-1232	ND	50	1		Aroclor-1260	ND	50	1	
Aroclor-1242	ND	50	1		Aroclor-1262	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	68	50-130			2,4,5,6-Tetrachloro-m-Xylene	99	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 04/14/08
Work Order No: 08-04-1261
Preparation: EPA 3545
Method: EPA 8082

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-04-0948-2	**Solid**	**GC 16**	**04/15/08**	**04/16/08**	**080415S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	42	50	50-135	16	0-20	3
Aroclor-1260	50	58	50-135	15	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-04-1261
Preparation: EPA 3545
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-535-315	**Solid**	**GC 16**	**04/15/08**	**04/16/08**	**080415L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	100	103	50-135	2	0-20	
Aroclor-1260	101	109	50-135	8	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-04-1261

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2365

Analysis Request and Chain of Custody Record

1261

Page 1 of 1

Project Name: TDY	Project Number: SC0307	
Samplers Names: Dave Skipton/Ryan Gray	Project Contact: Chris Lieder	
Laboratory Name: CalScience	Lab Contact: Steve Nowak	
Lab Address: 7440 Lincoln Ave, Garden Grove, CA	Lab Phone: 714-895-5494	
	Carrier/Waybill No.	

Required Analyses

VOCs by ___	Metals	SVOCs by 8270	PCB's by EPA 8082						
			8oz glass						
			ICE						

White copy: to accompany samples

Yellow copy: field copy

	Sample Name	Date	Time	Sample Type	Number of Containers	Comments	Lab Use Only: Condition of Bottles
1	FS-131-W	4/11/08	1055	Soil	X	Relinquished to secure refrigerator at Geosyntec 4/11/08 1515	

Special Instructions:

Turn-around Time: ☒ Normal ☐ Rush: ____

1. Relinquished by (Signiture/Affiliation) GSC	Date 4/14/08 Time 11:36	1. Received by (Signiture/Affiliation) CEL	Date 4/14/08 Time 11:36
2. Relinquished by (Signiture/Affiliation)	Date 4/14/08 Time 1655	2. Received by (Signiture/Affiliation)	Date 4/14/8 Time 1655
3. Relinquished by (Signiture/Affiliation)	Date Time	3. Received by (Signiture/Affiliation)	Date Time

Geosyntec consultants 10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08 - 04 - 1261

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec DATE: 4/14/8

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
✓ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

3.6 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	02/06/2008
Sample Matrix:	Water	**Date Received:**	02/08/2008
Sample Name:	54SEEP-18S-CB63	**Units:**	pg/L
Lab Code:	E0800129-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 22:46:00
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1100mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214208	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	**23.4**	J	4.28	182			1
Total DiCB	**996**		8.63	455			1
Total TriCB	**2930**		3.88	455			1
Total TetraCB	**4150**		2.12	455			1
Total PentaCB	**1230**		2.11	909			1
Total HexaCB	**300**	J	0.765	909			1
Total HeptaCB	**82.8**	J	1.14	909			1
Total OctaCB	**18.9**	J	1.10	909			1
Total NonaCB	ND	U	4.46	909			1
PCB 209	ND	U	3.09	455			1
Total PCBs	**9740**		0.765	909			1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	GeoSyntec Consultants	**Service Request:**	E0800129
Project:	PCB Congeners - TDY/SC0307	**Date Collected:**	02/06/2008
Sample Matrix:	Water	**Date Received:**	02/08/2008
Sample Name:	54SEEP-18S-CB63	**Units:**	pg/L
Lab Code:	E0800129-001	**Basis:**	NA

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analytical Method:	1668A	**Date Analyzed:**	2/20/08 22:46:00
Prep Method:	Method	**Date Extracted:**	2/11/08
Sample Amount:	1100mL	**Instrument Name:**	E-HRMS-02
		GC Column:	SPB-OCTYL
Data File Name:	U214208	**Blank File Name:**	U214206
ICAL Name:	12/13/07	**Cal Ver. File Name:**	U214205

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	334.945	17		15-150	3.25	0.743
PCB 3L	2000	332.895	17		15-150	3.22	0.872
PCB 4L	2000	398.761	20	Y	25-150	1.56	0.886
PCB 15L	2000	375.861	19	Y	25-150	1.54	1.225
PCB 19L	2000	370.148	19	Y	25-150	1.00	1.066
PCB 37L	2000	403.011	20	Y	25-150	1.05	1.083
PCB 54L	2000	459.477	23	Y	25-150	0.76	0.830
PCB 81L	2000	483.761	24	Y	25-150	0.79	1.331
PCB 77L	2000	491.289	25		25-150	0.81	1.352
PCB 104L	2000	424.833	21	Y	25-150	1.55	0.827
PCB 123L	2000	504.459	25		25-150	1.64	1.136
PCB 118L	2000	534.740	27		25-150	1.56	1.146
PCB 114L	2000	511.966	26		25-150	1.58	1.161
PCB 105L	2000	553.374	28		25-150	1.62	1.181
PCB 126L	2000	656.812	33		25-150	1.62	1.271
PCB 155L	2000	366.698	18	Y	25-150	1.20	0.802
PCB 167L	2000	546.080	27		25-150	1.30	1.071
PCBs 156L + 157L	4000	1231.281	31		25-150	1.28	1.098
PCB 169L	2000	673.700	34		25-150	1.27	1.175
PCB 188L	2000	219.116	11	Y	25-150	1.02	0.731
PCB 189L	2000	379.251	19	Y	25-150	1.05	0.962
PCB 202L	2000	275.933	14	Y	25-150	0.87	0.830
PCB 205L	2000	522.239	26		25-150	0.90	1.009
PCB 208L	2000	449.607	22	Y	25-150	0.78	0.952
PCB 206L	2000	535.387	27		25-150	0.76	1.040
PCB 209L	2000	650.681	33		25-150	1.21	1.069
PCB 28L	2000	352.194	18	Y	30-135	1.09	0.933
PCB 111L	2000	439.847	22	Y	30-135	1.57	1.078
PCB 178L	2000	474.981	24	Y	30-135	1.04	1.010

Comments:

PTS File No: 37052
Client: Calscience

ORGANIC CARBON DATA - TOC

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

		METHOD:	WALKLEY-BLACK
SAMPLE ID.	DEPTH, ft.	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg
Sample 1	N/A	SOIL	11000
Sample 2	N/A	SOIL	30200
Sample 3	N/A	SOIL	14400
Sample 4	N/A	SOIL	43300
Sample 5	N/A	SOIL	43000
Sample 6	N/A	SOIL	106400
Sample 7	N/A	SOIL	46000
Sample 8	N/A	SOIL	5950
Sample 9	N/A	SOIL	173600
Sample 10	N/A	SOIL	44900
Sample 11	N/A	SOIL	27200
Sample 12	N/A	SOIL	23400
Sample 13	N/A	SOIL	12100
Sample 14	N/A	SOIL	36800
Sample 15	N/A	SOIL	12000
Sample 16	N/A	SOIL	169800
Sample 17	N/A	SOIL	1850
Sample 18	N/A	SOIL	25500
Sample 19	N/A	SOIL	6000
Sample 20	N/A	SOIL	18400
Sample 21	N/A	SOIL	291900
Sample 22	N/A	SOIL	93900

ORGANIC CARBON DATA - TOC

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

		METHOD:	WALKLEY-BLACK
SAMPLE ID.	DEPTH, ft.	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg
Sample 23	N/A	SOIL	83100
Sample 24	N/A	SOIL	121100
Sample 25	N/A	SOIL	17800
Sample 26	N/A	SOIL	23800
Sample 17B	N/A	SOIL	2950

PTS Laboratories, Inc.

Calscience
PTS File No: 37052

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
Sample 1	N/A	Medium sand	0.439	0.00	0.00	53.07	40.92	4.99	1.02	6.01
Sample 2	N/A	Fine sand	0.157	0.00	0.00	25.20	44.43	25.34	5.03	30.37
Sample 3	N/A	Fine sand	0.108	0.00	0.00	11.31	51.93	29.73	7.03	36.76
Sample 4	N/A	Silt	0.033	0.00	0.00	4.59	26.99	55.60	12.82	68.42
Sample 5	N/A	Silt	0.044	0.00	0.00	11.44	26.04	48.98	13.54	62.52
Sample 6	N/A	Fine sand	0.065	0.00	0.00	5.28	40.86	46.38	7.47	53.86
Sample 7	N/A	Fine sand	0.121	0.00	1.64	19.90	46.22	(2)	(2)	32.24
Sample 8	N/A	Coarse sand	0.531	26.38	4.19	25.52	34.46	(2)	(2)	9.46
Sample 9	N/A	Fine sand	0.106	0.00	0.00	12.47	46.77	33.12	7.63	40.75
Sample 10	N/A	Fine sand	0.086	0.00	0.00	24.93	27.88	36.22	10.96	47.18
Sample 11	N/A	Medium sand	0.549	0.00	3.56	62.19	27.49	(2)	(2)	6.76
Sample 12	N/A	Medium sand	0.551	0.00	6.74	59.92	25.12	(2)	(2)	8.22
Sample 13	N/A	Fine sand	0.106	0.00	7.62	10.98	39.63	(2)	(2)	41.77
Sample 14	N/A	Silt	0.039	0.00	0.00	1.74	30.56	55.50	12.20	67.70

(1) Based on Mean from Trask
(2) Mechanical sieve does not differentiate silt/clay fractions

PTS Laboratories, Inc.

Calscience
PTS File No: 37052

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: N/A
PROJECT NO: 07-01-1069

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
Sample 15	N/A	Medium sand	0.489	0.00	6.14	52.08	30.38	(2)	(2)	11.41
Sample 16	N/A	Fine sand	0.058	0.00	0.00	4.20	38.66	48.39	8.75	57.14
Sample 17	N/A	Fine sand	0.280	0.52	5.25	26.44	65.63	(2)	(2)	2.15
Sample 18	N/A	Fine sand	0.161	0.00	0.00	10.76	69.99	15.31	3.94	19.25
Sample 19	N/A	Fine sand	0.174	0.00	0.00	8.75	75.98	12.15	3.12	15.27
Sample 20	N/A	Fine sand	0.163	0.00	7.55	18.34	61.64	(2)	(2)	12.47
Sample 21	N/A	Fine sand	0.064	0.00	0.00	4.73	40.41	47.33	7.54	54.86
Sample 22	N/A	Fine sand	0.091	0.00	0.00	15.54	38.10	36.09	10.28	46.37
Sample 23	N/A	Fine sand	0.072	0.00	0.00	7.45	41.83	42.04	8.68	50.72
Sample 24	N/A	Medium sand	0.616	5.98	26.56	24.40	25.12	(2)	(2)	17.94
Sample 25	N/A	Fine sand	0.130	0.00	0.00	18.79	42.26	30.92	8.03	38.95
Sample 26	N/A	Fine sand	0.101	0.00	0.00	9.76	47.72	36.44	6.08	42.52
Sample 17B	N/A	Medium sand	0.431	1.58	7.23	42.80	46.80	(2)	(2)	1.58

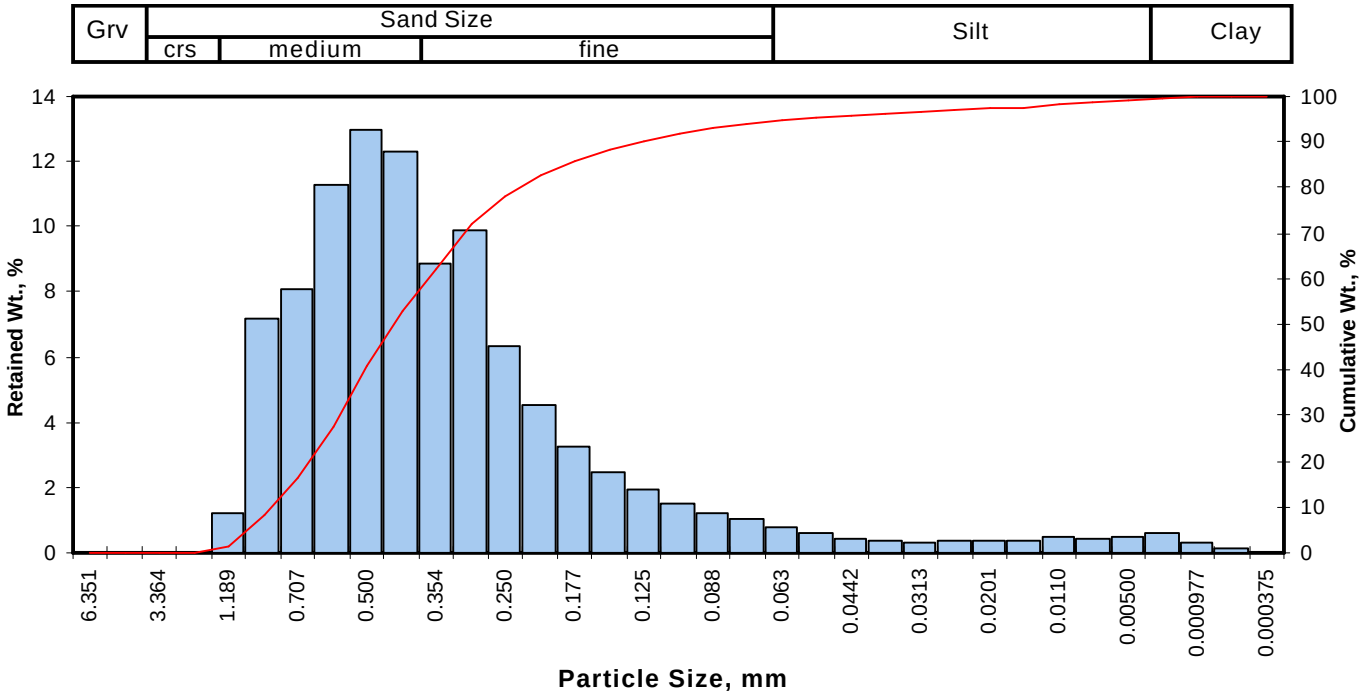
(1) Based on Mean from Trask
(2) Mechanical sieve does not differentiate silt/clay fractions

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 1
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.21	1.21	1.21
0.0331	0.841	0.25	20	7.20	7.19	8.40
0.0278	0.707	0.50	25	8.12	8.11	16.51
0.0234	0.595	0.75	30	11.30	11.29	27.80
0.0197	0.500	1.00	35	13.00	12.98	40.78
0.0166	0.420	1.25	40	12.30	12.29	53.07
0.0139	0.354	1.50	45	8.86	8.85	61.92
0.0117	0.297	1.75	50	9.93	9.92	71.83
0.0098	0.250	2.00	60	6.33	6.32	78.16
0.0083	0.210	2.25	70	4.51	4.50	82.66
0.0070	0.177	2.50	80	3.24	3.24	85.90
0.0059	0.149	2.75	100	2.46	2.46	88.35
0.0049	0.125	3.00	120	1.91	1.91	90.26
0.0041	0.105	3.25	140	1.50	1.50	91.76
0.0035	0.088	3.50	170	1.23	1.23	92.99
0.0029	0.074	3.75	200	1.00	1.00	93.99
0.0025	0.063	4.00	230	0.77	0.77	94.76
0.0021	0.053	4.25	270	0.58	0.58	95.34
0.00174	0.0442	4.50	325	0.45	0.45	95.79
0.00146	0.0372	4.75	400	0.38	0.38	96.16
0.00123	0.0313	5.00	450	0.33	0.33	96.49
0.000986	0.0250	5.32	500	0.38	0.38	96.87
0.000790	0.0201	5.64	635	0.36	0.36	97.23
0.000615	0.0156	6.00		0.38	0.38	97.61
0.000435	0.0110	6.50		0.47	0.47	98.08
0.000308	0.00781	7.00		0.43	0.43	98.51
0.000197	0.00500	7.65		0.47	0.47	98.98
0.000077	0.00195	9.00		0.60	0.60	99.58
0.000038	0.000977	10.00		0.28	0.28	99.86
0.000019	0.000488	11.00		0.14	0.14	100.00
0.000015	0.000375	11.38		0.00	0.00	100.00
TOTALS				**100.10**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.01	0.0390	0.991
10	0.30	0.0320	0.813
16	0.48	0.0281	0.715
25	0.69	0.0244	0.621
40	0.98	0.0199	0.505
50	1.19	0.0173	0.439
60	1.45	0.0145	0.367
75	1.88	0.0107	0.273
84	2.35	0.0077	0.196
90	2.97	0.0050	0.128
95	4.11	0.0023	0.058

Measure	Trask	Inman	Folk-Ward
Median, phi	1.19	1.19	1.19
Median, in.	0.0173	0.0173	0.0173
Median, mm	0.439	0.439	0.439
Mean, phi	1.16	1.42	1.34
Mean, in.	0.0176	0.0147	0.0155
Mean, mm	0.447	0.374	0.395
Sorting	1.509	0.935	1.087
Skewness	0.937	0.247	0.337
Kurtosis	0.254	1.189	1.413
Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	53.07
Fine Sand	200	40.92
Silt	>0.005 mm	4.99
Clay	<0.005 mm	1.02
	Total	**100**

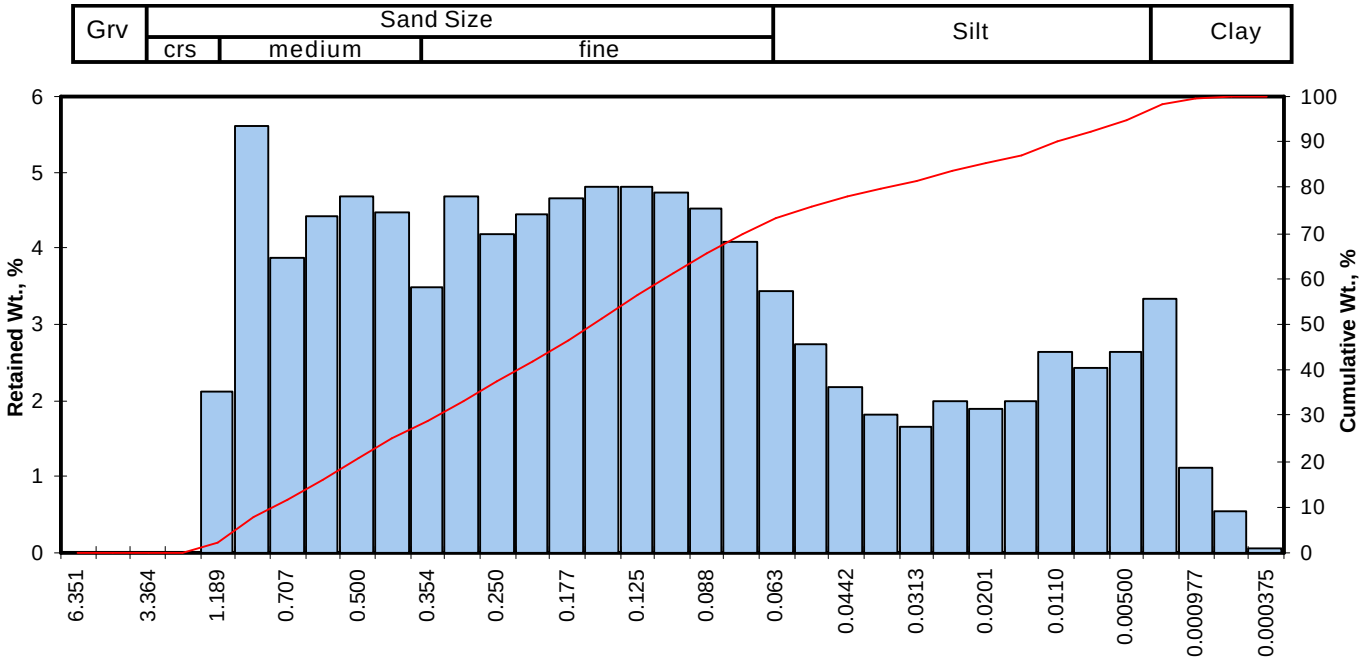
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 2
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	2.13	2.13	2.13
0.0331	0.841	0.25	20	5.60	5.60	7.73
0.0278	0.707	0.50	25	3.88	3.88	11.61
0.0234	0.595	0.75	30	4.42	4.42	16.03
0.0197	0.500	1.00	35	4.69	4.69	20.72
0.0166	0.420	1.25	40	4.48	4.48	25.20
0.0139	0.354	1.50	45	3.48	3.48	28.68
0.0117	0.297	1.75	50	4.68	4.68	33.36
0.0098	0.250	2.00	60	4.18	4.18	37.55
0.0083	0.210	2.25	70	4.45	4.45	42.00
0.0070	0.177	2.50	80	4.66	4.66	46.66
0.0059	0.149	2.75	100	4.81	4.81	51.47
0.0049	0.125	3.00	120	4.82	4.82	56.29
0.0041	0.105	3.25	140	4.73	4.73	61.02
0.0035	0.088	3.50	170	4.52	4.52	65.54
0.0029	0.074	3.75	200	4.09	4.09	69.63
0.0025	0.063	4.00	230	3.44	3.44	73.07
0.0021	0.053	4.25	270	2.73	2.73	75.80
0.00174	0.0442	4.50	325	2.16	2.16	77.96
0.00146	0.0372	4.75	400	1.82	1.82	79.78
0.00123	0.0313	5.00	450	1.65	1.65	81.43
0.000986	0.0250	5.32	500	1.98	1.98	83.41
0.000790	0.0201	5.64	635	1.88	1.88	85.29
0.000615	0.0156	6.00		1.98	1.98	87.27
0.000435	0.0110	6.50		2.63	2.63	89.90
0.000308	0.00781	7.00		2.43	2.43	92.33
0.000197	0.00500	7.65		2.64	2.64	94.97
0.000077	0.00195	9.00		3.33	3.33	98.30
0.000038	0.000977	10.00		1.10	1.10	99.40
0.000019	0.000488	11.00		0.54	0.54	99.94
0.000015	0.000375	11.38		0.06	0.06	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.01	0.0392	0.996
10	0.40	0.0299	0.760
16	0.75	0.0234	0.595
25	1.24	0.0167	0.424
40	2.14	0.0089	0.227
50	2.67	0.0062	0.157
60	3.20	0.0043	0.109
75	4.18	0.0022	0.055
84	5.42	0.0009	0.023
90	6.52	0.0004	0.011
95	7.66	0.0002	0.005

Measure	Trask	Inman	Folk-Ward
Median, phi	2.67	2.67	2.67
Median, in.	0.0062	0.0062	0.0062
Median, mm	0.157	0.157	0.157
Mean, phi	2.06	3.08	2.95
Mean, in.	0.0094	0.0046	0.0051
Mean, mm	0.240	0.118	0.130
Sorting	2.768	2.336	2.327
Skewness	0.977	0.176	0.239
Kurtosis	0.246	0.637	1.067
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	25.20
Fine Sand	200	44.43
Silt	>0.005 mm	25.34
Clay	<0.005 mm	5.03
	Total	**100**

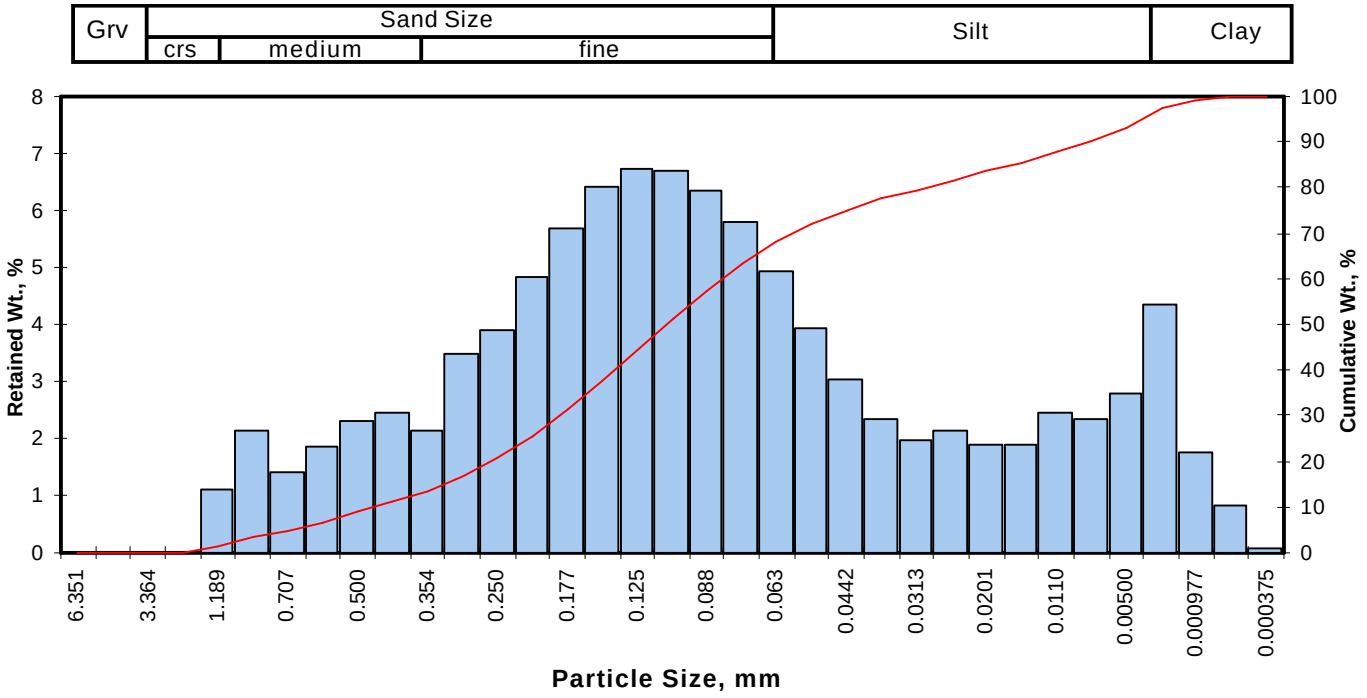
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 3
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.12	1.12	1.12
0.0331	0.841	0.25	20	2.13	2.13	3.25
0.0278	0.707	0.50	25	1.43	1.43	4.68
0.0234	0.595	0.75	30	1.87	1.87	6.55
0.0197	0.500	1.00	35	2.31	2.31	8.86
0.0166	0.420	1.25	40	2.45	2.45	11.31
0.0139	0.354	1.50	45	2.13	2.13	13.44
0.0117	0.297	1.75	50	3.48	3.48	16.92
0.0098	0.250	2.00	60	3.88	3.88	20.80
0.0083	0.210	2.25	70	4.83	4.83	25.63
0.0070	0.177	2.50	80	5.68	5.68	31.31
0.0059	0.149	2.75	100	6.40	6.40	37.70
0.0049	0.125	3.00	120	6.72	6.72	44.42
0.0041	0.105	3.25	140	6.68	6.68	51.10
0.0035	0.088	3.50	170	6.36	6.36	57.46
0.0029	0.074	3.75	200	5.78	5.78	63.24
0.0025	0.063	4.00	230	4.93	4.93	68.17
0.0021	0.053	4.25	270	3.93	3.93	72.10
0.00174	0.0442	4.50	325	3.02	3.02	75.12
0.00146	0.0372	4.75	400	2.36	2.36	77.48
0.00123	0.0313	5.00	450	1.96	1.96	79.44
0.000986	0.0250	5.32	500	2.15	2.15	81.59
0.000790	0.0201	5.64	635	1.90	1.90	83.49
0.000615	0.0156	6.00		1.89	1.89	85.38
0.000435	0.0110	6.50		2.44	2.44	87.82
0.000308	0.00781	7.00		2.34	2.34	90.16
0.000197	0.00500	7.65		2.81	2.81	92.97
0.000077	0.00195	9.00		4.36	4.36	97.33
0.000038	0.000977	10.00		1.75	1.75	99.08
0.000019	0.000488	11.00		0.84	0.84	99.92
0.000015	0.000375	11.38		0.08	0.08	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.54	0.0270	0.686
10	1.12	0.0182	0.461
16	1.68	0.0123	0.311
25	2.22	0.0085	0.215
40	2.84	0.0055	0.140
50	3.21	0.0043	0.108
60	3.61	0.0032	0.082
75	4.49	0.0018	0.044
84	5.74	0.0007	0.019
90	6.97	0.0003	0.008
95	8.28	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.21	3.21	3.21
Median, in.	0.0043	0.0043	0.0043
Median, mm	0.108	0.108	0.108
Mean, phi	2.95	3.71	3.54
Mean, in.	0.0051	0.0030	0.0034
Mean, mm	0.130	0.076	0.086
Sorting	2.198	2.027	2.185
Skewness	0.904	0.248	0.279
Kurtosis	0.188	0.908	1.395
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	11.31
Fine Sand	200	51.93
Silt	>0.005 mm	29.73
Clay	<0.005 mm	7.03
	Total	**100**

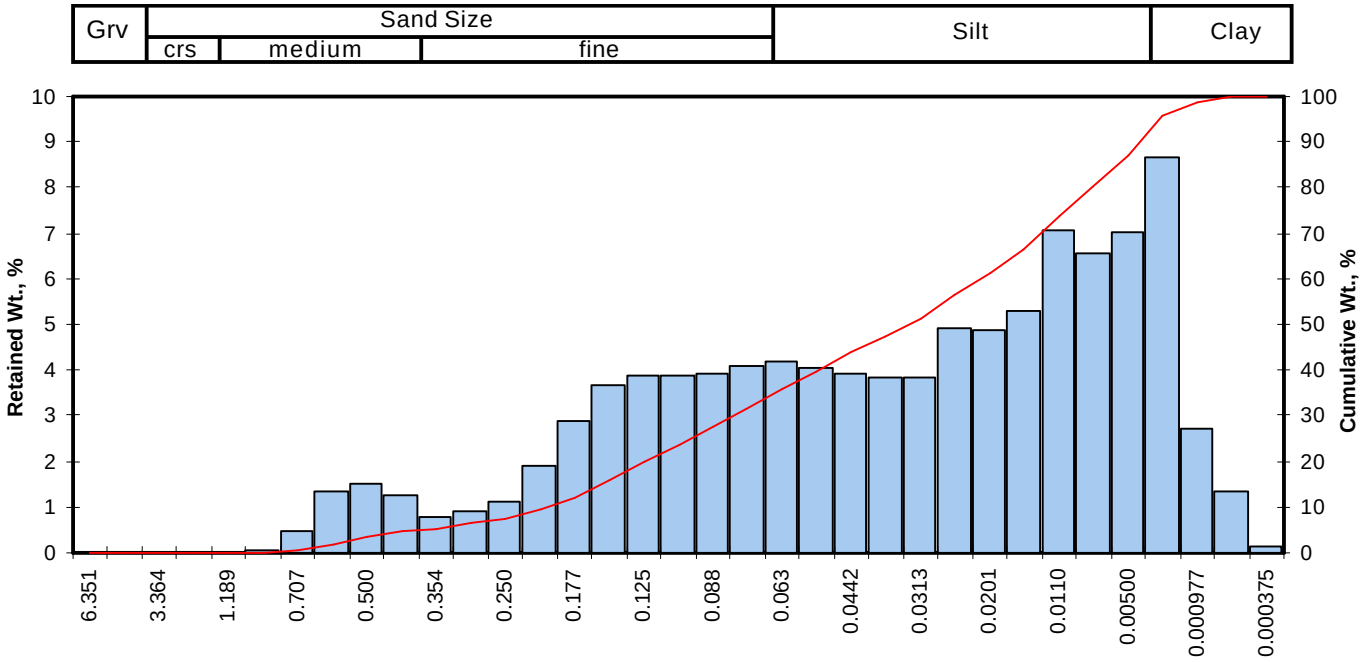
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 4
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.03	0.03	0.03
0.0278	0.707	0.50	25	0.48	0.48	0.51
0.0234	0.595	0.75	30	1.33	1.33	1.84
0.0197	0.500	1.00	35	1.50	1.50	3.34
0.0166	0.420	1.25	40	1.25	1.25	4.59
0.0139	0.354	1.50	45	0.78	0.78	5.37
0.0117	0.297	1.75	50	0.92	0.92	6.29
0.0098	0.250	2.00	60	1.11	1.11	7.40
0.0083	0.210	2.25	70	1.90	1.90	9.30
0.0070	0.177	2.50	80	2.89	2.89	12.19
0.0059	0.149	2.75	100	3.65	3.65	15.84
0.0049	0.125	3.00	120	3.86	3.86	19.70
0.0041	0.105	3.25	140	3.86	3.86	23.56
0.0035	0.088	3.50	170	3.93	3.93	27.49
0.0029	0.074	3.75	200	4.09	4.09	31.58
0.0025	0.063	4.00	230	4.16	4.16	35.74
0.0021	0.053	4.25	270	4.07	4.07	39.81
0.00174	0.0442	4.50	325	3.94	3.94	43.75
0.00146	0.0372	4.75	400	3.85	3.85	47.60
0.00123	0.0313	5.00	450	3.83	3.83	51.43
0.000986	0.0250	5.32	500	4.90	4.90	56.33
0.000790	0.0201	5.64	635	4.89	4.89	61.22
0.000615	0.0156	6.00		5.29	5.29	66.51
0.000435	0.0110	6.50		7.08	7.08	73.59
0.000308	0.00781	7.00		6.55	6.55	80.14
0.000197	0.00500	7.65		7.04	7.04	87.18
0.000077	0.00195	9.00		8.65	8.65	95.83
0.000038	0.000977	10.00		2.71	2.71	98.54
0.000019	0.000488	11.00		1.32	1.32	99.86
0.000015	0.000375	11.38		0.14	0.14	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	1.38	0.0151	0.384
10	2.31	0.0079	0.202
16	2.76	0.0058	0.148
25	3.34	0.0039	0.099
40	4.26	0.0021	0.052
50	4.91	0.0013	0.033
60	5.56	0.0008	0.021
75	6.61	0.0004	0.010
84	7.35	0.0002	0.006
90	8.09	0.0001	0.004
95	8.87	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.91	4.91	4.91
Median, in.	0.0013	0.0013	0.0013
Median, mm	0.033	0.033	0.033
Mean, phi	4.20	5.06	5.01
Mean, in.	0.0021	0.0012	0.0012
Mean, mm	0.054	0.030	0.031
Sorting	3.102	2.297	2.283
Skewness	0.954	0.065	0.062
Kurtosis	0.223	0.630	0.940
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	4.59
Fine Sand	200	26.99
Silt	>0.005 mm	55.60
Clay	<0.005 mm	12.82
	Total	**100**

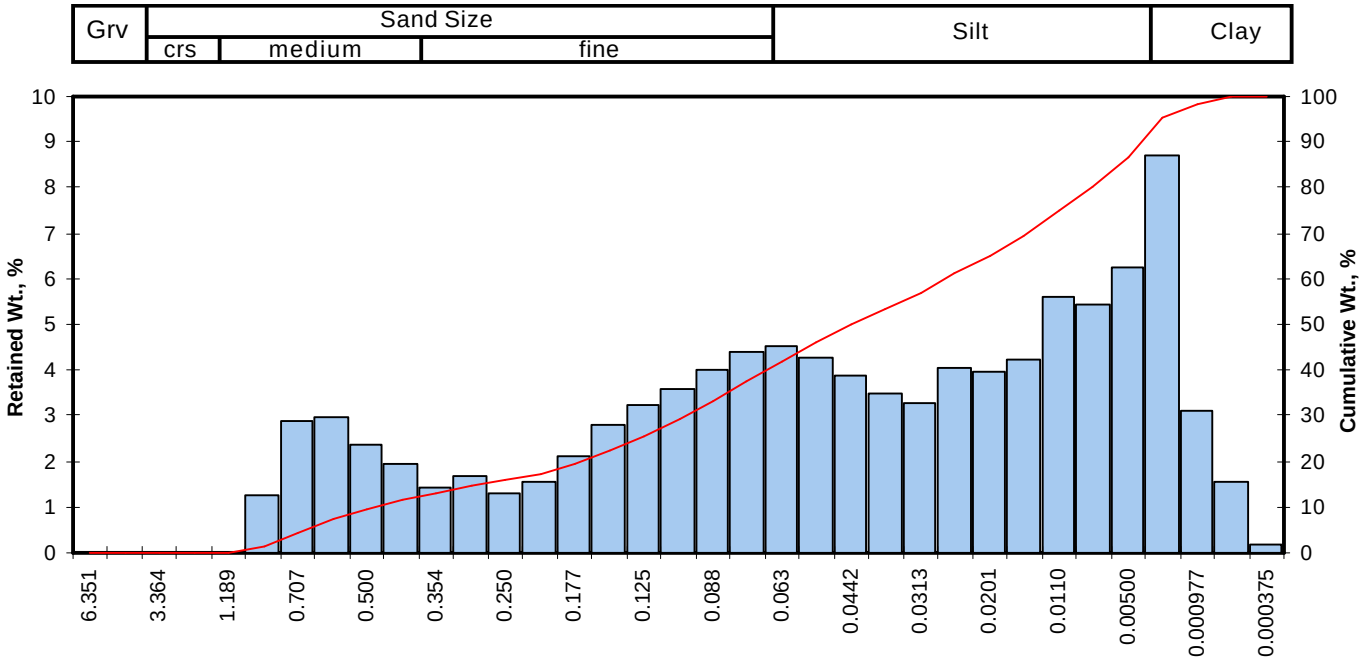
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 5
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	1.27	1.27	1.27
0.0278	0.707	0.50	25	2.90	2.90	4.17
0.0234	0.595	0.75	30	2.97	2.97	7.14
0.0197	0.500	1.00	35	2.36	2.36	9.50
0.0166	0.420	1.25	40	1.94	1.94	11.44
0.0139	0.354	1.50	45	1.41	1.41	12.85
0.0117	0.297	1.75	50	1.67	1.67	14.52
0.0098	0.250	2.00	60	1.30	1.30	15.82
0.0083	0.210	2.25	70	1.53	1.53	17.35
0.0070	0.177	2.50	80	2.12	2.12	19.47
0.0059	0.149	2.75	100	2.80	2.80	22.27
0.0049	0.125	3.00	120	3.24	3.24	25.52
0.0041	0.105	3.25	140	3.58	3.58	29.10
0.0035	0.088	3.50	170	4.00	4.00	33.10
0.0029	0.074	3.75	200	4.38	4.38	37.48
0.0025	0.063	4.00	230	4.51	4.51	41.99
0.0021	0.053	4.25	270	4.28	4.28	46.27
0.00174	0.0442	4.50	325	3.88	3.88	50.15
0.00146	0.0372	4.75	400	3.50	3.50	53.65
0.00123	0.0313	5.00	450	3.29	3.29	56.94
0.000986	0.0250	5.32	500	4.06	4.06	61.00
0.000790	0.0201	5.64	635	3.98	3.98	64.98
0.000615	0.0156	6.00		4.21	4.21	69.19
0.000435	0.0110	6.50		5.61	5.61	74.80
0.000308	0.00781	7.00		5.41	5.41	80.22
0.000197	0.00500	7.65		6.24	6.24	86.46
0.000077	0.00195	9.00		8.71	8.71	95.17
0.000038	0.000977	10.00		3.10	3.10	98.27
0.000019	0.000488	11.00		1.57	1.57	99.84
0.000015	0.000375	11.38		0.16	0.16	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.57	0.0265	0.674
10	1.06	0.0188	0.478
16	2.03	0.0096	0.245
25	2.96	0.0051	0.128
40	3.89	0.0027	0.067
50	4.49	0.0018	0.044
60	5.24	0.0010	0.026
75	6.52	0.0004	0.011
84	7.39	0.0002	0.006
90	8.20	0.0001	0.003
95	8.97	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.49	4.49	4.49
Median, in.	0.0018	0.0018	0.0018
Median, mm	0.044	0.044	0.044
Mean, phi	3.84	4.71	4.64
Mean, in.	0.0027	0.0015	0.0016
Mean, mm	0.070	0.038	0.040
Sorting	3.432	2.681	2.614
Skewness	0.842	0.082	0.074
Kurtosis	0.124	0.567	0.968
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	11.44
Fine Sand	200	26.04
Silt	>0.005 mm	48.98
Clay	<0.005 mm	13.54
	Total	**100**

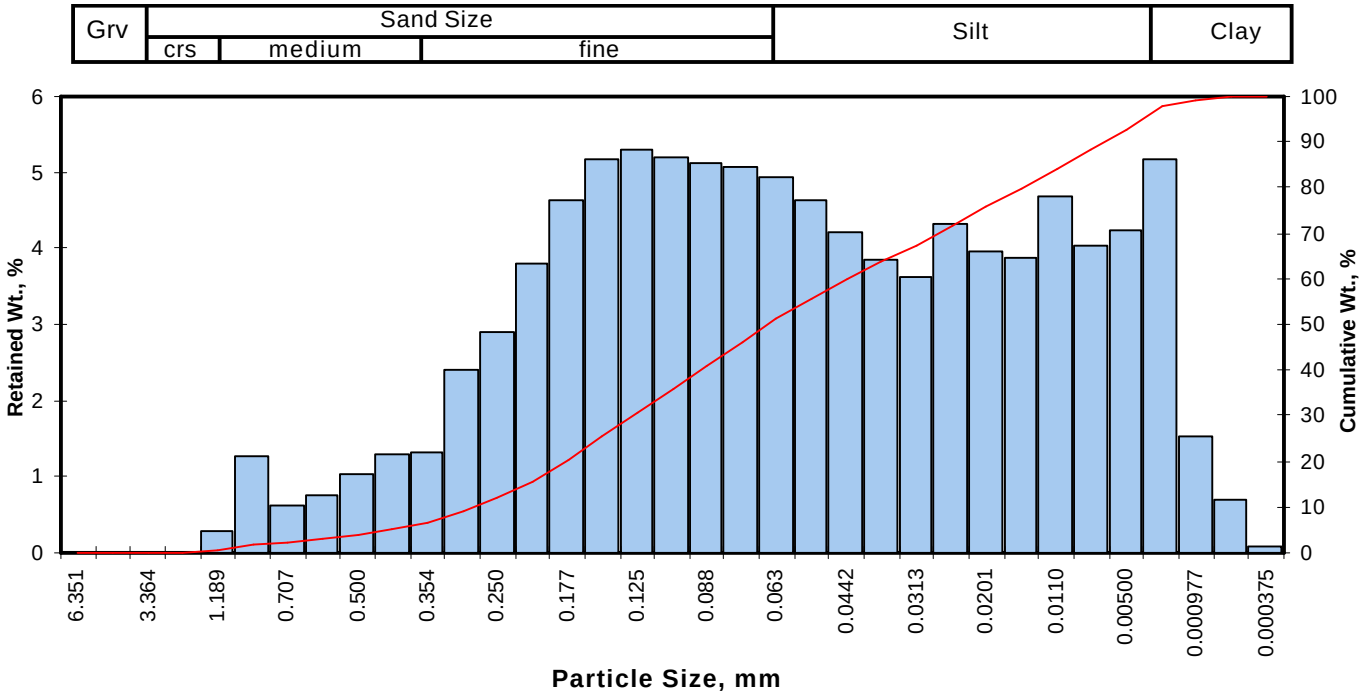
Phone: (562) 907-3607
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 6
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.29	0.29	0.29
0.0331	0.841	0.25	20	1.28	1.28	1.57
0.0278	0.707	0.50	25	0.63	0.63	2.20
0.0234	0.595	0.75	30	0.76	0.76	2.96
0.0197	0.500	1.00	35	1.03	1.03	3.99
0.0166	0.420	1.25	40	1.29	1.29	5.28
0.0139	0.354	1.50	45	1.31	1.31	6.59
0.0117	0.297	1.75	50	2.41	2.41	9.00
0.0098	0.250	2.00	60	2.89	2.89	11.89
0.0083	0.210	2.25	70	3.79	3.79	15.68
0.0070	0.177	2.50	80	4.62	4.62	20.30
0.0059	0.149	2.75	100	5.18	5.18	25.48
0.0049	0.125	3.00	120	5.29	5.29	30.77
0.0041	0.105	3.25	140	5.19	5.19	35.96
0.0035	0.088	3.50	170	5.11	5.11	41.07
0.0029	0.074	3.75	200	5.07	5.07	46.14
0.0025	0.063	4.00	230	4.94	4.94	51.08
0.0021	0.053	4.25	270	4.62	4.62	55.70
0.00174	0.0442	4.50	325	4.22	4.22	59.92
0.00146	0.0372	4.75	400	3.86	3.86	63.78
0.00123	0.0313	5.00	450	3.61	3.61	67.39
0.000986	0.0250	5.32	500	4.32	4.32	71.72
0.000790	0.0201	5.64	635	3.95	3.95	75.67
0.000615	0.0156	6.00		3.89	3.89	79.56
0.000435	0.0110	6.50		4.68	4.68	84.24
0.000308	0.00781	7.00		4.04	4.04	88.28
0.000197	0.00500	7.65		4.25	4.25	92.53
0.000077	0.00195	9.00		5.18	5.18	97.71
0.000038	0.000977	10.00		1.52	1.52	99.23
0.000019	0.000488	11.00		0.70	0.70	99.93
0.000015	0.000375	11.38		0.07	0.07	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	1.20	0.0172	0.437
10	1.84	0.0110	0.280
16	2.27	0.0082	0.208
25	2.73	0.0059	0.151
40	3.45	0.0036	0.092
50	3.95	0.0026	0.065
60	4.50	0.0017	0.044
75	5.59	0.0008	0.021
84	6.47	0.0004	0.011
90	7.26	0.0003	0.007
95	8.29	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.95	3.95	3.95
Median, in.	0.0026	0.0026	0.0026
Median, mm	0.065	0.065	0.065
Mean, phi	3.54	4.37	4.23
Mean, in.	0.0034	0.0019	0.0021
Mean, mm	0.086	0.048	0.053
Sorting	2.694	2.104	2.127
Skewness	0.864	0.202	0.214
Kurtosis	0.238	0.687	1.017

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	5.28
Fine Sand	200	40.86
Silt	>0.005 mm	46.38
Clay	<0.005 mm	7.47
	Total	**100**

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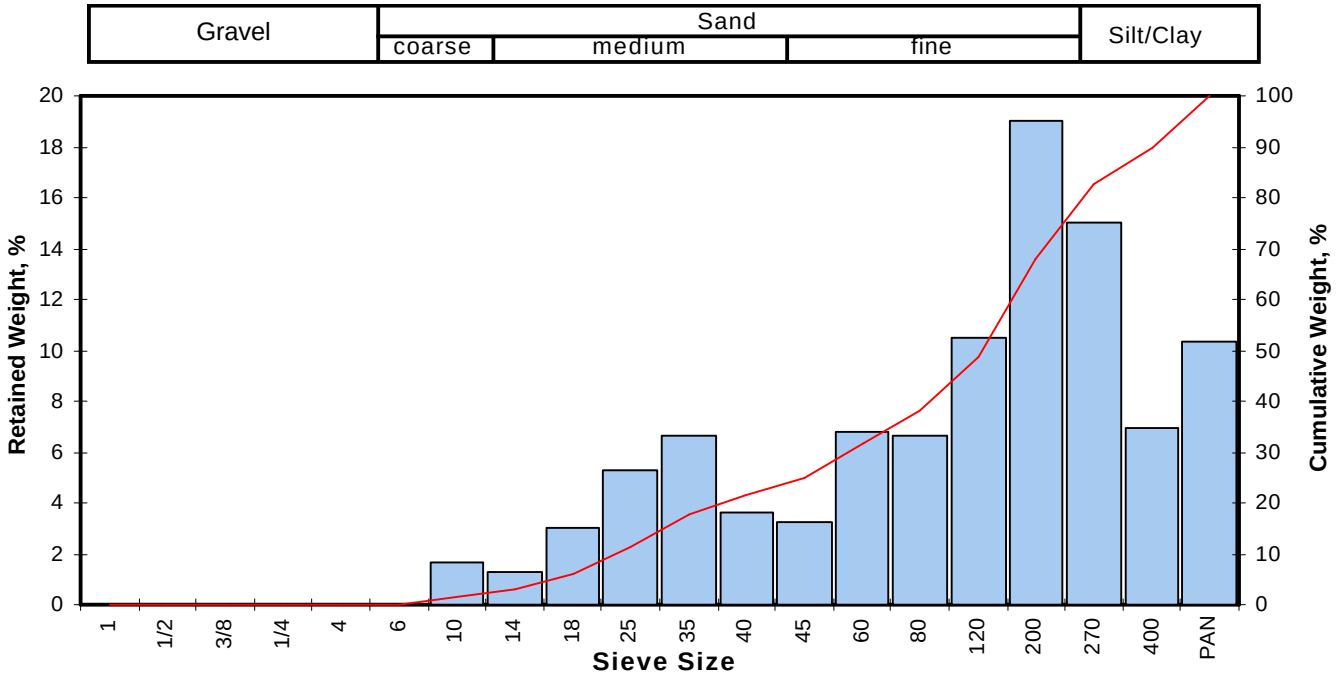
Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 7
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.13	1.64	1.64
0.0557	1.414	-0.50	14	0.10	1.26	2.90
0.0394	1.000	0.00	18	0.24	3.02	5.92
0.0278	0.707	0.50	25	0.42	5.29	11.21
0.0197	0.500	1.00	35	0.53	6.68	17.88
0.0166	0.420	1.25	40	0.29	3.65	21.54
0.0139	0.354	1.50	45	0.26	3.27	24.81
0.0098	0.250	2.00	60	0.54	6.80	31.61
0.0070	0.177	2.50	80	0.53	6.68	38.29
0.0049	0.125	3.00	120	0.83	10.45	48.74
0.0029	0.074	3.75	200	1.51	19.02	67.76
0.0021	0.053	4.25	270	1.19	14.99	82.75
0.0015	0.037	4.75	400	0.55	6.93	89.67
			PAN	0.82	10.33	100.00
TOTALS				7.94	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-0.15	0.0437	1.111
10	0.39	0.0301	0.765
16	0.86	0.0217	0.551
25	1.51	0.0138	0.350
40	2.58	0.0066	0.167
50	3.05	0.0048	0.121
60	3.44	0.0036	0.092
75	3.99	0.0025	0.063
84	4.34	0.0019	0.049
90	4.60	0.0016	0.041
95	2.30	0.0080	0.203

Measure	Trask	Inman	Folk-Ward
Median, phi	3.05	3.05	3.05
Median, in.	0.0048	0.0048	0.0048
Median, mm	0.121	0.121	0.121
Mean, phi	2.28	2.60	2.75
Mean, in.	0.0081	0.0065	0.0059
Mean, mm	0.207	0.165	0.149
Sorting	2.360	1.741	1.242
Skewness	1.229	-0.258	-0.935
Kurtosis	0.198	-0.296	0.406
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	1.64
Medium Sand	40	19.90
Fine Sand	200	46.22
Silt/Clay	<200	32.24
	Total	100

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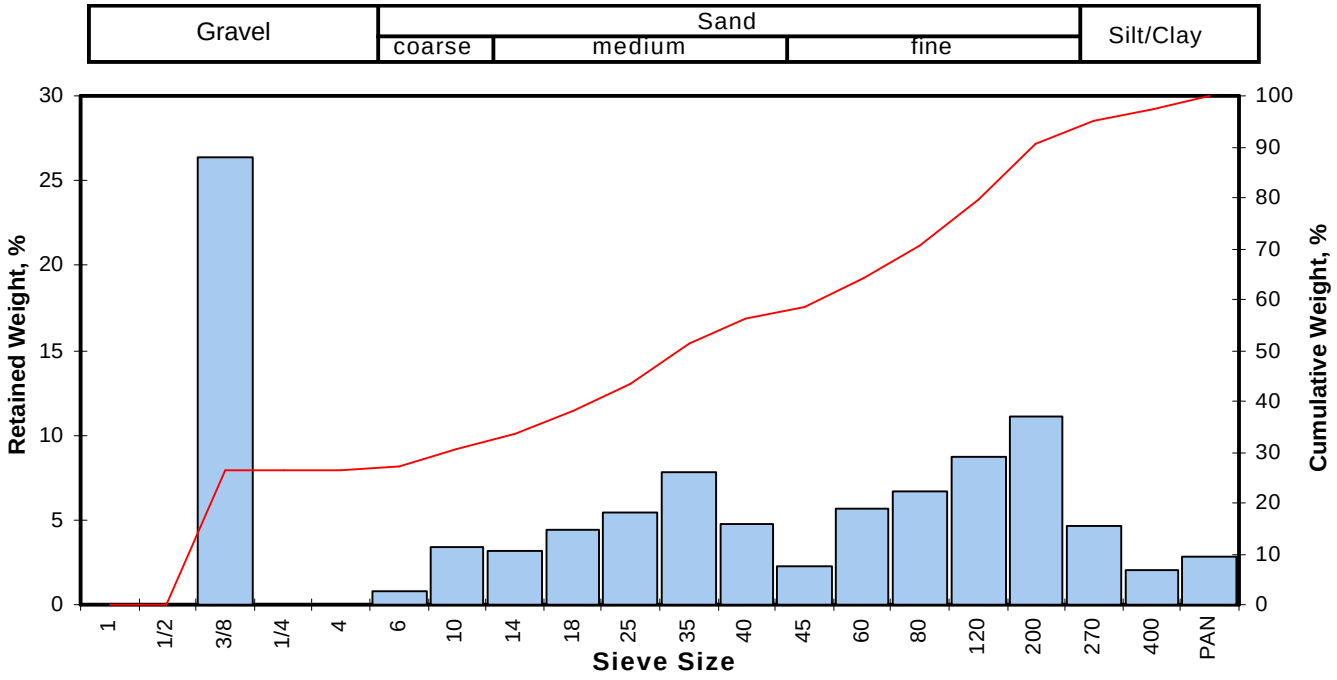
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 8
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	4.60	26.38	26.38
0.2500	6.351	-2.67	1/4	0.00	0.00	26.38
0.1873	4.757	-2.25	4	0.00	0.00	26.38
0.1324	3.364	-1.75	6	0.13	0.75	27.12
0.0787	2.000	-1.00	10	0.60	3.44	30.56
0.0557	1.414	-0.50	14	0.55	3.15	33.72
0.0394	1.000	0.00	18	0.77	4.42	38.13
0.0278	0.707	0.50	25	0.94	5.39	43.52
0.0197	0.500	1.00	35	1.37	7.86	51.38
0.0166	0.420	1.25	40	0.82	4.70	56.08
0.0139	0.354	1.50	45	0.40	2.29	58.37
0.0098	0.250	2.00	60	0.98	5.62	63.99
0.0070	0.177	2.50	80	1.17	6.71	70.70
0.0049	0.125	3.00	120	1.53	8.77	79.47
0.0029	0.074	3.75	200	1.93	11.07	90.54
0.0021	0.053	4.25	270	0.81	4.64	95.18
0.0015	0.037	4.75	400	0.35	2.01	97.19
			PAN	0.49	2.81	100.00
TOTALS				17.44	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-3.38	0.4098	10.409
10	-3.12	0.3412	8.667
16	-2.80	0.2739	6.957
25	-2.32	0.1970	5.003
40	0.17	0.0349	0.887
50	0.91	0.0209	0.531
60	1.64	0.0126	0.320
75	2.75	0.0059	0.149
84	3.31	0.0040	0.101
90	3.71	0.0030	0.076
95	4.23	0.0021	0.053

Measure	Trask	Inman	Folk-Ward
Median, phi	0.91	0.91	0.91
Median, in.	0.0209	0.0209	0.0209
Median, mm	0.531	0.531	0.531
Mean, phi	-1.37	0.25	0.47
Mean, in.	0.1014	0.0330	0.0284
Mean, mm	2.576	0.838	0.720
Sorting	5.791	3.053	2.679
Skewness	1.626	-0.216	-0.172
Kurtosis	0.282	0.246	0.615

Grain Size Description (ASTM-USCS Scale)	Coarse sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	26.38
Coarse Sand	10	4.19
Medium Sand	40	25.52
Fine Sand	200	34.46
Silt/Clay	<200	9.46
	Total	100

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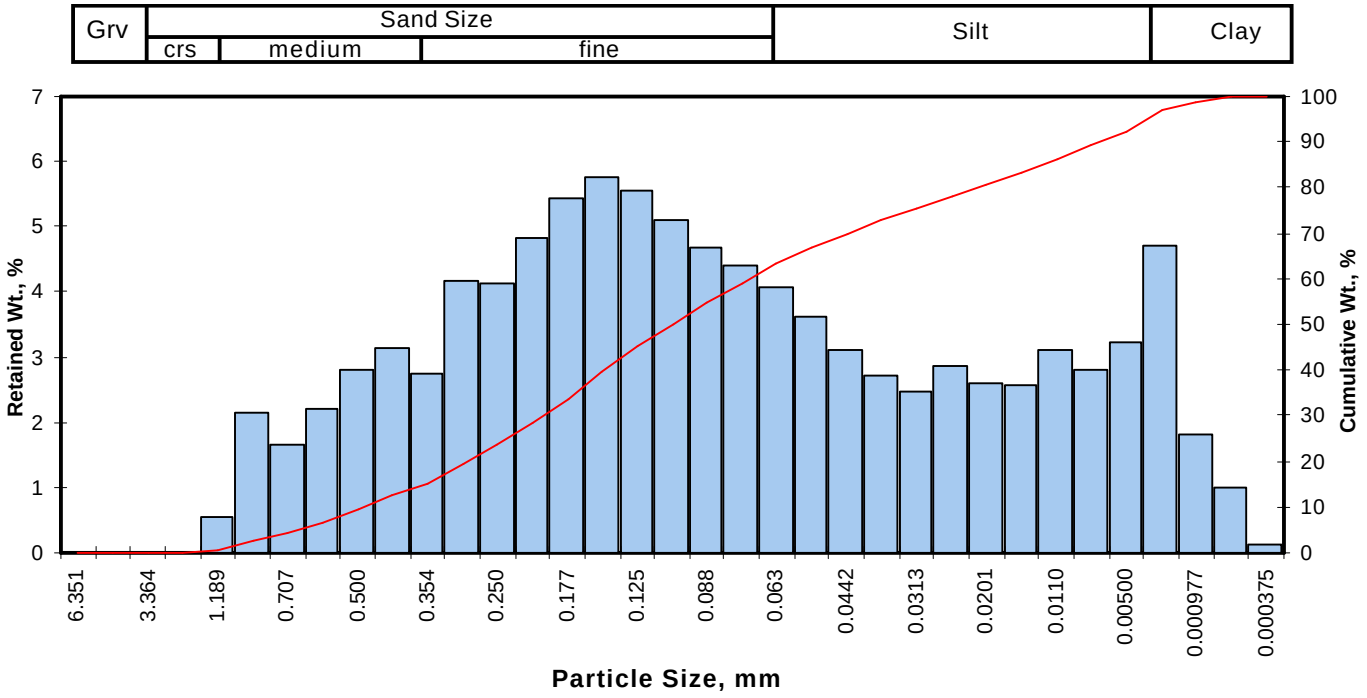
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 9
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.53	0.53	0.53
0.0331	0.841	0.25	20	2.13	2.13	2.66
0.0278	0.707	0.50	25	1.67	1.67	4.33
0.0234	0.595	0.75	30	2.20	2.20	6.53
0.0197	0.500	1.00	35	2.80	2.80	9.33
0.0166	0.420	1.25	40	3.14	3.14	12.47
0.0139	0.354	1.50	45	2.76	2.76	15.23
0.0117	0.297	1.75	50	4.15	4.15	19.38
0.0098	0.250	2.00	60	4.12	4.12	23.50
0.0083	0.210	2.25	70	4.82	4.82	28.32
0.0070	0.177	2.50	80	5.44	5.44	33.76
0.0059	0.149	2.75	100	5.75	5.75	39.51
0.0049	0.125	3.00	120	5.55	5.55	45.06
0.0041	0.105	3.25	140	5.10	5.10	50.17
0.0035	0.088	3.50	170	4.69	4.69	54.86
0.0029	0.074	3.75	200	4.39	4.39	59.25
0.0025	0.063	4.00	230	4.06	4.06	63.31
0.0021	0.053	4.25	270	3.61	3.61	66.92
0.00174	0.0442	4.50	325	3.12	3.12	70.04
0.00146	0.0372	4.75	400	2.72	2.72	72.76
0.00123	0.0313	5.00	450	2.46	2.46	75.22
0.000986	0.0250	5.32	500	2.87	2.87	78.09
0.000790	0.0201	5.64	635	2.60	2.60	80.69
0.000615	0.0156	6.00		2.55	2.55	83.24
0.000435	0.0110	6.50		3.10	3.10	86.34
0.000308	0.00781	7.00		2.81	2.81	89.15
0.000197	0.00500	7.65		3.22	3.22	92.37
0.000077	0.00195	9.00		4.70	4.70	97.07
0.000038	0.000977	10.00		1.82	1.82	98.89
0.000019	0.000488	11.00		1.00	1.00	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.58	0.0264	0.671
10	1.05	0.0190	0.482
16	1.55	0.0135	0.342
25	2.08	0.0093	0.237
40	2.77	0.0058	0.146
50	3.24	0.0042	0.106
60	3.80	0.0028	0.072
75	4.98	0.0012	0.032
84	6.12	0.0006	0.014
90	7.17	0.0003	0.007
95	8.40	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.24	3.24	3.24
Median, in.	0.0042	0.0042	0.0042
Median, mm	0.106	0.106	0.106
Mean, phi	2.90	3.83	3.64
Mean, in.	0.0053	0.0028	0.0032
Mean, mm	0.134	0.070	0.080
Sorting	2.732	2.288	2.330
Skewness	0.820	0.259	0.289
Kurtosis	0.216	0.710	1.106
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	12.47
Fine Sand	200	46.77
Silt	>0.005 mm	33.12
Clay	<0.005 mm	7.63
	Total	**100**

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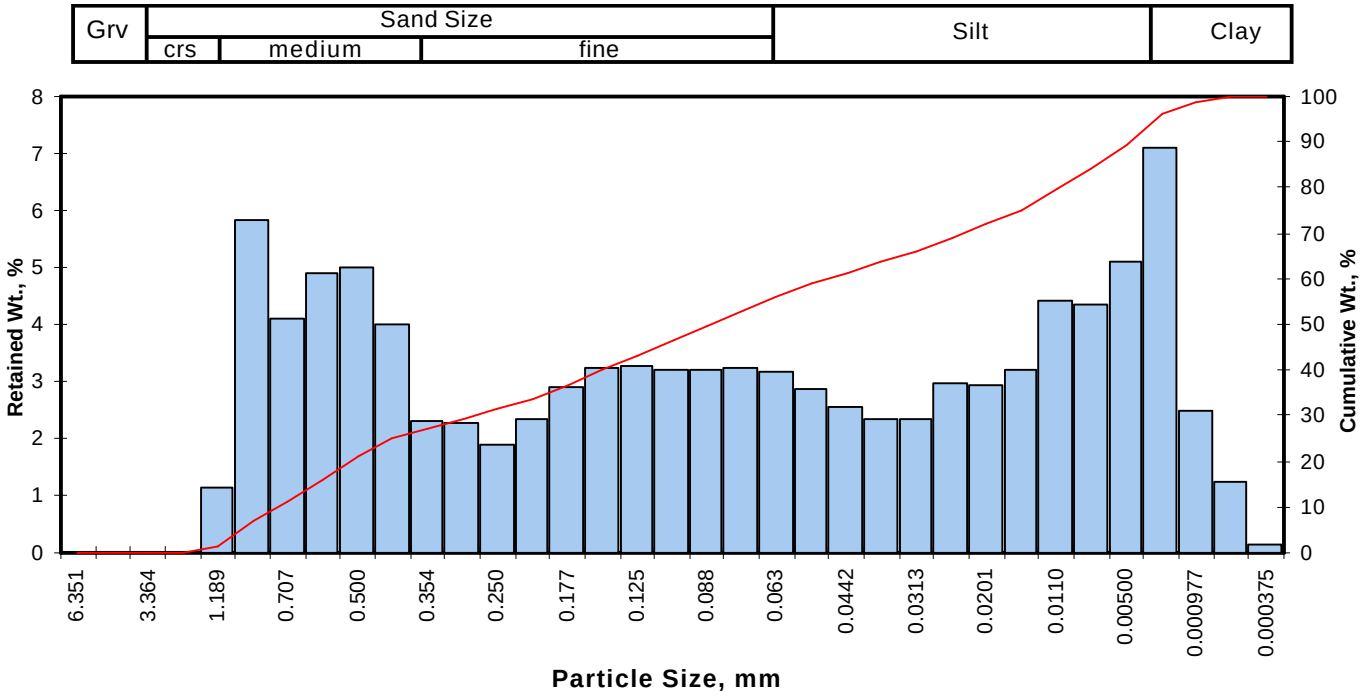
Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 10
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.13	1.13	1.13
0.0331	0.841	0.25	20	5.82	5.82	6.95
0.0278	0.707	0.50	25	4.09	4.09	11.04
0.0234	0.595	0.75	30	4.89	4.89	15.93
0.0197	0.500	1.00	35	5.01	5.01	20.94
0.0166	0.420	1.25	40	3.99	3.99	24.93
0.0139	0.354	1.50	45	2.31	2.31	27.24
0.0117	0.297	1.75	50	2.26	2.26	29.50
0.0098	0.250	2.00	60	1.90	1.90	31.40
0.0083	0.210	2.25	70	2.36	2.36	33.76
0.0070	0.177	2.50	80	2.89	2.89	36.65
0.0059	0.149	2.75	100	3.25	3.25	39.90
0.0049	0.125	3.00	120	3.28	3.28	43.18
0.0041	0.105	3.25	140	3.19	3.19	46.37
0.0035	0.088	3.50	170	3.19	3.19	49.56
0.0029	0.074	3.75	200	3.25	3.25	52.82
0.0025	0.063	4.00	230	3.17	3.17	55.99
0.0021	0.053	4.25	270	2.87	2.87	58.86
0.00174	0.0442	4.50	325	2.54	2.54	61.40
0.00146	0.0372	4.75	400	2.36	2.36	63.76
0.00123	0.0313	5.00	450	2.33	2.33	66.09
0.000986	0.0250	5.32	500	2.96	2.96	69.05
0.000790	0.0201	5.64	635	2.94	2.94	71.99
0.000615	0.0156	6.00		3.19	3.19	75.18
0.000435	0.0110	6.50		4.40	4.40	79.58
0.000308	0.00781	7.00		4.36	4.36	83.94
0.000197	0.00500	7.65		5.10	5.10	89.04
0.000077	0.00195	9.00		7.10	7.10	96.14
0.000038	0.000977	10.00		2.48	2.48	98.62
0.000019	0.000488	11.00		1.25	1.25	99.87
0.000015	0.000375	11.38		0.13	0.13	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.08	0.0372	0.944
10	0.44	0.0291	0.739
16	0.75	0.0234	0.593
25	1.26	0.0165	0.418
40	2.76	0.0058	0.148
50	3.53	0.0034	0.086
60	4.36	0.0019	0.049
75	5.98	0.0006	0.016
84	7.01	0.0003	0.008
90	7.83	0.0002	0.004
95	8.78	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	3.53	3.53	3.53
Median, in.	0.0034	0.0034	0.0034
Median, mm	0.086	0.086	0.086
Mean, phi	2.20	3.88	3.76
Mean, in.	0.0085	0.0027	0.0029
Mean, mm	0.217	0.068	0.074
Sorting	5.138	3.127	2.882
Skewness	0.943	0.111	0.159
Kurtosis	0.274	0.391	0.755

Grain Size Description (ASTM-USCS Scale): Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	24.93
Fine Sand	200	27.88
Silt	>0.005 mm	36.22
Clay	<0.005 mm	10.96
	Total	**100**

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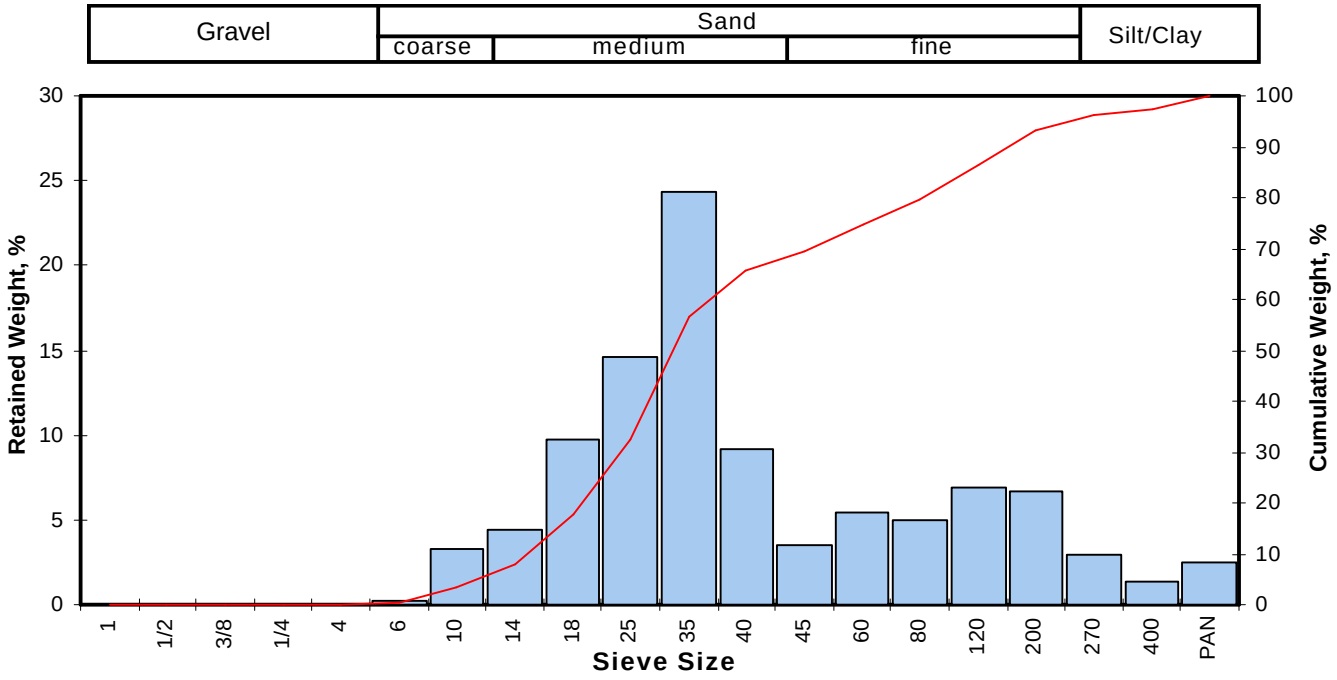
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 11
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.05	0.25	0.25
0.0787	2.000	-1.00	10	0.66	3.30	3.56
0.0557	1.414	-0.50	14	0.88	4.41	7.96
0.0394	1.000	0.00	18	1.95	9.76	17.73
0.0278	0.707	0.50	25	2.91	14.57	32.30
0.0197	0.500	1.00	35	4.85	24.29	56.58
0.0166	0.420	1.25	40	1.83	9.16	65.75
0.0139	0.354	1.50	45	0.71	3.56	69.30
0.0098	0.250	2.00	60	1.08	5.41	74.71
0.0070	0.177	2.50	80	0.99	4.96	79.67
0.0049	0.125	3.00	120	1.38	6.91	86.58
0.0029	0.074	3.75	200	1.33	6.66	93.24
0.0021	0.053	4.25	270	0.58	2.90	96.14
0.0015	0.037	4.75	400	0.28	1.40	97.55
			PAN	0.49	2.45	100.00
TOTALS				19.97	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-0.84	0.0703	1.785
10	-0.40	0.0518	1.316
16	-0.09	0.0419	1.063
25	0.25	0.0331	0.841
40	0.66	0.0249	0.634
50	0.86	0.0216	0.549
60	1.09	0.0185	0.469
75	2.03	0.0096	0.245
84	2.81	0.0056	0.142
90	3.39	0.0038	0.096
95	4.05	0.0024	0.060

Measure	Trask	Inman	Folk-Ward
Median, phi	0.86	0.86	0.86
Median, in.	0.0216	0.0216	0.0216
Median, mm	0.549	0.549	0.549
Mean, phi	0.88	1.36	1.20
Mean, in.	0.0214	0.0153	0.0172
Mean, mm	0.543	0.389	0.436
Sorting	1.853	1.451	1.466
Skewness	0.827	0.343	0.324
Kurtosis	0.244	0.685	1.126

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	3.56
Medium Sand	40	62.19
Fine Sand	200	27.49
Silt/Clay	<200	6.76
	Total	100

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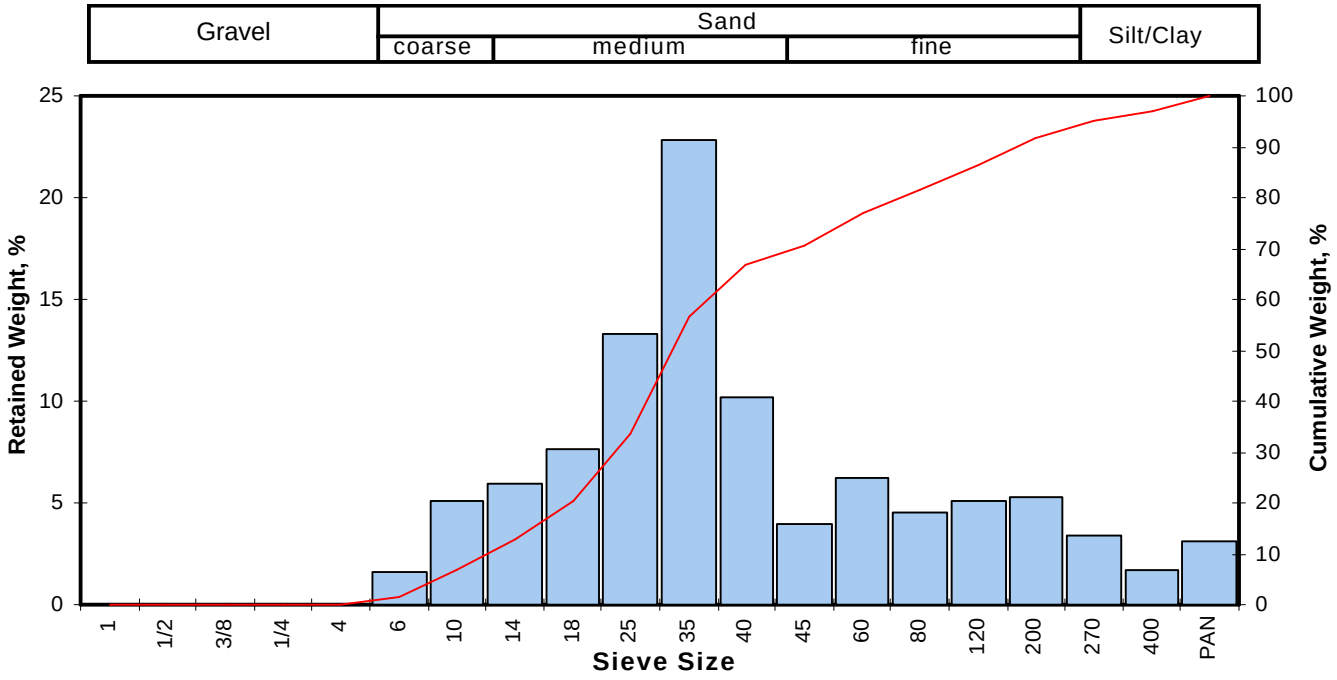
Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 12
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.21	1.63	1.63
0.0787	2.000	-1.00	10	0.66	5.12	6.74
0.0557	1.414	-0.50	14	0.77	5.97	12.71
0.0394	1.000	0.00	18	0.99	7.67	20.39
0.0278	0.707	0.50	25	1.71	13.26	33.64
0.0197	0.500	1.00	35	2.94	22.79	56.43
0.0166	0.420	1.25	40	1.32	10.23	66.67
0.0139	0.354	1.50	45	0.51	3.95	70.62
0.0098	0.250	2.00	60	0.80	6.20	76.82
0.0070	0.177	2.50	80	0.59	4.57	81.40
0.0049	0.125	3.00	120	0.66	5.12	86.51
0.0029	0.074	3.75	200	0.68	5.27	91.78
0.0021	0.053	4.25	270	0.44	3.41	95.19
0.0015	0.037	4.75	400	0.22	1.71	96.90
			PAN	0.40	3.10	100.00
TOTALS				12.90	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.26	0.0940	2.388
10	-0.73	0.0652	1.656
16	-0.29	0.0480	1.219
25	0.17	0.0349	0.886
40	0.64	0.0253	0.642
50	0.86	0.0217	0.551
60	1.09	0.0185	0.471
75	1.85	0.0109	0.277
84	2.75	0.0058	0.148
90	3.50	0.0035	0.089
95	4.22	0.0021	0.054

Measure	Trask	Inman	Folk-Ward
Median, phi	0.86	0.86	0.86
Median, in.	0.0217	0.0217	0.0217
Median, mm	0.551	0.551	0.551
Mean, phi	0.78	1.23	1.11
Mean, in.	0.0229	0.0167	0.0183
Mean, mm	0.582	0.425	0.464
Sorting	1.790	1.520	1.590
Skewness	0.898	0.247	0.237
Kurtosis	0.195	0.801	1.337

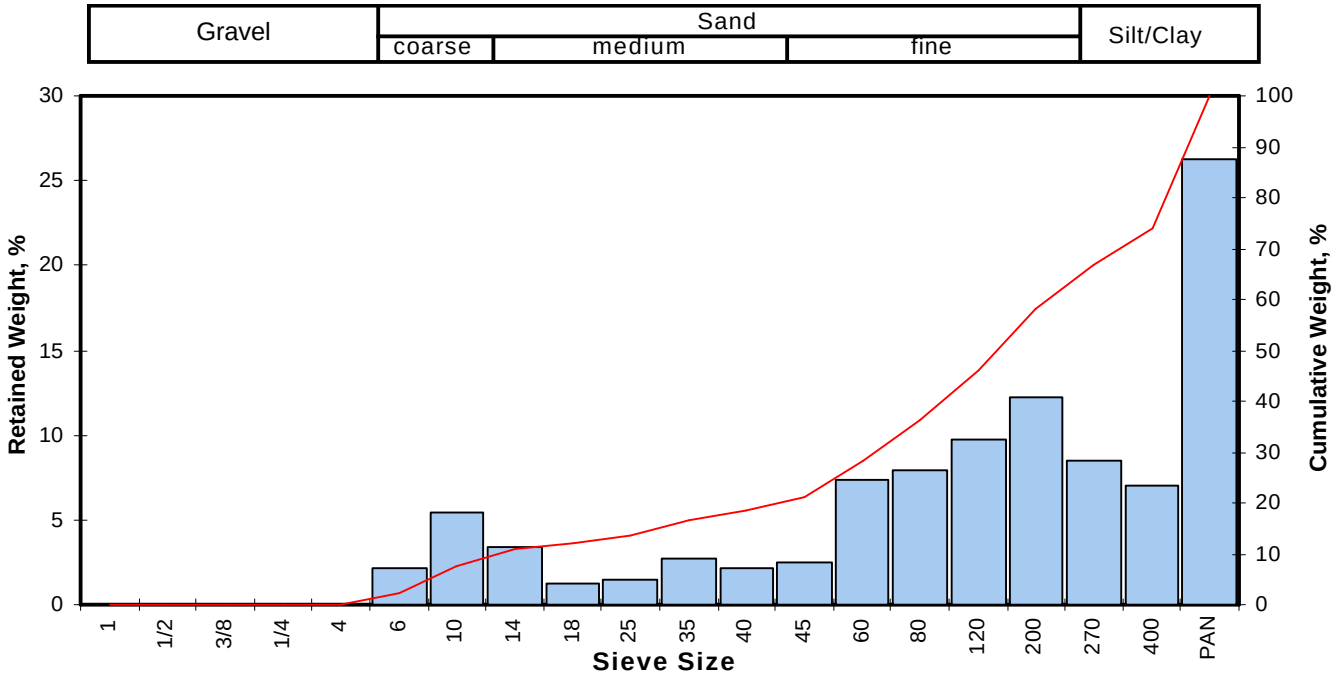
Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	6.74
Medium Sand	40	59.92
Fine Sand	200	25.12
Silt/Clay	<200	8.22
	Total	100

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 13
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.07	2.13	2.13
0.0787	2.000	-1.00	10	0.18	5.49	7.62
0.0557	1.414	-0.50	14	0.11	3.35	10.98
0.0394	1.000	0.00	18	0.04	1.22	12.20
0.0278	0.707	0.50	25	0.05	1.52	13.72
0.0197	0.500	1.00	35	0.09	2.74	16.46
0.0166	0.420	1.25	40	0.07	2.13	18.60
0.0139	0.354	1.50	45	0.08	2.44	21.04
0.0098	0.250	2.00	60	0.24	7.32	28.35
0.0070	0.177	2.50	80	0.26	7.93	36.28
0.0049	0.125	3.00	120	0.32	9.76	46.04
0.0029	0.074	3.75	200	0.40	12.20	58.23
0.0021	0.053	4.25	270	0.28	8.54	66.77
0.0015	0.037	4.75	400	0.23	7.01	73.78
			PAN	0.86	26.22	100.00
TOTALS				3.28	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.36	0.1009	2.564
10	-0.65	0.0616	1.564
16	0.92	0.0209	0.530
25	1.77	0.0115	0.293
40	2.69	0.0061	0.155
50	3.24	0.0042	0.106
60	3.85	0.0027	0.069
75	4.53	0.0017	0.043
84	2.90	0.0053	0.134
90	1.81	0.0112	0.285
95	0.91	0.0210	0.534

Measure	Trask	Inman	Folk-Ward
Median, phi	3.24	3.24	3.24
Median, in.	0.0042	0.0042	0.0042
Median, mm	0.106	0.106	0.106
Mean, phi	2.57	1.91	2.35
Mean, in.	0.0066	0.0105	0.0077
Mean, mm	0.168	0.267	0.196
Sorting	2.601	0.992	0.839
Skewness	1.067	-1.348	-2.207
Kurtosis	0.098	0.142	0.336

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	7.62
Medium Sand	40	10.98
Fine Sand	200	39.63
Silt/Clay	<200	41.77
	Total	100

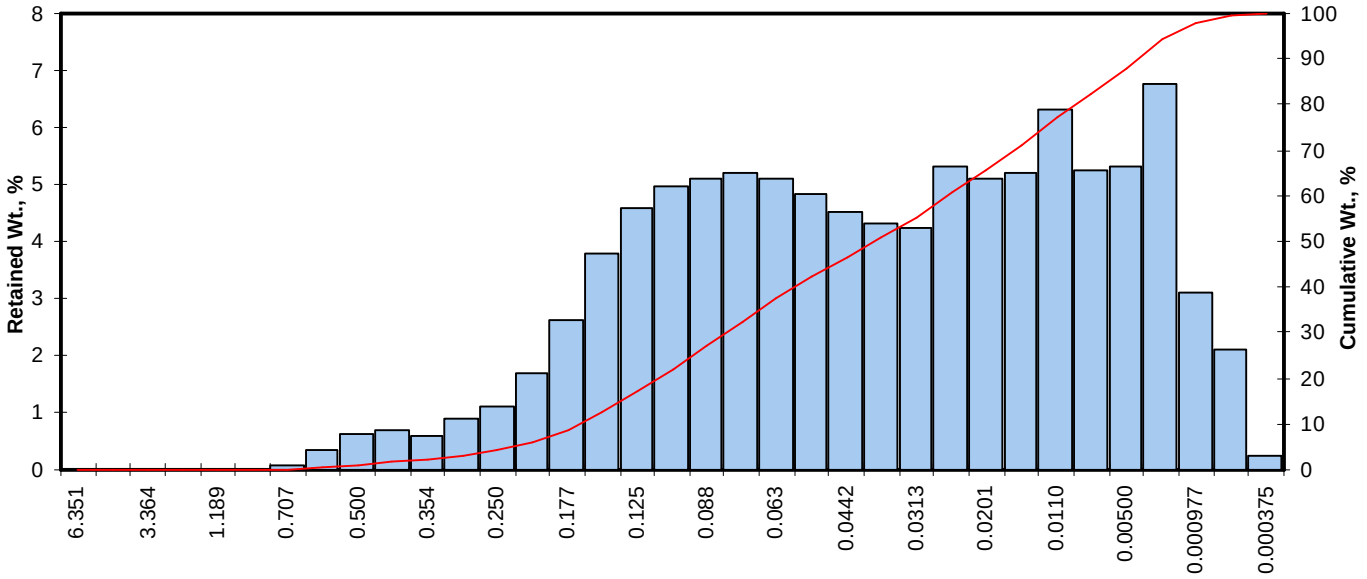
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 14
Depth, ft: N/A

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.08	0.08	0.08
0.0234	0.595	0.75	30	0.34	0.34	0.42
0.0197	0.500	1.00	35	0.62	0.62	1.04
0.0166	0.420	1.25	40	0.70	0.70	1.74
0.0139	0.354	1.50	45	0.57	0.57	2.31
0.0117	0.297	1.75	50	0.91	0.91	3.22
0.0098	0.250	2.00	60	1.10	1.10	4.32
0.0083	0.210	2.25	70	1.69	1.69	6.01
0.0070	0.177	2.50	80	2.63	2.63	8.64
0.0059	0.149	2.75	100	3.79	3.79	12.43
0.0049	0.125	3.00	120	4.60	4.60	17.03
0.0041	0.105	3.25	140	4.96	4.96	21.99
0.0035	0.088	3.50	170	5.11	5.11	27.10
0.0029	0.074	3.75	200	5.20	5.20	32.30
0.0025	0.063	4.00	230	5.12	5.12	37.42
0.0021	0.053	4.25	270	4.82	4.82	42.24
0.00174	0.0442	4.50	325	4.51	4.51	46.75
0.00146	0.0372	4.75	400	4.31	4.31	51.06
0.00123	0.0313	5.00	450	4.24	4.24	55.31
0.000986	0.0250	5.32	500	5.31	5.31	60.62
0.000790	0.0201	5.64	635	5.10	5.10	65.72
0.000615	0.0156	6.00		5.22	5.22	70.94
0.000435	0.0110	6.50		6.31	6.31	77.25
0.000308	0.00781	7.00		5.25	5.25	82.50
0.000197	0.00500	7.65		5.30	5.30	87.80
0.000077	0.00195	9.00		6.75	6.75	94.55
0.000038	0.000977	10.00		3.09	3.09	97.64
0.000019	0.000488	11.00		2.12	2.12	99.76
0.000015	0.000375	11.38		0.24	0.24	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	2.10	0.0092	0.233
10	2.59	0.0065	0.166
16	2.94	0.0051	0.130
25	3.40	0.0037	0.095
40	4.13	0.0022	0.057
50	4.69	0.0015	0.039
60	5.28	0.0010	0.026
75	6.32	0.0005	0.013
84	7.18	0.0003	0.007
90	8.09	0.0001	0.004
95	9.15	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.69	4.69	4.69
Median, in.	0.0015	0.0015	0.0015
Median, mm	0.039	0.039	0.039
Mean, phi	4.22	5.06	4.94
Mean, in.	0.0021	0.0012	0.0013
Mean, mm	0.054	0.030	0.033
Sorting	2.756	2.119	2.127
Skewness	0.888	0.177	0.221
Kurtosis	0.254	0.662	0.987
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	1.74
Fine Sand	200	30.56
Silt	>0.005 mm	55.50
Clay	<0.005 mm	12.20
	Total	**100**

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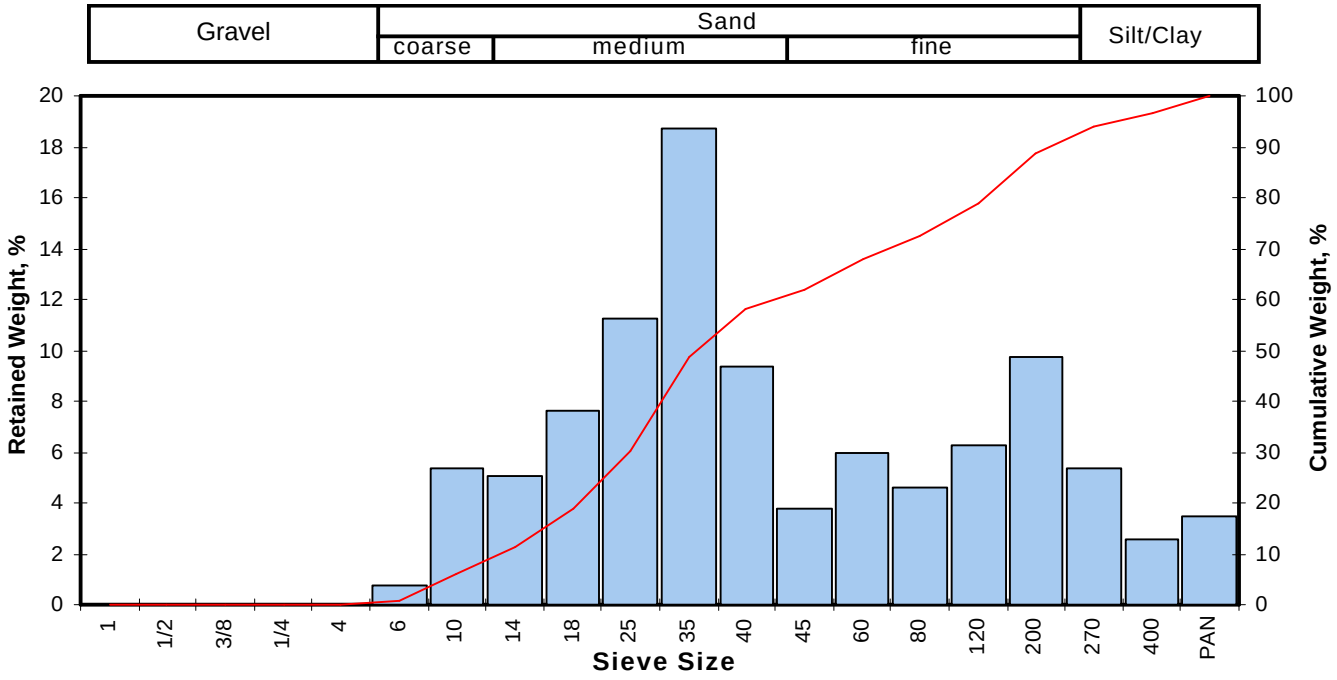
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 15
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.15	0.76	0.76
0.0787	2.000	-1.00	10	1.06	5.38	6.14
0.0557	1.414	-0.50	14	1.00	5.07	11.21
0.0394	1.000	0.00	18	1.51	7.66	18.86
0.0278	0.707	0.50	25	2.22	11.26	30.12
0.0197	0.500	1.00	35	3.69	18.71	48.83
0.0166	0.420	1.25	40	1.85	9.38	58.22
0.0139	0.354	1.50	45	0.75	3.80	62.02
0.0098	0.250	2.00	60	1.18	5.98	68.00
0.0070	0.177	2.50	80	0.91	4.61	72.62
0.0049	0.125	3.00	120	1.23	6.24	78.85
0.0029	0.074	3.75	200	1.92	9.74	88.59
0.0021	0.053	4.25	270	1.06	5.38	93.97
0.0015	0.037	4.75	400	0.51	2.59	96.55
			PAN	0.68	3.45	100.00
TOTALS				19.72	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.16	0.0879	2.232
10	-0.62	0.0605	1.536
16	-0.19	0.0448	1.138
25	0.27	0.0326	0.828
40	0.76	0.0232	0.589
50	1.03	0.0193	0.489
60	1.37	0.0153	0.388
75	2.69	0.0061	0.155
84	3.40	0.0037	0.095
90	3.88	0.0027	0.068
95	4.45	0.0018	0.046

Measure	Trask	Inman	Folk-Ward
Median, phi	1.03	1.03	1.03
Median, in.	0.0193	0.0193	0.0193
Median, mm	0.489	0.489	0.489
Mean, phi	1.03	1.60	1.41
Mean, in.	0.0193	0.0129	0.0148
Mean, mm	0.491	0.329	0.375
Sorting	2.312	1.792	1.746
Skewness	0.732	0.320	0.270
Kurtosis	0.229	0.565	0.950

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	6.14
Medium Sand	40	52.08
Fine Sand	200	30.38
Silt/Clay	<200	11.41
	Total	100

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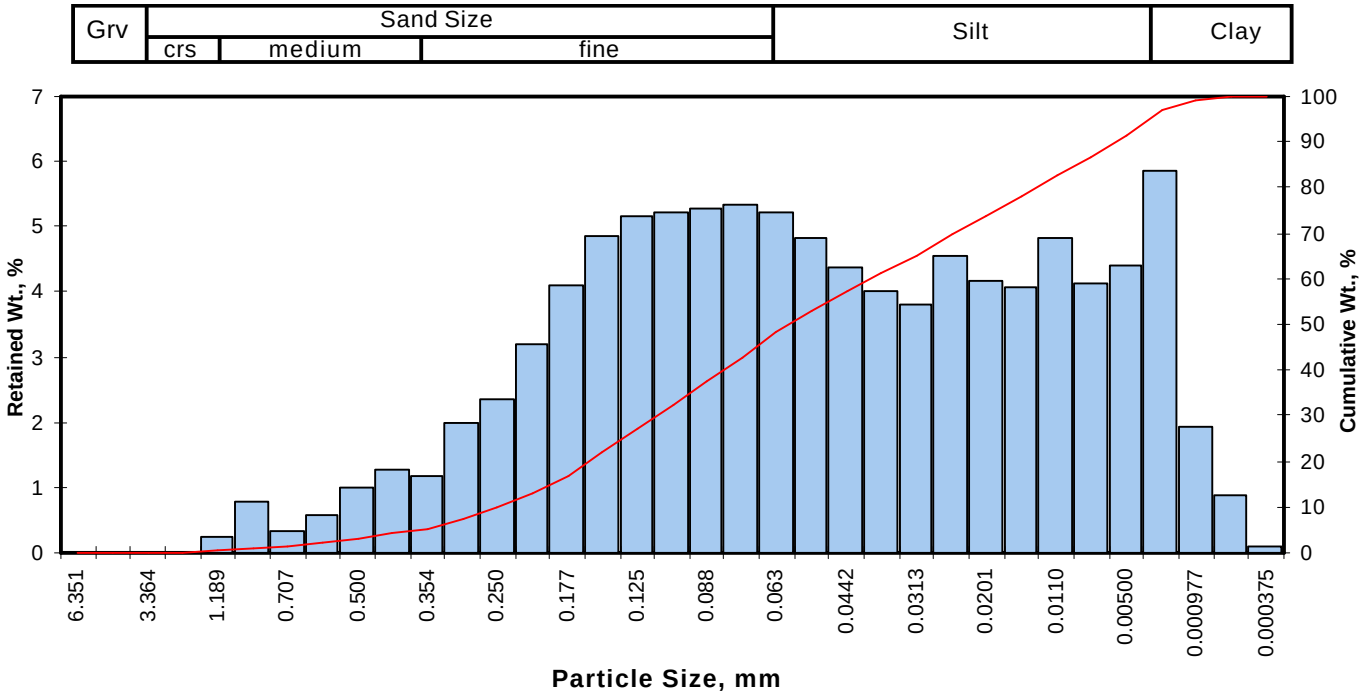
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 16
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.23	0.23	0.23
0.0331	0.841	0.25	20	0.79	0.79	1.02
0.0278	0.707	0.50	25	0.34	0.34	1.36
0.0234	0.595	0.75	30	0.58	0.58	1.94
0.0197	0.500	1.00	35	1.00	1.00	2.94
0.0166	0.420	1.25	40	1.26	1.26	4.20
0.0139	0.354	1.50	45	1.17	1.17	5.37
0.0117	0.297	1.75	50	1.99	1.99	7.36
0.0098	0.250	2.00	60	2.34	2.34	9.70
0.0083	0.210	2.25	70	3.19	3.19	12.89
0.0070	0.177	2.50	80	4.11	4.11	17.00
0.0059	0.149	2.75	100	4.86	4.86	21.86
0.0049	0.125	3.00	120	5.17	5.17	27.03
0.0041	0.105	3.25	140	5.22	5.22	32.25
0.0035	0.088	3.50	170	5.27	5.27	37.52
0.0029	0.074	3.75	200	5.34	5.34	42.86
0.0025	0.063	4.00	230	5.21	5.21	48.07
0.0021	0.053	4.25	270	4.83	4.83	52.90
0.00174	0.0442	4.50	325	4.38	4.38	57.28
0.00146	0.0372	4.75	400	4.02	4.02	61.30
0.00123	0.0313	5.00	450	3.80	3.80	65.10
0.000986	0.0250	5.32	500	4.56	4.56	69.66
0.000790	0.0201	5.64	635	4.15	4.15	73.81
0.000615	0.0156	6.00		4.07	4.07	77.88
0.000435	0.0110	6.50		4.82	4.82	82.70
0.000308	0.00781	7.00		4.13	4.13	86.83
0.000197	0.00500	7.65		4.42	4.42	91.25
0.000077	0.00195	9.00		5.85	5.85	97.10
0.000038	0.000977	10.00		1.93	1.93	99.03
0.000019	0.000488	11.00		0.88	0.88	99.91
0.000015	0.000375	11.38		0.09	0.09	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	1.42	0.0147	0.373
10	2.02	0.0097	0.246
16	2.44	0.0073	0.184
25	2.90	0.0053	0.134
40	3.62	0.0032	0.082
50	4.10	0.0023	0.058
60	4.67	0.0015	0.039
75	5.75	0.0007	0.019
84	6.66	0.0004	0.010
90	7.46	0.0002	0.006
95	8.51	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	4.10	4.10	4.10
Median, in.	0.0023	0.0023	0.0023
Median, mm	0.058	0.058	0.058
Mean, phi	3.71	4.55	4.40
Mean, in.	0.0030	0.0017	0.0019
Mean, mm	0.076	0.043	0.047
Sorting	2.679	2.109	2.129
Skewness	0.856	0.213	0.229
Kurtosis	0.240	0.681	1.022
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	4.20
Fine Sand	200	38.66
Silt	>0.005 mm	48.39
Clay	<0.005 mm	8.75
	Total	**100**

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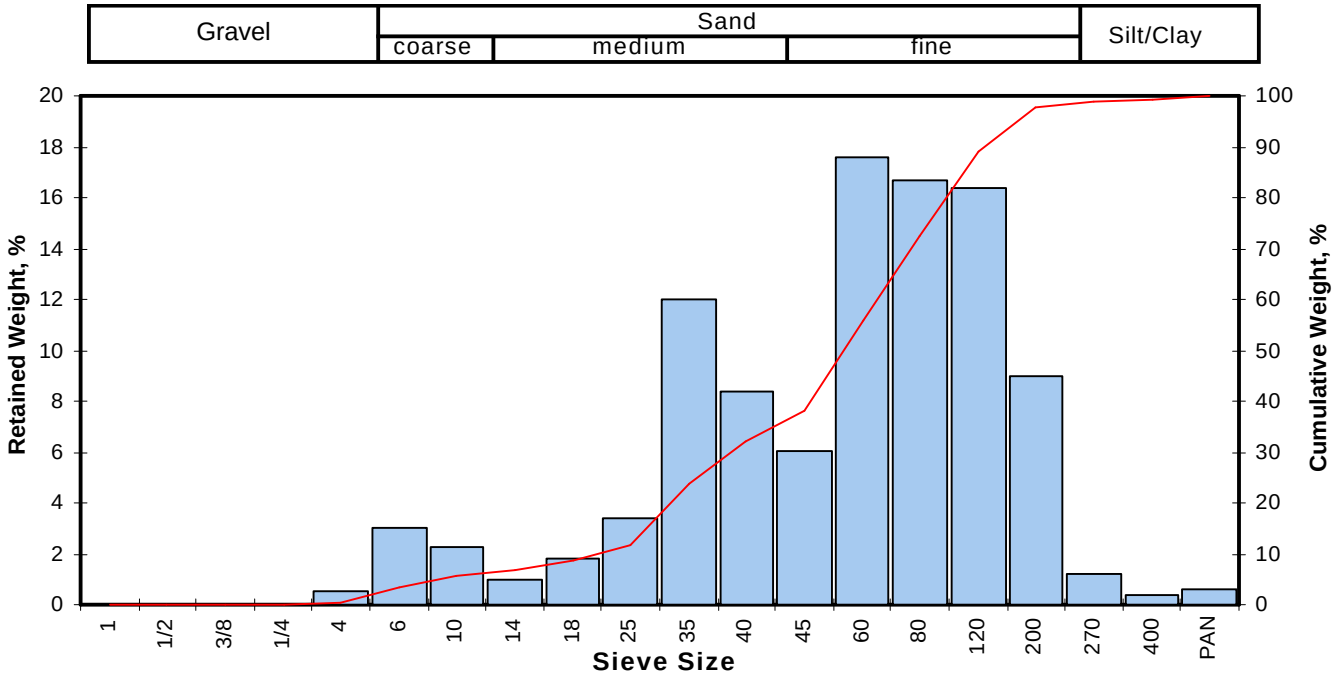
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 17
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.06	0.52	0.52
0.1324	3.364	-1.75	6	0.35	3.01	3.53
0.0787	2.000	-1.00	10	0.26	2.24	5.77
0.0557	1.414	-0.50	14	0.11	0.95	6.72
0.0394	1.000	0.00	18	0.21	1.81	8.53
0.0278	0.707	0.50	25	0.39	3.36	11.89
0.0197	0.500	1.00	35	1.39	11.97	23.86
0.0166	0.420	1.25	40	0.97	8.35	32.21
0.0139	0.354	1.50	45	0.70	6.03	38.24
0.0098	0.250	2.00	60	2.04	17.57	55.81
0.0070	0.177	2.50	80	1.94	16.71	72.52
0.0049	0.125	3.00	120	1.90	16.37	88.89
0.0029	0.074	3.75	200	1.04	8.96	97.85
0.0021	0.053	4.25	270	0.14	1.21	99.05
0.0015	0.037	4.75	400	0.04	0.34	99.40
			PAN	0.07	0.60	100.00
TOTALS				11.61	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.26	0.0942	2.392
10	0.22	0.0338	0.859
16	0.67	0.0247	0.628
25	1.03	0.0192	0.488
40	1.55	0.0134	0.342
50	1.83	0.0110	0.280
60	2.13	0.0090	0.229
75	2.58	0.0066	0.168
84	2.85	0.0055	0.139
90	3.09	0.0046	0.117
95	3.51	0.0035	0.088

Measure	Trask	Inman	Folk-Ward
Median, phi	1.83	1.83	1.83
Median, in.	0.0110	0.0110	0.0110
Median, mm	0.280	0.280	0.280
Mean, phi	1.61	1.76	1.79
Mean, in.	0.0129	0.0116	0.0114
Mean, mm	0.328	0.295	0.290
Sorting	1.706	1.089	1.267
Skewness	1.021	-0.067	-0.182
Kurtosis	0.216	1.189	1.268

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.52
Coarse Sand	10	5.25
Medium Sand	40	26.44
Fine Sand	200	65.63
Silt/Clay	<200	2.15
	Total	100

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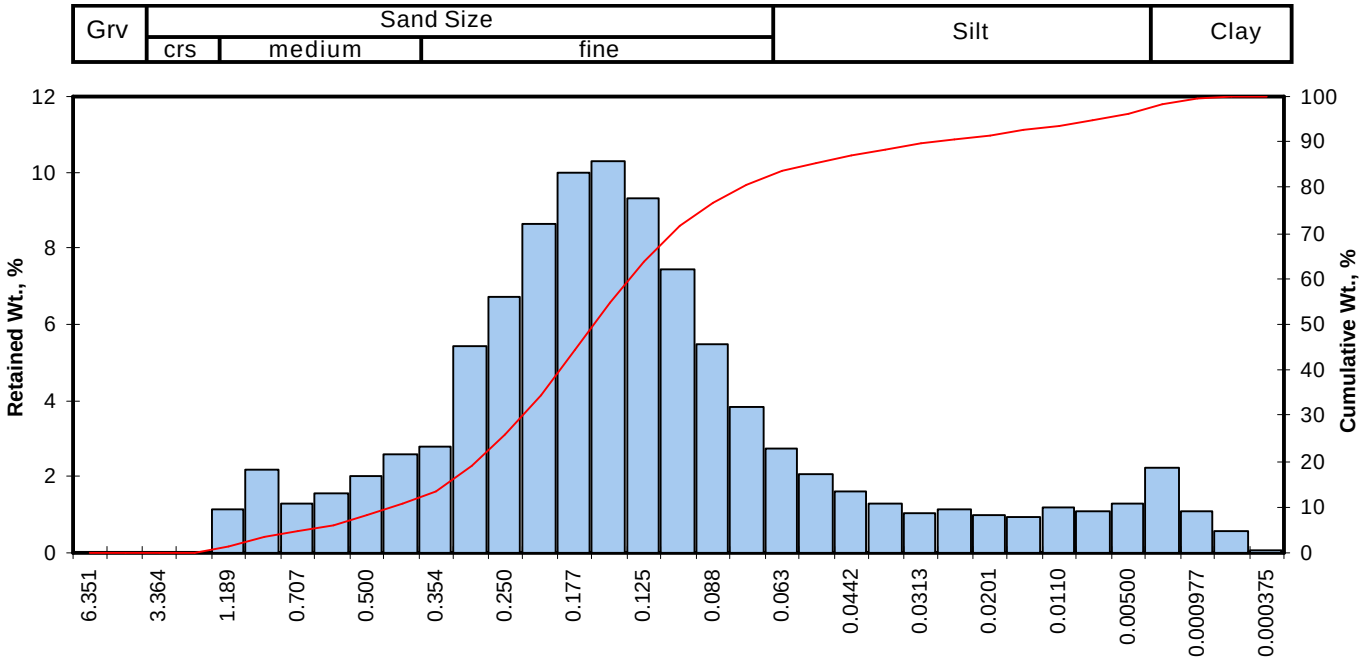
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 18
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.13	1.13	1.13
0.0331	0.841	0.25	20	2.15	2.15	3.28
0.0278	0.707	0.50	25	1.29	1.29	4.57
0.0234	0.595	0.75	30	1.56	1.56	6.13
0.0197	0.500	1.00	35	2.04	2.04	8.17
0.0166	0.420	1.25	40	2.59	2.59	10.76
0.0139	0.354	1.50	45	2.78	2.78	13.54
0.0117	0.297	1.75	50	5.45	5.45	18.99
0.0098	0.250	2.00	60	6.72	6.72	25.71
0.0083	0.210	2.25	70	8.66	8.66	34.37
0.0070	0.177	2.50	80	9.98	9.98	44.35
0.0059	0.149	2.75	100	10.30	10.30	54.65
0.0049	0.125	3.00	120	9.31	9.31	63.96
0.0041	0.105	3.25	140	7.47	7.47	71.43
0.0035	0.088	3.50	170	5.47	5.47	76.90
0.0029	0.074	3.75	200	3.85	3.85	80.75
0.0025	0.063	4.00	230	2.75	2.75	83.50
0.0021	0.053	4.25	270	2.05	2.05	85.55
0.00174	0.0442	4.50	325	1.59	1.59	87.14
0.00146	0.0372	4.75	400	1.27	1.27	88.41
0.00123	0.0313	5.00	450	1.05	1.05	89.46
0.000986	0.0250	5.32	500	1.13	1.13	90.59
0.000790	0.0201	5.64	635	0.96	0.96	91.55
0.000615	0.0156	6.00		0.93	0.93	92.48
0.000435	0.0110	6.50		1.17	1.17	93.65
0.000308	0.00781	7.00		1.10	1.10	94.75
0.000197	0.00500	7.65		1.31	1.31	96.06
0.000077	0.00195	9.00		2.21	2.21	98.27
0.000038	0.000977	10.00		1.09	1.09	99.36
0.000019	0.000488	11.00		0.58	0.58	99.94
0.000015	0.000375	11.38		0.06	0.06	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.57	0.0265	0.674
10	1.18	0.0174	0.442
16	1.61	0.0129	0.327
25	1.97	0.0100	0.255
40	2.39	0.0075	0.191
50	2.64	0.0063	0.161
60	2.89	0.0053	0.135
75	3.41	0.0037	0.094
84	4.06	0.0024	0.060
90	5.15	0.0011	0.028
95	7.12	0.0003	0.007

Measure	Trask	Inman	Folk-Ward
Median, phi	2.64	2.64	2.64
Median, in.	0.0063	0.0063	0.0063
Median, mm	0.161	0.161	0.161
Mean, phi	2.52	2.84	2.77
Mean, in.	0.0069	0.0055	0.0058
Mean, mm	0.174	0.140	0.147
Sorting	1.647	1.224	1.605
Skewness	0.962	0.163	0.266
Kurtosis	0.194	1.677	1.866
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	10.76
Fine Sand	200	69.99
Silt	>0.005 mm	15.31
Clay	<0.005 mm	3.94
	Total	**100**

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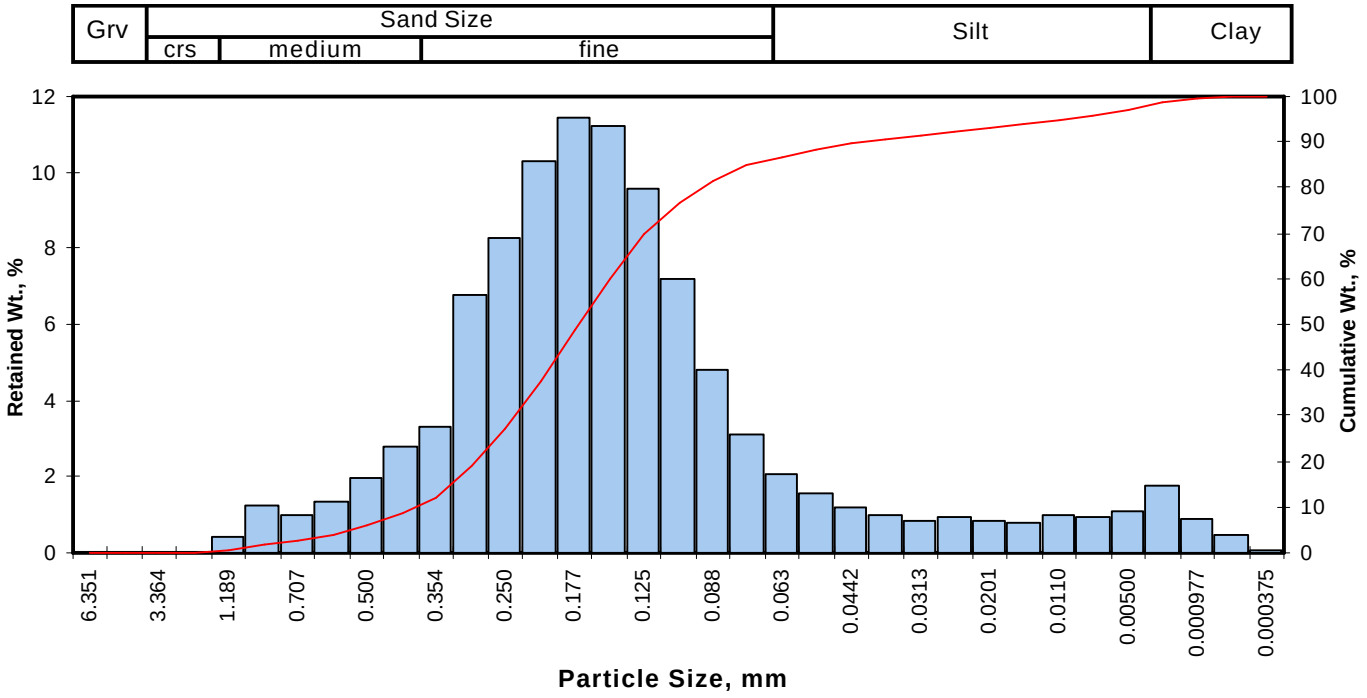
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 19
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.41	0.41	0.41
0.0331	0.841	0.25	20	1.24	1.24	1.65
0.0278	0.707	0.50	25	0.98	0.98	2.63
0.0234	0.595	0.75	30	1.34	1.34	3.97
0.0197	0.500	1.00	35	1.96	1.96	5.94
0.0166	0.420	1.25	40	2.81	2.81	8.75
0.0139	0.354	1.50	45	3.30	3.30	12.05
0.0117	0.297	1.75	50	6.76	6.77	18.82
0.0098	0.250	2.00	60	8.26	8.27	27.09
0.0083	0.210	2.25	70	10.30	10.31	37.40
0.0070	0.177	2.50	80	11.40	11.41	48.81
0.0059	0.149	2.75	100	11.20	11.21	60.02
0.0049	0.125	3.00	120	9.58	9.59	69.61
0.0041	0.105	3.25	140	7.16	7.17	76.78
0.0035	0.088	3.50	170	4.83	4.84	81.62
0.0029	0.074	3.75	200	3.11	3.11	84.73
0.0025	0.063	4.00	230	2.08	2.08	86.81
0.0021	0.053	4.25	270	1.53	1.53	88.34
0.00174	0.0442	4.50	325	1.21	1.21	89.55
0.00146	0.0372	4.75	400	0.99	0.99	90.55
0.00123	0.0313	5.00	450	0.84	0.84	91.39
0.000986	0.0250	5.32	500	0.93	0.93	92.32
0.000790	0.0201	5.64	635	0.81	0.81	93.13
0.000615	0.0156	6.00		0.79	0.79	93.92
0.000435	0.0110	6.50		0.99	0.99	94.91
0.000308	0.00781	7.00		0.91	0.91	95.82
0.000197	0.00500	7.65		1.06	1.06	96.88
0.000077	0.00195	9.00		1.76	1.76	98.64
0.000038	0.000977	10.00		0.86	0.86	99.50
0.000019	0.000488	11.00		0.45	0.45	99.95
0.000015	0.000375	11.38		0.05	0.05	100.00
TOTALS				**99.90**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.88	0.0214	0.543
10	1.34	0.0155	0.394
16	1.65	0.0126	0.320
25	1.94	0.0103	0.261
40	2.31	0.0080	0.202
50	2.53	0.0068	0.174
60	2.75	0.0059	0.149
75	3.19	0.0043	0.110
84	3.69	0.0030	0.077
90	4.61	0.0016	0.041
95	6.55	0.0004	0.011

Measure	Trask	Inman	Folk-Ward
Median, phi	2.53	2.53	2.53
Median, in.	0.0068	0.0068	0.0068
Median, mm	0.174	0.174	0.174
Mean, phi	2.43	2.67	2.62
Mean, in.	0.0073	0.0062	0.0064
Mean, mm	0.185	0.157	0.163
Sorting	1.543	1.023	1.370
Skewness	0.975	0.139	0.279
Kurtosis	0.215	1.771	1.857
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	8.75
Fine Sand	200	75.98
Silt	>0.005 mm	12.15
Clay	<0.005 mm	3.12
	Total	**100**

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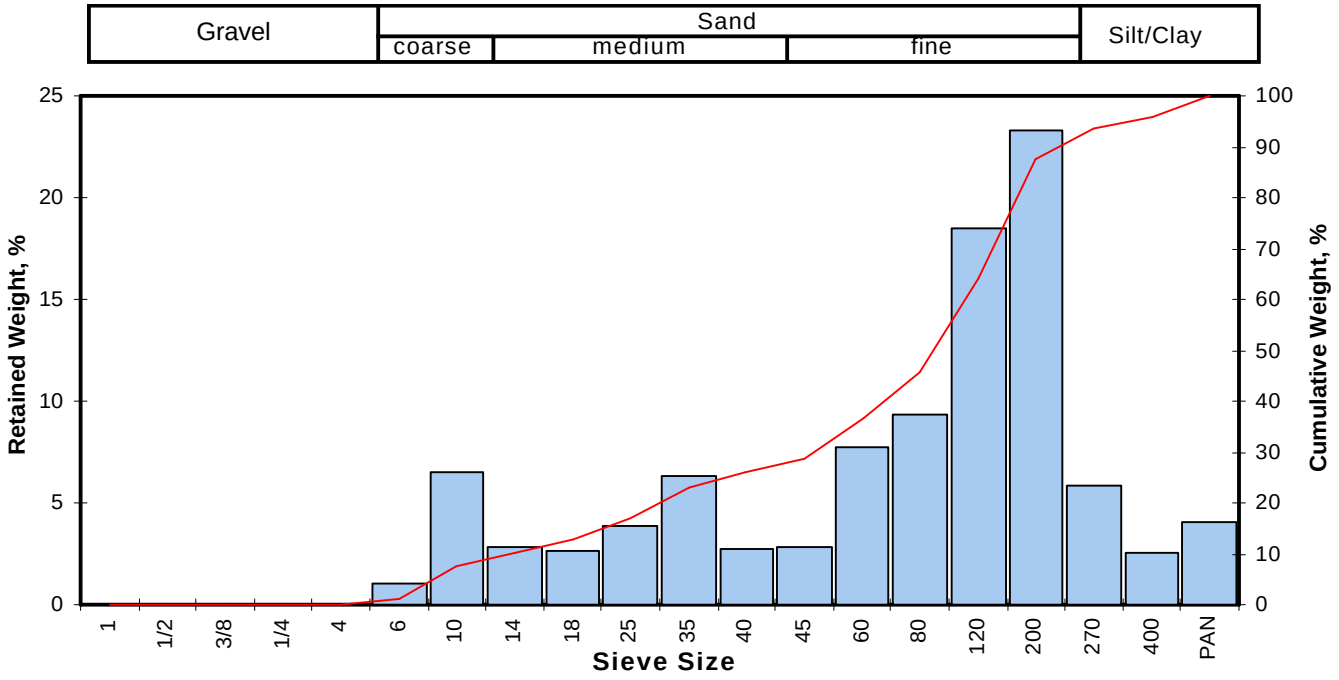
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 20
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.10	1.05	1.05
0.0787	2.000	-1.00	10	0.62	6.50	7.55
0.0557	1.414	-0.50	14	0.27	2.83	10.38
0.0394	1.000	0.00	18	0.25	2.62	13.00
0.0278	0.707	0.50	25	0.37	3.88	16.88
0.0197	0.500	1.00	35	0.60	6.29	23.17
0.0166	0.420	1.25	40	0.26	2.73	25.89
0.0139	0.354	1.50	45	0.27	2.83	28.72
0.0098	0.250	2.00	60	0.74	7.76	36.48
0.0070	0.177	2.50	80	0.89	9.33	45.81
0.0049	0.125	3.00	120	1.76	18.45	64.26
0.0029	0.074	3.75	200	2.22	23.27	87.53
0.0021	0.053	4.25	270	0.56	5.87	93.40
0.0015	0.037	4.75	400	0.24	2.52	95.91
			PAN	0.39	4.09	100.00
TOTALS				9.54	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.29	0.0965	2.452
10	-0.57	0.0583	1.481
16	0.39	0.0301	0.765
25	1.17	0.0175	0.445
40	2.19	0.0086	0.219
50	2.61	0.0064	0.163
60	2.88	0.0053	0.135
75	3.35	0.0039	0.098
84	3.64	0.0032	0.080
90	3.96	0.0025	0.064
95	4.57	0.0017	0.042

Measure	Trask	Inman	Folk-Ward
Median, phi	2.61	2.61	2.61
Median, in.	0.0064	0.0064	0.0064
Median, mm	0.163	0.163	0.163
Mean, phi	1.88	2.01	2.21
Mean, in.	0.0107	0.0098	0.0085
Mean, mm	0.272	0.248	0.216
Sorting	2.127	1.625	1.701
Skewness	1.280	-0.371	-0.352
Kurtosis	0.122	0.804	1.103

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	7.55
Medium Sand	40	18.34
Fine Sand	200	61.64
Silt/Clay	<200	12.47
	Total	100

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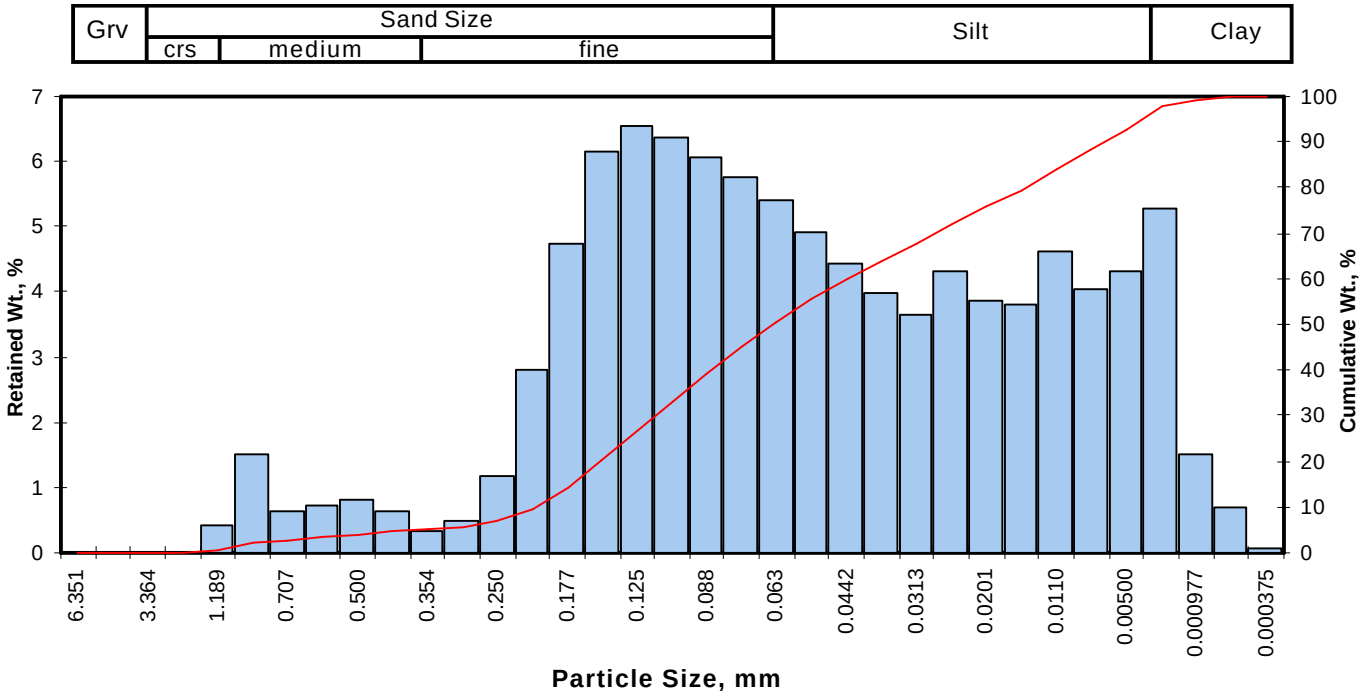
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 21
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.43	0.43	0.43
0.0331	0.841	0.25	20	1.51	1.51	1.94
0.0278	0.707	0.50	25	0.63	0.63	2.57
0.0234	0.595	0.75	30	0.71	0.71	3.28
0.0197	0.500	1.00	35	0.81	0.81	4.09
0.0166	0.420	1.25	40	0.64	0.64	4.73
0.0139	0.354	1.50	45	0.32	0.32	5.05
0.0117	0.297	1.75	50	0.47	0.47	5.52
0.0098	0.250	2.00	60	1.17	1.17	6.69
0.0083	0.210	2.25	70	2.81	2.81	9.50
0.0070	0.177	2.50	80	4.73	4.73	14.23
0.0059	0.149	2.75	100	6.15	6.15	20.38
0.0049	0.125	3.00	120	6.56	6.56	26.94
0.0041	0.105	3.25	140	6.38	6.38	33.32
0.0035	0.088	3.50	170	6.06	6.06	39.38
0.0029	0.074	3.75	200	5.76	5.76	45.14
0.0025	0.063	4.00	230	5.40	5.40	50.53
0.0021	0.053	4.25	270	4.93	4.93	55.46
0.00174	0.0442	4.50	325	4.44	4.44	59.90
0.00146	0.0372	4.75	400	3.99	3.99	63.89
0.00123	0.0313	5.00	450	3.66	3.66	67.55
0.000986	0.0250	5.32	500	4.30	4.30	71.85
0.000790	0.0201	5.64	635	3.86	3.86	75.71
0.000615	0.0156	6.00		3.80	3.80	79.51
0.000435	0.0110	6.50		4.61	4.61	84.12
0.000308	0.00781	7.00		4.04	4.04	88.16
0.000197	0.00500	7.65		4.30	4.30	92.46
0.000077	0.00195	9.00		5.28	5.28	97.74
0.000038	0.000977	10.00		1.51	1.51	99.25
0.000019	0.000488	11.00		0.68	0.68	99.93
0.000015	0.000375	11.38		0.07	0.07	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	1.46	0.0143	0.363
10	2.28	0.0081	0.206
16	2.57	0.0066	0.168
25	2.93	0.0052	0.132
40	3.53	0.0034	0.087
50	3.98	0.0025	0.064
60	4.51	0.0017	0.044
75	5.58	0.0008	0.021
84	6.49	0.0004	0.011
90	7.28	0.0003	0.006
95	8.30	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.98	3.98	3.98
Median, in.	0.0025	0.0025	0.0025
Median, mm	0.064	0.064	0.064
Mean, phi	3.71	4.53	4.34
Mean, in.	0.0030	0.0017	0.0019
Mean, mm	0.076	0.043	0.049
Sorting	2.509	1.957	2.014
Skewness	0.825	0.283	0.274
Kurtosis	0.277	0.746	1.055

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	4.73
Fine Sand	200	40.41
Silt	>0.005 mm	47.33
Clay	<0.005 mm	7.54
	Total	**100**

Phone: (562) 907-3607
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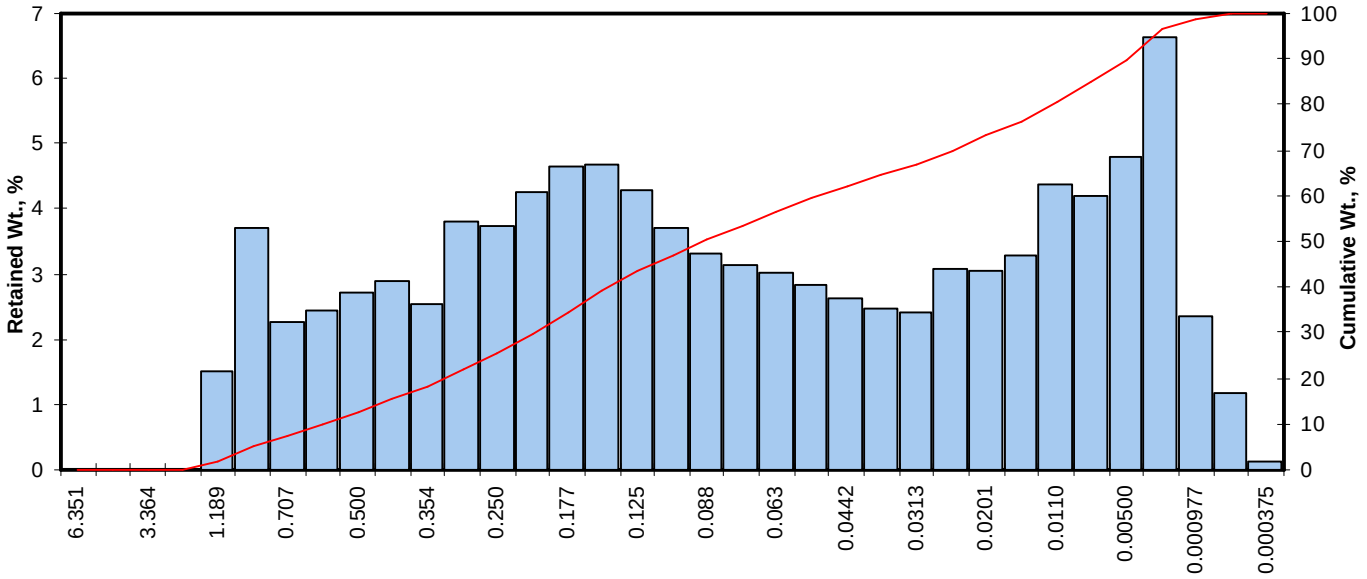
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 22
Depth, ft: N/A

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.51	1.51	1.51
0.0331	0.841	0.25	20	3.70	3.70	5.21
0.0278	0.707	0.50	25	2.26	2.26	7.47
0.0234	0.595	0.75	30	2.45	2.45	9.92
0.0197	0.500	1.00	35	2.72	2.72	12.64
0.0166	0.420	1.25	40	2.90	2.90	15.54
0.0139	0.354	1.50	45	2.54	2.54	18.08
0.0117	0.297	1.75	50	3.81	3.81	21.89
0.0098	0.250	2.00	60	3.73	3.73	25.62
0.0083	0.210	2.25	70	4.26	4.26	29.88
0.0070	0.177	2.50	80	4.66	4.66	34.54
0.0059	0.149	2.75	100	4.69	4.69	39.23
0.0049	0.125	3.00	120	4.27	4.27	43.50
0.0041	0.105	3.25	140	3.70	3.70	47.20
0.0035	0.088	3.50	170	3.31	3.31	50.50
0.0029	0.074	3.75	200	3.13	3.13	53.63
0.0025	0.063	4.00	230	3.01	3.01	56.64
0.0021	0.053	4.25	270	2.83	2.83	59.47
0.00174	0.0442	4.50	325	2.62	2.62	62.09
0.00146	0.0372	4.75	400	2.46	2.46	64.55
0.00123	0.0313	5.00	450	2.40	2.40	66.95
0.000986	0.0250	5.32	500	3.07	3.07	70.02
0.000790	0.0201	5.64	635	3.06	3.06	73.08
0.000615	0.0156	6.00		3.28	3.28	76.36
0.000435	0.0110	6.50		4.38	4.38	80.74
0.000308	0.00781	7.00		4.19	4.19	84.93
0.000197	0.00500	7.65		4.79	4.79	89.72
0.000077	0.00195	9.00		6.65	6.65	96.37
0.000038	0.000977	10.00		2.34	2.34	98.71
0.000019	0.000488	11.00		1.17	1.17	99.88
0.000015	0.000375	11.38		0.12	0.12	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.22	0.0338	0.858
10	0.76	0.0233	0.592
16	1.30	0.0160	0.407
25	1.96	0.0101	0.257
40	2.80	0.0057	0.144
50	3.46	0.0036	0.091
60	4.30	0.0020	0.051
75	5.85	0.0007	0.017
84	6.89	0.0003	0.008
90	7.70	0.0002	0.005
95	8.72	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	3.46	3.46	3.46
Median, in.	0.0036	0.0036	0.0036
Median, mm	0.091	0.091	0.091
Mean, phi	2.86	4.09	3.88
Mean, in.	0.0054	0.0023	0.0027
Mean, mm	0.137	0.059	0.068
Sorting	3.853	2.797	2.686
Skewness	0.736	0.225	0.231
Kurtosis	0.204	0.519	0.895
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	15.54
Fine Sand	200	38.10
Silt	>0.005 mm	36.09
Clay	<0.005 mm	10.28
	Total	**100**

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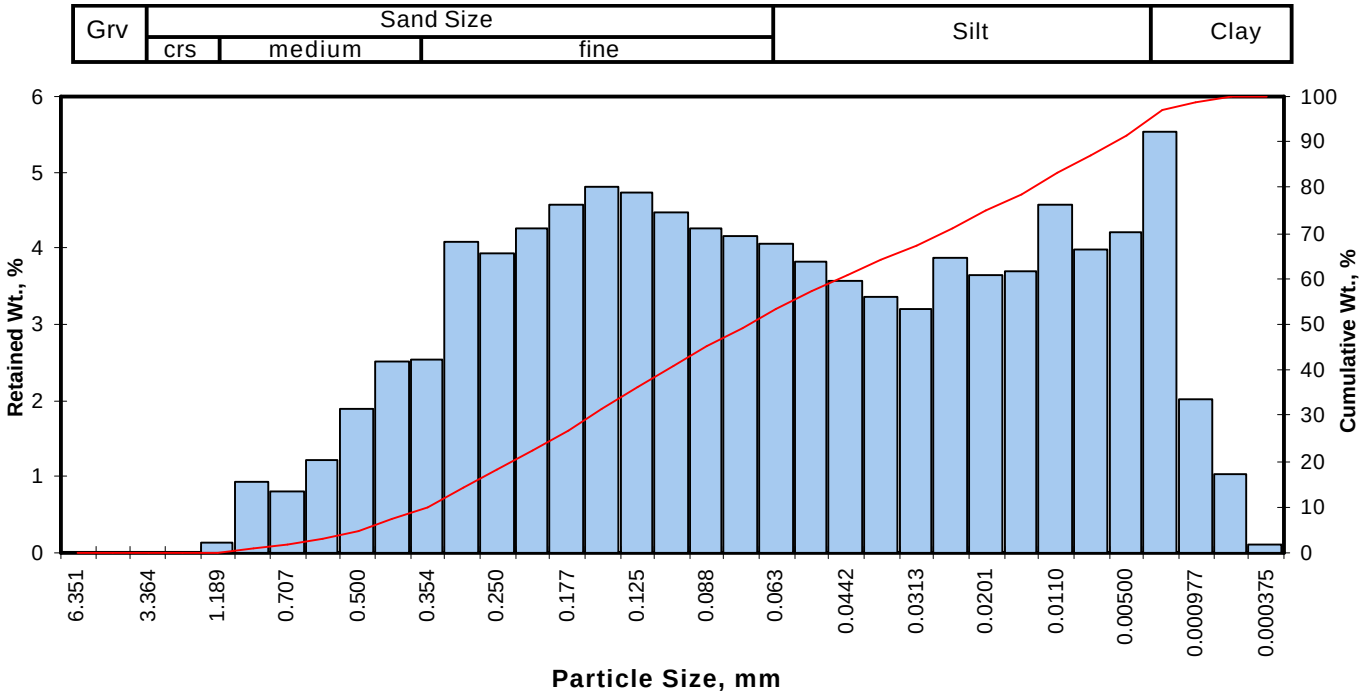
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 23
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.12	0.12	0.12
0.0331	0.841	0.25	20	0.93	0.93	1.05
0.0278	0.707	0.50	25	0.79	0.79	1.84
0.0234	0.595	0.75	30	1.21	1.21	3.05
0.0197	0.500	1.00	35	1.88	1.88	4.93
0.0166	0.420	1.25	40	2.52	2.52	7.45
0.0139	0.354	1.50	45	2.53	2.53	9.98
0.0117	0.297	1.75	50	4.08	4.08	14.06
0.0098	0.250	2.00	60	3.93	3.93	17.99
0.0083	0.210	2.25	70	4.27	4.27	22.26
0.0070	0.177	2.50	80	4.58	4.58	26.84
0.0059	0.149	2.75	100	4.80	4.80	31.64
0.0049	0.125	3.00	120	4.72	4.72	36.36
0.0041	0.105	3.25	140	4.47	4.47	40.83
0.0035	0.088	3.50	170	4.28	4.28	45.11
0.0029	0.074	3.75	200	4.17	4.17	49.28
0.0025	0.063	4.00	230	4.05	4.05	53.33
0.0021	0.053	4.25	270	3.82	3.82	57.15
0.00174	0.0442	4.50	325	3.58	3.58	60.73
0.00146	0.0372	4.75	400	3.36	3.36	64.09
0.00123	0.0313	5.00	450	3.20	3.20	67.29
0.000986	0.0250	5.32	500	3.89	3.89	71.18
0.000790	0.0201	5.64	635	3.65	3.65	74.83
0.000615	0.0156	6.00		3.71	3.71	78.54
0.000435	0.0110	6.50		4.57	4.57	83.11
0.000308	0.00781	7.00		3.99	3.99	87.10
0.000197	0.00500	7.65		4.22	4.22	91.32
0.000077	0.00195	9.00		5.53	5.53	96.85
0.000038	0.000977	10.00		2.01	2.01	98.86
0.000019	0.000488	11.00		1.03	1.03	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	1.01	0.0196	0.498
10	1.50	0.0139	0.353
16	1.87	0.0107	0.273
25	2.40	0.0075	0.190
40	3.20	0.0043	0.109
50	3.79	0.0028	0.072
60	4.45	0.0018	0.046
75	5.66	0.0008	0.020
84	6.61	0.0004	0.010
90	7.44	0.0002	0.006
95	8.55	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	3.79	3.79	3.79
Median, in.	0.0028	0.0028	0.0028
Median, mm	0.072	0.072	0.072
Mean, phi	3.26	4.24	4.09
Mean, in.	0.0041	0.0021	0.0023
Mean, mm	0.105	0.053	0.059
Sorting	3.092	2.369	2.327
Skewness	0.851	0.189	0.225
Kurtosis	0.244	0.591	0.949

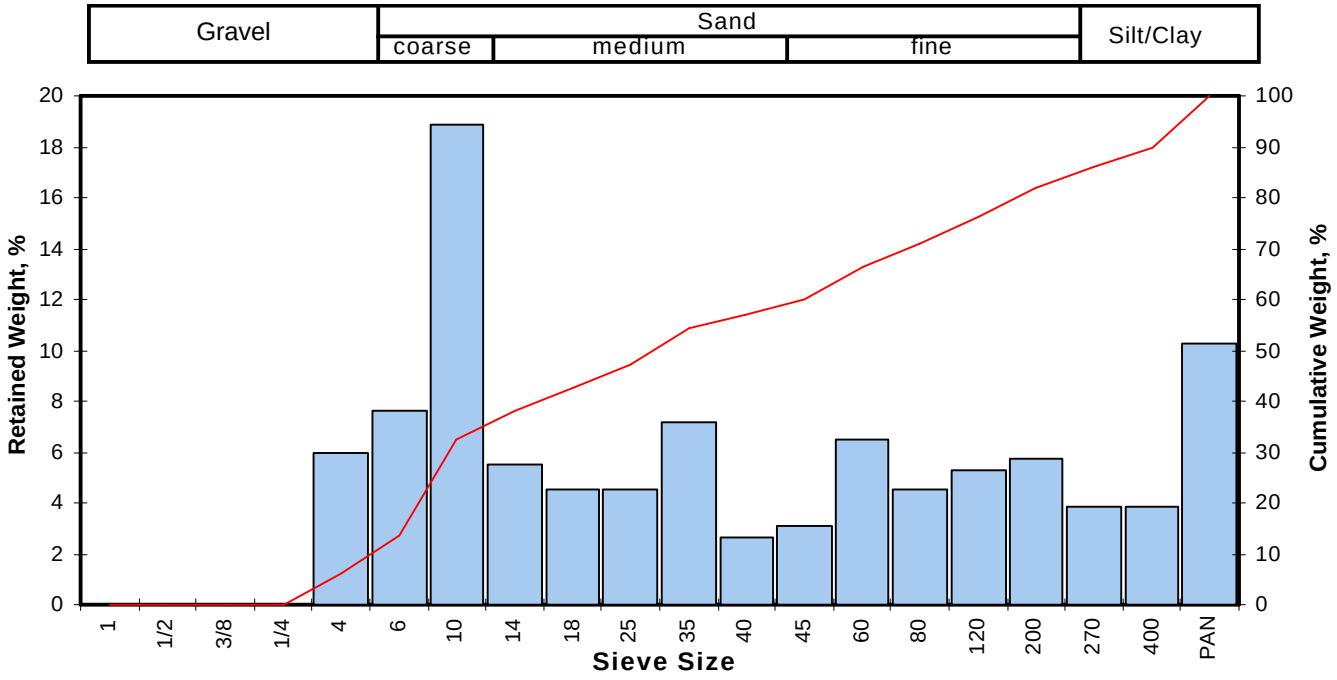
Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	7.45
Fine Sand	200	41.83
Silt	>0.005 mm	42.04
Clay	<0.005 mm	8.68
	Total	**100**

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 24
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.25	5.98	5.98
0.1324	3.364	-1.75	6	0.32	7.66	13.64
0.0787	2.000	-1.00	10	0.79	18.90	32.54
0.0557	1.414	-0.50	14	0.23	5.50	38.04
0.0394	1.000	0.00	18	0.19	4.55	42.58
0.0278	0.707	0.50	25	0.19	4.55	47.13
0.0197	0.500	1.00	35	0.30	7.18	54.31
0.0166	0.420	1.25	40	0.11	2.63	56.94
0.0139	0.354	1.50	45	0.13	3.11	60.05
0.0098	0.250	2.00	60	0.27	6.46	66.51
0.0070	0.177	2.50	80	0.19	4.55	71.05
0.0049	0.125	3.00	120	0.22	5.26	76.32
0.0029	0.074	3.75	200	0.24	5.74	82.06
0.0021	0.053	4.25	270	0.16	3.83	85.89
0.0015	0.037	4.75	400	0.16	3.83	89.71
			PAN	0.43	10.29	100.00
TOTALS				4.18	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-2.32	0.1964	4.988
10	-1.99	0.1561	3.965
16	-1.66	0.1241	3.152
25	-1.30	0.0969	2.461
40	-0.28	0.0479	1.218
50	0.70	0.0242	0.616
60	1.50	0.0140	0.354
75	2.88	0.0054	0.136
84	4.00	0.0025	0.062
90	4.62	0.0016	0.041
95	2.31	0.0079	0.202

Measure	Trask	Inman	Folk-Ward
Median, phi	0.70	0.70	0.70
Median, in.	0.0242	0.0242	0.0242
Median, mm	0.616	0.616	0.616
Mean, phi	-0.38	1.17	1.02
Mean, in.	0.0511	0.0175	0.0195
Mean, mm	1.298	0.443	0.495
Sorting	4.249	2.830	2.116
Skewness	0.941	0.167	-0.069
Kurtosis	0.296	-0.182	0.454

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	5.98
Coarse Sand	10	26.56
Medium Sand	40	24.40
Fine Sand	200	25.12
Silt/Clay	<200	17.94
	Total	100

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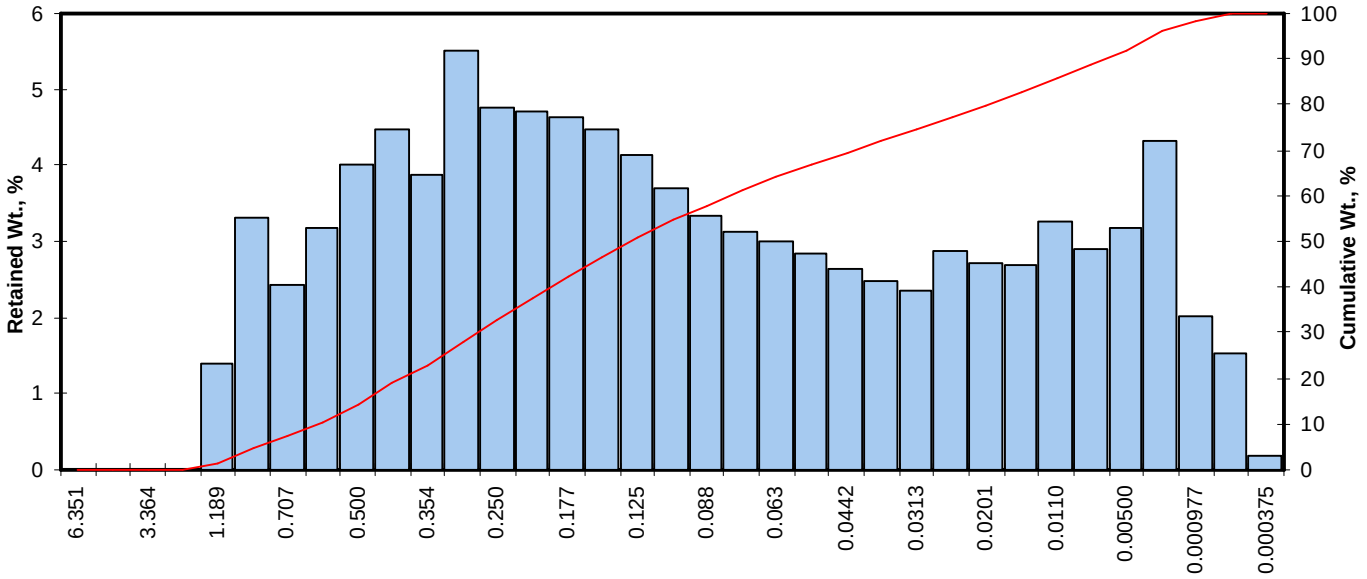
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 25
Depth, ft: N/A

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	1.39	1.39	1.39
0.0331	0.841	0.25	20	3.30	3.30	4.69
0.0278	0.707	0.50	25	2.43	2.43	7.12
0.0234	0.595	0.75	30	3.18	3.18	10.30
0.0197	0.500	1.00	35	4.01	4.01	14.31
0.0166	0.420	1.25	40	4.48	4.48	18.79
0.0139	0.354	1.50	45	3.89	3.89	22.68
0.0117	0.297	1.75	50	5.50	5.50	28.18
0.0098	0.250	2.00	60	4.75	4.75	32.93
0.0083	0.210	2.25	70	4.70	4.70	37.63
0.0070	0.177	2.50	80	4.62	4.62	42.25
0.0059	0.149	2.75	100	4.48	4.48	46.73
0.0049	0.125	3.00	120	4.14	4.14	50.87
0.0041	0.105	3.25	140	3.70	3.70	54.57
0.0035	0.088	3.50	170	3.34	3.34	57.91
0.0029	0.074	3.75	200	3.14	3.14	61.05
0.0025	0.063	4.00	230	3.01	3.01	64.06
0.0021	0.053	4.25	270	2.84	2.84	66.90
0.00174	0.0442	4.50	325	2.65	2.65	69.55
0.00146	0.0372	4.75	400	2.47	2.47	72.02
0.00123	0.0313	5.00	450	2.35	2.35	74.37
0.000986	0.0250	5.32	500	2.87	2.87	77.24
0.000790	0.0201	5.64	635	2.71	2.71	79.95
0.000615	0.0156	6.00		2.70	2.70	82.65
0.000435	0.0110	6.50		3.26	3.26	85.91
0.000308	0.00781	7.00		2.89	2.89	88.80
0.000197	0.00500	7.65		3.17	3.17	91.97
0.000077	0.00195	9.00		4.32	4.32	96.29
0.000038	0.000977	10.00		2.01	2.01	98.30
0.000019	0.000488	11.00		1.52	1.52	99.82
0.000015	0.000375	11.38		0.18	0.18	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.28	0.0324	0.823
10	0.73	0.0238	0.604
16	1.09	0.0184	0.468
25	1.61	0.0129	0.329
40	2.38	0.0076	0.192
50	2.95	0.0051	0.130
60	3.67	0.0031	0.079
75	5.07	0.0012	0.030
84	6.21	0.0005	0.014
90	7.24	0.0003	0.007
95	8.60	0.0001	0.003

Measure	Trask	Inman	Folk-Ward
Median, phi	2.95	2.95	2.95
Median, in.	0.0051	0.0051	0.0051
Median, mm	0.130	0.130	0.130
Mean, phi	2.48	3.65	3.42
Mean, in.	0.0071	0.0031	0.0037
Mean, mm	0.179	0.080	0.094
Sorting	3.323	2.556	2.538
Skewness	0.763	0.275	0.317
Kurtosis	0.250	0.626	0.983
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	18.79
Fine Sand	200	42.26
Silt	>0.005 mm	30.92
Clay	<0.005 mm	8.03
	Total	**100**

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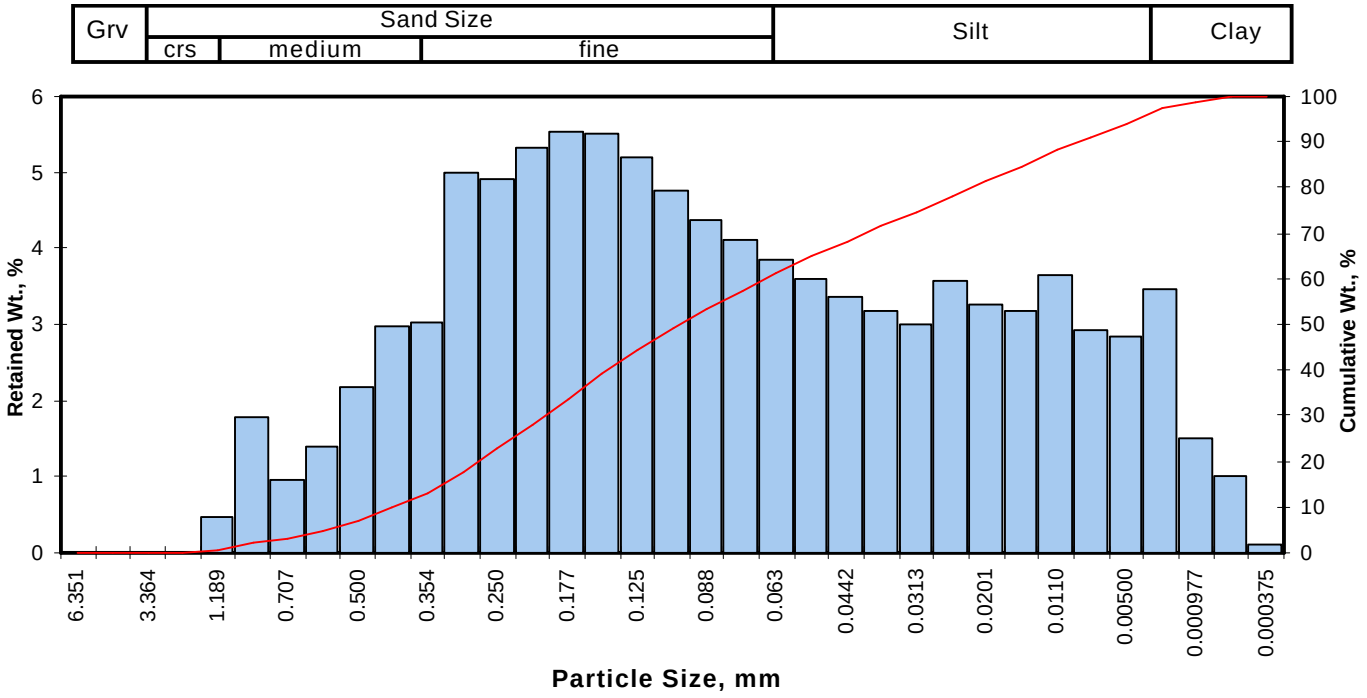
PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: Calscience
Project: N/A
Project No: 07-01-1069

PTS File No: 37052
Sample ID: Sample 26
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.47	0.47	0.47
0.0331	0.841	0.25	20	1.79	1.79	2.26
0.0278	0.707	0.50	25	0.96	0.96	3.22
0.0234	0.595	0.75	30	1.39	1.39	4.61
0.0197	0.500	1.00	35	2.18	2.18	6.79
0.0166	0.420	1.25	40	2.97	2.97	9.76
0.0139	0.354	1.50	45	3.02	3.02	12.78
0.0117	0.297	1.75	50	4.99	4.99	17.77
0.0098	0.250	2.00	60	4.91	4.91	22.68
0.0083	0.210	2.25	70	5.33	5.33	28.01
0.0070	0.177	2.50	80	5.54	5.54	33.55
0.0059	0.149	2.75	100	5.52	5.52	39.07
0.0049	0.125	3.00	120	5.19	5.19	44.26
0.0041	0.105	3.25	140	4.75	4.75	49.01
0.0035	0.088	3.50	170	4.37	4.37	53.38
0.0029	0.074	3.75	200	4.10	4.10	57.48
0.0025	0.063	4.00	230	3.86	3.86	61.34
0.0021	0.053	4.25	270	3.59	3.59	64.93
0.00174	0.0442	4.50	325	3.37	3.37	68.30
0.00146	0.0372	4.75	400	3.18	3.18	71.48
0.00123	0.0313	5.00	450	3.00	3.00	74.48
0.000986	0.0250	5.32	500	3.58	3.58	78.06
0.000790	0.0201	5.64	635	3.27	3.27	81.33
0.000615	0.0156	6.00		3.19	3.19	84.52
0.000435	0.0110	6.50		3.64	3.64	88.16
0.000308	0.00781	7.00		2.91	2.91	91.07
0.000197	0.00500	7.65		2.85	2.85	93.92
0.000077	0.00195	9.00		3.47	3.47	97.39
0.000038	0.000977	10.00		1.50	1.50	98.89
0.000019	0.000488	11.00		1.00	1.00	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than

Weight percent	Phi Value	Particle Size Inches	Particle Size Millimeters
5	0.79	0.0227	0.576
10	1.27	0.0163	0.415
16	1.66	0.0124	0.316
25	2.11	0.0091	0.232
40	2.79	0.0057	0.144
50	3.31	0.0040	0.101
60	3.91	0.0026	0.066
75	5.05	0.0012	0.030
84	5.94	0.0006	0.016
90	6.82	0.0003	0.009
95	8.07	0.0001	0.004

Measure	Trask	Inman	Folk-Ward
Median, phi	3.31	3.31	3.31
Median, in.	0.0040	0.0040	0.0040
Median, mm	0.101	0.101	0.101
Mean, phi	2.93	3.80	3.64
Mean, in.	0.0052	0.0028	0.0032
Mean, mm	0.131	0.072	0.080
Sorting	2.768	2.140	2.172
Skewness	0.829	0.231	0.270
Kurtosis	0.248	0.699	1.015

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	9.76
Fine Sand	200	47.72
Silt	>0.005 mm	36.44
Clay	<0.005 mm	6.08
	Total	**100**

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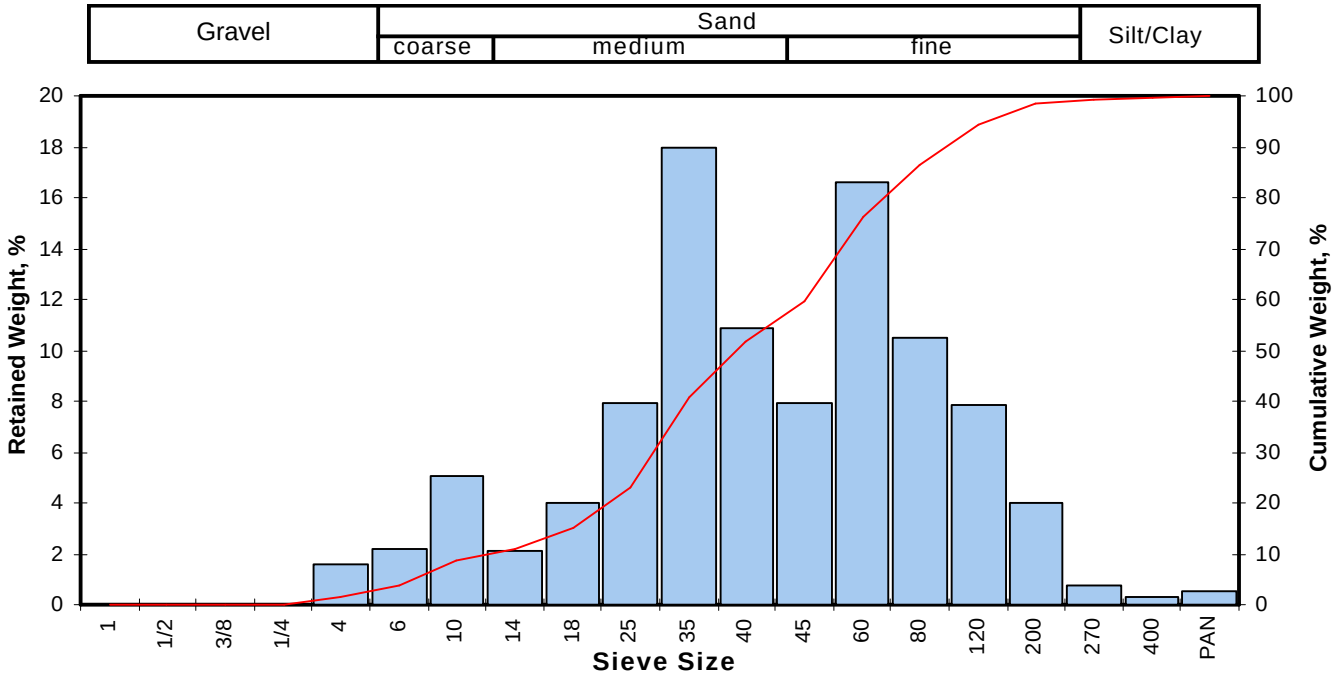
Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Calscience	**PTS File No:**	37052
Project:	N/A	**Sample ID:**	Sample 17B
Project No:	07-01-1069	**Depth, ft:**	N/A



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.21	1.58	1.58
0.1324	3.364	-1.75	6	0.29	2.19	3.77
0.0787	2.000	-1.00	10	0.67	5.05	8.82
0.0557	1.414	-0.50	14	0.28	2.11	10.93
0.0394	1.000	0.00	18	0.53	3.99	14.92
0.0278	0.707	0.50	25	1.05	7.91	22.83
0.0197	0.500	1.00	35	2.38	17.94	40.77
0.0166	0.420	1.25	40	1.44	10.85	51.62
0.0139	0.354	1.50	45	1.05	7.91	59.53
0.0098	0.250	2.00	60	2.20	16.58	76.11
0.0070	0.177	2.50	80	1.39	10.47	86.59
0.0049	0.125	3.00	120	1.04	7.84	94.42
0.0029	0.074	3.75	200	0.53	3.99	98.42
0.0021	0.053	4.25	270	0.10	0.75	99.17
0.0015	0.037	4.75	400	0.04	0.30	99.47
			PAN	0.07	0.53	100.00
TOTALS				13.27	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.57	0.1166	2.963
10	-0.72	0.0648	1.647
16	0.07	0.0376	0.954
25	0.56	0.0267	0.678
40	0.98	0.0200	0.507
50	1.21	0.0170	0.431
60	1.51	0.0138	0.350
75	1.97	0.0101	0.256
84	2.38	0.0076	0.193
90	2.72	0.0060	0.152
95	3.11	0.0046	0.116

Measure	Trask	Inman	Folk-Ward
Median, phi	1.21	1.21	1.21
Median, in.	0.0170	0.0170	0.0170
Median, mm	0.431	0.431	0.431
Mean, phi	1.10	1.22	1.22
Mean, in.	0.0184	0.0169	0.0169
Mean, mm	0.467	0.429	0.430
Sorting	1.628	1.154	1.285
Skewness	0.965	0.008	-0.090
Kurtosis	0.141	1.025	1.363

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	1.58
Coarse Sand	10	7.23
Medium Sand	40	42.80
Fine Sand	200	46.80
Silt/Clay	<200	1.58
	Total	100

Phone: (562) 907-3607
Fax: (562) 907-3610

Calscience Environmental Laboratories, Inc.

October 24, 2007

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 07-10-1324**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/17/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 10/17/07
Work Order No: 07-10-1324
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
64SW-101707	**07-10-1324-1**	**10/17/07**	**Aqueous**	**ICP 5300**	**10/18/07**	**10/19/07**	**071018L03**

Comment(s): -Mercury was analyzed on 10/18/2007 2:11:53 PM with batch 071018L03

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	0.0119	0.0100	1		Molybdenum	0.00685	0.00500	1	
Barium	0.0413	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	0.0126	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	0.00500	0.00500	1	
Copper	0.177	0.00500	1		Zinc	0.463	0.0100	1	
Lead	ND	0.0100	1						

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
145SW-101707	**07-10-1324-2**	**10/17/07**	**Aqueous**	**ICP 5300**	**10/18/07**	**10/19/07**	**071018L03**

Comment(s): -Mercury was analyzed on 10/18/2007 2:14:08 PM with batch 071018L03

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	0.0332	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	0.00505	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0410	0.00500	1		Zinc	1.53	0.0100	1	
Lead	ND	0.0100	1						

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
172SW-101707	**07-10-1324-3**	**10/17/07**	**Aqueous**	**ICP 5300**	**10/18/07**	**10/19/07**	**071018L03**

Comment(s): -Mercury was analyzed on 10/18/2007 2:16:25 PM with batch 071018L03

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	0.0246	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	0.00573	0.00500	1	
Copper	0.0723	0.00500	1		Zinc	0.267	0.0100	1	
Lead	ND	0.0100	1						

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**099-04-008-3,195**	**N/A**	**Aqueous**	**Mercury**	**10/18/07**	**10/18/07**	**071018L03**

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 10/17/07
Work Order No: 07-10-1324
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**097-01-003-7,639**	**N/A**	**Aqueous**	**ICP 5300**	**10/18/07**	**10/19/07**	**071018L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	ND	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	ND	0.00500	1		Zinc	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	10/17/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-10-1324
San Diego, CA 92127-2116		Preparation:	EPA 3510B
		Method:	EPA 8082
		Units:	ug/L

Project: TDY / SC0307 — Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
64SW-101707	**07-10-1324-1**	**10/17/07**	**Aqueous**	**GC 16**	**10/18/07**	**10/20/07**	**071018L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	97	50-135			2,4,5,6-Tetrachloro-m-Xylene	93	50-135		

145SW-101707	**07-10-1324-2**	**10/17/07**	**Aqueous**	**GC 16**	**10/18/07**	**10/20/07**	**071018L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	96	50-135			2,4,5,6-Tetrachloro-m-Xylene	94	50-135		

172SW-101707	**07-10-1324-3**	**10/17/07**	**Aqueous**	**GC 16**	**10/18/07**	**10/20/07**	**071018L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	94	50-135			2,4,5,6-Tetrachloro-m-Xylene	95	50-135		

Method Blank	**099-12-533-89**	**N/A**	**Aqueous**	**GC 16**	**10/18/07**	**10/20/07**	**071018L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	116	50-135			2,4,5,6-Tetrachloro-m-Xylene	117	50-135		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 10/17/07
Work Order No: 07-10-1324

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix
64SW-101707	**07-10-1324-1**	**10/17/07**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	10/18/07	10/18/07	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	10/17/07	10/17/07	EPA 7196A
Specific Conductance	170	1.0	1		umhos/cm	N/A	10/17/07	SM 2510 B
Solids, Total Suspended	2.0	1.0	1		mg/L	N/A	10/18/07	SM 2540 D
pH	7.53	0.01	1		pH units	N/A	10/17/07	SM 4500 H+ B

145SW-101707	**07-10-1324-2**	**10/17/07**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	10/18/07	10/18/07	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	10/17/07	10/17/07	EPA 7196A
Specific Conductance	95	1.0	1		umhos/cm	N/A	10/17/07	SM 2510 B
Solids, Total Suspended	1.1	1.0	1		mg/L	N/A	10/18/07	SM 2540 D
pH	7.39	0.01	1		pH units	N/A	10/17/07	SM 4500 H+ B

172SW-101707	**07-10-1324-3**	**10/17/07**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	10/18/07	10/18/07	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	10/17/07	10/17/07	EPA 7196A
Specific Conductance	97	1.0	1		umhos/cm	N/A	10/17/07	SM 2510 B
Solids, Total Suspended	3.3	1.0	1		mg/L	N/A	10/18/07	SM 2540 D
pH	7.21	0.01	1		pH units	N/A	10/17/07	SM 4500 H+ B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 10/17/07
Work Order No: 07-10-1324

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	10/18/07	10/18/07	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	10/17/07	10/17/07	EPA 7196A
Solids, Total Suspended	ND	1.0	1		mg/L	N/A	10/18/07	SM 2540 D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 10/17/07
Work Order No: 07-10-1324
Preparation: EPA 3010A Total
Method: EPA 6010B

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-10-1334-1	**Aqueous**	**ICP 5300**	**10/18/07**	**10/19/07**	**071018S03**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	108	105	72-132	4	0-10	
Arsenic	103	99	80-140	4	0-11	
Barium	99	98	87-123	2	0-6	
Beryllium	100	97	89-119	3	0-8	
Cadmium	102	100	82-124	1	0-7	
Chromium	99	99	86-122	0	0-8	
Cobalt	105	104	83-125	1	0-7	
Copper	97	96	78-126	1	0-7	
Lead	103	102	84-120	1	0-7	
Molybdenum	99	95	78-126	4	0-7	
Nickel	108	105	84-120	3	0-7	
Selenium	101	93	79-127	8	0-9	
Silver	97	96	86-128	1	0-7	
Thallium	112	110	79-121	2	0-8	
Vanadium	95	93	88-118	2	0-7	
Zinc	108	110	89-131	1	0-8	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 10/17/07
Work Order No: 07-10-1324
Preparation: EPA 7470A Total
Method: EPA 7470A

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-10-1334-2	**Aqueous**	**Mercury**	**10/18/07**	**10/18/07**	**071018S03**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	101	101	66-126	0	0-7	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-10-1324

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	172SW-101707	10/17/07	10/17/07	97	97	70-130	0	0-25	
HEM: Oil and Grease	EPA 1664A	07-10-1355-1	10/18/07	10/18/07	86	92	78-114	6	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-10-1324

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	07-10-1248-1	10/17/07	6.25	6.27	0	0-25	
Specific Conductance	SM 2510 B	172SW-101707	10/17/07	97	98	0	0-25	
Solids, Total Suspended	SM 2540 D	07-10-1297-2	10/18/07	29	30	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-10-1324
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-7,639	**Aqueous**	**ICP 5300**	**10/18/07**	**10/19/07**	**071018L03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	99	99	80-120	0	0-20	
Arsenic	90	91	80-120	1	0-20	
Barium	99	98	80-120	1	0-20	
Beryllium	88	91	80-120	3	0-20	
Cadmium	97	97	80-120	0	0-20	
Chromium	97	97	80-120	0	0-20	
Cobalt	101	100	80-120	1	0-20	
Copper	93	92	80-120	1	0-20	
Lead	95	99	80-120	4	0-20	
Molybdenum	92	93	80-120	1	0-20	
Nickel	101	102	80-120	2	0-20	
Selenium	89	87	80-120	2	0-20	
Silver	95	95	80-120	0	0-20	
Thallium	110	108	80-120	2	0-20	
Vanadium	91	92	80-120	1	0-20	
Zinc	101	100	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received:	N/A
Work Order No:	07-10-1324
Preparation:	EPA 7470A Total
Method:	EPA 7470A

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-3,195	**Aqueous**	**Mercury**	**10/18/07**	**10/18/07**	**071018L03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	103	103	85-121	0	0-4	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received:	N/A
Work Order No:	07-10-1324
Preparation:	EPA 3510B
Method:	EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-533-89	**Aqueous**	**GC 16**	**10/18/07**	**10/20/07**	**071018L06**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	103	97	50-135	6	0-25	
Aroclor-1260	114	112	50-135	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-10-1324

Project: TDY / SC0307

Matrix : Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	099-05-064-1,565	10/17/07	10/17/07	0.500	0.470	94	80-120	
HEM: Oil and Grease	EPA 1664A	099-05-119-1,271	10/18/07	10/18/07	40.0	35.9	90	78-114	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-10-1324

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2018 10-1324

Page 1 of 1

Analysis Request and Chain of Custody Record

Project Name: TDY	Project Number: SC0307	
Samplers Names	Project Contact: Brian Hitchens	
Laboratory Name: Calscience	Lab Contact: Steve Nowak	
Lab Address: 7440 Lincoln way, Garden Grove, CA 92841	Lab Phone: 714-895-5494	
	Carrier/Waybill No.	

White copy: to accompany samples

Yellow copy: field copy

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by	Metals Title 22	SVOCs by 8270	oil & grease	pH & Conductivity	Cr+6/Cr	PCBs	TSS	Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative									
				Number of Containers									
64SW-101707	1322	10/17/07	H_2O		X		X	X	X	X	X		
145SW-101707	1300	10/17/07			X		X	X	X	X	X		
172SW-101707	1245	10/17/07			X		X	X	X	X	X		

Special Instructions:

Turn-around Time: ☐ Normal ☐ Rush: _____

1. Relinquished by (Signature/Affiliation)	Date 10-17-07 Time 1415	1. Received by (Signature/Affiliation) CEL	Date 10-17-07 Time 1415
2. Relinquished by (Signature/Affiliation)	Date 10-17-7 Time 1615	2. Received by (Signature/Affiliation) Duke Nishihara CEL	Date 10-17-7 Time 1615
3. Relinquished by (Signature/Affiliation)	Date Time	3. Received by (Signature/Affiliation)	Date Time

Geosyntec consultants 10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07 - 10 - 1324

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec **DATE:** 10-17-7

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- ____ Chilled, cooler with temperature blank provided.
- ____ Chilled, cooler without temperature blank.
- ✓ Chilled and placed in cooler with wet ice.
- ____ Ambient and placed in cooler with wet ice.
- ____ Ambient temperature.

3.8 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- ____ °C Temperature blank.
- ____ °C IR thermometer.
- ____ Ambient temperature.

Initial: [initials]

CUSTODY SEAL INTACT:

Sample(s): ____ Cooler: ____ No (Not Intact) : ____ Not Present: ✓

Initial: [initials]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.	✓		
Tedlar bag(s) free of condensation			✓

Initial: [initials]

COMMENTS:

Calscience Environmental Laboratories, Inc.

December 11, 2007

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 07-11-2278**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 11/30/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 11/30/07
Work Order No: 07-11-2278
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
172SW-113007	**07-11-2278-1-E**	**11/30/07**	**Aqueous**	**ICP 5300**	**12/03/07**	**12/05/07**	**071203L17**

Comment(s): -Mercury was analyzed on 12/5/2007 2:16:34 PM with batch 071205L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	0.0400	0.0100	1		Nickel	0.00591	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0587	0.00500	1		Zinc	0.244	0.0100	1	
Lead	0.0183	0.0100	1						

145SW-113007	**07-11-2278-2-E**	**11/30/07**	**Aqueous**	**ICP 5300**	**12/03/07**	**12/05/07**	**071203L17**

Comment(s): -Mercury was analyzed on 12/5/2007 2:18:49 PM with batch 071205L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	ND	0.0100	1		Molybdenum	0.0377	0.00500	1	
Barium	0.0614	0.0100	1		Nickel	0.00615	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0508	0.00500	1		Zinc	0.325	0.0100	1	
Lead	0.0512	0.0100	1						

64SW-113007	**07-11-2278-3-E**	**11/30/07**	**Aqueous**	**ICP 5300**	**12/03/07**	**12/05/07**	**071203L17**

Comment(s): -Mercury was analyzed on 12/5/2007 2:30:07 PM with batch 071205L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	0.0189	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	0.0365	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	0.00965	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0734	0.00500	1		Zinc	0.516	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	**099-04-008-3,264**	**N/A**	**Aqueous**	**Mercury**	**12/05/07**	**12/05/07**	**071205L04**

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 11/30/07
Work Order No: 07-11-2278
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**097-01-003-7,775**	**N/A**	**Aqueous**	**ICP 5300**	**12/03/07**	**12/05/07**	**071203L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	ND	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	ND	0.00500	1		Zinc	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	11/30/07
10875 Rancho Bernardo Road, Suite 200		Work Order No:	07-11-2278
San Diego, CA 92127-2116		Preparation:	EPA 3510B
		Method:	EPA 8082
		Units:	ug/L

Project: TDY / SC0307 — Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
172SW-113007	**07-11-2278-1-A**	**11/30/07**	**Aqueous**	**GC 16**	**12/03/07**	**12/05/07**	**071203L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	106	50-135			2,4,5,6-Tetrachloro-m-Xylene	91	50-135		

145SW-113007	**07-11-2278-2-A**	**11/30/07**	**Aqueous**	**GC 16**	**12/03/07**	**12/05/07**	**071203L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	113	50-135			2,4,5,6-Tetrachloro-m-Xylene	91	50-135		

64SW-113007	**07-11-2278-3-A**	**11/30/07**	**Aqueous**	**GC 16**	**12/03/07**	**12/05/07**	**071203L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	107	50-135			2,4,5,6-Tetrachloro-m-Xylene	91	50-135		

Method Blank	**099-12-533-104**	**N/A**	**Aqueous**	**GC 16**	**12/03/07**	**12/05/07**	**071203L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	126	50-135			2,4,5,6-Tetrachloro-m-Xylene	111	50-135		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 11/30/07
Work Order No: 07-11-2278

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix
172SW-113007	**07-11-2278-1**	**11/30/07**	**Aqueous**

Comment(s): (5) Sample analyzed outside recommended holding time.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	12/10/07	EPA 1664A
Chromium, Hexavalent (5)	ND	0.020	1		mg/L	12/03/07	12/03/07	EPA 7196A
Specific Conductance	43	1.0	1		umhos/cm	N/A	11/30/07	SM 2510 B
Solids, Total Suspended	17	1.0	1		mg/L	N/A	12/03/07	SM 2540 D
pH	6.27	0.01	1		pH units	N/A	11/30/07	SM 4500 H+ B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
145SW-113007	**07-11-2278-2**	**11/30/07**	**Aqueous**

Comment(s): (5) Sample analyzed outside recommended holding time.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	12/10/07	EPA 1664A
Chromium, Hexavalent (5)	ND	0.020	1		mg/L	12/03/07	12/03/07	EPA 7196A
Specific Conductance	43	1.0	1		umhos/cm	N/A	11/30/07	SM 2510 B
Solids, Total Suspended	ND	1.0	1		mg/L	N/A	12/03/07	SM 2540 D
pH	5.57	0.01	1		pH units	N/A	11/30/07	SM 4500 H+ B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
64SW-113007	**07-11-2278-3**	**11/30/07**	**Aqueous**

Comment(s): (5) Sample analyzed outside recommended holding time.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	12/10/07	EPA 1664A
Chromium, Hexavalent (5)	ND	0.020	1		mg/L	12/03/07	12/03/07	EPA 7196A
Specific Conductance	76	1.0	1		umhos/cm	N/A	11/30/07	SM 2510 B
Solids, Total Suspended	14	1.0	1		mg/L	N/A	12/03/07	SM 2540 D
pH	5.46	0.01	1		pH units	N/A	11/30/07	SM 4500 H+ B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 11/30/07
Work Order No: 07-11-2278

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	12/10/07	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	12/03/07	12/03/07	EPA 7196A
Solids, Total Suspended	ND	1.0	1		mg/L	N/A	12/03/07	SM 2540 D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 11/30/07
Work Order No: 07-11-2278
Preparation: EPA 3010A Total
Method: EPA 6010B

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-11-2230-1	**Aqueous**	**ICP 5300**	**12/03/07**	**12/05/07**	**071203S17**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	98	95	72-132	2	0-10	
Arsenic	94	94	80-140	0	0-11	
Barium	106	103	87-123	2	0-6	
Beryllium	101	99	89-119	2	0-8	
Cadmium	105	103	82-124	3	0-7	
Chromium	105	103	86-122	2	0-8	
Cobalt	107	105	83-125	2	0-7	
Copper	99	97	78-126	2	0-7	
Lead	106	105	84-120	1	0-7	
Molybdenum	105	104	78-126	1	0-7	
Nickel	108	107	84-120	1	0-7	
Selenium	97	97	79-127	1	0-9	
Silver	101	98	86-128	3	0-7	
Thallium	105	103	79-121	2	0-8	
Vanadium	102	100	88-118	2	0-7	
Zinc	107	104	89-131	2	0-8	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 11/30/07
Work Order No: 07-11-2278
Preparation: EPA 7470A Total
Method: EPA 7470A

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
145SW-113007	**Aqueous**	**Mercury**	**12/05/07**	**12/05/07**	**071205S04**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	101	100	66-126	1	0-7	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-11-2278

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	64SW-113007	12/03/07	12/3/07	94	95	70-130	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-11-2278

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	172SW-113007	11/30/07	6.27	6.28	0	0-25	
Specific Conductance	SM 2510 B	172SW-113007	11/30/07	43	43	0	0-25	
Solids, Total Suspended	SM 2540 D	07-11-2283-3	12/03/07	409	404	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-11-2278
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-003-7,775	**Aqueous**	**ICP 5300**	**12/05/07**	**071203-I-17**	**071203L17**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Antimony	0.500	0.504	101	80-120	
Arsenic	0.500	0.489	98	80-120	
Barium	0.500	0.524	105	80-120	
Beryllium	0.500	0.483	97	80-120	
Cadmium	0.500	0.516	103	80-120	
Chromium	0.500	0.516	103	80-120	
Cobalt	0.500	0.525	105	80-120	
Copper	0.500	0.487	97	80-120	
Lead	0.500	0.514	103	80-120	
Molybdenum	0.500	0.515	103	80-120	
Nickel	0.500	0.537	107	80-120	
Selenium	0.500	0.462	92	80-120	
Silver	0.250	0.245	98	80-120	
Thallium	0.500	0.507	101	80-120	
Vanadium	0.500	0.499	100	80-120	
Zinc	0.500	0.520	104	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received:	N/A
Work Order No:	07-11-2278
Preparation:	EPA 7470A Total
Method:	EPA 7470A

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-3,264	**Aqueous**	**Mercury**	**12/05/07**	**12/05/07**	**071205L04**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	101	101	85-121	0	0-4	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-11-2278
Preparation: EPA 3510B
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-533-104	**Aqueous**	**GC 16**	**12/03/07**	**12/05/07**	**071203L04**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	120	134	50-135	11	0-25	
Aroclor-1260	131	135	50-135	3	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-11-2278

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
HEM: Oil and Grease	EPA 1664A	099-05-119-1,318	N/A	12/10/07	90	86	78-114	4	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 07-11-2278

Project: TDY / SC0307

Matrix : Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	099-05-064-1,578	12/03/07	12/03/07	0.500	0.490	98	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-11-2278

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Calscience Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Date 11/30/07

Page 1 of 1

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

LABORATORY CLIENT: Calscience @ Geosyntec

ADDRESS: 7440 Lincoln Way @

CITY: Garden Grove, @ San Diego STATE: CA ZIP: 92841

TEL: 714-895-5494 E-MAIL:

CLIENT PROJECT NAME / NUMBER: TBY / SC0307

P.O. NO.:

PROJECT CONTACT: Brian Hitchens

LAB USE ONLY: 11-2278

SAMPLER(S): (PRINT) CL/BB

COELT LOG CODE: ☐☐☐☐

COOLER RECEIPT TEMP= °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ _____

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH(g) OIL & Grease	TPH (d) or (C7-C36) or (C7-C44)	TPH ( )	BTEX / MTBE (8260B)	VOCs (8260B)	VOCs+Oxys (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8181A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI)[7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g)[TO-3]+	pH & Conductivity	TSS
1	172SW-113007		11/30/07	10:15a	W	6	1									1		1	1			1	1
2	145SW-113007		11/30/07	10:30a		6	1									1		1	1			1	1
3	64SW-113007		11/30/07	10:54a		6	1									1		1	1			1	1

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 11/30/07	Time: 1600
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 11-30-7	Time: 1835
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07 - 11 - 2278

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec **DATE:** 11-30-7

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- ✓ Chilled, cooler with temperature blank provided.
- _____ Chilled, cooler without temperature blank.
- _____ Chilled and placed in cooler with wet ice.
- _____ Ambient and placed in cooler with wet ice.
- _____ Ambient temperature.
- 2.7 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- _____ °C Temperature blank.
- _____ °C IR thermometer.
- _____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

Calscience Environmental Laboratories, Inc.

January 17, 2008

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: **Calscience Work Order No.: 08-01-0661**
Client Reference: TDY / SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 1/10/2008 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/10/08
Work Order No: 08-01-0661
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-104-TANK	**08-01-0661-1-D**	**01/10/08**	**Aqueous**	**ICP 5300**	**01/10/08**	**01/11/08 14:10**	**080110L04**

Comment(s): -Mercury was analyzed on 1/11/2008 12:46:10 PM with batch 080111L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	0.0273	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0368	0.00500	1		Zinc	0.356	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	**099-04-008-3,313**	**N/A**	**Aqueous**	**Mercury**	**01/11/08**	**01/11/08 12:32**	**080111L01**

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Method Blank	**097-01-003-7,896**	**N/A**	**Aqueous**	**ICP 5300**	**01/10/08**	**01/10/08 14:24**	**080110L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	ND	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	ND	0.00500	1		Zinc	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	01/10/08
10875 Rancho Bernardo Road, Suite 200		Work Order No:	08-01-0661
San Diego, CA 92127-2116		Preparation:	EPA 3510B
		Method:	EPA 8082
		Units:	ug/L

Project: TDY / SC0307 — Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-104-TANK	**08-01-0661-1-A**	**01/10/08**	**Aqueous**	**GC 16**	**01/10/08**	**01/11/08 13:31**	**080110L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	91	50-135			2,4,5,6-Tetrachloro-m-Xylene	83	50-135		

Method Blank	**099-12-533-122**	**N/A**	**Aqueous**	**GC 16**	**01/10/08**	**01/10/08 14:49**	**080110L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	109	50-135			2,4,5,6-Tetrachloro-m-Xylene	94	50-135		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/10/08
Work Order No: 08-01-0661

Project: TDY / SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix
CB-104-TANK	**08-01-0661-1**	**01/10/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	01/14/08	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	01/10/08	01/10/08	EPA 7196A
Specific Conductance	65	1.0	1		umhos/cm	N/A	01/10/08	SM 2510 B
Solids, Total Suspended	8.2	1.0	1		mg/L	N/A	01/12/08	SM 2540 D
pH	8.53	0.01	1		pH units	N/A	01/10/08	SM 4500 H+ B

Method Blank	**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	01/14/08	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	01/10/08	01/10/08	EPA 7196A
Solids, Total Suspended	ND	1.0	1		mg/L	N/A	01/12/08	SM 2540 D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 01/10/08
Work Order No: 08-01-0661
Preparation: EPA 3010A Total
Method: EPA 6010B

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-01-0566-1	**Aqueous**	**ICP 5300**	**01/10/08**	**01/10/08**	**080110S04**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	102	101	72-132	1	0-10	
Arsenic	110	109	80-140	0	0-11	
Barium	111	112	87-123	1	0-6	
Beryllium	107	108	89-119	1	0-8	
Cadmium	111	111	82-124	0	0-7	
Chromium	110	110	86-122	0	0-8	
Cobalt	113	113	83-125	0	0-7	
Copper	100	100	78-126	0	0-7	
Lead	112	112	84-120	0	0-7	
Molybdenum	109	110	78-126	1	0-7	
Nickel	114	115	84-120	0	0-7	
Selenium	109	109	79-127	0	0-9	
Silver	101	102	86-128	0	0-7	
Thallium	108	108	79-121	0	0-8	
Vanadium	107	108	88-118	1	0-7	
Zinc	115	111	89-131	2	0-8	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received:	01/10/08
Work Order No:	08-01-0661
Preparation:	EPA 7470A Total
Method:	EPA 7470A

Project TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CB-104-TANK	**Aqueous**	**Mercury**	**01/11/08**	**01/11/08**	**080111S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	104	104	66-126	0	0-7	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-01-0661

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	CB-104-TANK	01/10/08	1/10/08	100	99	70-130	1	0-25	
HEM: Oil and Grease	EPA 1664A	08-01-0634-1	01/14/08	N/A	87	91	78-114	3	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-01-0661

Project: TDY / SC0307

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	08-01-0594-1	01/10/08	6.53	6.54	0	0-25	
Specific Conductance	SM 2510 B	08-01-0606-1	01/10/08	320	320	0	0-25	
Solids, Total Suspended	SM 2540 D	08-01-0687-1	01/12/08	48	48	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-01-0661
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-003-7,896	**Aqueous**	**ICP 5300**	**01/10/08**	**080110-I-04**	**080110L04**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Antimony	0.500	0.507	101	80-120	
Arsenic	0.500	0.511	102	80-120	
Barium	0.500	0.538	108	80-120	
Beryllium	0.500	0.506	101	80-120	
Cadmium	0.500	0.536	107	80-120	
Chromium	0.500	0.530	106	80-120	
Cobalt	0.500	0.539	108	80-120	
Copper	0.500	0.478	96	80-120	
Lead	0.500	0.538	108	80-120	
Molybdenum	0.500	0.525	105	80-120	
Nickel	0.500	0.559	112	80-120	
Selenium	0.500	0.504	101	80-120	
Silver	0.250	0.239	95	80-120	
Thallium	0.500	0.518	104	80-120	
Vanadium	0.500	0.514	103	80-120	
Zinc	0.500	0.541	108	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-01-0661
Preparation: EPA 7470A Total
Method: EPA 7470A

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-3,313	**Aqueous**	**Mercury**	**01/11/08**	**01/11/08**	**080111L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	101	100	85-121	0	0-4	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-01-0661
Preparation: EPA 3510B
Method: EPA 8082

Project: TDY / SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-533-122	**Aqueous**	**GC 16**	**01/10/08**	**01/10/08**	**080110L06**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	106	108	50-135	1	0-25	
Aroclor-1260	123	121	50-135	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-01-0661

Project: TDY / SC0307

Matrix : Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	099-05-064-1,595	01/10/08	01/10/08	0.500	0.507	101	80-120	
HEM: Oil and Grease	EPA 1664A	099-05-119-1,382	01/14/08	N/A	40.0	36.9	92	78-114	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-01-0661

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Document Number: 2247 (0661)

Analysis Request and Chain of Custody Record

Page 1 of 1

White copy: to accompany samples

Yellow copy: field copy

Project Name: TDY	Project Number: SC0307
Samplers Names: CL	Project Contact: Brian Hitchens
Laboratory Name: Cal Science	Lab Contact: Steve Nowak
Lab Address: 7440 Lincoln Way, Garden Grove CA	Lab Phone: 714 895-5494
	Carrier/Waybill No.

Sample Name	Date	Time	Sample Type	Required Analyses: VOCs by ____	Metals	SVOCs by 8270	PCBs	Oil & Grease	pH & Conductivity	Metals (Title 22)	Cr 6	TSS	Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative			1L Liter Amber	1 Liter Amber	500 ml poly	250ml poly	500ml poly	1 Liter poly		
				Number of Containers										
1 CB-104-TANK	1/10/08		H_2O				1	1	1	1	1	1		

Special Instructions: HHN – Chrome 6 sample

Turn-around Time: ☐ Normal ☐ Rush: _____

1. Relinquished by (Signiture/Affiliation)	Date 1/10/08 Time 13:20	1. Received by (Signiture/Affiliation) CEL	Date 1-10-08 Time 1320
2. Relinquished by (Signiture/Affiliation)	Date 1-10-8 Time 1545	2. Received by (Signiture/Affiliation)	Date 1-10-8 Time 1545
3. Relinquished by (Signiture/Affiliation)	Date Time	3. Received by (Signiture/Affiliation)	Date Time

Geosyntec consultants
10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08- 0 1 - 0 6 6 1

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec **DATE:** 1-10-8

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- _____ Chilled, cooler with temperature blank provided.
- _____ Chilled, cooler without temperature blank.
- _____ Chilled and placed in cooler with wet ice.
- ✓ Ambient and placed in cooler with wet ice.
- _____ Ambient temperature.

3.8 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- _____ °C Temperature blank.
- _____ °C IR thermometer.
- _____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		✓
VOA vial(s) free of headspace.			
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

Calscience Environmental Laboratories, Inc.

February 11, 2008

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Subject: Calscience Work Order No.: 08-02-0128
Client Reference: TDY /SC0307

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/4/2008 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 02/04/08
Work Order No: 08-02-0128
Preparation: EPA 3010A Total/EPA 7470A Total
Method: EPA 6010B /EPA 7470A
Units: mg/L

Project: TDY /SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-104 TANK-2	08-02-0128-1-C	02/04/08	Aqueous	ICP 5300	02/04/08	02/05/08 12:31	080204L13

Comment(s): -Mercury was analyzed on 2/5/2008 5:18:39 PM with batch 080205L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	0.0340	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0351	0.00500	1		Zinc	0.342	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	099-04-008-3,347	N/A	Aqueous	Mercury	02/05/08	02/05/08 17:11	080205L01

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Method Blank	097-01-003-7,980	N/A	Aqueous	ICP 5300	02/04/08	02/05/08 11:02	080204L13

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.00500	1	
Barium	ND	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	ND	0.00500	1		Zinc	ND	0.0100	1	

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 02/04/08
Work Order No: 08-02-0128
Preparation: EPA 3510B
Method: EPA 8082
Units: ug/L

Project: TDY /SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CB-104 TANK-2	08-02-0128-1-E	02/04/08	Aqueous	GC 31	02/04/08	02/06/08 15:50	080204L10

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	91	50-135			2,4,5,6-Tetrachloro-m-Xylene	94	50-135		

Method Blank	099-12-533-136	N/A	Aqueous	GC 31	02/04/08	02/05/08 14:06	080204L10

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	90	50-135			2,4,5,6-Tetrachloro-m-Xylene	80	50-135		

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 02/04/08
Work Order No: 08-02-0128

Project: TDY /SC0307

Client Sample Number	Lab Sample Number	Date Collected	Matrix
CB-104 TANK-2	08-02-0128-1	02/04/08	Aqueous

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	02/06/08	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	02/04/08	02/04/08	EPA 7196A
Specific Conductance	110	1.0	1		umhos/cm	N/A	02/04/08	SM 2510 B
Solids, Total Suspended	3.2	1.0	1		mg/L	N/A	02/05/08	SM 2540 D
pH	5.65	0.01	1		pH units	N/A	02/04/08	SM 4500 H+ B

Method Blank		N/A	Aqueous

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	N/A	02/06/08	EPA 1664A
Chromium, Hexavalent	ND	0.020	1		mg/L	02/04/08	02/04/08	EPA 7196A
Solids, Total Suspended	ND	1.0	1		mg/L	N/A	02/05/08	SM 2540 D

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: 02/04/08
Work Order No: 08-02-0128
Preparation: EPA 3010A Total
Method: EPA 6010B

Project TDY /SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-02-0109-11	Aqueous	ICP 5300	02/04/08	02/05/08	080204S13

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	104	107	72-132	3	0-10	
Arsenic	108	113	80-140	4	0-11	
Barium	106	108	87-123	2	0-6	
Beryllium	106	109	89-119	3	0-8	
Cadmium	107	110	82-124	3	0-7	
Chromium	104	107	86-122	2	0-8	
Cobalt	107	110	83-125	3	0-7	
Copper	104	107	78-126	3	0-7	
Lead	105	107	84-120	2	0-7	
Molybdenum	107	110	78-126	3	0-7	
Nickel	110	113	84-120	3	0-7	
Selenium	107	108	79-127	2	0-9	
Silver	102	104	86-128	2	0-7	
Thallium	103	106	79-121	3	0-8	
Vanadium	105	108	88-118	3	0-7	
Zinc	122	118	89-131	3	0-8	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants		Date Received:	02/04/08
10875 Rancho Bernardo Road, Suite 200		Work Order No:	08-02-0128
San Diego, CA 92127-2116		Preparation:	EPA 7470A Total
		Method:	EPA 7470A

Project TDY /SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CB-104 TANK-2	Aqueous	Mercury	02/05/08	02/05/08	080205S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	108	108	66-126	0	0-7	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-02-0128

Project: TDY /SC0307

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	% REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	CB-104 TANK-2	02/04/08	2/4/08	98	98	70-130	0	0-25	
HEM: Oil and Grease	EPA 1664A	08-02-0305-1	02/06/08	N/A	89	91	78-114	2	0-18	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-02-0128

Project: TDY /SC0307

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	CB-104 TANK-2	02/04/08	5.65	5.64	0	0-25	
Specific Conductance	SM 2510 B	08-02-0113-1	02/04/08	980	980	0	0-25	
Solids, Total Suspended	SM 2540 D	08-02-0249-1	02/05/08	336	325	3	0-20	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-02-0128
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: TDY /SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-7,980	Aqueous	ICP 5300	02/04/08	02/05/08	080204L13

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	101	102	80-120	1	0-20	
Arsenic	101	101	80-120	0	0-20	
Barium	108	109	80-120	1	0-20	
Beryllium	101	101	80-120	1	0-20	
Cadmium	106	106	80-120	0	0-20	
Chromium	106	106	80-120	0	0-20	
Cobalt	107	107	80-120	0	0-20	
Copper	100	99	80-120	0	0-20	
Lead	106	107	80-120	1	0-20	
Molybdenum	105	106	80-120	1	0-20	
Nickel	110	111	80-120	1	0-20	
Selenium	98	98	80-120	0	0-20	
Silver	100	101	80-120	1	0-20	
Thallium	101	103	80-120	1	0-20	
Vanadium	102	103	80-120	1	0-20	
Zinc	109	110	80-120	0	0-20	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-02-0128
Preparation: EPA 7470A Total
Method: EPA 7470A

Project: TDY /SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-3,347	Aqueous	Mercury	02/05/08	02/05/08	080205L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	98	99	85-121	1	0-4	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received:	N/A
Work Order No:	08-02-0128
Preparation:	EPA 3510B
Method:	EPA 8082

Project: TDY /SC0307

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-533-136	Aqueous	GC 31	02/04/08	02/05/08	080204L10

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	82	72	50-135	13	0-25	
Aroclor-1260	84	79	50-135	6	0-25	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127-2116

Date Received: N/A
Work Order No: 08-02-0128

Project: TDY /SC0307

Matrix : Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Chromium, Hexavalent	EPA 7196A	099-05-064-1,610	02/04/08	02/04/08	0.500	0.500	100	80-120	
HEM: Oil and Grease	EPA 1664A	099-05-119-1,407	02/06/08	N/A	40.0	40.0	100	78-114	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-02-0128

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

02-0128

Document Number: 2323

Analysis Request and Chain of Custody Record

Project Name: TDY	Project Number: SC0307	Page 1 of 1
Samplers Names: CL	Project Contact: Brian Hitchens	
Laboratory Name: Calscience	Lab Contact: Steve Nowak	White copy: to accompany samples
Lab Address: 7440 Lincoln Garden Grove CA	Lab Phone: 714 895-5494	Yellow copy: field copy
	Carrier/Waybill No.	

Required Analyses

Sample Name	Date	Time	Sample Type	VOCs by ___	Metals Title 22	SVOCs by 8270	Oil & Grease	PCBs	Cr 6	TSS	pH & Cond			Comments	Lab Use Only: Condition of Bottles
				Bottle Type and Volume/Preservative	250ml poly HNO3		1Li Amber	1Li Amber	500ml poly	1Li poly	500ml poly				
				Number of Containers											
CB-104 TANK-2	2/4/08	12:10	H2O		1		1	1	1	1	1				

Special Instructions:

Turn-around Time: ☒ Normal ☐ Rush: ___

1. Relinquished by (Signiture/Affiliation)	Date 2/4/08 Time 12:20	1. Received by (Signiture/Affiliation) CEL	Date 2/4/08 Time 1330
2. Relinquished by (Signiture/Affiliation)	Date 2/4/8 Time 1605	2. Received by (Signiture/Affiliation)	Date 2/4/8 Time 1605
3. Relinquished by (Signiture/Affiliation)	Date Time	3. Received by (Signiture/Affiliation)	Date Time

Geosyntec consultants
10875 Rancho Bernardo Road, Suite 200, San Diego, CA 92127 (858) 674-6559 Fax: (858) 674-6586

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08 - 02-0128

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Geosyntec DATE: 2/4/8

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
__✓__ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
3.4 °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

PTS Laboratories, Inc.

8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

October 26, 2009

Brian Hitchens
GeoSyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127

Re: PTS File No: 39876
Physical Properties Data
TDY; SCO307

Dear Mr. Hitchens:

Please find enclosed report for Physical Properties analyses conducted upon cores received from your TDY; SCO307 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2504.

Sincerely,
PTS Laboratories

Rachel Spitz
Project Manager

Encl.

PTS Laboratories

Project Name: TDY
Project Number: SCO307

PTS File No: 39876
Client: GeoSyntec Consultants

TEST PROGRAM

CORE ID	Depth ft.	Core Recovery ft.	Hydraulic Conductivity Pkg.						Notes
		Plugs:	Vert. 1"						
Rcvd. 10/15/09									
CLGT-C-7.8	7.8	0.5	X						
CLGT-E-6.2	6.2	0.5	X						
TOTALS:	2 Cores	1.0	2						

Laboratory Test Program Notes

PTS File No: 39876
Client: GeoSyntec Consultants

PTS Laboratories

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

PROJECT NAME: TDY
PROJECT NO: SCO307

		METHODS:	API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40; EPA 9100	
									25 PSI CONFINING STRESS	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (4,5), cm/s
				BULK, g/cc	GRAIN, g/cc	TOTAL	AIR FILLED			
CLGT-C-7.8	7.8	V	13.5	1.53	2.75	44.4	23.7	46.6	417	4.24E-04
CLGT-E-6.2	6.2	V	15.2	1.44	2.75	47.6	25.7	46.0	660	6.68E-04

(1) Sample Orientation: H = horizontal; V = vertical (2) Total Porosity = no pore fluids in place; all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids (3) Water = 0.9996 g/cc (4) Native State or Effective = With as-received pore fluids in place (5) Permeability to water and hydraulic conductivity measured at saturated conditions; Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

PTS Laboratories, Inc.

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

COMPANY: Geosyntec Consultants

ADDRESS: 10875 Rancho Bernardo Rd. Ste 200 CITY: San Diego, CA ZIP CODE: 92127

PROJECT MANAGER: Brian Hitchens 674-6559

PROJECT NAME: TDY PHONE NUMBER: 674-6586

PROJECT NUMBER: SD0307 FAX NUMBER:

SITE LOCATION: Convair Lagoon

SAMPLER SIGNATURE:

PO#:

TURNAROUND TIME: 24 HOURS ☐ 5 DAYS ☐ 48 HOURS ☐ NORMAL ☑ 72 HOURS ☒ OTHER: _____

SAMPLE INTEGRITY (CHECK): INTACT ✓ ON ICE ____

PTS QUOTE NO.:

PTS FILE: 39870

ANALYSIS REQUEST

SAMPLE ID NUMBER	DATE	TIME	DEPTH, FT	NUMBER OF SAMPLES	SOIL PROPERTIES PACKAGE	HYDRAULIC CONDUCTIVITY PACKAGE	PORE FLUID SATURATIONS PACKAGE	TCEQ/TNRCC PROPERTIES PACKAGE	CAPILLARITY PACKAGE	FLUID PROPERTIES PACKAGE	PHOTOLOG: CORE PHOTOGRAPHY	MOISTURE CONTENT, ASTM D2216	POROSITY: TOTAL, API RP40	POROSITY: EFFECTIVE, ASTM D425M	SPECIFIC GRAVITY, ASTM D854	BULK DENSITY (DRY), API RP40 or ASTM D2937	AIR PERMEABILITY, API RP40	HYDRAULIC CONDUCTIVITY, EPA9100, API RP40, D5084	GRAIN SIZE DISTRIBUTION, ASTM D422/4464M	TOC: WALKLEY-BLACK	ATTERBERG LIMITS, ASTM D4318	COMMENTS
CLGT-C-7.8	10/13/09	950	7.8'																			
CLGT-E-6.2	10/13/09	1100	6.2'																			

1. RELINQUISHED BY	2. RECEIVED BY	3. RELINQUISHED BY	4. RECEIVED BY
Ryan Gong			
COMPANY: Geosyntec Consultants	COMPANY: PTS Labs Inc	COMPANY	COMPANY
DATE: 10/14/09 TIME: 1117	DATE: 10-15-09 TIME: 1543	DATE TIME	DATE TIME

Attachment B
Groundwater Modeling Results

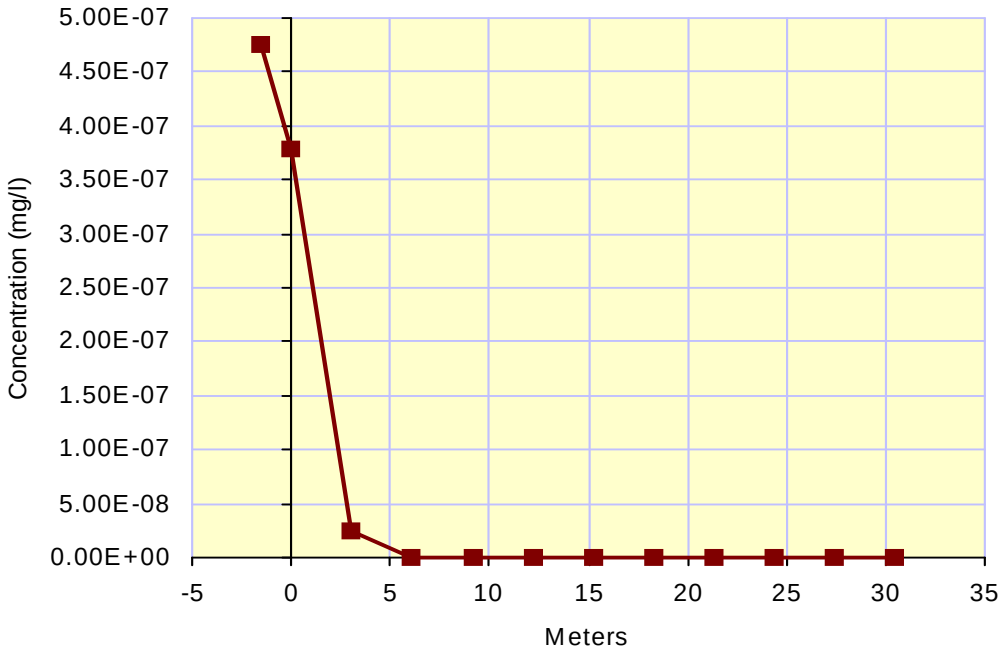
Groundwater Model Results

Baseline Scenario

35 and 49 year time steps

TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210			
Hydraulic Gradient:	0.00200	**m/m**		
Hydraulic Conductivity:	2.412E-02	**m/hr**	6.700E-04	**cm/sec**
Soil Bulk Density:	1.440E+03	**kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00	**m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00	**m**	0.000E+00	**ft**

Dispersivities	**Meters**	**Feet**
Longitudinal:	4.21	13.81
Lateral:	0.43	1.40
Vertical:	0.04	0.14

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-06	**1/hr**

Load	**Begin (m)**	**End (m)**	**Begin (ft)**	**End(ft)**
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6

Retardation Factor:	256.000		
Retarded Darcy Velocity:	8.974E-07	**m/hr**	2.492E-08 **cm/sec**
Retarded Longitudinal Disp. Cofficient:	3.830E-06	**m2/hr**	
Retarded Lateral Dispersion Cofficient:	4.373E-07	**m2/hr**	
Retarded Vertical Dispersion Cofficient:	9.200E-08	**m2/hr**	

Depth (Z) = 0.00 meters, 0.00 feet.
Distribution in mg/l at 12775.00 days, 35.00 years.
Maximum concentration of 4.760E-07 mg/l (5.95 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	4.760E-07	3.790E-07	2.480E-08	5.130E-11	2.580E-15							
0.00	0.00												
0.00	0.00												
0.00	0.00												
0.00	0.00												
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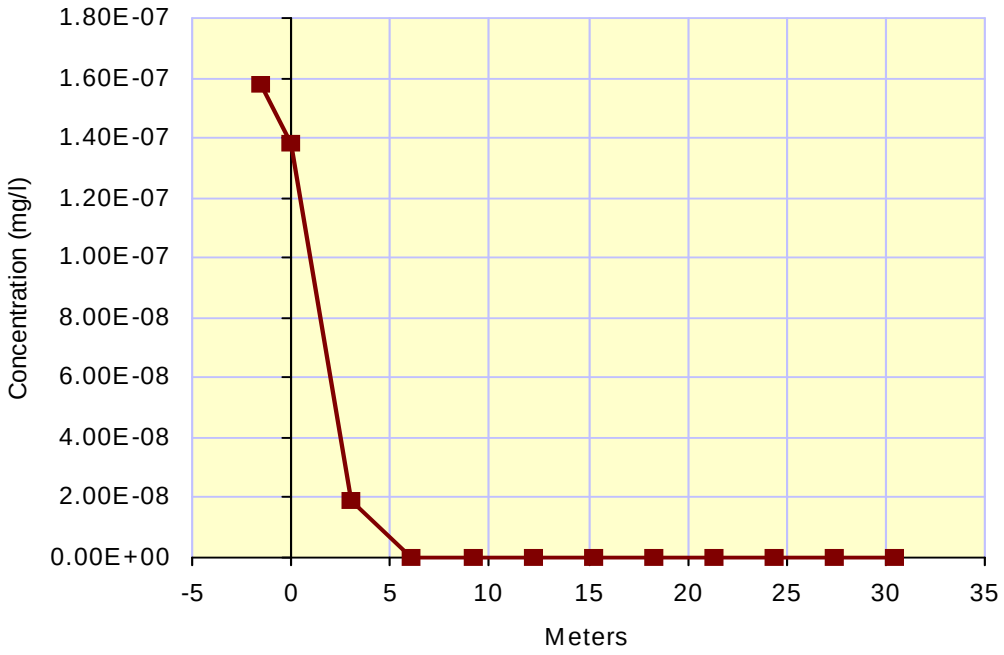
TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210			
Hydraulic Gradient:	0.00200	**m/m**		
Hydraulic Conductivity:	2.412E-02	**m/hr**	6.700E-04	**cm/sec**
Soil Bulk Density:	1.440E+03	**kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00	**m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00	**m**	0.000E+00	**ft**

Dispersivities	Meters	Feet
Longitudinal:	4.21	13.81
Lateral:	0.43	1.40
Vertical:	0.04	0.14

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-06	**1/hr**

Load	Begin (m)	End (m)	Begin (ft)	End(ft)
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6

Retardation Factor: 256.000

Retarded Darcy Velocity:	8.974E-07	**m/hr**	2.492E-08 **cm/sec**
Retarded Longitudinal Disp. Cofficient:	3.830E-06	**m2/hr**	
Retarded Lateral Dispersion Cofficient:	4.373E-07	**m2/hr**	
Retarded Vertical Dispersion Cofficient:	9.200E-08	**m2/hr**	

Depth (Z) = 0.00 meters, 0.00 feet.

Distribution in mg/l at 17885.00 days, 49.00 years.

Maximum concentration of 1.580E-07 mg/l (1.98 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	1.580E-07	1.380E-07	1.880E-08	2.180E-10	1.820E-13							
0.00	0.00												
0.00	0.00												
0.00	0.00												
0.00	0.00												
0.00	0.00												
0.00	0.00												

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Additional Groundwater Model Results

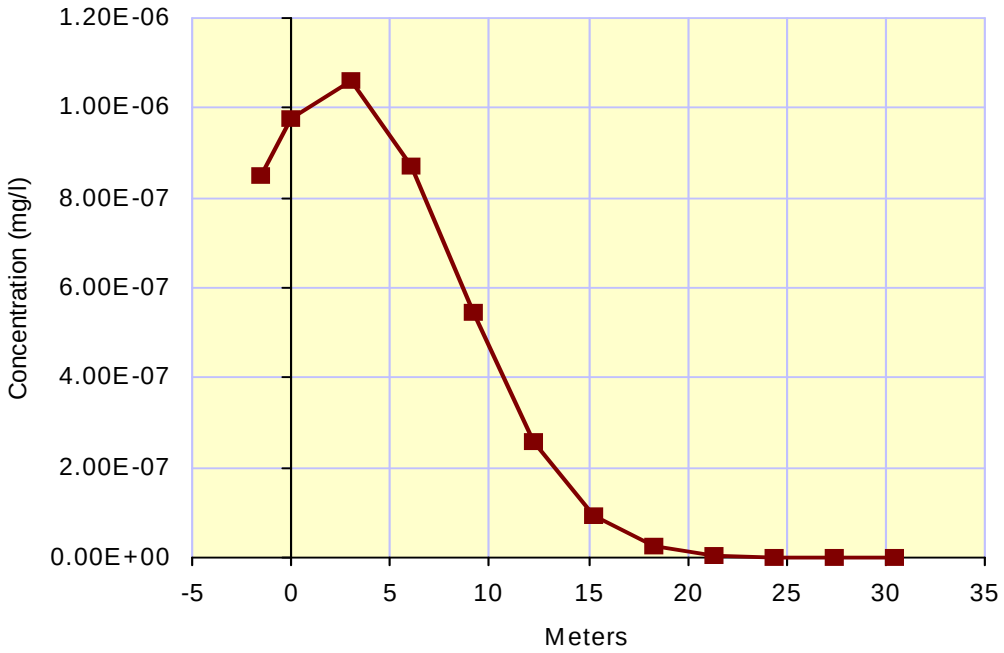
High Hydraulic Conductivity and

Low Degradation Rate Scenario

50, 125, and 175 year time steps

TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210			
Hydraulic Gradient:	0.00200	**m/m**		
Hydraulic Conductivity:	2.412E-01	**m/hr**	6.700E-03	**cm/sec**
Soil Bulk Density:	1.440E+03	**kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00	**m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00	**m**	0.000E+00	**ft**

Dispersivities	**Meters**	**Feet**
Longitudinal:	4.21	13.81
Lateral:	0.43	1.40
Vertical:	0.04	0.14

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-07	**1/hr**

Load	**Begin (m)**	**End (m)**	**Begin (ft)**	**End(ft)**
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6
Retardation Factor: 256.000

Retarded Darcy Velocity:	8.974E-06	**m/hr**	2.492E-07 **cm/sec**
Retarded Longitudinal Disp. Cofficient:	3.781E-05	**m2/hr**	
Retarded Lateral Dispersion Cofficient:	3.885E-06	**m2/hr**	
Retarded Vertical Dispersion Cofficient:	4.318E-07	**m2/hr**	

Depth (Z) = 0.00 meters, 0.00 feet.
Distribution in mg/l at 18250.00 days, 50.00 years.
Maximum concentration of 1.060E-06 mg/l (13.25 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	8.480E-07	9.780E-07	1.060E-06	8.710E-07	5.450E-07	2.590E-07	9.370E-08	2.570E-08	5.370E-09	8.520E-10	1.020E-10	9.370E-12
0.00	0.00												
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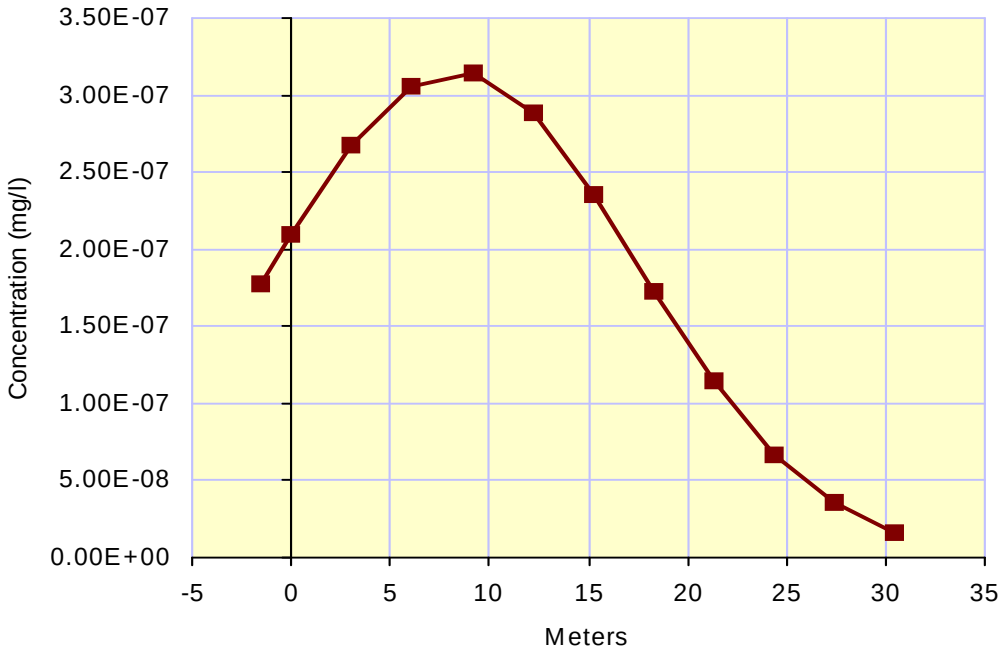
TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210			
Hydraulic Gradient:	0.00200	**m/m**		
Hydraulic Conductivity:	2.412E-01	**m/hr**	6.700E-03	**cm/sec**
Soil Bulk Density:	1.440E+03	**kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00	**m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00	**m**	0.000E+00	**ft**

Dispersivities	**Meters**	**Feet**
Longitudinal:	4.21	13.81
Lateral:	0.43	1.40
Vertical:	0.04	0.14

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-07	**1/hr**

Load	**Begin (m)**	**End (m)**	**Begin (ft)**	**End(ft)**
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6
Retardation Factor: 256.000
Retarded Darcy Velocity: 8.974E-06 **m/hr** 2.492E-07 **cm/sec**
Retarded Longitudinal Disp. Cofficient: 3.781E-05 **m2/hr**
Retarded Lateral Dispersion Cofficient: 3.885E-06 **m2/hr**
Retarded Vertical Dispersion Cofficient: 4.318E-07 **m2/hr**

Depth (Z) = 0.00 meters, 0.00 feet.
Distribution in mg/l at 45625.00 days, 125.00 years.
Maximum concentration of 3.140E-07 mg/l (3.93 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	1.770E-07	2.090E-07	2.670E-07	3.060E-07	3.140E-07	2.880E-07	2.360E-07	1.730E-07	1.140E-07	6.700E-08	3.520E-08	1.660E-08
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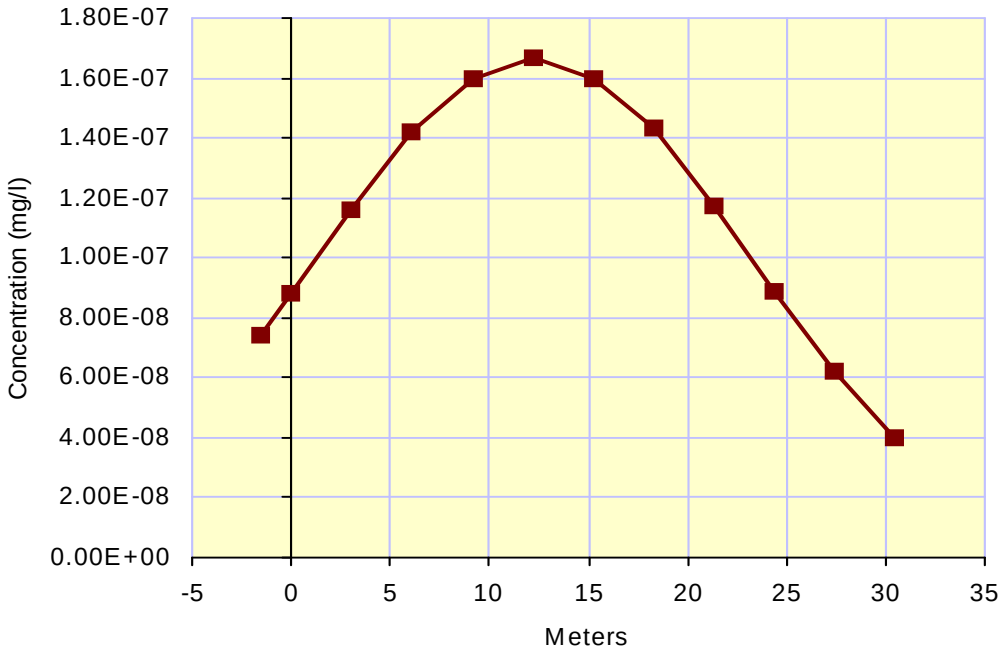
TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210		
Hydraulic Gradient:	0.00200 **m/m**		
Hydraulic Conductivity:	2.412E-01 **m/hr**	6.700E-03	**cm/sec**
Soil Bulk Density:	1.440E+03 **kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00 **m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00 **m**	0.000E+00	**ft**

Dispersivities	**Meters**	**Feet**
Longitudinal:	4.21	13.81
Lateral:	0.43	1.40
Vertical:	0.04	0.14

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-07	**1/hr**

Load	**Begin (m)**	**End (m)**	**Begin (ft)**	**End(ft)**
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6
Retardation Factor: 256.000
Retarded Darcy Velocity: 8.974E-06 **m/hr** 2.492E-07 **cm/sec**
Retarded Longitudinal Disp. Cofficient: 3.781E-05 **m2/hr**
Retarded Lateral Dispersion Cofficient: 3.885E-06 **m2/hr**
Retarded Vertical Dispersion Cofficient: 4.318E-07 **m2/hr**

Depth (Z) = 0.00 meters, 0.00 feet.
Distribution in mg/l at 63875.00 days, 175.00 years.
Maximum concentration of 1.670E-07 mg/l (2.09 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	7.420E-08	8.790E-08	1.160E-07	1.420E-07	1.600E-07	1.670E-07	1.600E-07	1.430E-07	1.170E-07	8.860E-08	6.200E-08	4.000E-08
0.00	0.00												
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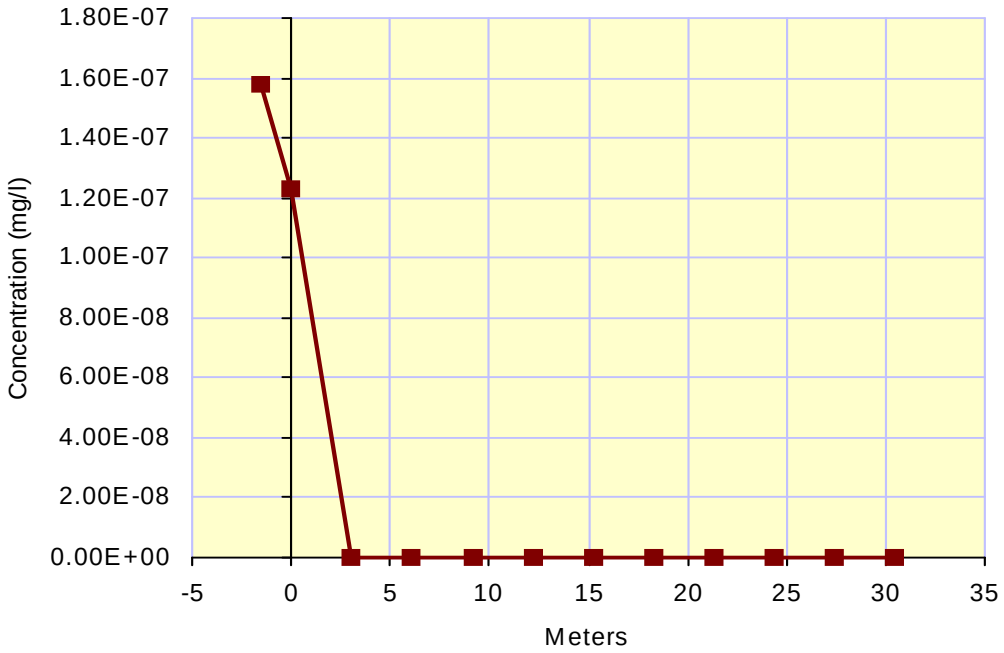
Groundwater Model Results

Dispersivity Sensitivity Analysis

30 ft and 1000 ft plume lengths

TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210			
Hydraulic Gradient:	0.00200	**m/m**		
Hydraulic Conductivity:	2.412E-02	**m/hr**	6.700E-04	**cm/sec**
Soil Bulk Density:	1.440E+03	**kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00	**m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00	**m**	0.000E+00	**ft**

Dispersivities	**Meters**	**Feet**
Longitudinal:	0.76	2.50
Lateral:	0.06	0.20
Vertical:	0.01	0.03

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-06	**1/hr**

Load	**Begin (m)**	**End (m)**	**Begin (ft)**	**End(ft)**
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6

Retardation Factor: 256.000

Retarded Darcy Velocity:	8.974E-07	**m/hr**	2.492E-08 **cm/sec**
Retarded Longitudinal Disp. Cofficient:	7.382E-07	**m2/hr**	
Retarded Lateral Dispersion Cofficient:	1.090E-07	**m2/hr**	
Retarded Vertical Dispersion Cofficient:	6.108E-08	**m2/hr**	

Depth (Z) = 0.00 meters, 0.00 feet.

Distribution in mg/l at 20075.00 days, 55.00 years.

Maximum concentration of 1.580E-07 mg/l (1.98 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	1.580E-07	1.230E-07	1.700E-10									
0.00	0.00												
0.00	0.00												
0.00	0.00												
0.00	0.00												
0.00	0.00												
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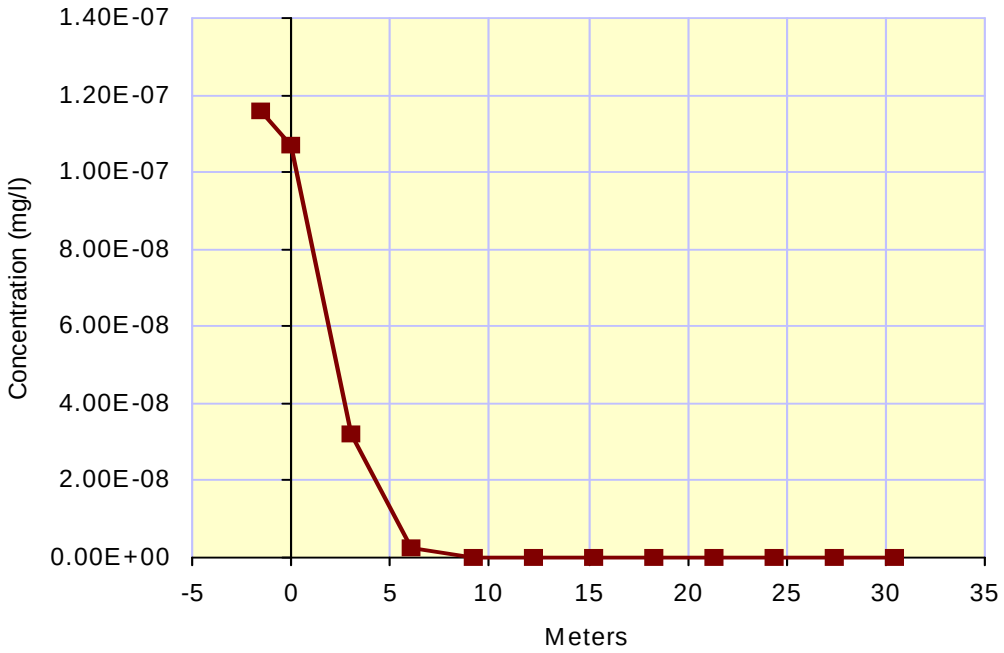
TDY - Convair PCB

Dissolved Concentrations in Plume



AT123D INPUT PARAMETERS

Effective Porosity:	0.210			
Hydraulic Gradient:	0.00200	**m/m**		
Hydraulic Conductivity:	2.412E-02	**m/hr**	6.700E-04	**cm/sec**
Soil Bulk Density:	1.440E+03	**kg/m3**	1.440E+00	**g/cm3**
Aquifer Width:	0.000E+00	**m**	0.000E+00	**ft**
Aquifer Depth:	0.000E+00	**m**	0.000E+00	**ft**

Dispersivities	**Meters**	**Feet**
Longitudinal:	7.47	24.52
Lateral:	0.73	2.40
Vertical:	0.07	0.25

Soil Organic Carbon Content:	8.300E-02	**percent**
Carbon Adsorption Coefficient:	4.480E+04	**(ug/g)/(ug/ml)**
Distribution Coefficient (Kd):	3.718E-02	**m3/kg**
Molecular Diffusion Coefficient:	2.916E-06	**m2/hr**
First-Order Decay Coefficient:	7.911E-06	**1/hr**

Load	**Begin (m)**	**End (m)**	**Begin (ft)**	**End(ft)**
X-Direction	-3.048	0.000	-10.008	0.000
Y-Direction	-3.049	3.049	-10.011	10.011
Z-Direction	0.000	8.232	0.000	27.027

Initial Load (kg): 6.580E-5 **Initial Load (mg/L):** 8.000E-6

Retardation Factor:	256.000		
Retarded Darcy Velocity:	8.974E-07	**m/hr**	2.492E-08 **cm/sec**
Retarded Longitudinal Disp. Cofficient:	6.757E-06	**m2/hr**	
Retarded Lateral Dispersion Cofficient:	7.109E-07	**m2/hr**	
Retarded Vertical Dispersion Cofficient:	1.213E-07	**m2/hr**	

Depth (Z) = 0.00 meters, 0.00 feet.
Distribution in mg/l at 18250.00 days, 50.00 years.
Maximum concentration of 1.160E-07 mg/l (1.45 percent of the maximum concentration of 8.000E-06 mg/l).

Meters		-1.52	0.00	3.05	6.10	9.15	12.19	15.24	18.29	21.34	24.39	27.44	30.49
	Feet	-4.99	0.00	10.01	20.03	30.04	40.02	50.04	60.05	70.07	80.08	90.09	100.11
0.00	0.00	1.160E-07	1.070E-07	3.200E-08	2.340E-09	4.000E-11	1.540E-13						
0.00	0.00												
0.00	0.00												
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Attachment C
Boring Logs

GEOSYNTEC CONSULTANTS
10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-1 **SHEET** 1 OF 2
START DATE 14 Aug 06 **Elevation** FT. MSL
FINISH DATE 14 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
1	**Fine Sand (SW)** with pebble clasts, olive brown [2.5 Y 4/4], moist. becomes dark grayish brown [2.5 Y 4/4], moist.			4.5 ft³ Concrete and Quickrete mix used for cover (vault) and surface seal								
5	becomes medium sand							7/13/10/11	87.5	1.8		
7								3/6/8/8	70.8			▽ Groundwater encountered at 6.74 ft bgs on 8/14/06.
9	becomes fine sand, black [2.5 Y 2.5/1]							4/8/10/12	70.8	0		5 gal water added
11								3/1/0/0	70.8	0		5 gal water added
12	**Clay (CH)** black [2.5Y 2.3/1], high plasticity.											
13	**Silt (ML)** black [2.5Y 2.5/1].							2/0/0/0	100			
15	**Silty Sand (SM)** black [2.5 Y 2.5/1].							0 push	50			
17								4/3/3/7	45.8			5 gal water added
19	**Very Fine Sand (SW)** black [2.5 Y 2.5/1], well graded.			10.2 ft³ Wyo-Ben bentonite grout mix				6/9/11/14	79.2	0		
21								3/5/5/11	54.2			
23								4/7/8/7	60.4	0		5 gal water added
25	becomes very dark gray [2.5Y 3/1]							4/4/6/6	50			5 gal water added
27								4/4/7/9	83.3			
29								5/6/9/10	62.5			5 gal water added
31	**Fine Sand (SW)** dark gray [2.5 Y 3/1], well graded.							4/5/5/10	62.5	0		5 gal water added
33								3/11/13/18				5 gal water added
35				0.4 ft³ Sinclair TR30								

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow-Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**
NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

GEOSYNTEC CONSULTANTS

10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-1 **SHEET** 2 OF 2
START DATE 14 Aug 06 **Elevation** FT. MSL
FINISH DATE 14 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
36	**Medium Sand (SP)** with shell hash, black [2.5Y 2.5/1], poorly graded.			bentonite pellets				3/4/7/11				5 gal water added
37												
38								8/10/11/18		0		
39												
40	**Silt (ML)** with mottled coloration, dark gray [2.5Y 4/1] to dark olive [2.5Y 3/3], contact with Bay Point Silt at 40.25' bgs.							3/5/8/10				
41				2.2 ft^3 Lapis Lustre RMC #3 sand								
42	**Medium to Fine Sand (SP)** black [2.5Y 3/1], poorly graded.			2", 0.010" slotted schedule 40 PVC								Most likely fall in from borehole/auger.
	Total Depth 43.5 ft bgs											

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow-Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**
NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

GEOSYNTEC CONSULTANTS

10875 Rancho Bernardo Rd, Suite 200
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Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-2 **SHEET** 1 OF 1
START DATE 15 Aug 06 **Elevation** FT. MSL
FINISH DATE 15 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
1	**Fine Sand (SW)** with pebble-size clasts, olive brown [2.5Y 4/4], moist. with shell hash, dark grayish brown [2.5Y 4/2].			4.5 ft ^{3} Concrete and Quickrete mix used for cover (vault) and surface seal								
2												
3												
4				0.3 ft^3 Wyo-Ben bentonite chips								
5	becomes fine to medium sand							6/8/9/9	82.3			
6										0		
7												
8												
9												
10	**Fine Sand with Silt (SM)** with shell hash, black [2.5Y 2.5/1].			4 ft^3 Lapis Lustre RMC #3 Sand				4/7/6/4	87.5	0		5 gal water added
				2", 0.010" Slotted schedule 40 PVC								
	Total Depth 16 ft bgs											

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow-Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**
NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

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10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-3 **SHEET** 1 OF 2
START DATE 15 Aug 06 **Elevation** FT. MSL
FINISH DATE 16 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	WELL CONSTRUCTION MATERIAL	SAMPLES NUMBER	SAMPLES TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS
1	**Silty Sand (SM)** olive brown [2.5Y 4/4]	4.5 ft³ Concrete and Quickrete mix used for cover (vault) and surface seal							
2	**Fine Sand (SP)** dark grayish brown [2.5Y 4/2], moist.								
3									
4									
5									
6	**Fine to Medium Sand (SW)** very dark grayish brown [2.5Y 3/2].				6/8/11/12	93.75			
7									
8					7/6/4/3	88.5			
9	increasing shell hash becomes black [2.5 Y 2.5/1], wet				1/1/3/6	85.4	0		
10									
11									
12	increasing fine grain sand				2/4/1/0	43.75			
13	**Silty Sand (SM)** black [2.5Y 2.5/1], wet.				0/0/1/1	62.5			▽ Groundwater encountered at 13.5 ft bgs on 8/15/06.
14									
15					0/0/1/1	100			
16							0		
17	poorly graded				1/1/4/5	70.8			
18									
19		0.7 ft³ Wyo-Ben Bentonite Grout							
20					0/0/4/6	100	0		
21	increasing shell hash								
22	**Fine to Medium Sand** with shell hash, black [2.5Y 2.5/1].				2/3/0/2	92.7			
23									
24					0/4/2/4	79.2			10 gal water added
25							0		
26	**Silty Sand (SM)** black [5Y 2.5/1].				4/6/9/3	64.6			
27									
28					4/7/5/6	53.1			5 gal water added
29							0		
30	with shell hash				0/3//5/6	69.8			
31							0		30-35 ft resampled with 5 foot continuous core Sample method changed to 5 foot continuous core due to equipment change. 2 foot samples
32					2/4/6/6	83.3			
33									
34		10.7 ft³ Sinclair				89.5			
35									

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow-Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**

NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

GEOSYNTEC CONSULTANTS

10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-3 **SHEET** 2 OF 2
START DATE 15 Aug 06 **Elevation** FT. MSL
FINISH DATE 16 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	TIME	COMMENTS
36				TR30 Bentonite Pellets					54.2			taken to prevent drop out of sample from tube.
37									37.5			
38												
39	**Fine Sand (SP)** with shell hash, olive brown [2.5Y 4/4].			2.3 ft^3 Lapis Lustre RMC #3 Sand								
40	No Recovery								0			
41				2", 0.010" slotted schedule 40 PVC					0			
42												
43	Total Depth = 43.5 ft bgs											

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow-Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**
NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

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GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-4 **SHEET** 1 OF 1
START DATE 17 Aug 06 **Elevation** FT. MSL
FINISH DATE 17 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	TIME	COMMENTS
1	**Silty Sand (SM)** olive brown [2/5 Y 4/4].			4.5 ft³ Concrete and Quickrete mix used for cover (vault) and surface seal								
2	**Fine Sand (SP)** with shell hash, dark grayish brown [2.5 Y 4/2], moist.											
3				0.3 ft³ Wyo-Ben Bentonite Chips								
4												
5									5			
6												
7												
8				3.8 ft³ Lapis Lustre RMC # 3 Sand								
9												
10	**Fine to Medium Sand (SW)** with shell hash, very dark greyish brown [2.5 Y 3/2].			2", 0.010" slotted schedule 40 PVC					100			
11												
12										0		
13												
14												
15												
16	Total Depth = 16 ft bgs											

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**
NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
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BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

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San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-5 **SHEET** 1 OF 2
START DATE 17 Aug 06 **Elevation** FT. MSL
FINISH DATE 17 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	WELL CONSTRUCTION MATERIAL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
1–3	**Fill**, fine to medium grain sand with intermixed pea gravel, dark olive brown [2.5Y 3/3]. **Fine to Medium Sand (SW)** with pebble clasts, dark olive brown [2.5Y 3/3].	4.6 ft³ Concrete and Quickrete mix used for cover (vault)							
3–9	**Fine to Medium Sand with Gravel (GW)** well graded, dark brown [10YR 3/3]								
9–14	No Recovery					0	0		
14–26	**Sand (SP)** with shell clast, poorly graded, black [2.5Y 2.5/1].	9.6 ft³ Wyo-Ben benitonite grout				87.5 41.6 31.25 77.3 45.8 54.2	0 0 0		5 gal of water added 5 gal of water added
26–29	**Silty Sand (SM)** black [2.5Y 2.5/1]. **Fine to Medium Grain Sand (SP)** black [2.5Y 2.5/1]. **Silty Sand (SM)** black [2.5Y 2.5/1]. **Silty Sand (SM)** black [2.5Y 2.5/1]. **Sand (SP)**, poorly graded, black [2.5Y 2.5/1].					91.7 50			
30–35	**Silty Sand (SM)** with biotite, black [2.5Y 2.5/1], wet.	0.9 ft³ Sinclair TR30 bentonite pellets				75 79.2	0		

CONTRACTOR Tri-County **NORTHING**
EQUIPMENT CME-75 **EASTING**
DRILL MTHD Hollow Stem **ANGLE** Vertical
DIAMETER 8" **BEARING** ------
LOGGER R. Gray **REVIEWER** **PRINTED** 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

GEOSYNTEC CONSULTANTS

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San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-5 **SHEET** 2 OF 2
START DATE 17 Aug 06 **Elevation** FT. MSL
FINISH DATE 17 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	TIME	COMMENTS
36	with shell hash								100			
37												
38									91.2			
39										0		
40				7.6 ft^3 Lapis Lustre RMC #3 sand								
41	**Clay (CL)** with shell hash, medium plasticity, black [2.5Y 2.5/1].			2", 0.010" slotted schedule 40 PVC								
42									100			
	Total Depth = 43 ft bgs									0		

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**
NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

GEOSYNTEC CONSULTANTS

10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559 Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING MWCL-6 **SHEET** 1 OF 1
START DATE 18 Aug 06 **Elevation** FT. MSL
FINISH DATE 18 Aug 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
1	**Medium Sand (SW)** with gravel, olive brown [2.5Y 4/3], mps 10 mm.			4.5 ft³ Cement and Quickrete 2:1 mix								Hand Auger to 3 ft bgs.
2	trace asphalt											
3	more gravel, mps 1.5"			0.3 ft³ Enviroplug Medium Bentonite Chips								
4												
5									12.5	0		
6												
7												
8	drill action indicates possible cobbles			3.5 ft³ Lapis Lustre RMS #3 Sand								
9												
10	**Fine to Medium Sand (SP)** olive brown [2.5Y 4/3], wet.			2", 0.010" Slotted schedule 40 PVC					71	0		
11												
12												
13												
14	becomes black [2.5Y 2.5/1]											
15	**Fine to Medium Sand (SM)** with silt, black [2.5Y 2.5/1], wet.											
	Total Depth = 15.75 ft bgs											

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Tri-County
EQUIPMENT CME-75
DRILL MTHD Hollow Stem
DIAMETER 8"
LOGGER R. Gray **REVIEWER**

NORTHING
EASTING
ANGLE Vertical
BEARING ------
PRINTED 13 Oct 06

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 13/10/06

Geosyntec consultants
10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING **MWCL-7** SHEET **2 OF 2**
START DATE **19 Dec 06** Elevation **11.15 FT. MSL**
FINISH DATE **20 Dec 06**
PROJECT **TDY**
LOCATION **Harbor Drive**
PROJECT NUMBER **SC0307**

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
41	soft, moist, greenish black [GLEY1 5GY], slight plasticity, silty SAND (ML)			67.4 ft³ Wyo-Ben benitonite cement					33	0		5 gallons of water added
42												
43	becomes brown [10YR 4/3]											
44												
45	firm, moist, dark greenish gray [Gley 4/1], medium plasticity, CLAY (CL)								100	0		5 gallons of water added
46												
47												
48												
49												
50	loose, moist, olive brown [2.5Y 4/4], coarse SAND with gravel (SP)								68	0		5 gallons of water added
51												
52												
53												
54	firm, moist, brown [10YR4/3], medium plasticity, CLAY (CL)											
55	loose, moist to wet, dark olive gray [5Y 3/2], fine to medium SAND (SP)			3.9 ft³ Sinclair TR30 bentonite pellets					85	0		5 gallons of water added
56												
57												
58												
59												
60									100			15 gallons of water added
61				10.5 ft³ RMC #3 sand								
62												
63				2", 0.010" slotted schedule 40 PVC								
64	increase in moisture									0		15 gallons of water added
65												
	Total Depth 65.5 ft bgs											

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR **Test America**
EQUIPMENT **CME-75**
DRILL MTHD **Hollow Stem Auger**
DIAMETER **8"**
LOGGER **J. Rinehart** REVIEWER

NORTHING **32.72843510**
EASTING **-117.1865199**
ANGLE **Vertical**
BEARING **-----**
PRINTED **29 Mar 07**

REMARKS:

COORDINATE SYSTEM: **MSL**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W/WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 29/3/07

Geosyntec consultants
10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

GS FORM: CORE3 10/00

BOREHOLE LOG

BORING **MWCL-8** SHEET **1 OF 1**
START DATE **21 Dec 06** Elevation **8.90 FT. MSL**
FINISH DATE **21 Dec 06**
PROJECT **TDY**
LOCATION **Harbor Drive**
PROJECT NUMBER **SC0307**

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LOG	WELL CONSTRUCTION MATERIAL	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	TIME	COMMENTS
0	loose, moist, very dark grayish brown [10YR 3/2], coarse SAND with gravel (GW)			12 ft³ Concrete and Quickrete mix used for cover (vault)					35	0		Located 16" east from the 60" SWCS
1												
2	firm, moist, yellowish brown [10YR 5/4], slight plasticity, SILT with some clay (ML)											
3	soft, moist, light yellowish brown [2.5Y 6/3], silty SAND with some shell hash (SM)			0.9 ft³ Wyo-Ben benitonite cement	5							
4				0.4 ft³ Sinclair TR30 bentonite chips								
5									35	0		
6												
7												▽
8	becomes wet			1.3 ft³ RMC #3 sand								
9					0							
10	becomes dark olive brown [2.5Y 3/3]			pre-packed 1", 0.010" slotted schedule 40 PVC					100	0		Clay lens from 9.4 to 9.7 ft bgs, dark yellowish brown [10YR 3/4].
11	loose, moist to wet, dark olive gray [5Y 3/2], medium SAND with shell hash (SP)											
12	Total Depth 12 ft bgs											

PROFESSIONAL GEOLOGIST • BRIAN R. HITCHENS No. 7593 • STATE OF CALIFORNIA

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 3.25
LOGGER J. Rinehart REVIEWER

NORTHING 32.72847261
EASTING -117.1852016
ANGLE Vertical
BEARING ------
PRINTED 23 Mar 07

REMARKS:

COORDINATE SYSTEM: MSL
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG W:\WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 23/3/07

Geosyntec consultants
10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

GS FORM: BORE 1/99

BOREHOLE RECORD

BORING T-54 **SHEET** 1 OF 4
START DATE 20 Dec 06 **ELEVATION** 10.77 FT MSL
FINISH DATE 20 Dec 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	COMMENTS
	very dark gray [10YR 3/1], ASPHALT						70	0	
	loose, moist, dark yellowish brown [10YR 4/6], medium SAND (SW) with gravel								
	firm, moist, yellowish brown [10YR 5/4], high plasticity, CLAY (CL)								
	loose, moist, dark yellowish brown [10YR 4/6], coarse SAND (SP) with gravel								
5							71	0	
	loose, moist, very dark brown [10YR 4/4], medium to coarse SAND (GP) with gravel and shell hash								
	firm, yellowish brown [10YR 4/4], high plasticity, CLAY (CL)								
	loose, moist, black [10YR 4/2], GRAVEL (GP)								
	loose, moist, dark grayish brown [10YR 4/2], medium SAND (SM)								
	loose, dry, white [10YR 8/1], GRAVEL (GP)								
10	loose, wet, very dark gray [10YR 3/1], medium SAND (SP) with gravel						100	0	
	No Recovery								
15									
20									

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 2"
LOGGER J. Rinehart **REVIEWER**

NORTHING 32.72853960
EASTING -117.1864130
ANGLE Vertical
BEARING ------
PRINTED 29 Mar 07

REMARKS: Backfilled with 1.4 cubic feet Enviroplug bentonite pellets to surface.

COORDINATE SYSTEM: MSL
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG NO WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 29/3/07

Geosyntec consultants
10875 Rancho Bernardo Rd, Suite 200
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

GS FORM: BORE 1/99

BOREHOLE RECORD

BORING T-54 **SHEET** 2 OF 4
START DATE 20 Dec 06 **ELEVATION** 10.77 FT MSL
FINISH DATE 20 Dec 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	COMMENTS
25									
30									
35									
40									

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 2"
LOGGER J. Rinehart **REVIEWER**

NORTHING 32.72853960
EASTING -117.1864130
ANGLE Vertical
BEARING ------
PRINTED 29 Mar 07

REMARKS: Backfilled with 1.4 cubic feet Enviroplug bentonite pellets to surface.

COORDINATE SYSTEM: MSL
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG NO WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 29/3/07

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BOREHOLE RECORD

BORING T-54 **SHEET** 3 OF 4
START DATE 20 Dec 06 **ELEVATION** 10.77 FT MSL
FINISH DATE 20 Dec 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	COMMENTS
45									
50									
55									
60									

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 2"
LOGGER J. Rinehart **REVIEWER**

NORTHING 32.72853960
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START DATE 20 Dec 06 **ELEVATION** 10.77 FT MSL
FINISH DATE 20 Dec 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	COMMENTS
65	Total Depth at 65 ft bgs								

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 2"
LOGGER J. Rinehart **REVIEWER**

NORTHING 32.72853960
EASTING -117.1864130
ANGLE Vertical
BEARING ------
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REMARKS: Backfilled with 1.4 cubic feet Enviroplug bentonite pellets to surface.

COORDINATE SYSTEM: MSL
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BORING LOG NO WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 29/3/07

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Fax: (858) 674-6586

GS FORM: BORE 1/99

BOREHOLE RECORD

BORING T-55 **SHEET** 1 OF 4
START DATE 20 Dec 06 **ELEVATION** 11.22 FT MSL
FINISH DATE 20 Dec 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS PER 6"	SAMPLES RECOVERY (%)	SAMPLES PID READING (ppm)	COMMENTS
	very dark gray [10YR 3/1], ASPHALT								
	loose, moist, pale brown [10YR 6/3], GRAVEL (GM)						92	0	
	becomes dark yellowish brown [10YR 4/4]								
	loose, moist, dark yellowish brown [10YR 4/6], SAND (SP) with gravel								
5	loose, moist, very dark grayish brown [10YR 3/2], GRAVEL (GM)						80	0	
	loose, moist, very dark grayish brown [10YR 3/2], low plasticity, GRAVEL (GM)								
	Shell hash present								
	loose, dry, white [10YR 8/1], GRAVEL (GP) with sand								
	loose, moist, very dark brown [10YR 3/2], SAND (SP) with gravel								
	loose, dry, light yellowish brown [2.5Y 6/3], Silty SAND (SM)								
	becomes moist								
	color change to light olive brown [2.5Y 5/6]								
10	loose, moist, dark olive brown [2.5Y 3/3], SAND (SP) with some gravel						100	0	
	loose, wet, very dark grayish brown [2.5Y 3/2], SAND (SM)								
	No Recovery								
15									
20									

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 2"
LOGGER J. Rinehart **REVIEWER**

NORTHING 32.72834100
EASTING -117.1866354
ANGLE Vertical
BEARING ------
PRINTED 29 Mar 07

REMARKS: Backfilled with 1.5 cubic feet Enviroplug bentonite pellets to surface.

COORDINATE SYSTEM: MSL
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG NO WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 29/3/07

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BOREHOLE RECORD

BORING T-55 **SHEET** 2 OF 4
START DATE 20 Dec 06 **ELEVATION** 11.22 FT MSL
FINISH DATE 20 Dec 06
PROJECT TDY
LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	COMMENTS
25									
30									
35									
40									

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EQUIPMENT Geoprobe
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NORTHING 32.72834100
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45									
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BOREHOLE RECORD

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START DATE 20 Dec 06 **ELEVATION** 11.22 FT MSL
FINISH DATE 20 Dec 06
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LOCATION Harbor Drive
PROJECT NUMBER SC0307

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS PER 6"	SAMPLES: RECOVERY (%)	SAMPLES: PID READING (ppm)	COMMENTS
65									
70	Total Depth at 70 ft bgs								

Brian Hitchens
Professional Geologist No. 7593

CONTRACTOR Vironex
EQUIPMENT Geoprobe
DRILL MTHD Direct Push
DIAMETER 2"
LOGGER J. Rinehart **REVIEWER**

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BORING LOG NO WELL (BRIAN) SC0307.GPJ GEOSNTEC.GDT 29/3/07

APPENDIX B

Background Metals Evaluation

APPENDIX B
SITE-SPECIFIC BACKGROUND EVALUATION

Prepared by S.S. Papadopoulos and Associates, Inc.
12 May 2005

B.1 Methodology

Inorganic constituents such as metals and cyanide occur naturally in the environment. A determination of whether site-related activities have resulted in elevated concentrations of these constituents requires an understanding of the range of background concentrations representative of natural conditions. Existing site data for metals and cyanide in soil and groundwater were evaluated to derive site-specific maximum background concentrations, following guidance provided in the California Department of Toxic Substances Control document *Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities, Final Policy* (DTSC, 1997). The site-specific maximum background concentrations for soil and groundwater are presented in Table B-1.

The 2003 site-specific dataset for soil contains between 408 and 431 analytical results for each metal, 161 results for total cyanide, and 159 results for amenable cyanide in soil samples collected across the site. The existing site-specific dataset for groundwater contains between 121 and 127 analytical results for each metal, and 19 results each for total cyanide, and amenable cyanide in groundwater samples collected across the site.

The soil and groundwater datasets include samples from both potentially impacted and non-impacted areas. For each constituent, each dataset may therefore represent either one population, representative of background conditions, or two or more separate populations, one representative of background conditions and the other(s) impacted by facility-related activities. The impacted soil and groundwater sample populations, if present, are characterized by higher concentrations, relative to background, of those constituents. The soil and groundwater datasets were statistically analyzed to determine whether the two or more populations could be identified and distinguished, and to estimate the maximum concentration of each constituent that could be attributed to the background population.

For each constituent in each of the two media, the statistical evaluation included:

1. An initial screening to determine whether the dataset contained sufficient values greater than the detection limit (at least 10% of samples and at least 10 samples for each constituent),

2. Computation and review of summary statistics for concentrations and log-transformed concentrations of each constituent in each media,

3. Construction and review of histograms, box-and-whisker percentile plots, and normal quantile plots of concentrations and log-transformed concentrations of each constituent in each media, to determine whether the dataset more closely follows a normal or log-normal distribution (both analyses are presented for each constituent), to identify whether more than one population is evident and to estimate the maximum concentration associated with the background population, and

4. Comparison of the site-specific maximum background concentrations in soil with published maximum background values for these same metals in California and Western U.S. soils.

B.2 Results

The statistical analyses are presented in Exhibit A. Beryllium, silver, thallium, and total and amenable cyanide were not detected frequently enough in soils to permit a meaningful analysis. In groundwater, there were insufficient detections for antimony, arsenic, beryllium, cadmium, copper, lead, mercury, silver, thallium, and total and amenable cyanide (Table B-1).

For arsenic, barium, and vanadium in soil, and for barium in groundwater, quantile plots of concentration or log-transformed concentration plot as a single linear trend, indicating a single sample population. For these, the maximum observed value is taken as the maximum site-specific background concentration. For the remaining metals, quantile plots of either concentration or log-transformed concentration indicated a break in slope. The population nearest the origin was taken as the background population, and the maximum background concentration was estimated from the concentration corresponding to the break in slope on the quantile diagram. The interpreted break in slope is indicated by a line on the diagram. The site-specific maximum background concentrations for soil are compared to published maximum background values for California and Western U.S. soils in Table B-2. All of the site-specific maximum values are less than state or regional maximum background except for antimony, cadmium, and selenium.

Table B-1
Calculated Background Concentrations for Metals and Cyanide in Soil and Groundwater
2701 North Harbor Drive
San Diego, California

	Soil				
	Max Background (mg/kg)	**Min Detected (mg/kg)**	**Max Detected (mg/kg)**	**No. Samples**	**% Detection Above Background**
Antimony	3.9	0.3	8.5	408	0.7%
Arsenic	23[a]	0.4	23	408	0.0%
Barium	440[a]	1	440	408	0.0%
Beryllium	b	ND	ND	408	b
Cadmium	3.6	0.06	6.8	408	0.7%
Chromium	47	1.8	2200	431	6.0%
Cobalt	23	0.5	100	408	1.5%
Copper	55	0.2	200	408	0.7%
Lead	13.4	0.6	150	408	5.9%
Mercury	0.065	0.03	0.38	409	2.7%
Molybdenum	2.3	0.1	10	408	1.0%
Nickel	14.3	0.7	170	408	3.7%
Selenium	23.7	0.3	30	408	0.5%
Silver	b	0.5	2.5	408	b
Thallium	b	2.2	2.2	408	b
Vanadium	70[a]	0.8	70	408	0.0%
Zinc	53	2	710	408	5.4%
Cyanide (total)	b	0.08	1.7	161	b
Cyanide (amenable)	b	0.08	1	159	b

	Groundwater				
	Max Background (mg/L)	**Min Detected (mg/L)**	**Max Detected (mg/L)**	**No. Samples**	**% Detection Above Background**
Antimony	b	0.03	3	121	b
Arsenic	b	ND	ND	121	b
Barium	0.49[a]	0.0099	0.49	121	0.0%
Beryllium	b	0.0003	0.01	121	b
Cadmium	b	0.0031	0.01	121	b
Chromium	0.03	0.002	250	121	1.7%
Cobalt	0.04	0.0008	0.09	121	0.8%
Copper	b	0.002	0.019	121	b
Lead	b	ND	ND	121	b
Mercury	b	ND	ND	127	b
Molybdenum	0.046	0.004	0.29	121	26.4%
Nickel	0.1	0.003	0.45	121	4.1%
Selenium	0.63	0.025	1.3	121	4.1%
Silver	b	ND	ND	121	b
Thallium	b	ND	ND	121	b
Vanadium	0.076	0.0006	0.13	121	1.7%
Zinc	0.069	0.006	1.3	121	5.0%
Cyanide (total)	b	0.005	0.01	19	b
Cyanide (amenable)	b	ND	ND	19	b

Notes:
a - Entire dataset within background
b - Insufficient detections to determine background
mg/kg - milligram per kilogram
mg/L - milligram per liter

Table B-2
Comparison of Maximum Background Soil Concentrations With Published Values
2701 North Harbor Drive
San Diego, California

	Site-Specific Maximum Background (mg/kg)	Literature Maximum Values	
		California[1,2] (mg/kg)	Western US[3] (mg/kg)
Antimony	3.9	1.95	2.6
Arsenic	23	31.2	97
Barium	440	1400	5000
Beryllium	-	2.7	15
Cadmium	3.6	1.7	-
Chromium	47	1579	2000
Cobalt	23	46.9	50
Copper	55	96.4	300
Lead	13.4	97.1	700
Mercury	0.065	0.9	4.6
Molybdenum	2.3	9.6	7
Nickel	14.3	509	700
Selenium	23.7	1.3	4.3
Silver	(2.5)b	8.3	-
Thallium	(2.2)b	1.1	31
Vanadium	70	288	500
Zinc	53	236	2100

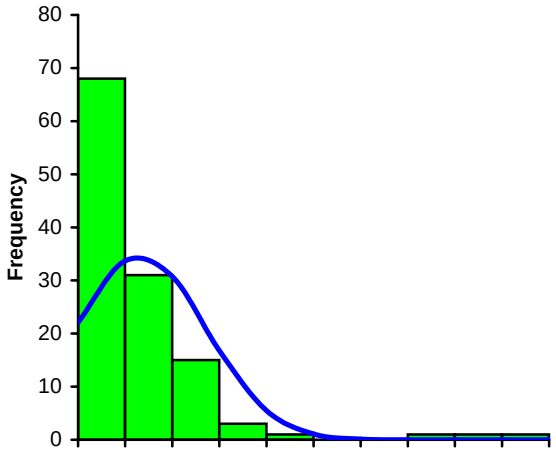
Notes:

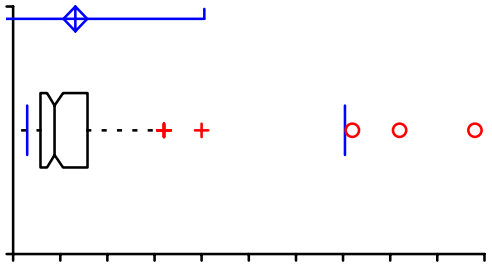
1. University of California, Riverside and DTSC. 1996. Background Concentrations of Trace and Major Elements in California Soils. Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources.
2. Bradford, G. R., R. J. Arkley, P. F. Pratt and F. L. Bair. 1967. Total content of nine mineral elements in 50 selected benchmark soil profiles of California. Hilgardia 38:541-556.
3. Shacklette, H.T. and J.G. Boerngen. 1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. U.S. Geological Survey Professional Paper 1270. U.S. Gov. Printing Office, Washington D.C. 105 p. (Westen US data only)

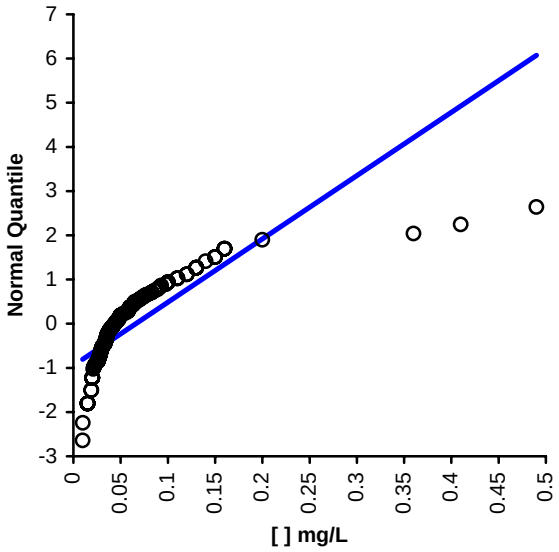
(2.5)b - Insufficient detections to determine site specific background, maximum detection presented
- no data for the constituent
mg/kg - milligram per kilogram

Statistical Analysis of Constituents in Groundwater

Test	**Continuous summary descriptives**
Variable	Barium in groundwater
Performed by	tl
Date	28 April 2005





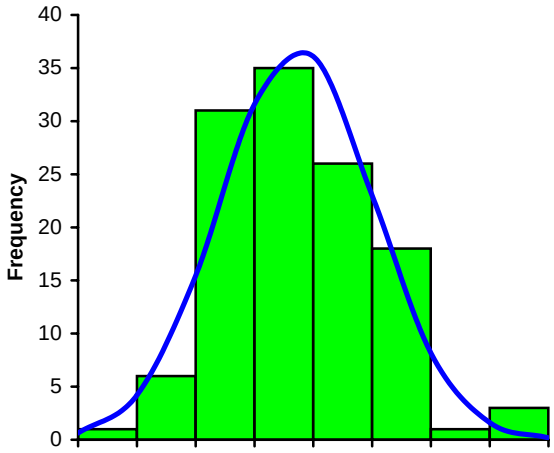


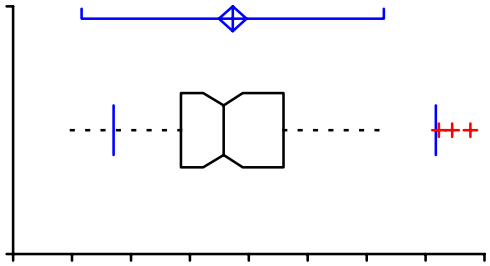
n	121
Mean	0.066
95% CI	0.054 to 0.079
Variance	0.0049
SD	0.0698
SE	0.0063
CV	106%
% Detection	96.7%
Minimum	0.0099
Maximum	0.49
Median	0.044
95.5% CI	0.036 to 0.053
Range	0.4801
IQR	0.05

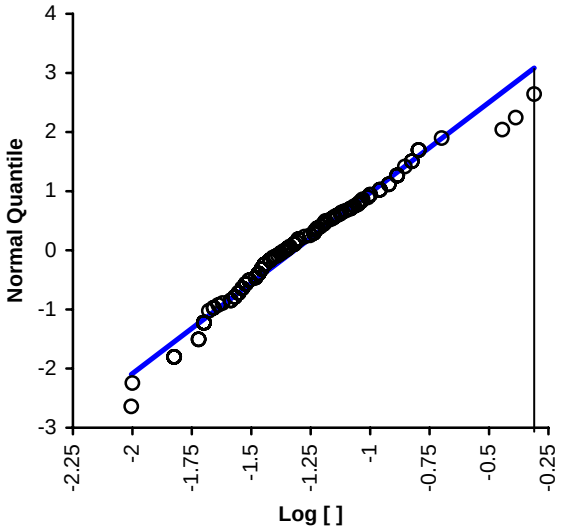
Percentile	
2.5th	0.015
25th	0.029
50th	0.044
75th	0.079
97.5th	0.352

	Coefficient	**p**
Kolmogorov-Smirnov	2.3859	< 0.01
Skewness	3.6599	<0.0001
Kurtosis	17.1296	<0.0001

Test	**Continuous summary descriptives**
Variable	Barium in groundwater
Performed by	tl
Date	28 April 2005





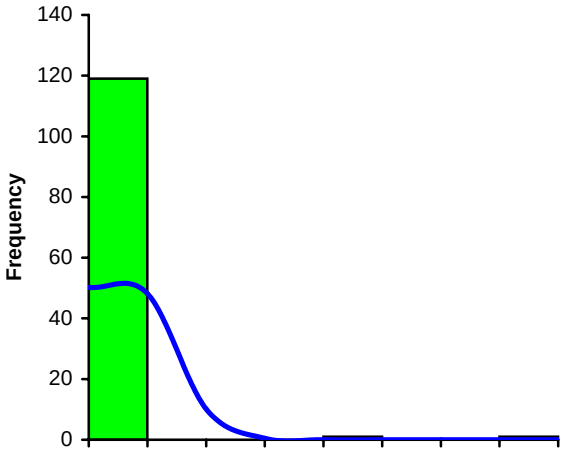


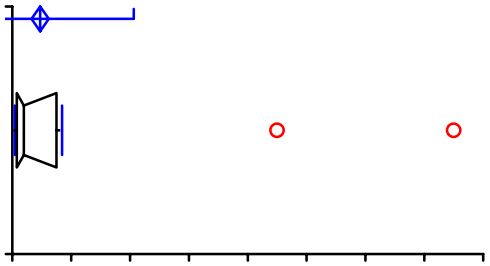
n	121
Mean	-1.318
95% CI	-1.377 to -1.259
Variance	0.1070
SD	0.3271
SE	0.0297
CV	-25%
% Detection	96.7%
Minimum	-2.0044
Maximum	-0.3098
Median	-1.357
95.5% CI	-1.444 to -1.276
Range	1.6946
IQR	0.4352

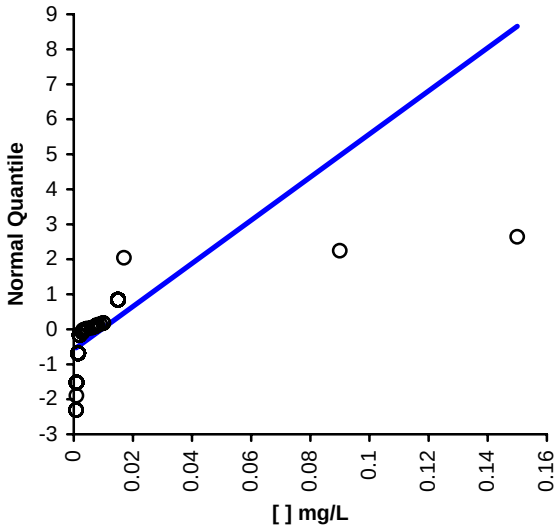
Percentile	
2.5th	-1.824
25th	-1.538
50th	-1.357
75th	-1.102
97.5th	-0.456

	Coefficient	**p**
Kolmogorov-Smirnov	0.7846	0.1391
Skewness	0.5167	0.0214
Kurtosis	0.2692	0.4481

Test	**Continuous summary descriptives**
Variable	Cobalt in groundwater
Performed by	tl
Date	28 April 2005





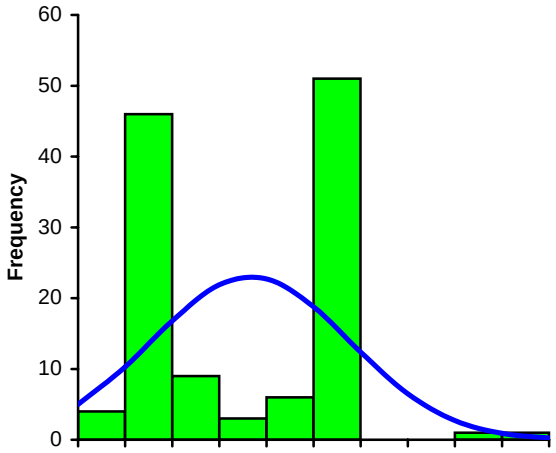


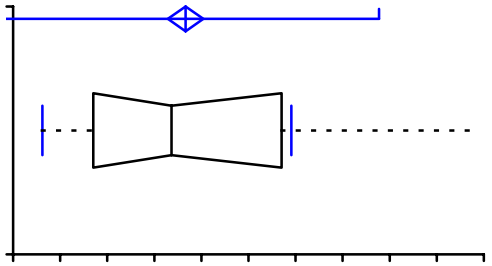
n	121
Mean	0.009
95% CI	0.007 to 0.012
Variance	0.0003
SD	0.0162
SE	0.0015
CV	172%
% Detection	24.8%
Minimum	0.0008
Maximum	<0.3
Median	0.004
95.5% CI	0.002 to 0.015
Range	0.1492
IQR	0.0135

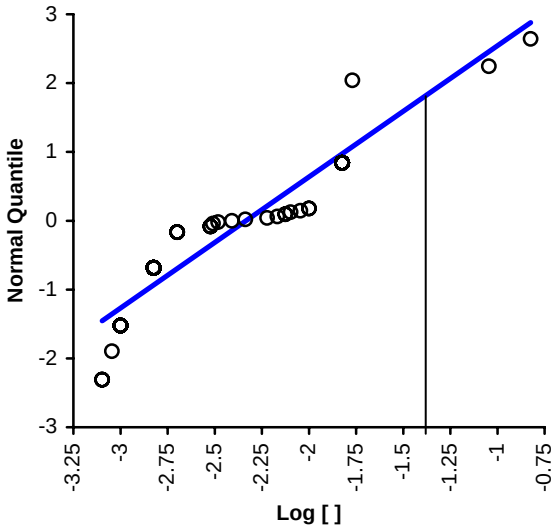
Percentile	
2.5th	0.001
25th	0.002
50th	0.004
75th	0.015
97.5th	0.017

	Coefficient	**p**
Kolmogorov-Smirnov	3.7796	< 0.01
Skewness	6.4942	<0.0001
Kurtosis	51.5265	<0.0001

Test	**Continuous summary descriptives**
Variable	Cobalt in groundwater
Performed by	tl
Date	28 April 2005





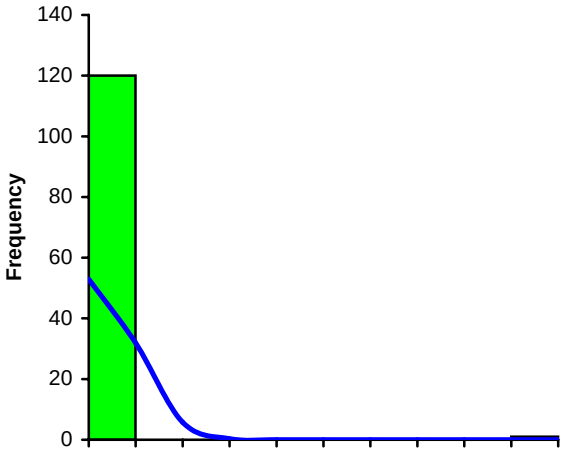


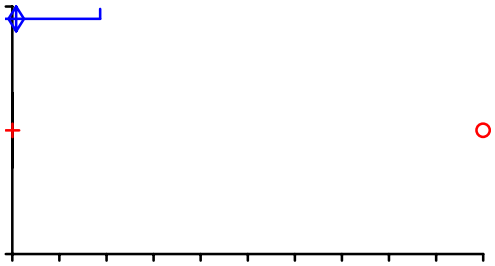
n	121
Mean	-2.334
95% CI	-2.428 to -2.240
Variance	0.2749
SD	0.5243
SE	0.0477
CV	-22%
% Detection	24.8%
Minimum	-3.0969
Maximum	<-0.5228
Median	-2.409
95.5% CI	-2.824 to -1.824
Range	2.2730
IQR	1

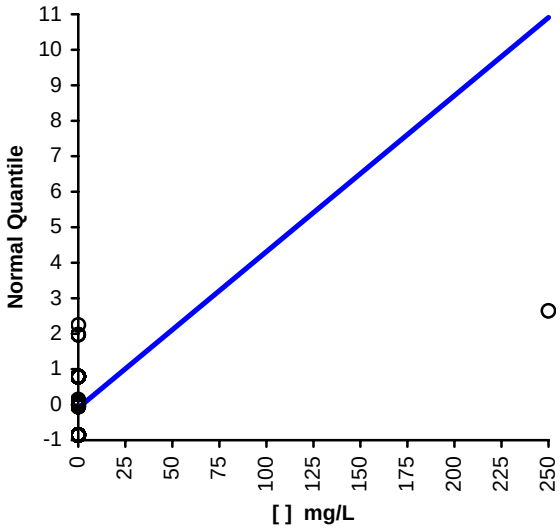
Percentile	
2.5th	-3.094
25th	-2.824
50th	-2.409
75th	-1.824
97.5th	-1.772

	Coefficient	**p**
Kolmogorov-Smirnov	2.8351	< 0.01
Skewness	0.2041	0.3440
Kurtosis	-1.1669	<0.0001

Test	**Continuous summary descriptives**
Variable	Chromium in groundwater
Performed by	tl
Date	28 April 2005





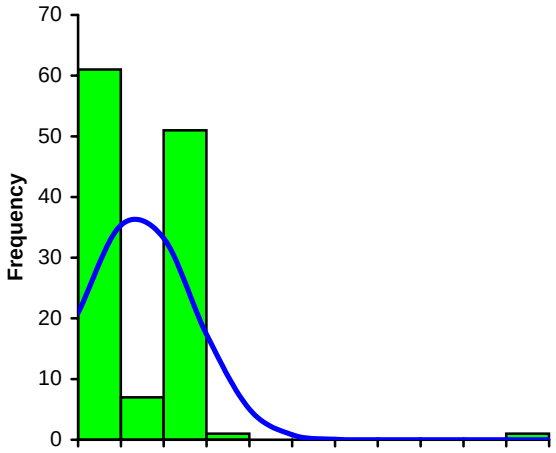


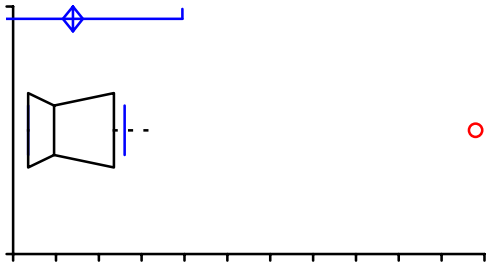
n	121
Mean	2.074
95% CI	-2.017 to 6.165
Variance	516.4959
SD	22.7265
SE	2.0660
CV	1096%
% Detection	10.7%
Minimum	0.002
Maximum	250
Median	0.003
95.5% CI	0.002 to 0.015
Range	249.9985
IQR	0.0135

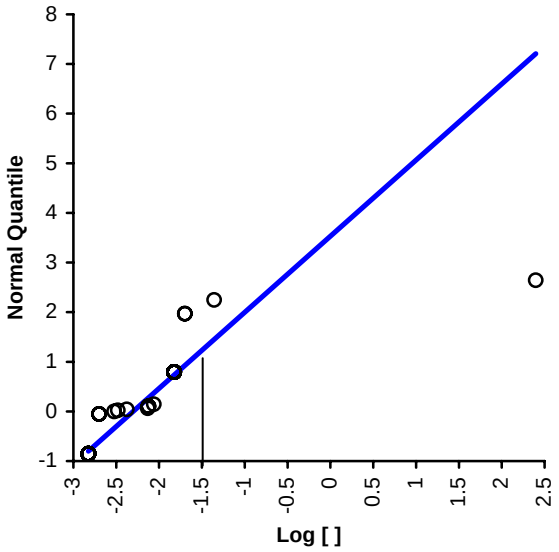
Percentile	
2.5th	0.002
25th	0.002
50th	0.003
75th	0.015
97.5th	0.020

	Coefficient	**p**
Kolmogorov-Smirnov	5.8360	< 0.01
Skewness	11.0000	<0.0001
Kurtosis	121.0000	<0.0001

Test	**Continuous summary descriptives**
Variable	Chromium in groundwater
Performed by	tl
Date	28 April 2005





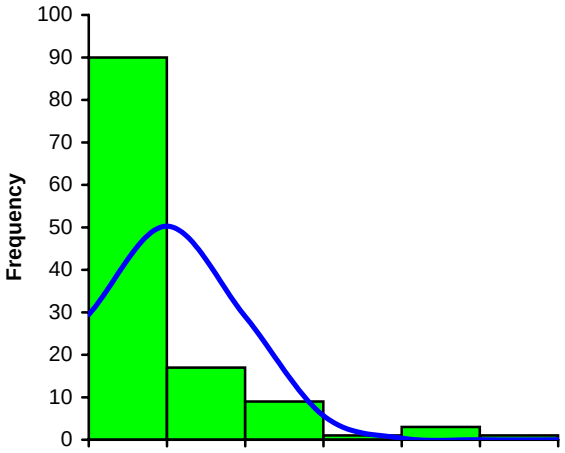


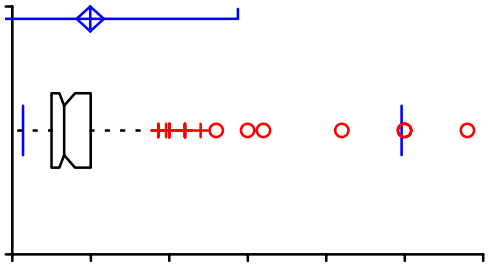
n	121
Mean	-2.303
95% CI	-2.420 to -2.185
Variance	0.4255
SD	0.6523
SE	0.0593
CV	-28%
% Detection	10.7%
Minimum	-2.6989
Maximum	2.3979
Median	-2.523
95.5% CI	-2.824 to -1.824
Range	5.2218
IQR	1

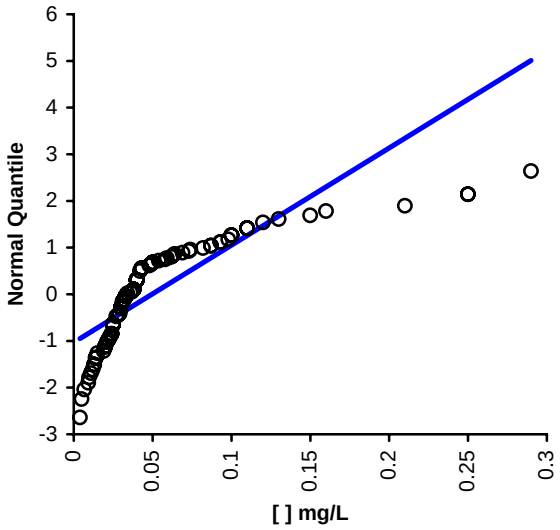
Percentile	
2.5th	-2.824
25th	-2.824
50th	-2.523
75th	-1.824
97.5th	-1.699

	Coefficient	**p**
Kolmogorov-Smirnov	2.7749	< 0.01
Skewness	3.1244	<0.0001
Kurtosis	20.9241	<0.0001

Test	**Continuous summary descriptives**
Variable	Molybdenum in groundwater
Performed by	tl
Date	28 April 2005





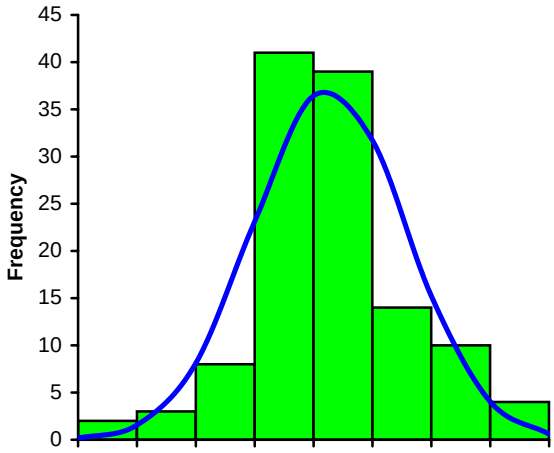


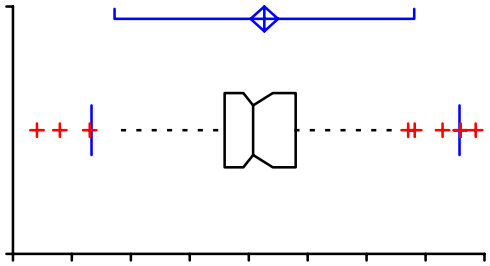
n	121
Mean	0.050
95% CI	0.041 to 0.058
Variance	0.0023
SD	0.0480
SE	0.0044
CV	97%
% Detection	90.9%
Minimum	0.004
Maximum	0.29
Median	0.033
95.5% CI	0.030 to 0.040
Range	0.286
IQR	0.025

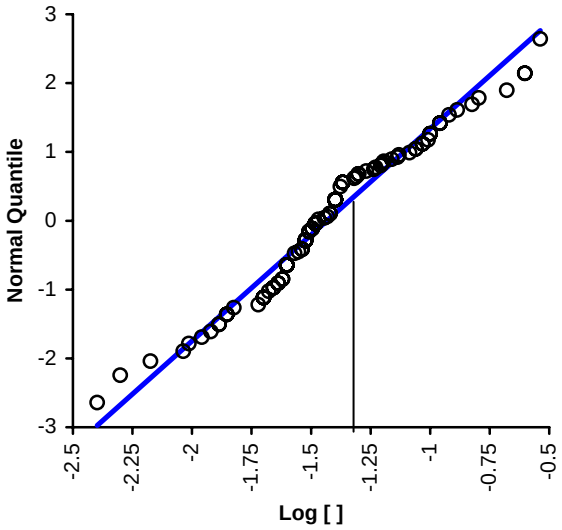
Percentile	
2.5th	0.007
25th	0.025
50th	0.033
75th	0.050
97.5th	0.248

	Coefficient	**p**
Kolmogorov-Smirnov	3.1235	< 0.01
Skewness	2.8654	<0.0001
Kurtosis	9.5750	<0.0001

Test	**Continuous summary descriptives**
Variable	Molybdenum in groundwater
Performed by	tl
Date	28 April 2005





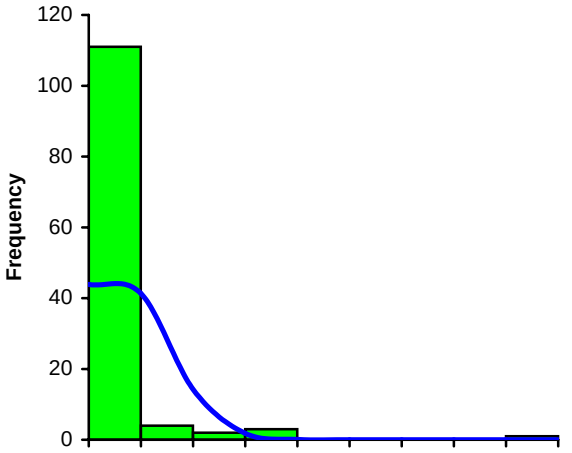


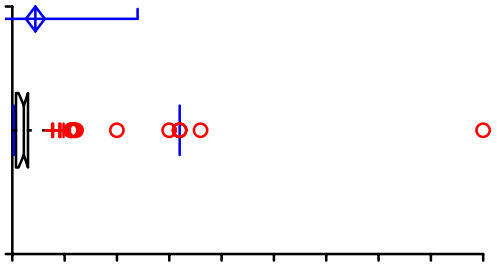
n	121
Mean	-1.434
95% CI	-1.492 to -1.375
Variance	0.1052
SD	0.3243
SE	0.0295
CV	-23%
% Detection	90.9%
Minimum	-2.3979
Maximum	-0.5376
Median	-1.481
95.5% CI	-1.523 to -1.398
Range	1.8603
IQR	0.3010

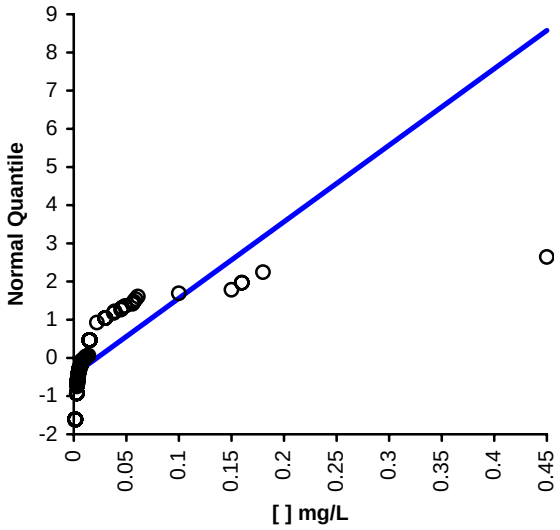
Percentile	
2.5th	-2.167
25th	-1.602
50th	-1.481
75th	-1.301
97.5th	-0.606

	Coefficient	**p**
Kolmogorov-Smirnov	1.6089	< 0.01
Skewness	0.2005	0.3523
Kurtosis	1.0308	0.0530

Test	**Continuous summary descriptives**
Variable	Nickel in groundwater
Performed by	tl
Date	28 April 2005





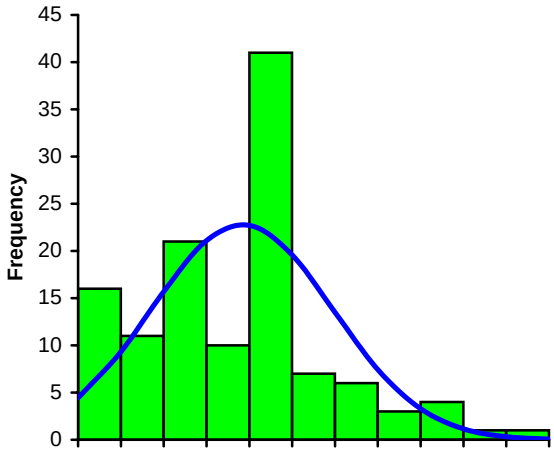


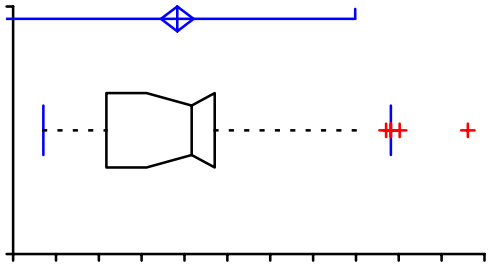
n	121
Mean	0.022
95% CI	0.013 to 0.031
Variance	0.0025
SD	0.0499
SE	0.0045
CV	227%
% Detection	57.0%
Minimum	<0.003
Maximum	0.45
Median	0.011
95.5% CI	0.006 to 0.015
Range	0.4485
IQR	0.0115

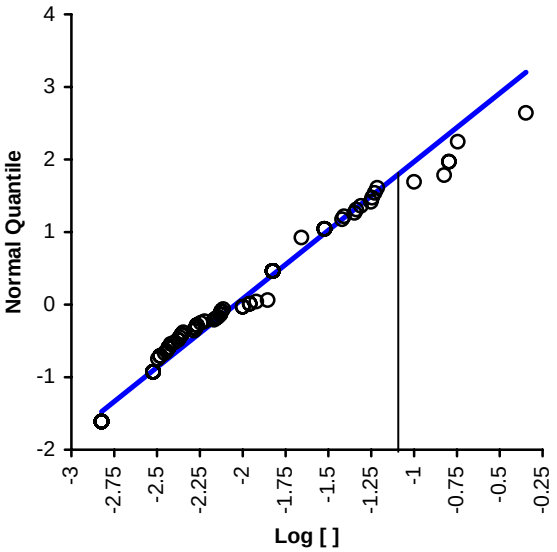
Percentile	
2.5th	0.002
25th	0.004
50th	0.011
75th	0.015
97.5th	0.160

	Coefficient	**p**
Kolmogorov-Smirnov	4.1378	< 0.01
Skewness	6.1426	<0.0001
Kurtosis	46.7203	<0.0001

Test	**Continuous summary descriptives**
Variable	Nickel in groundwater
Performed by	tl
Date	28 April 2005





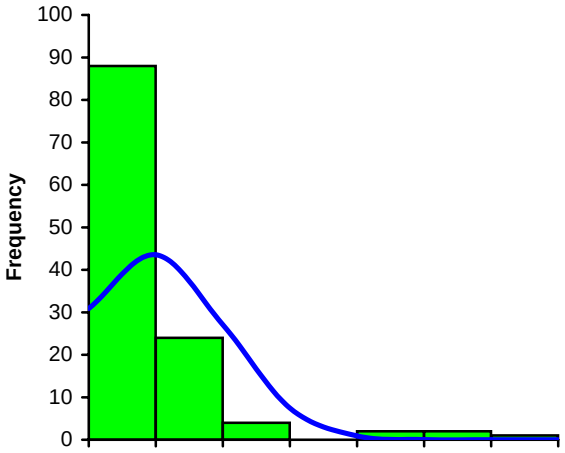


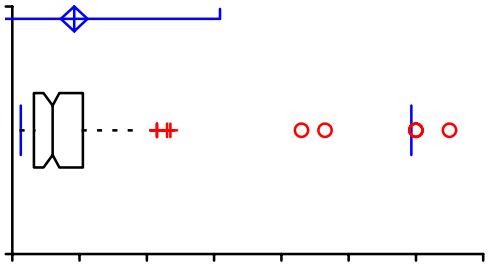
n	121
Mean	-2.042
95% CI	-2.138 to -1.947
Variance	0.2804
SD	0.5295
SE	0.0481
CV	-26%
% Detection	57.0%
Minimum	<-2.5228
Maximum	-0.3468
Median	-1.959
95.5% CI	-2.222 to -1.824
Range	2.477121255
IQR	0.632023215

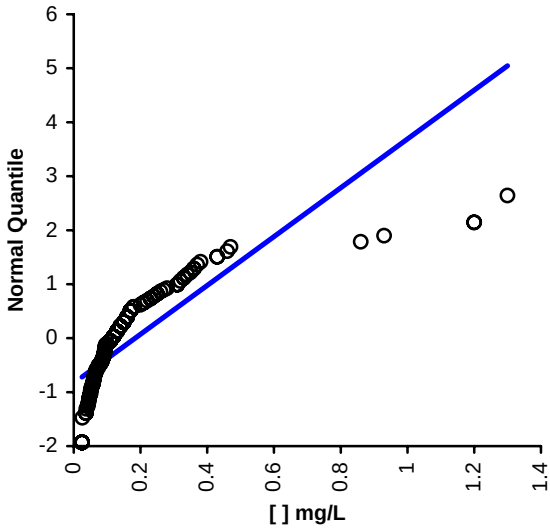
Percentile	
2.5th	-2.824
25th	-2.456
50th	-1.959
75th	-1.824
97.5th	-0.796

	Coefficient	**p**
Kolmogorov-Smirnov	1.7517	< 0.01
Skewness	0.5135	0.0222
Kurtosis	0.2152	0.5148

Test	**Continuous summary descriptives**
Variable	Selenium in groundwater
Performed by	tl
Date	28 April 2005





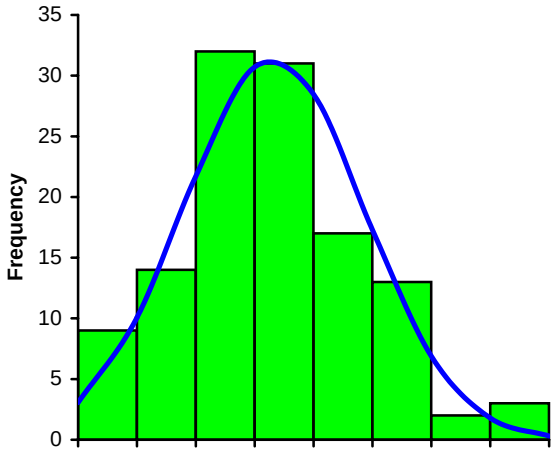


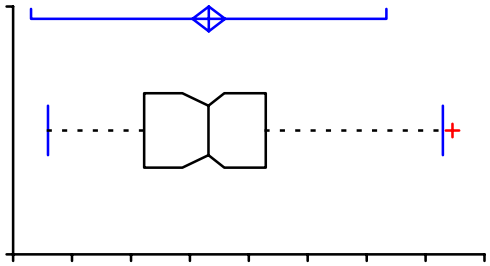
n	121
Mean	0.184
95% CI	0.144 to 0.224
Variance	0.0489
SD	0.2212
SE	0.0201
CV	120%
% Detection	93.4%
Minimum	0.025
Maximum	1.3
Median	0.120
95.5% CI	0.093 to 0.140
Range	1.275
IQR	0.146

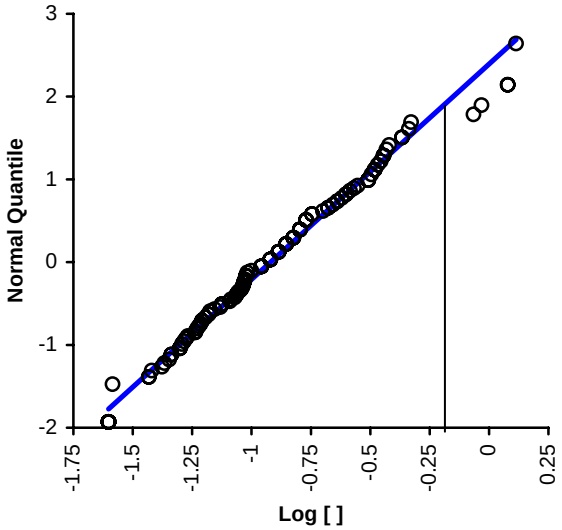
Percentile	
2.5th	0.025
25th	0.064
50th	0.120
75th	0.210
97.5th	1.187

	Coefficient	**p**
Kolmogorov-Smirnov	2.6135	< 0.01
Skewness	3.3040	<0.0001
Kurtosis	12.4574	<0.0001

Test	**Continuous summary descriptives**
Variable	Selenium in groundwater
Performed by	tl
Date	28 April 2005





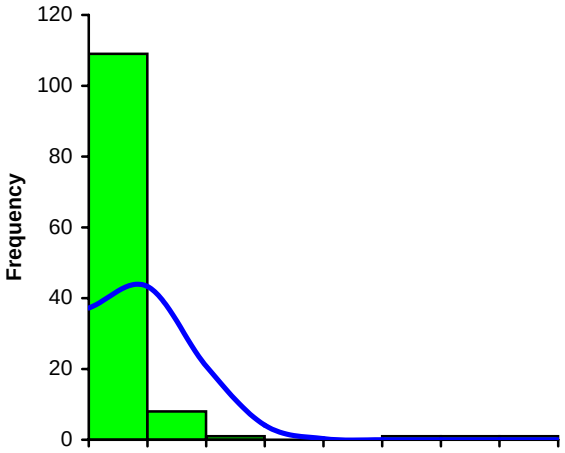


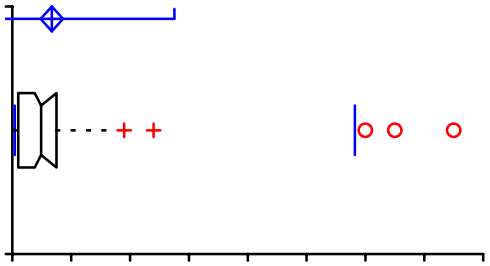
n	121
Mean	-0.920
95% CI	-0.989 to -0.851
Variance	0.1479
SD	0.3845
SE	0.0350
CV	-42%
% Detection	93.4%
Minimum	-1.6021
Maximum	0.1139
Median	-0.921
95.5% CI	-1.032 to -0.854
Range	1.7160
IQR	0.5160

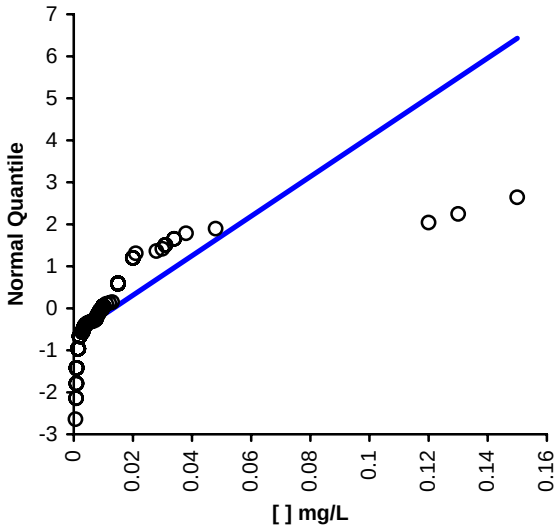
Percentile	
2.5th	-1.602
25th	-1.194
50th	-0.921
75th	-0.678
97.5th	0.074

	Coefficient	**p**
Kolmogorov-Smirnov	0.6479	> 0.15
Skewness	0.3524	0.1077
Kurtosis	0.0621	0.7475

Test	**Continuous summary descriptives**
Variable	Vanadium in groundwater
Performed by	tl
Date	28 April 2005





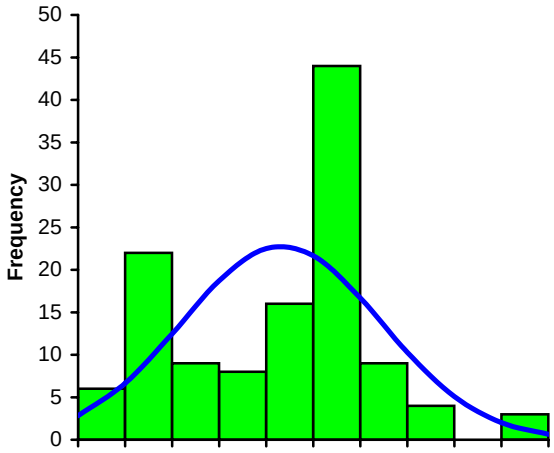


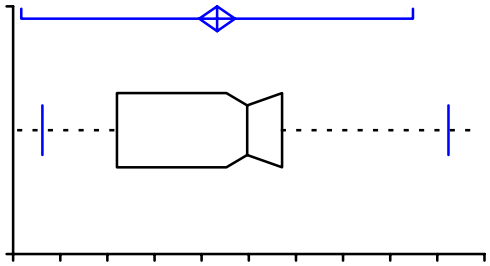
n	121
Mean	0.013
95% CI	0.010 to 0.017
Variance	0.0005
SD	0.0212
SE	0.0019
CV	158%
% Detection	52.9%
Minimum	0.0006
Maximum	<0.3
Median	0.010
95.5% CI	0.008 to 0.015
Range	0.1494
IQR	0.013

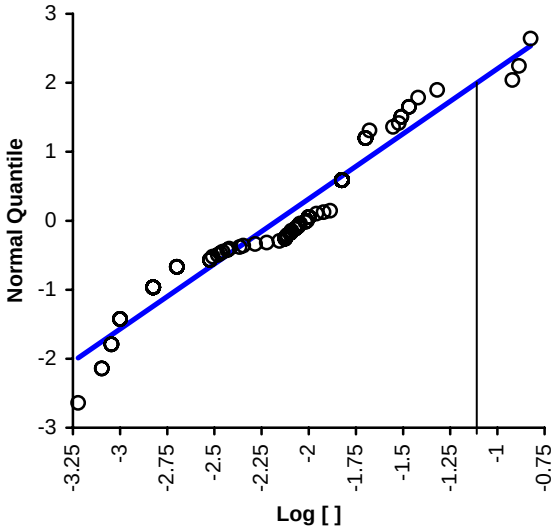
Percentile	
2.5th	0.001
25th	0.002
50th	0.010
75th	0.015
97.5th	0.116

	Coefficient	**p**
Kolmogorov-Smirnov	3.7436	< 0.01
Skewness	4.7396	<0.0001
Kurtosis	25.5187	<0.0001

Test	**Continuous summary descriptives**
Variable	Vanadium in groundwater
Performed by	tl
Date	28 April 2005





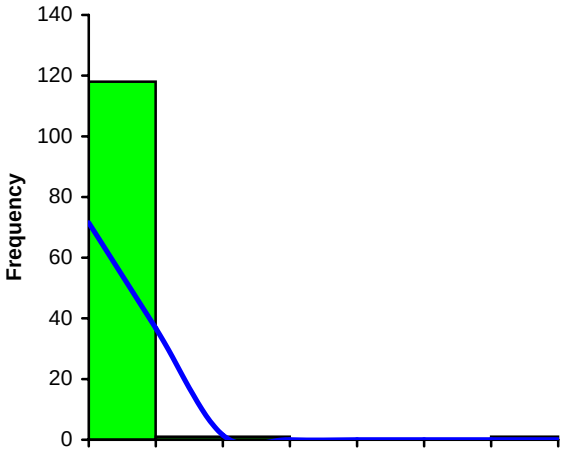


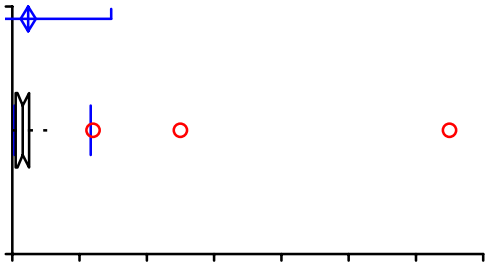
n	121
Mean	-2.168
95% CI	-2.263 to -2.073
Variance	0.2809
SD	0.5300
SE	0.0482
CV	-24%
% Detection	52.9%
Minimum	-3.2218
Maximum	<-0.5228
Median	-2.009
95.5% CI	-2.119 to -1.824
Range	2.3979
IQR	0.8751

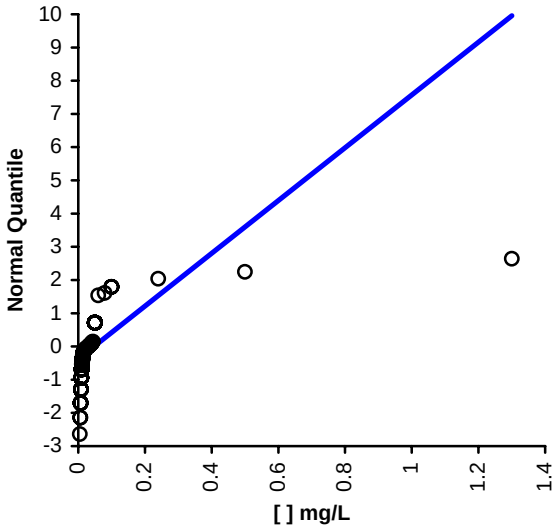
Percentile	
2.5th	-3.094
25th	-2.699
50th	-2.009
75th	-1.824
97.5th	-0.941

	Coefficient	**p**
Kolmogorov-Smirnov	1.9913	< 0.01
Skewness	-0.1558	0.4684
Kurtosis	-0.5991	0.0750

Test	**Continuous summary descriptives**
Variable	Zinc in groundwater
Performed by	tl
Date	28 April 2005





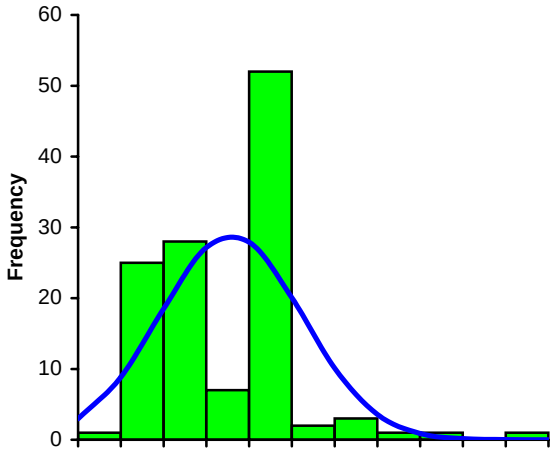


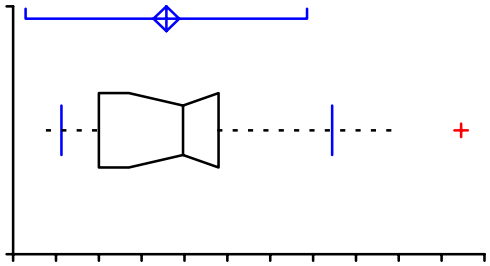
n	121
Mean	0.047
95% CI	0.025 to 0.070
Variance	0.0158
SD	0.1258
SE	0.0114
CV	266%
% Detection	59.5%
Minimum	0.006
Maximum	1.3
Median	0.031
95.5% CI	0.015 to 0.050
Range	1.295
IQR	0.04

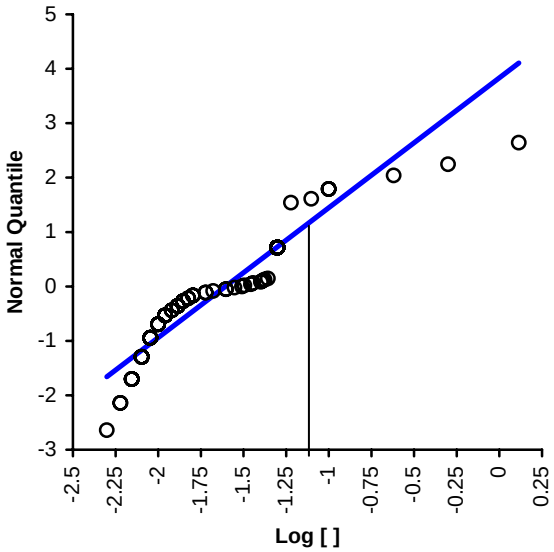
Percentile	
2.5th	0.006
25th	0.010
50th	0.031
75th	0.050
97.5th	0.233

	Coefficient	**p**
Kolmogorov-Smirnov	4.7057	< 0.01
Skewness	8.7733	<0.0001
Kurtosis	84.4713	<0.0001

Test	**Continuous summary descriptives**
Variable	Zinc in groundwater
Performed by	tl
Date	28 April 2005







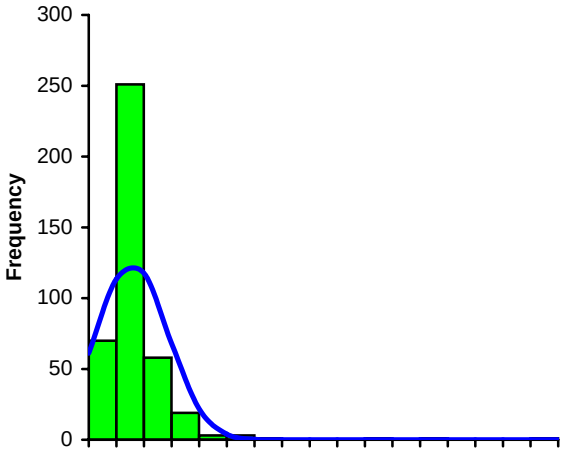
n	121
Mean	-1.606
95% CI	-1.682 to -1.531
Variance	0.1754
SD	0.4189
SE	0.0381
CV	-26%
% Detection	59.5%
Minimum	-2.2218
Maximum	0.1139
Median	-1.509
95.5% CI	-1.824 to -1.301
Range	2.4150
IQR	0.6990

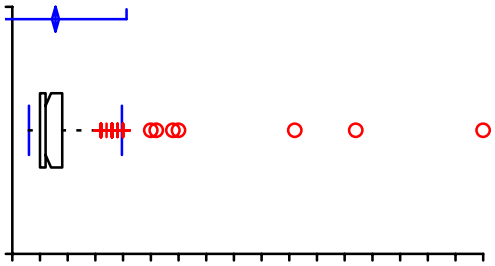
Percentile	
2.5th	-2.219
25th	-2.000
50th	-1.509
75th	-1.301
97.5th	-0.639

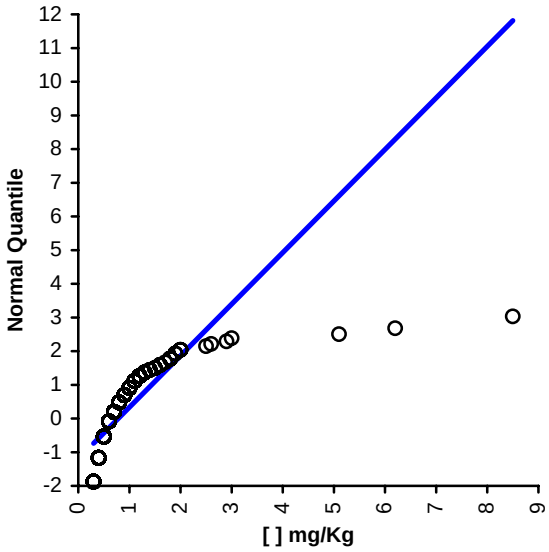
	Coefficient	**p**
Kolmogorov-Smirnov	2.2674	< 0.01
Skewness	0.7018	0.0025
Kurtosis	1.3746	0.0201

Statistical Analysis of Constituents in Soil

Test	**Continuous summary descriptives**
Variable	Antimony in soil
Performed by	tl
Date	15 April 2005





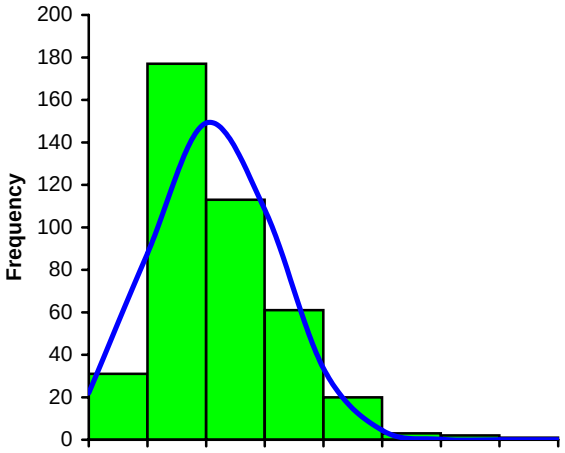


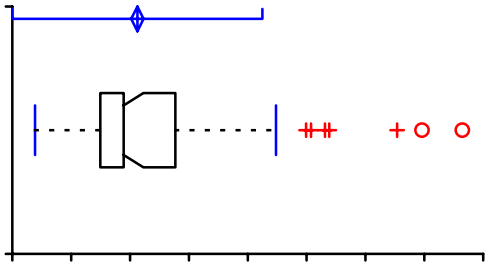
n	408
Mean	0.780
95% CI	0.716 to 0.844
Variance	0.4271
SD	0.6535
SE	0.0324
CV	84%
% Detection	85.0%
Minimum	0.3
Maximum	8.5
Median	0.600
95.8% CI	0.600 to 0.700
Range	8.2
IQR	0.4

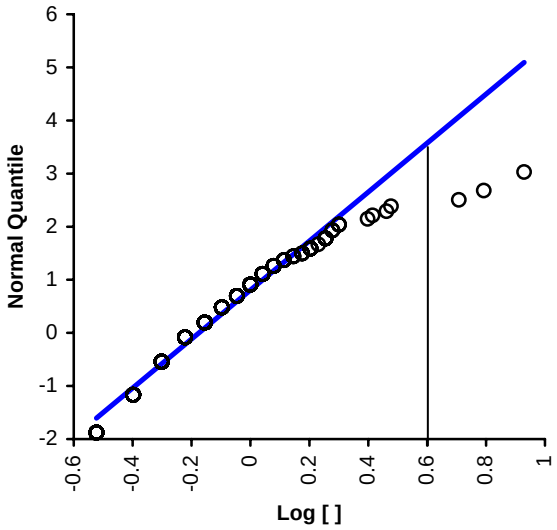
Percentile	
2.5th	0.300
25th	0.500
50th	0.600
75th	0.900
97.5th	1.978

	Coefficient	**p**
Kolmogorov-Smirnov	4.6811	< 0.01
Skewness	6.6115	<0.0001
Kurtosis	63.3227	<0.0001

Test	**Continuous summary descriptives**
Variable	Antimony in soil
Performed by	tl
Date	15 April 2005





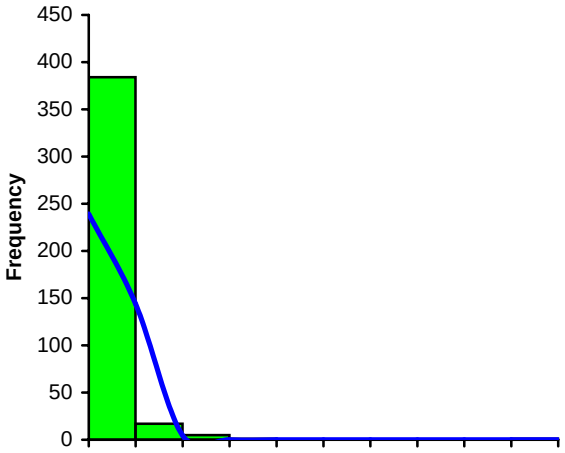


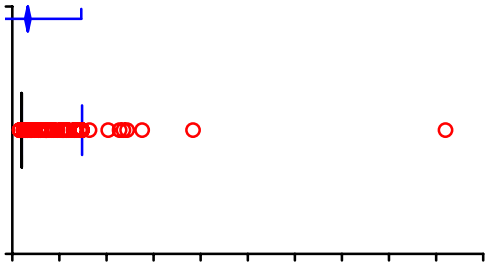
n	408
Mean	-0.175
95% CI	-0.196 to -0.154
Variance	0.0470
SD	0.2168
SE	0.0107
CV	-124%
% Detection	85.0%
Minimum	-0.5229
Maximum	0.9294
Median	-0.222
95.8% CI	-0.222 to -0.155
Range	1.452
IQR	0.255

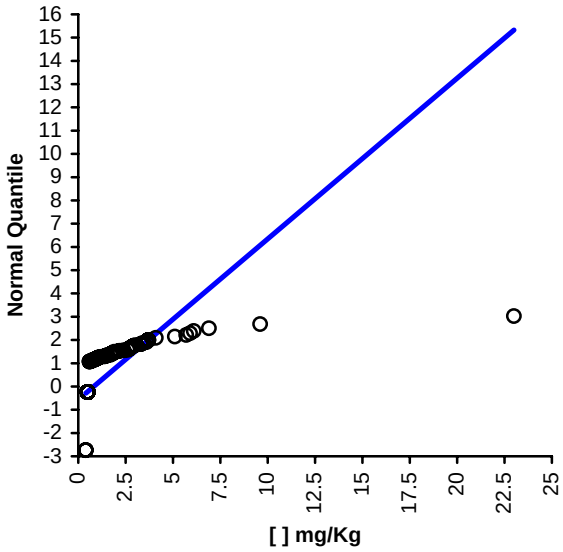
Percentile	
2.5th	-0.523
25th	-0.301
50th	-0.222
75th	-0.046
97.5th	0.296

	Coefficient	**p**
Kolmogorov-Smirnov	2.9000	< 0.01
Skewness	1.0335	<0.0001
Kurtosis	2.5887	<0.0001

Test	**Continuous summary descriptives**
Variable	Arsenic in soil
Performed by	tl
Date	15 April 2005





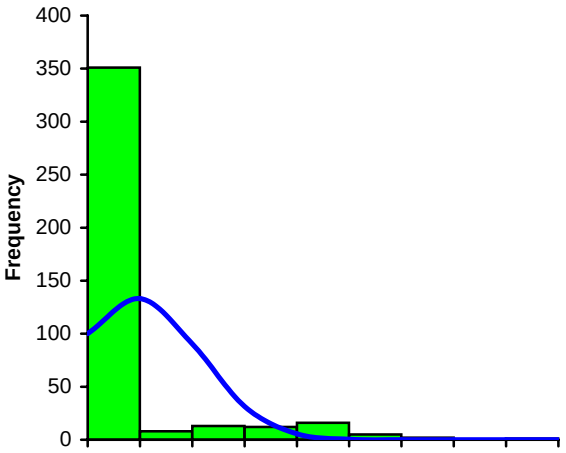


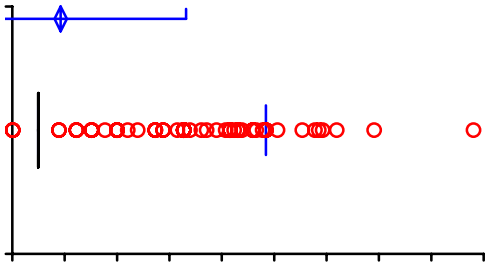
n	408
Mean	0.824
95% CI	0.683 to 0.965
Variance	2.0932
SD	1.4468
SE	0.0716
CV	176%
% Detection	14.7%
Minimum	0.4
Maximum	23
Median	0.500
95.8% CI	0.500 to 0.500
Range	22.6
IQR	0

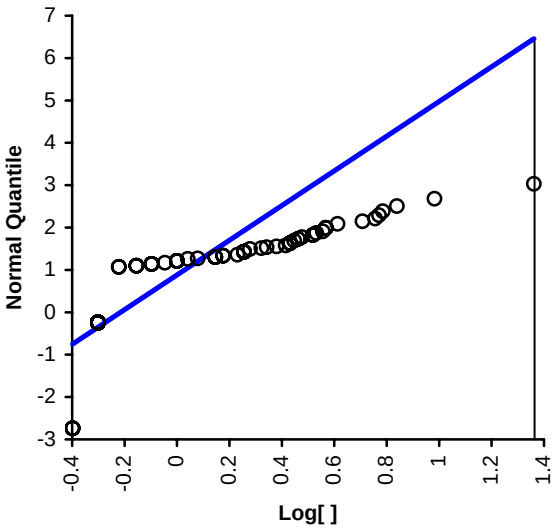
Percentile	
2.5th	0.500
25th	0.500
50th	0.500
75th	0.500
97.5th	3.700

	Coefficient	**p**
Kolmogorov-Smirnov	8.9812	< 0.01
Skewness	10.2139	<0.0001
Kurtosis	140.4708	<0.0001

Test	**Continuous summary descriptives**
Variable	Arsenic in soil
Performed by	tl
Date	15 April 2005





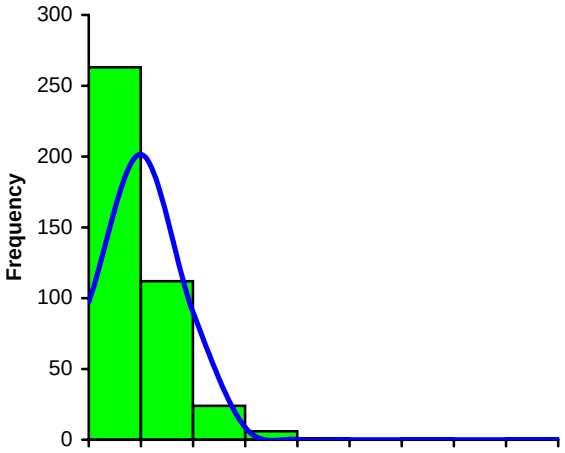


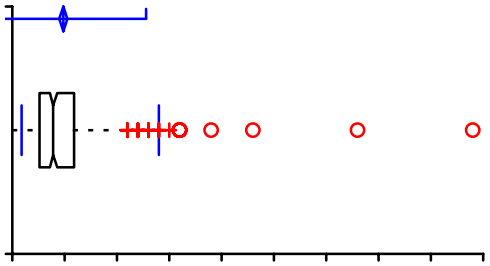
n	408
Mean	-0.215
95% CI	-0.239 to -0.191
Variance	0.0597
SD	0.2442
SE	0.0121
CV	-113%
% Detection	14.7%
Minimum	-0.3979
Maximum	1.3617
Median	-0.301
95.8% CI	-0.301 to -0.301
Range	1.7597
IQR	0

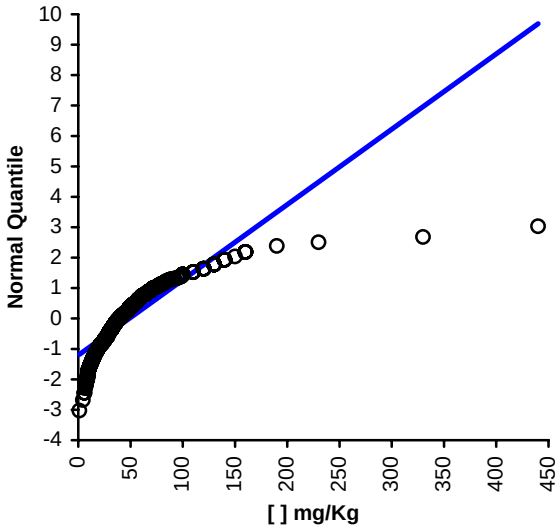
Percentile	
2.5th	-0.301
25th	-0.301
50th	-0.301
75th	-0.301
97.5th	0.568

	Coefficient	**p**
Kolmogorov-Smirnov	9.9685	< 0.01
Skewness	3.1077	<0.0001
Kurtosis	9.9225	<0.0001

Test	**Continuous summary descriptives**
Variable	Barium in soil
Performed by	tl
Date	15 April 2005





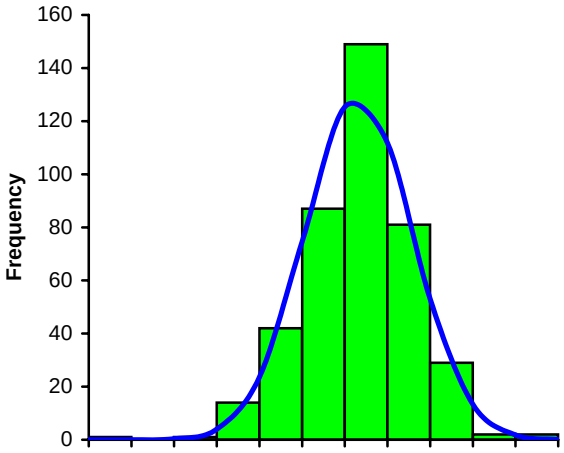


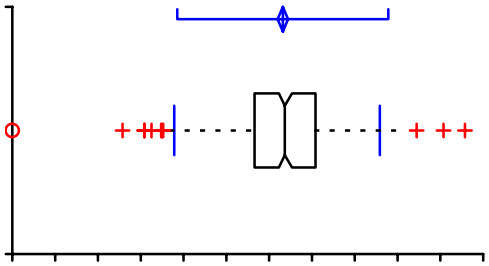
n	408
Mean	48.735
95% CI	44.806 to 52.664
Variance	1629.8119
SD	40.3709
SE	1.9987
CV	83%
% Detection	100.0%
Minimum	1
Maximum	440
Median	39.000
95.8% CI	36.000 to 43.000
Range	439
IQR	33

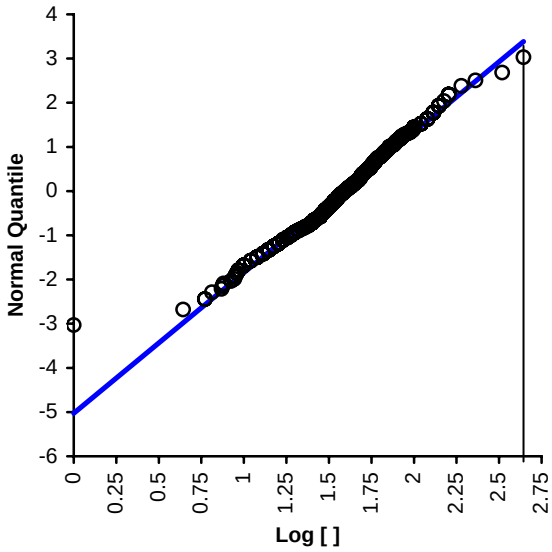
Percentile	
2.5th	8.823
25th	26.000
50th	39.000
75th	59.000
97.5th	140.000

	Coefficient	**p**
Kolmogorov-Smirnov	3.1388	< 0.01
Skewness	3.9154	<0.0001
Kurtosis	27.8067	<0.0001

Test	**Continuous summary descriptives**
Variable	Barium in soil
Performed by	tl
Date	2 May 2005





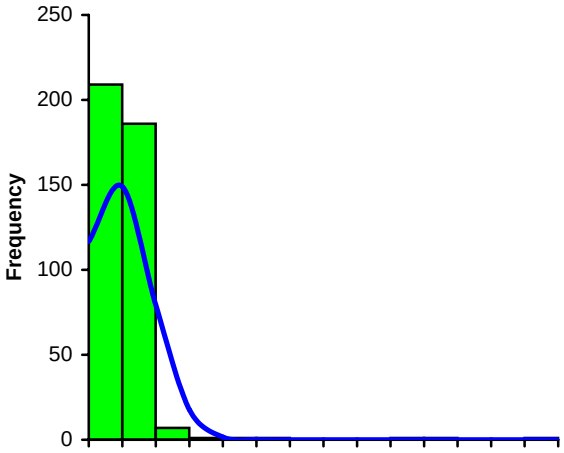


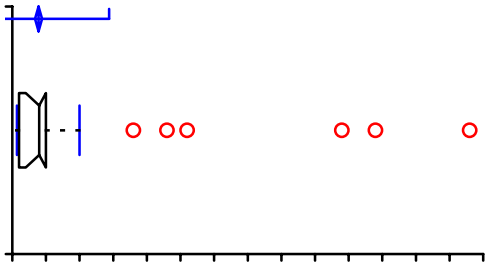
n	408
Mean	1.580
95% CI	1.549 to 1.610
Variance	0.0988
SD	0.3144
SE	0.0156
CV	20%
% Detection	100.0%
Minimum	0
Maximum	2.6435
Median	1.591
95.8% CI	1.556 to 1.633
Range	2.6435
IQR	0.3559

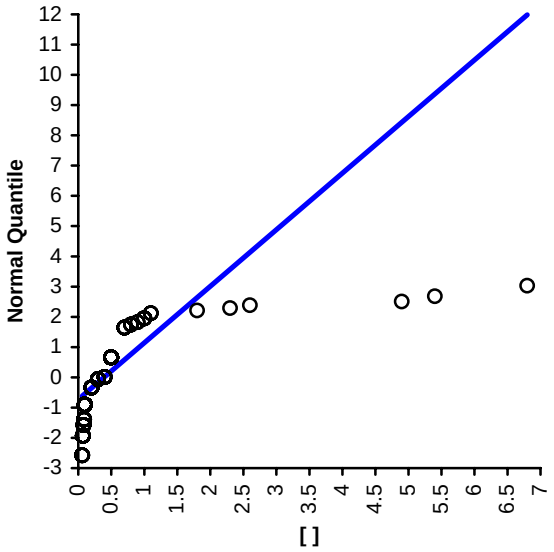
Percentile	
2.5th	0.946
25th	1.415
50th	1.591
75th	1.771
97.5th	2.146

	Coefficient	**p**
Kolmogorov-Smirnov	1.3536	< 0.01
Skewness	-0.4128	0.0009
Kurtosis	1.5572	<0.0001

Test	**Continuous summary descriptives**
Variable	Cadmium in soil
Performed by	tl
Date	15 April 2005





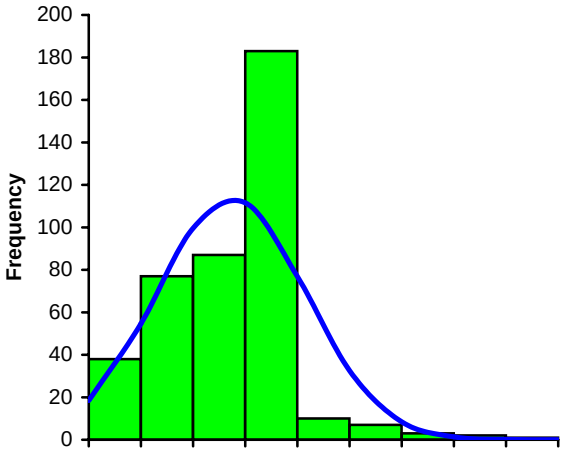


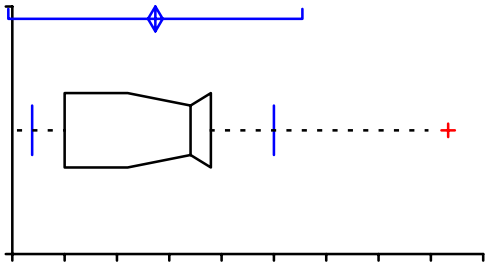
n	408
Mean	0.390
95% CI	0.338 to 0.442
Variance	0.2862
SD	0.5349
SE	0.0265
CV	137%
% Detection	57.1%
Minimum	0.06
Maximum	6.8
Median	0.400
95.8% CI	0.200 to 0.500
Range	6.74
IQR	0.4

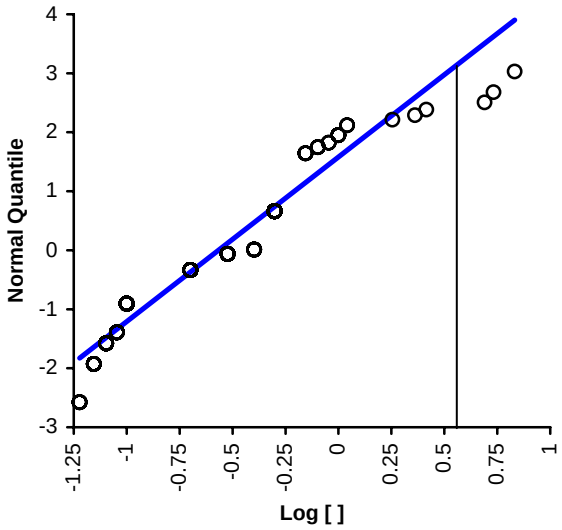
Percentile	
2.5th	0.070
25th	0.100
50th	0.400
75th	0.500
97.5th	1.000

	Coefficient	**p**
Kolmogorov-Smirnov	7.3263	< 0.01
Skewness	8.0748	<0.0001
Kurtosis	81.5026	<0.0001

Test	**Continuous summary descriptives**
Variable	Cadmium in soil
Performed by	tl
Date	15 April 2005





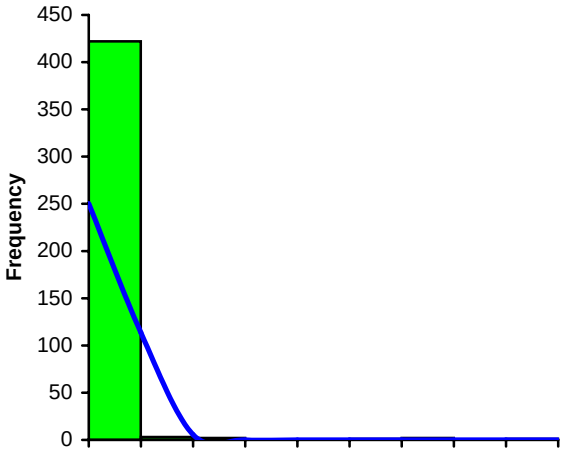


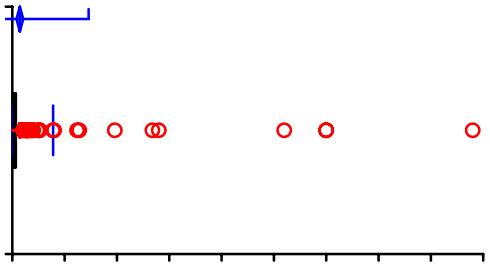
n	408
Mean	-0.567
95% CI	-0.601 to -0.532
Variance	0.1284
SD	0.3584
SE	0.0177
CV	-63%
% Detection	57.1%
Minimum	-1.2218
Maximum	0.8325
Median	-0.398
95.8% CI	-0.699 to -0.301
Range	2.0544
IQR	0.6990

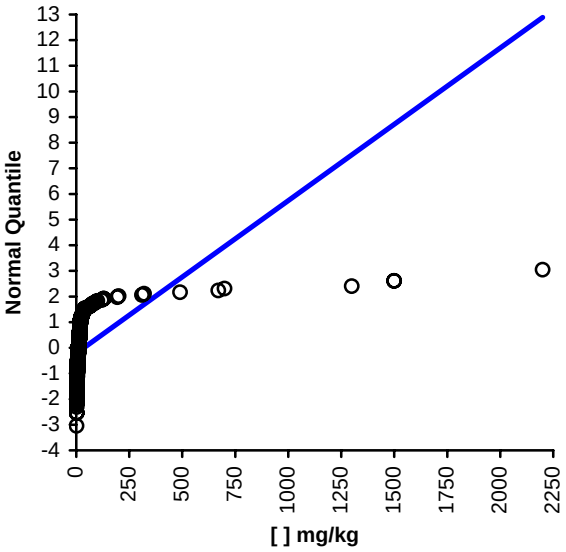
Percentile	
2.5th	-1.155
25th	-1.000
50th	-0.398
75th	-0.301
97.5th	0.000

	Coefficient	**p**
Kolmogorov-Smirnov	5.2266	< 0.01
Skewness	0.0924	0.4408
Kurtosis	-0.0041	0.9247

Test	**Continuous summary descriptives**
Variable	Chromium in soil
Performed by	tl
Date	15 April 2005





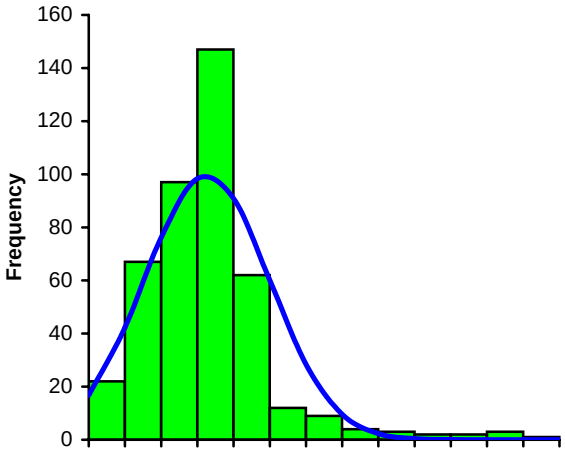


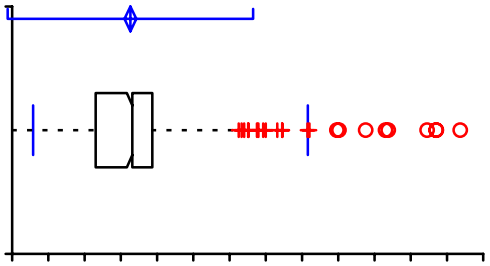
n	431
Mean	35.810
95% CI	19.911 to 51.710
Variance	28203.2237
SD	167.9382
SE	8.0893
CV	469%
% Detection	100.0%
Minimum	1.8
Maximum	2200
Median	12.000
95.7% CI	11.000 to 12.000
Range	2198.2
IQR	9.8

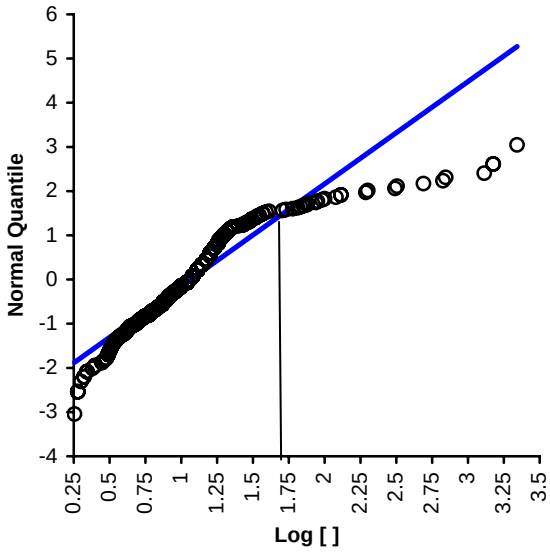
Percentile	
2.5th	2.480
25th	6.700
50th	12.000
75th	16.500
97.5th	195.200

	Coefficient	**p**
Kolmogorov-Smirnov	8.9863	< 0.01
Skewness	9.4342	<0.0001
Kurtosis	98.0679	<0.0001

Test	**Continuous summary descriptives**
Variable	Chromium in soil
Performed by	tl
Date	15 April 2005





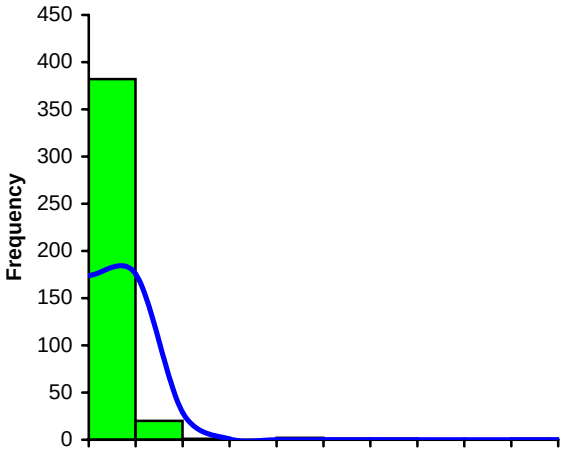


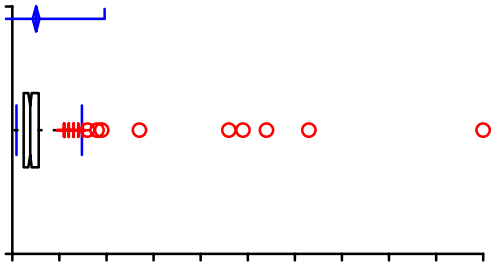
n	431
Mean	1.066
95% CI	1.025 to 1.107
Variance	0.1866
SD	0.4320
SE	0.0208
CV	41%
% Detection	100.0%
Minimum	0.2553
Maximum	3.3424
Median	1.079
95.7% CI	1.041 to 1.079
Range	3.0872
IQR	0.3912

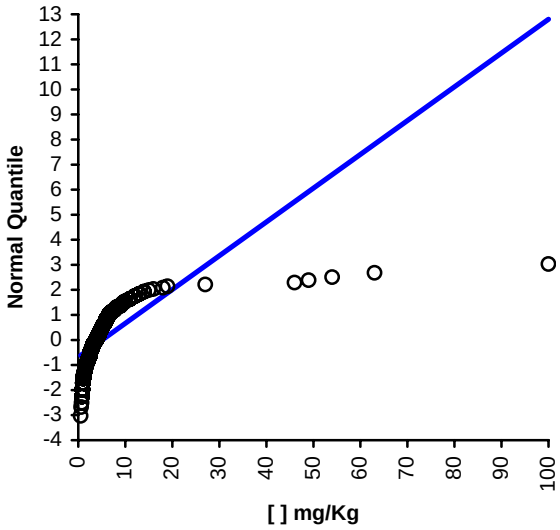
Percentile	
2.5th	0.394
25th	0.826
50th	1.079
75th	1.217
97.5th	2.290

	Coefficient	**p**
Kolmogorov-Smirnov	3.0872	< 0.01
Skewness	1.8141	<0.0001
Kurtosis	6.5654	<0.0001

Test	**Continuous summary descriptives**
Variable	Cobalt in soil
Performed by	tl
Date	15 April 2005





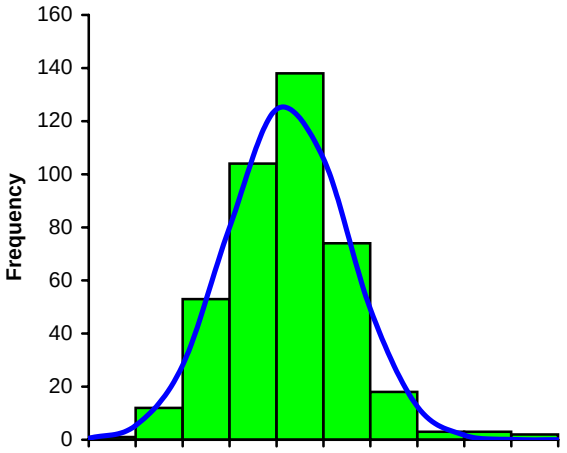


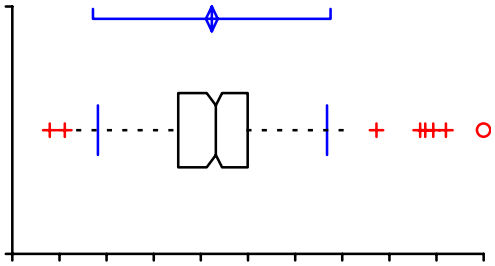
n	408
Mean	5.050
95% CI	4.328 to 5.772
Variance	55.0294
SD	7.4182
SE	0.3673
CV	147%
% Detection	99.0%
Minimum	0.5
Maximum	100
Median	3.800
95.8% CI	3.400 to 4.100
Range	99.5
IQR	3.2

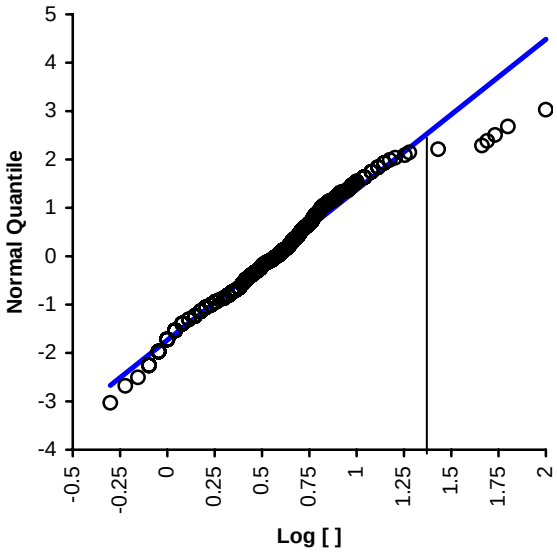
Percentile	
2.5th	0.900
25th	2.400
50th	3.800
75th	5.600
97.5th	14.775

	Coefficient	**p**
Kolmogorov-Smirnov	5.5840	< 0.01
Skewness	8.1063	<0.0001
Kurtosis	83.6260	<0.0001

Test	**Continuous summary descriptives**
Variable	Cobalt in soil
Performed by	tl
Date	15 April 2005





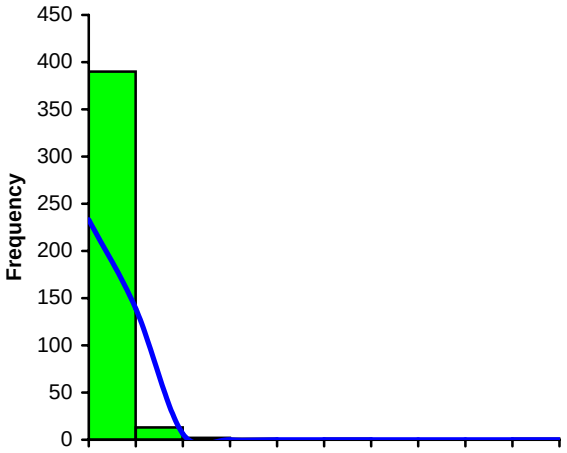


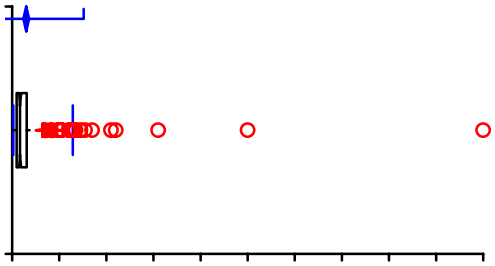
n	408
Mean	0.558
95% CI	0.527 to 0.589
Variance	0.1034
SD	0.3216
SE	0.0159
CV	58%
% Detection	99.0%
Minimum	-0.3010
Maximum	2
Median	0.580
95.8% CI	0.531 to 0.613
Range	2.3010
IQR	0.3680

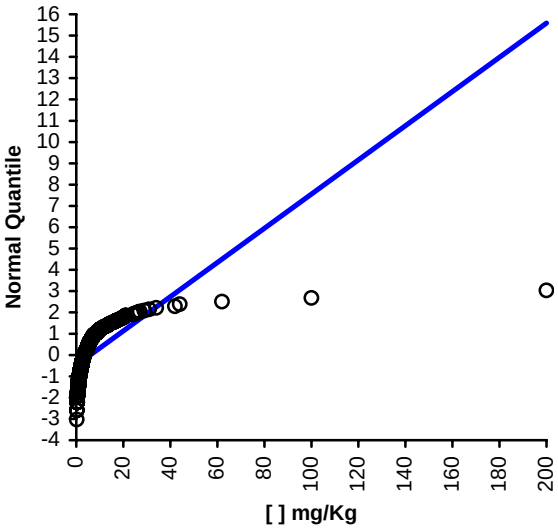
Percentile	
2.5th	-0.046
25th	0.380
50th	0.580
75th	0.748
97.5th	1.169

	Coefficient	**p**
Kolmogorov-Smirnov	1.2053	< 0.01
Skewness	0.4368	0.0005
Kurtosis	1.7240	<0.0001

Test	**Continuous summary descriptives**
Variable	Copper in soil
Performed by	tl
Date	15 April 2005





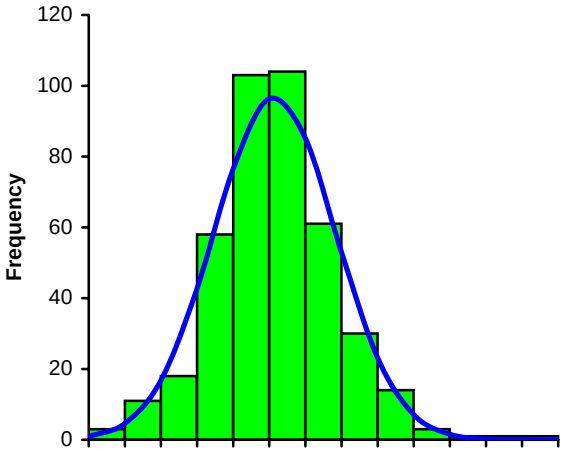


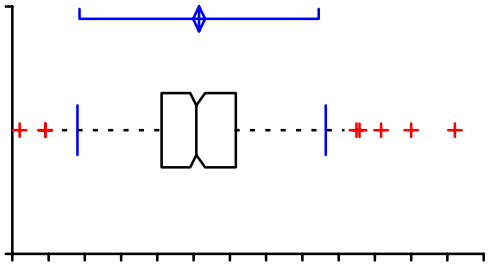
n	408
Mean	5.987
95% CI	4.775 to 7.198
Variance	154.8845
SD	12.4453
SE	0.6161
CV	208%
% Detection	98.8%
Minimum	0.2
Maximum	200
Median	3.300
95.8% CI	3.000 to 3.800
Range	199.8
IQR	4.275

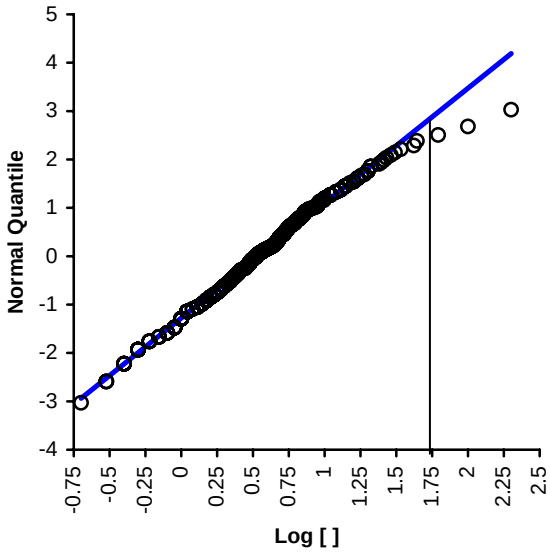
Percentile	
2.5th	0.500
25th	1.900
50th	3.300
75th	6.175
97.5th	25.775

	Coefficient	**p**
Kolmogorov-Smirnov	6.5025	< 0.01
Skewness	10.9017	<0.0001
Kurtosis	154.0327	<0.0001

Test	**Continuous summary descriptives**
Variable	Copper in soil
Performed by	tl
Date	15 April 2005





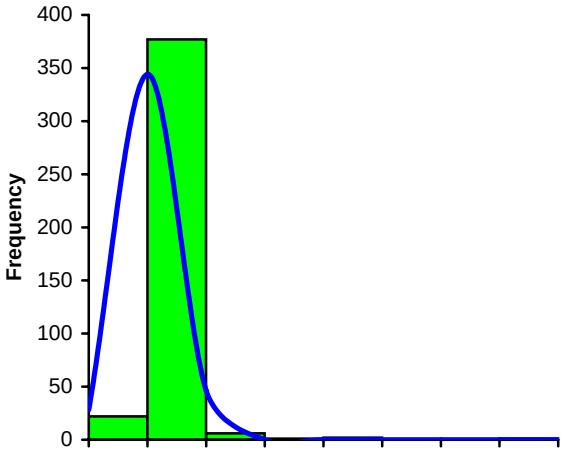


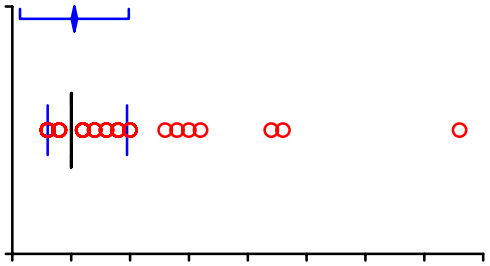
n	408
Mean	0.538
95% CI	0.497 to 0.579
Variance	0.1771
SD	0.4208
SE	0.0208
CV	78%
% Detection	98.8%
Minimum	-0.6990
Maximum	2.3010
Median	0.519
95.8% CI	0.477 to 0.580
Range	3
IQR	0.5119

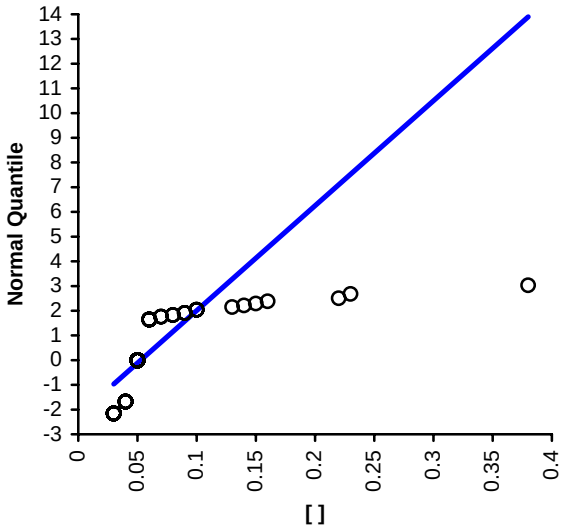
Percentile	
2.5th	-0.301
25th	0.279
50th	0.519
75th	0.791
97.5th	1.411

	Coefficient	**p**
Kolmogorov-Smirnov	0.8743	0.0636
Skewness	0.2462	0.0423
Kurtosis	0.8923	0.0049

Test	**Continuous summary descriptives**
Variable	Mercury in soil
Performed by	tl
Date	15 April 2005





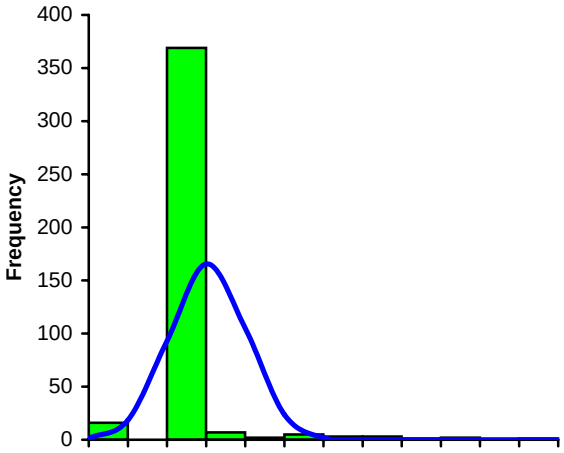


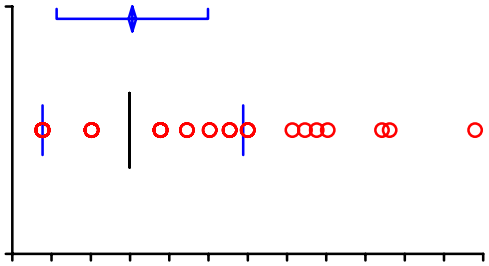
n	409
Mean	0.053
95% CI	0.050 to 0.055
Variance	0.0006
SD	0.0236
SE	0.0012
CV	45%
% Detection	12.2%
Minimum	0.03
Maximum	0.38
Median	0.050
95.2% CI	0.050 to 0.050
Range	0.35
IQR	0

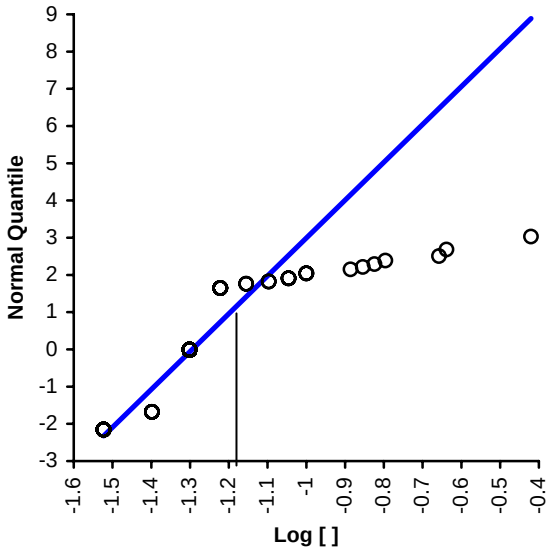
Percentile	
2.5th	0.030
25th	0.050
50th	0.050
75th	0.050
97.5th	0.098

	Coefficient	**p**
Kolmogorov-Smirnov	9.8767	< 0.01
Skewness	9.2175	<0.0001
Kurtosis	106.7591	<0.0001

Test	**Continuous summary descriptives**
Variable	Mercury in soil
Performed by	tl
Date	15 April 2005





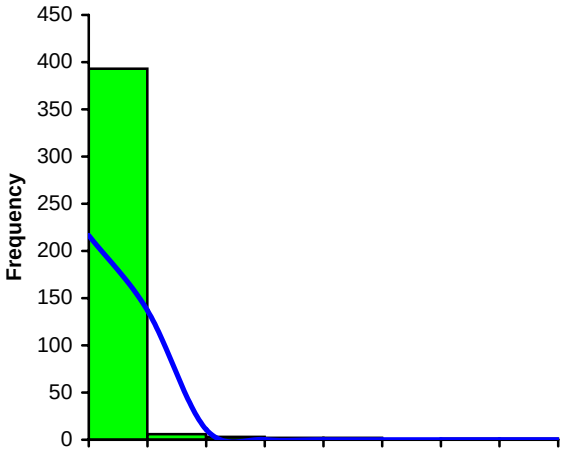


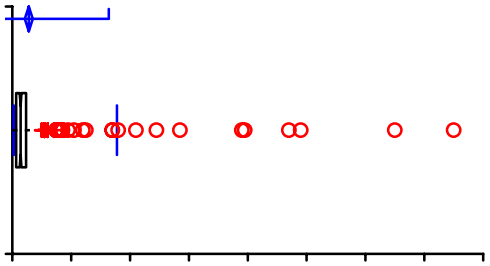
n	409
Mean	-1.294
95% CI	-1.304 to -1.285
Variance	0.0097
SD	0.0983
SE	0.0049
CV	-8%
% Detection	12.2%
Minimum	-1.5229
Maximum	-0.4202
Median	-1.301
95.2% CI	-1.301 to -1.301
Range	1.1027
IQR	0

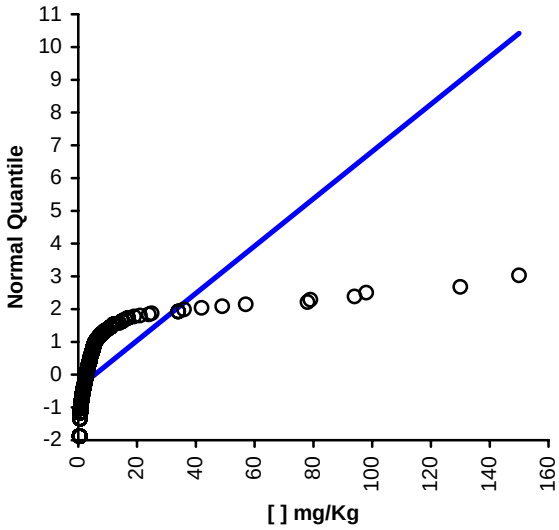
Percentile	
2.5th	-1.523
25th	-1.301
50th	-1.301
75th	-1.301
97.5th	-1.011

	Coefficient	**p**
Kolmogorov-Smirnov	9.5062	< 0.01
Skewness	3.9773	<0.0001
Kurtosis	28.6427	<0.0001

Test	**Continuous summary descriptives**
Variable	Lead in soil
Performed by	tl
Date	15 April 2005





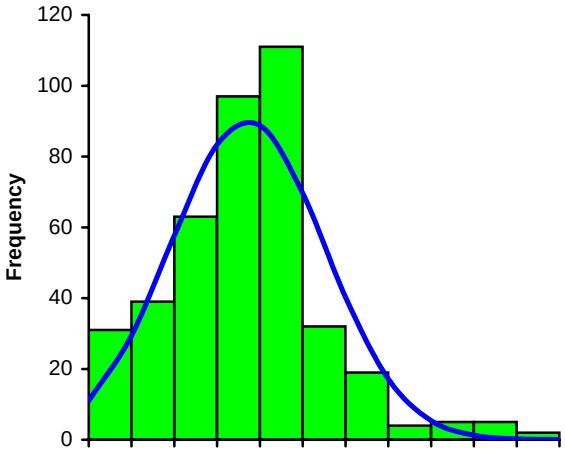


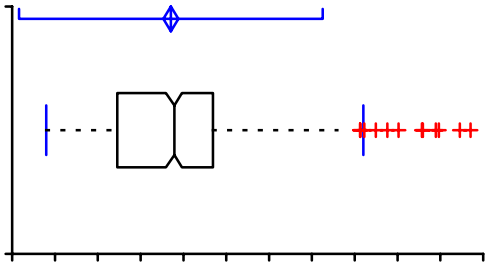
n	408
Mean	5.600
95% CI	4.251 to 6.948
Variance	192.1289
SD	13.8611
SE	0.6862
CV	248%
% Detection	91.4%
Minimum	0.6
Maximum	150
Median	2.800
95.8% CI	2.500 to 3.100
Range	149.5
IQR	3.4

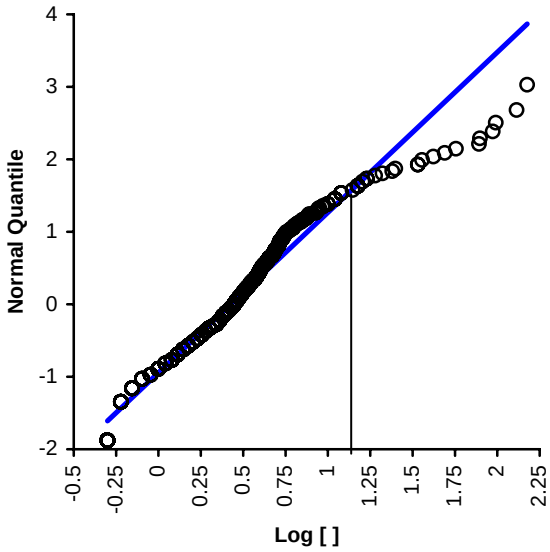
Percentile	
2.5th	0.500
25th	1.300
50th	2.800
75th	4.700
97.5th	35.550

	Coefficient	**p**
Kolmogorov-Smirnov	7.2118	< 0.01
Skewness	6.9936	<0.0001
Kurtosis	56.4009	<0.0001

Test	**Continuous summary descriptives**
Variable	Lead in soil
Performed by	tl
Date	15 April 2005





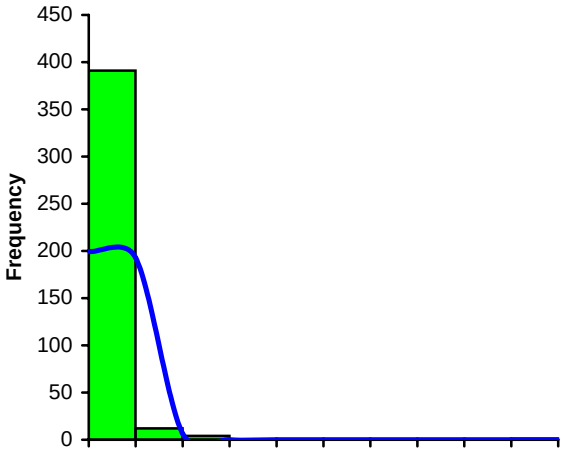


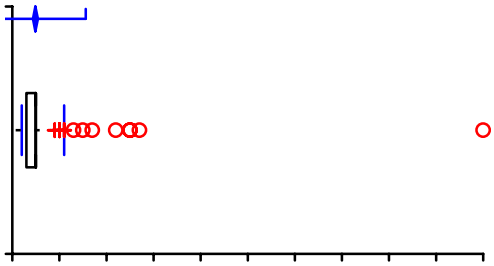
n	408
Mean	0.427
95% CI	0.383 to 0.471
Variance	0.2046
SD	0.4524
SE	0.0224
CV	106%
% Detection	91.4%
Minimum	-0.222
Maximum	2.1761
Median	0.447
95.8% CI	0.398 to 0.491
Range	2.4771
IQR	0.5582

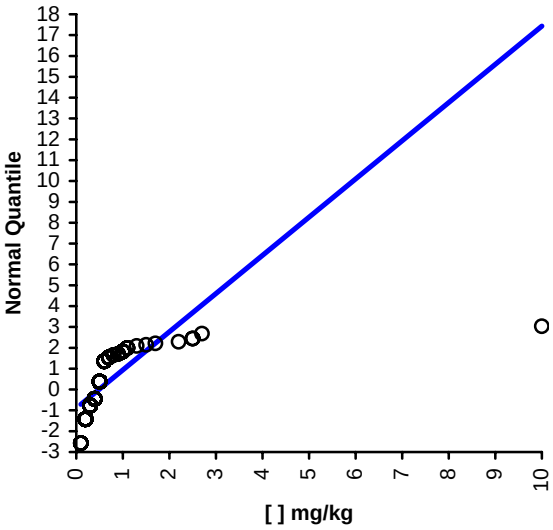
Percentile	
2.5th	-0.301
25th	0.114
50th	0.447
75th	0.672
97.5th	1.551

	Coefficient	**p**
Kolmogorov-Smirnov	1.5464	< 0.01
Skewness	0.6770	<0.0001
Kurtosis	1.3649	0.0002

Test	**Continuous summary descriptives**
Variable	Molybdenum in soil
Performed by	tl
Date	15 April 2005





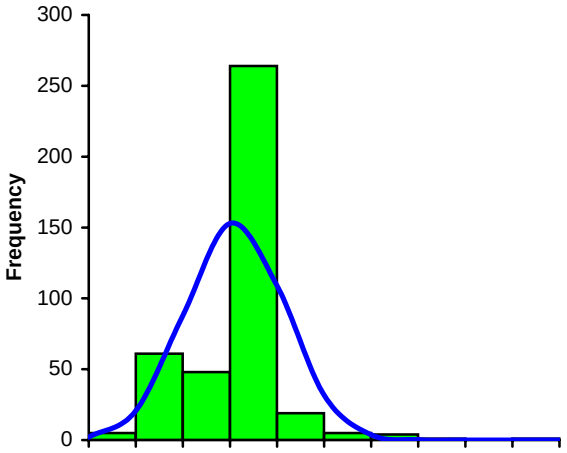


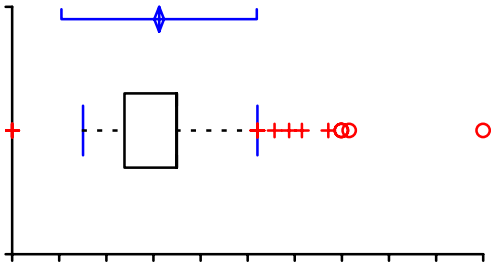
n	408
Mean	0.490
95% CI	0.437 to 0.543
Variance	0.2977
SD	0.5456
SE	0.0270
CV	111%
% Detection	53.4%
Minimum	0.1
Maximum	10
Median	0.500
95.8% CI	0.500 to 0.500
Range	9.9
IQR	0.2

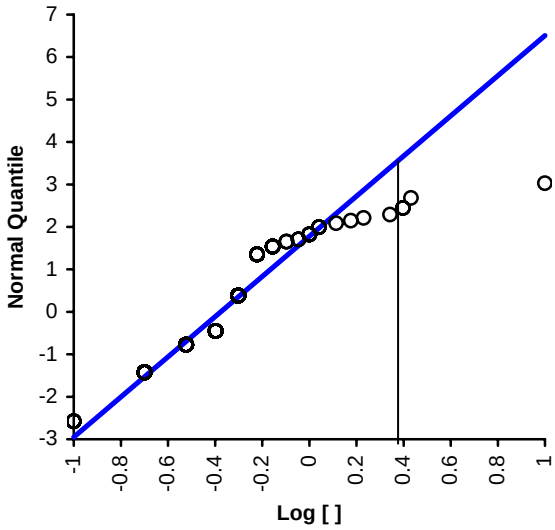
Percentile	
2.5th	0.200
25th	0.300
50th	0.500
75th	0.500
97.5th	1.100

	Coefficient	**p**
Kolmogorov-Smirnov	7.8843	< 0.01
Skewness	13.6056	<0.0001
Kurtosis	229.0684	<0.0001

Test	**Continuous summary descriptives**
Variable	Molybdenum in soil
Performed by	tl
Date	15 April 2005





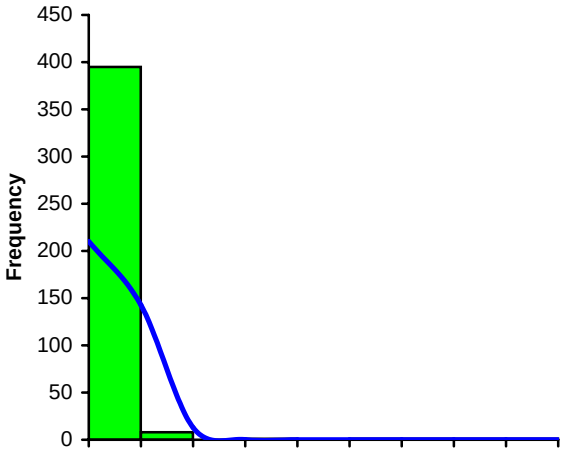


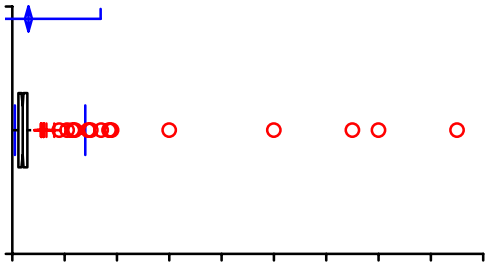
n	408
Mean	-0.376
95% CI	-0.397 to -0.355
Variance	0.0447
SD	0.2115
SE	0.0105
CV	-56%
% Detection	53.4%
Minimum	-1
Maximum	1
Median	-0.301
95.8% CI	-0.301 to -0.301
Range	2
IQR	0.2218

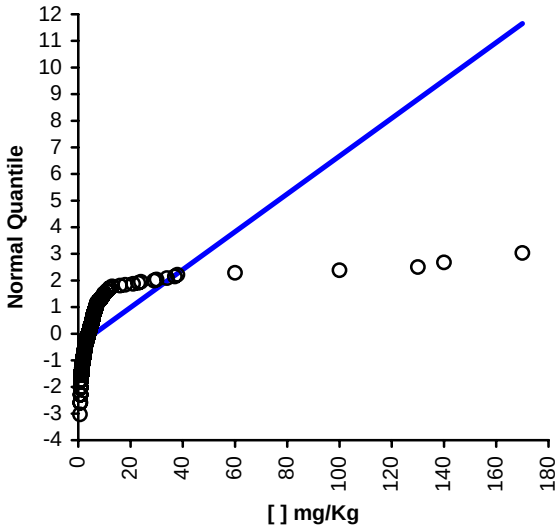
Percentile	
2.5th	-0.699
25th	-0.523
50th	-0.301
75th	-0.301
97.5th	0.041

	Coefficient	**p**
Kolmogorov-Smirnov	5.3802	< 0.01
Skewness	0.6261	<0.0001
Kurtosis	5.7055	<0.0001

Test	**Continuous summary descriptives**
Variable	Nickel in soil
Performed by	tl
Date	15 April 2005





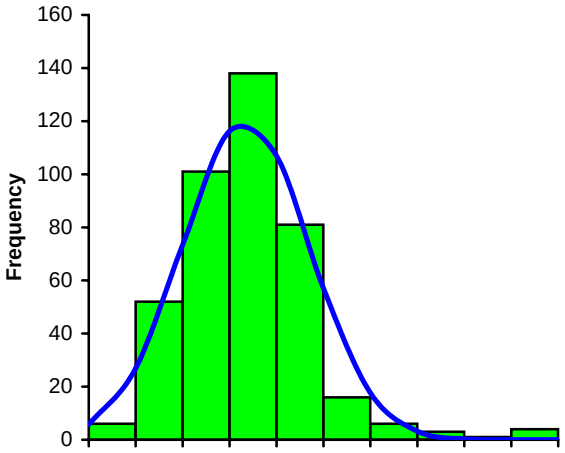


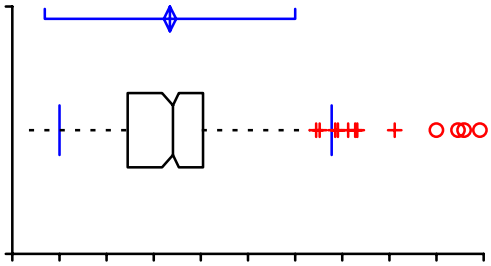
n	408
Mean	6.173
95% CI	4.804 to 7.541
Variance	197.7843
SD	14.0636
SE	0.6963
CV	228%
% Detection	99.5%
Minimum	0.7
Maximum	170
Median	4.000
95.8% CI	3.500 to 4.300
Range	169.3
IQR	3.475

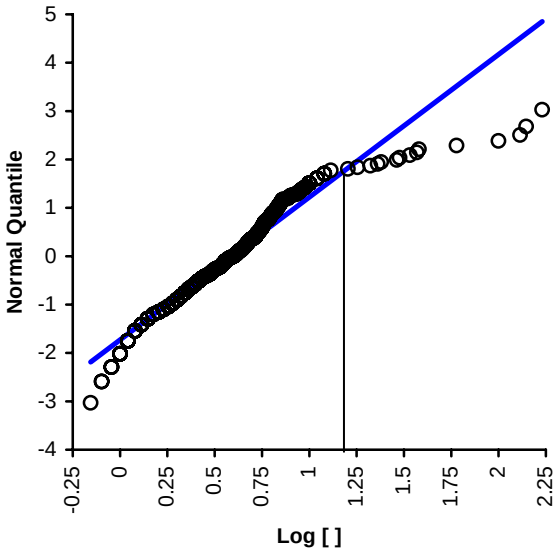
Percentile	
2.5th	1.000
25th	2.300
50th	4.000
75th	5.775
97.5th	27.875

	Coefficient	**p**
Kolmogorov-Smirnov	7.0967	< 0.01
Skewness	8.6885	<0.0001
Kurtosis	84.0218	<0.0001

Test	**Continuous summary descriptives**
Variable	Nickel in soil
Performed by	tl
Date	15 April 2005





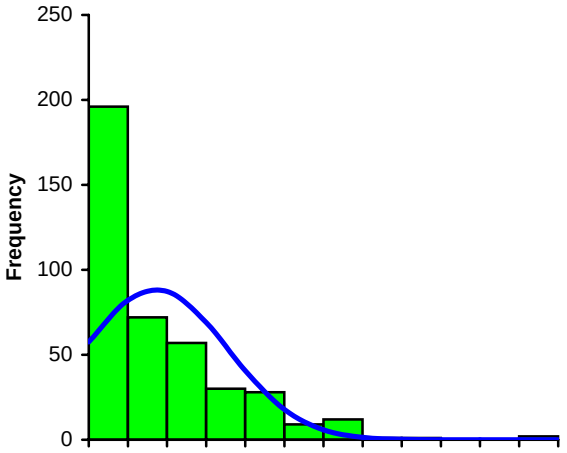


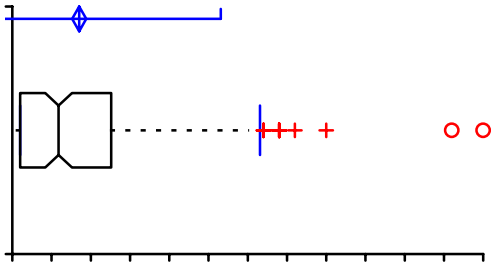
n	408
Mean	0.586
95% CI	0.553 to 0.619
Variance	0.1149
SD	0.3389
SE	0.0168
CV	58%
% Detection	99.5%
Minimum	-0.1549
Maximum	2.2304
Median	0.602
95.8% CI	0.544 to 0.633
Range	2.385
IQR	0.400

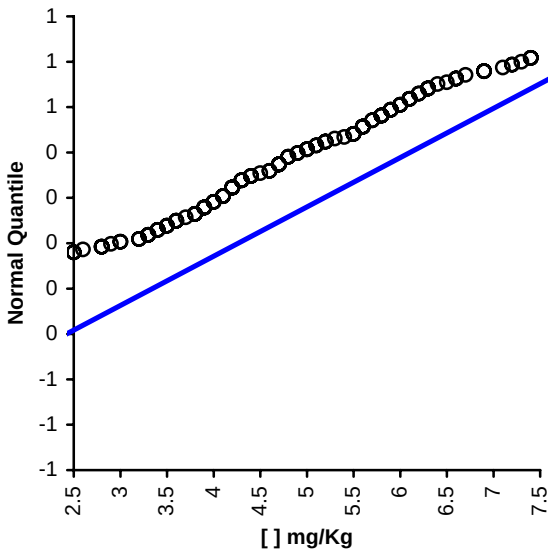
Percentile	
2.5th	0.000
25th	0.362
50th	0.602
75th	0.762
97.5th	1.444

	Coefficient	**p**
Kolmogorov-Smirnov	1.8578	< 0.01
Skewness	1.0457	<0.0001
Kurtosis	3.7124	<0.0001

Test	**Continuous summary descriptives**
Variable	Selenium in soil
Performed by	tl
Date	15 April 2005





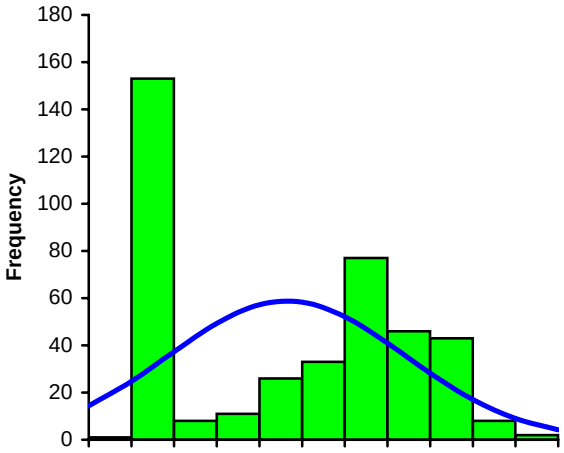


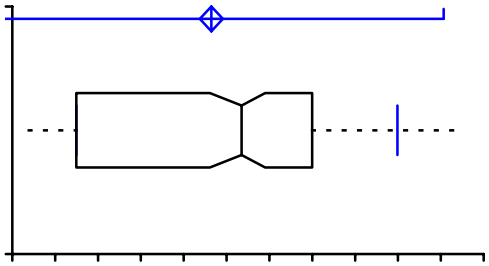
n	408
Mean	4.263
95% CI	3.816 to 4.711
Variance	21.1874
SD	4.6030
SE	0.2279
CV	108%
% Detection	63.2%
Minimum	0.3
Maximum	30
Median	2.950
95.8% CI	2.100 to 3.800
Range	29.7
IQR	5.8

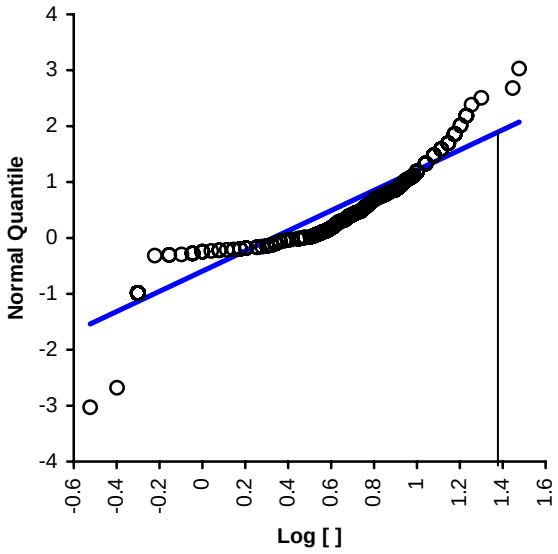
Percentile	
2.5th	0.500
25th	0.500
50th	2.950
75th	6.300
97.5th	15.775

	Coefficient	**p**
Kolmogorov-Smirnov	4.0844	< 0.01
Skewness	1.6584	<0.0001
Kurtosis	3.9183	<0.0001

Test	**Continuous summary descriptives**
Variable	Selenium in soil
Performed by	tl
Date	15 April 2005





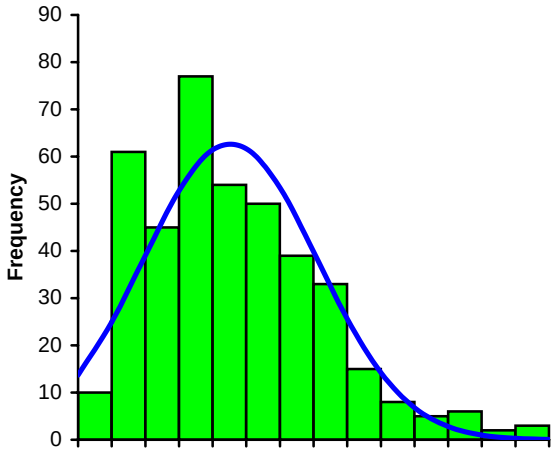


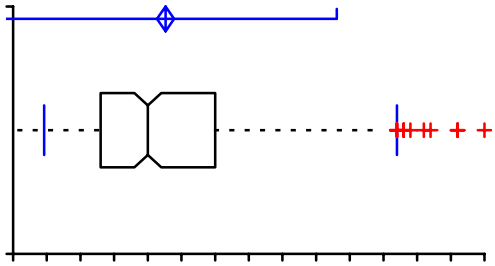
n	408
Mean	0.329
95% CI	0.275 to 0.383
Variance	0.3064
SD	0.5535
SE	0.0274
CV	168%
% Detection	63.2%
Minimum	-0.5229
Maximum	1.4771
Median	0.470
95.8% CI	0.322 to 0.580
Range	2
IQR	1.1004

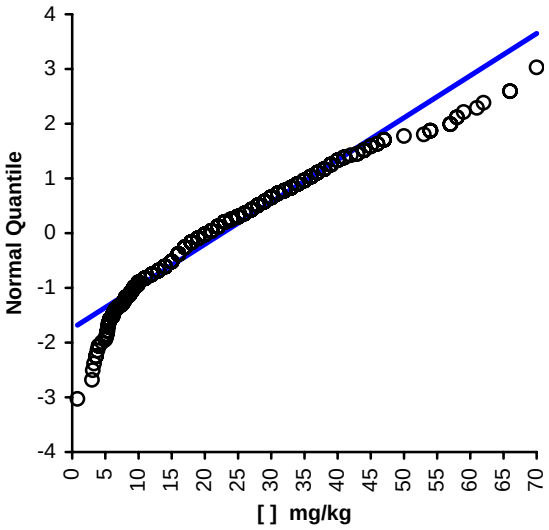
Percentile	
2.5th	-0.301
25th	-0.301
50th	0.470
75th	0.799
97.5th	1.198

	Coefficient	**p**
Kolmogorov-Smirnov	5.0049	< 0.01
Skewness	0.0155	0.8971
Kurtosis	-1.5700	<0.0001

Test	**Continuous summary descriptives**
Variable	Vanadium in soil
Performed by	tl
Date	15 April 2005





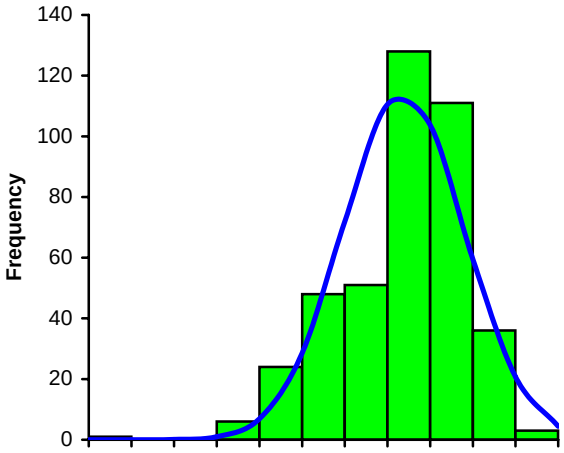


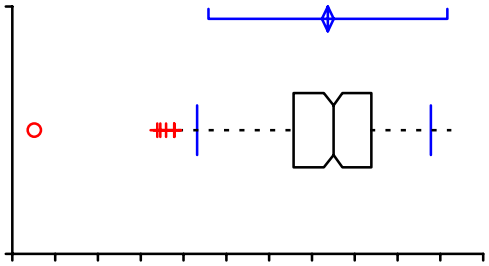
n	408
Mean	22.636
95% CI	21.373 to 23.899
Variance	168.4383
SD	12.9784
SE	0.6425
CV	57%
% Detection	100.0%
Minimum	0.8
Maximum	70
Median	20.000
95.8% CI	18.000 to 22.000
Range	69.2
IQR	17

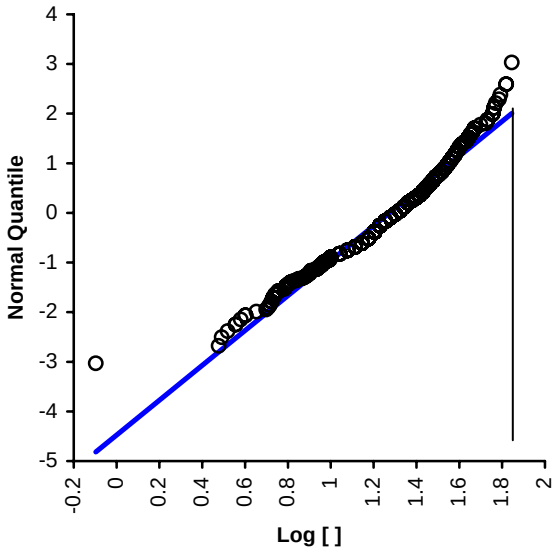
Percentile	
2.5th	4.613
25th	13.000
50th	20.000
75th	30.000
97.5th	57.000

	Coefficient	**p**
Kolmogorov-Smirnov	1.8808	< 0.01
Skewness	0.8751	<0.0001
Kurtosis	0.6938	0.0190

Test	**Continuous summary descriptives**
Variable	Vanadium in soil
Performed by	tl
Date	15 April 2005





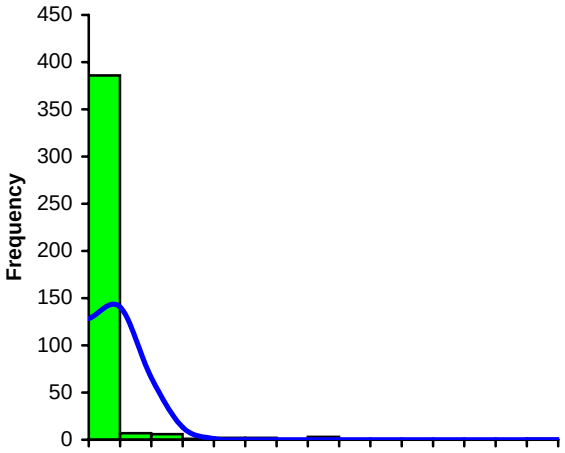


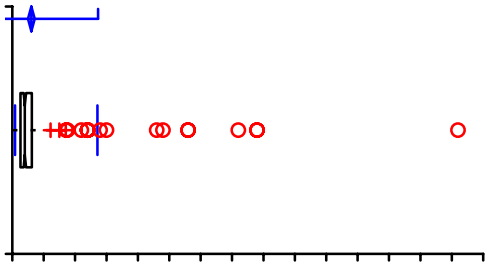
n	408
Mean	1.274
95% CI	1.247 to 1.302
Variance	0.0811
SD	0.2847
SE	0.0141
CV	22%
% Detection	100.0%
Minimum	-0.0969
Maximum	1.8451
Median	1.301
95.8% CI	1.255 to 1.342
Range	1.942008053
IQR	0.363177902

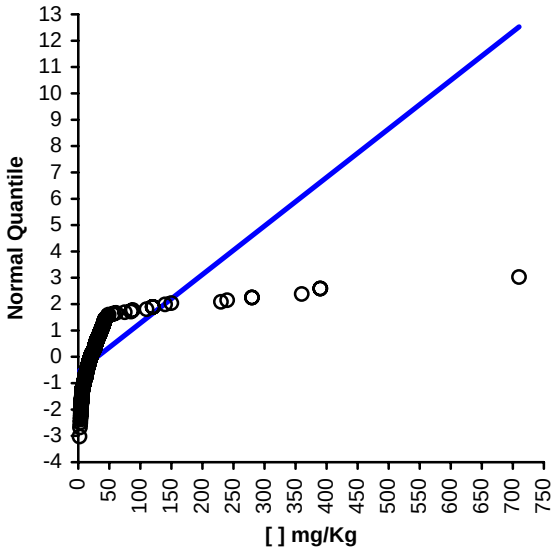
Percentile	
2.5th	0.664
25th	1.114
50th	1.301
75th	1.477
97.5th	1.756

	Coefficient	**p**
Kolmogorov-Smirnov	1.7008	< 0.01
Skewness	-0.7273	<0.0001
Kurtosis	0.8552	0.0064

Test	**Continuous summary descriptives**
Variable	Zinc in soil
Performed by	tl
Date	15 April 2005





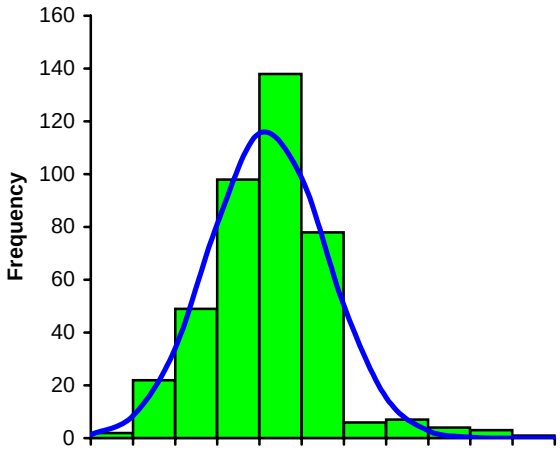


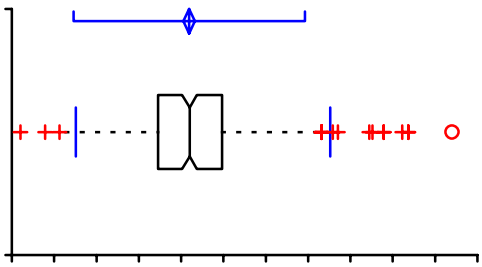
n	408
Mean	30.377
95% CI	25.097 to 35.658
Variance	2943.7091
SD	54.2560
SE	2.6861
CV	179%
% Detection	100.0%
Minimum	2
Maximum	710
Median	20.0
95.8% CI	18.0 to 22.0
Range	708
IQR	18

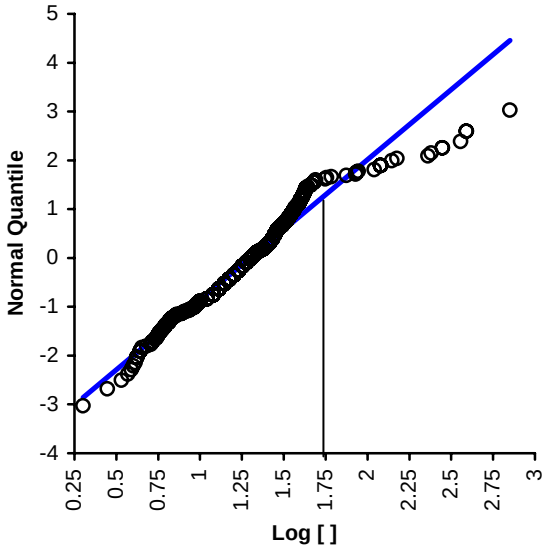
Percentile	
2.5th	4.245
25th	13.000
50th	20.000
75th	31.000
97.5th	135.500

	Coefficient	**p**
Kolmogorov-Smirnov	6.7671	< 0.01
Skewness	7.6780	<0.0001
Kurtosis	74.8426	<0.0001

Test	**Continuous summary descriptives**
Variable	Zinc in soil
Performed by	tl
Date	15 April 2005







n	408
Mean	1.298
95% CI	1.264 to 1.332
Variance	0.1217
SD	0.3488
SE	0.0173
CV	27%
% Detection	100.0%
Minimum	0.3010
Maximum	2.8513
Median	1.301
95.8% CI	1.255 to 1.342
Range	2.5502
IQR	0.3774

Percentile	
2.5th	0.628
25th	1.114
50th	1.301
75th	1.491
97.5th	2.131

	Coefficient	**p**
Kolmogorov-Smirnov	1.9110	< 0.01
Skewness	0.6076	<0.0001
Kurtosis	2.3122	<0.0001

APPENDIX C

Targeted Risk Assessment for Current Exposure Scenarios

Geosyntec consultants

10875 Rancho Bernardo Road, Suite 200
San Diego, CA 92127
PH 858.674.6559
FAX 858.674.6586
www.geosyntec.com

Memorandum

Date:	23 August 2007 Revised 11 February 2008
To:	Tom Alo, San Diego Regional Water Quality Control Board
Copies to:	Edgard Bertaut, Paul Manasjan, Bill Hays, Anita Broughton
From:	Brian Hitchens, Geosyntec, San Diego
Subject:	Targeted Risk Assessment for Current Exposure Scenarios 2701 North Harbor Drive, San Diego CA, 92101 Geosyntec Project: SC0307

Introduction

Based on information provided to TDY by the Airport Authority, two currently unoccupied commercial buildings immediately to the west of 2701 North Harbor Drive (Site) are scheduled to be occupied by industrial/commercial workers in mid-summer 2007. TDY has prepared this technical memorandum to present the Targeted Risk Assessment (RA) of the groundwater-to-indoor air and the soil gas-to indoor air exposure pathways for these workers. Additionally, indoor air exposures were evaluated for the current onsite guard and the San Park Harbor Drive parking attendant. Onsite and offsite data used for this evaluation include groundwater and soil gas samples collected in the vicinity of these structures and are summarized in **Table 1** for soil gas and **Table 2** for groundwater. Based on the exposure factors described below, potential health risk estimates from this RA do not exceed target health goals using the maximum VOC concentrations detected in soil gas and groundwater adjacent to each respective structure.

Risk Assessment Approach

This RA is based upon the equations presented in the Site-Wide Risk Assessment (Geosyntec, 2007). Several of the exposure assumptions have been tailored to more appropriately reflect the anticipated use of these four structures, as detailed below. This Targeted RA will be used as a predictive tool to determine if current impacts to soil and groundwater in the vicinity of these structures could potentially pose a risk to workers.

Data Used in Assessment

Based on the distribution of Site data, the maximum concentrations of VOCs detected in soil gas and groundwater samples closest to the building footprints were used in the risk calculations for the respective buildings. This onsite and offsite data are summarized in **Table 1** for soil gas and **Table 2** for groundwater. The sample points are identified on **Figures 1** through **6**.

Evaluation of Surface Sediment

Samples of surface sediment material which could potentially contribute to fugitive dust were collected from composite bins of sediment collected during Site sweeping activities; however, these data were not used quantitatively in this Targeted RA. Because dust is a secondary source, the potential risk associated with dust generated from paved surfaces and buildings is not a typical exposure scenario evaluated in an RA. Nonetheless, an evaluation of potential risk due to inhalation of fugitive dust for an industrial/commercial worker, based on current Site soil data, was completed in the RA. Additionally, RBCs were generated in the RI/FS for all soil pathways including ingestion, dermal contact, and inhalation of particulates/vapors. Maximum concentrations of PCBs and metals detected in aggregate surface sediment samples collected during sweeping activities are well below their respective soil RBCs as defined in the RI/FS for commercial worker exposures. Moreover, the potential risks estimated in the RA from exposures to soils were largely driven by the ingestion route, with the potential risk due to inhalation of fugitive dust being approximately two to four orders of magnitude less. Based on this comparison, further evaluation of dust is not necessary.

Exposure Assessment

Based on available aerial photography and onsite observations, the northern Sky Chef building is approximately 30,000 square feet in size and the southern Sky Chef building is approximately 9,025 square feet (**Figure 1**). The parking attendant structure is approximately 46 square feet (**Figure 2**), and the onsite guard station is approximately 250 square feet (**Figure 3**).

The quantitative evaluation of potential health risk for workers was conducted using Site-Specific and Default exposure parameters. For the Site-Specific scenario, it was assumed that the industrial/commercial worker in the former Sky Chefs buildings will be working 8 hours per day, 5 days per week, 50 weeks per year for 5 years, after which time the

western area will be redeveloped and the active soil and groundwater remediation planned for this area will have significantly reduced potential risk in this vicinity. In contrast, for the Default scenario, a conservative assumption was made that workers (including Sky Chef workers, security guard, and ticket attendant) will be potentially working for 25 years with concentrations of VOCs in soil gas and groundwater unchanged from present conditions (see **Table 3**). Based on the distribution of known sources, and the current extent of soil, groundwater, and soil gas impacts, it is estimated that impacted soil gas and groundwater have the potential to affect approximately 50% of the floor area of the northern Sky Chef building and approximately 100% of the floor area of the southern Sky Chef Building. These assumptions were used in the Site-Specific evaluation. In contrast, a conservative assumption of 100% of the floor area that flux occurs was assumed for the Default evaluation for all workers (see **Table 4**).

The security guard has been onsite since November 2002 and will remain onsite until the current Site buildings are demolished, conservatively estimated for the purposes of this risk assessment to be November 2009. The onsite guard is estimated to spend 25% of a shift outside of the guard station, patrolling the grounds. For the Site-Specific evaluation, potential indoor air exposures was assumed to occur for the full 8 hours per day, 5 days a week, 50 weeks per year, for seven years (November 2002-November 2009). For comparison, the Default evaluation assumed that this worker would be onsite for a duration of 25 years (see **Table 3**).

The San Park attendant was evaluated over a 25 year potential exposure duration, consistent with the post-remediation commercial worker exposure scenario. Thus, the exposure parameters are the same for both the Site-Specific and Default evaluation for this receptor.

The Site-Specific and Default exposure parameters used in this Targeted RA are summarized in **Table 3**.

Vapor Intrusion Model

The potential exists for VOCs to volatilize from the subsurface into indoor air. This pathway was evaluated using the Johnson and Ettinger (J&E, 1991 and Cal-EPA, 2005) subsurface vapor intrusion model to estimate potential migration of subsurface vapors into indoor air.

For the soil gas-to-indoor air pathway, a sampling depth of 3 feet (91.5 cm) was used in the J&E model. For the groundwater-to-indoor air pathway, the average depth to groundwater of 7 feet bgs was used in the model. Default soil physical properties based on the assumption of loamy-sand (LS) were used, consistent with the Site-Wide RA (Geosyntec, 2007). The DTSC default Qsoil value of 5 liters per minute (l/min) per 100 m^2 of building floor space was used to represent the flow rate of soil vapor from directly below the building foundation into indoor air in this targeted RA. Based on this flow rate, the Qsoil term was scaled to the actual building sizes for the North Sky Chef building, South Sky Chef building, the San Park Attendant booth, and for the guard station as indicated in Table 4 of this Appendix.

The model-predicted indoor air concentrations were used as exposure point concentrations (EPCs) in the estimation of potential risk and hazard. The J&E model spreadsheets including the model inputs, intermediate calculations, and predicted indoor air concentrations are presented in **Attachment 1**. The J&E model spreadsheets were used only to estimate indoor air concentrations and not to estimate potential risk.

Toxicity Assessment

Chronic toxicity criteria are used to characterize the relationship between the magnitude of exposure to a chemical and the nature and magnitude of adverse health effects that may result from such exposure.

Potential cancer effects resulting from human exposure to chemicals are generally estimated quantitatively using inhalation cancer slope factors (CSFs) or inhalation unit risk factors (URFs). Potential noncancer effects resulting from human exposure to chemicals are estimated quantitatively using chronic reference doses (RfDs) or reference concentrations (RfCs) for inhaled chemicals. In addition, Cal-EPA has developed chronic Reference Exposure Levels for noncancer effects, which were used in place of RfCs, if available. In this evaluation, chronic toxicity criteria were selected (in order of preference) from the following sources: 1) Cal-EPA OEHHA Toxicity Criteria Database, online (2007); 2) USEPA's (2007) Integrated Risk Information System (IRIS); 3) USEPA Region IX PRG table (USEPA, 2004).

The chronic toxicity criteria used in this Targeted RA are presented in **Table 5**.

Engineering Controls

The Site-Specific exposure factors used in the North Sky Chefs building assumes that 10% of the building will be used for office space, with an 8-foot ceiling height. These office dimensions are based on figures provided by the Airport Authority. Because soil gas impacts are confined to the southeast corner of the North Sky Chefs building, the Site-Specific scenario assumes that basic engineering controls and mitigative measures will be installed such that the HVAC system is modified for an increased air exchange rate (AER) and the office space is positioned away from the southeast corner of the building.

In the Default scenario, the office area is assumed to be in the southeast corner of the North Sky Chefs building and a value of 100% is used for the office area potentially overlying soil gas impacts. Though the actual office area location will not overlie soil gas impacts, in the Site-Specific scenario, to be conservative, it is assumed that 50% of the office area overlies soil gas impacts.

A HVAC system with an AER of 5 volumes per hour is the proposed engineering control used in the Site-Specific scenario as a proposed engineering control for the North Sky Chef building. This value is similar to the AER used to evaluate the indoor air pathway for Los Angeles Unified School District proposed school sites (Cal-EPA, 2004)."

Summary of Results

Geosyntec Consultants prepared this Targeted Human Health Risk Assessment to evaluate potential current exposures to Site-related chemicals present in soil gas and groundwater in relation to the two Sky Chefs Buildings, the San Park Attendant, and the Guard Building on the Former TRA Site. The potential cancer risk estimated using Default parameters did exceed the target risk goal. However, based on the Site-Specific exposure factors described above, which are believed to be consistent with current and future planned Site use, potential cumulative cancer and noncancer hazard estimates from this Targeted Risk Assessment did not exceed target health goals using the maximum VOC concentrations detected in soil gas and groundwater adjacent to each respective structure.

The results of the Site-Specific and Default evaluations are summarized in **Tables 6 and 7**, respectively. The detailed risk calculations are provided in **Attachment 1** while the Johnson and Ettinger model spreadsheets are provided in **Attachment 2**.

Tables

Figures

Attachments

References:

California Environmental Protection Agency (Cal-EPA), 2004. *Guidance for Assessing Exposures and Health Risks at Existing and Proposed School Sites Pursuant to Health and Safety Code §901(f),* Final Report.

* * * * *

Table 1
Summary of Soil Gas Data
Targeted Risk Assessment
2701 North Harbor Drive
San Diego, California

Location	DateSample	Depth	Method	Parameter	Results	Area of Concern
0242-03-11	6/9/2003	3	SW8260B	1,2-Dichloroethane	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	Benzene	0.52	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	cis-1,2-Dichloroethene	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	Ethyl-tert-butyl-ether	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	o-Xylene	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	p,m-Xylene	<1	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	Tetrachloroethene	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	Toluene	0.59	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	trans-1,2-Dichloroethene	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	Trichloroethene	<0.5	SG Sky Chef North and South
0242-03-11	6/9/2003	3	SW8260B	Vinyl Chloride	0.3	SG Sky Chef North and South
0242-03-35	7/10/2003	3	SW8260B	1,2-Dichloroethane	<2	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	Benzene	<1	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	cis-1,2-Dichloroethene	12	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	Ethyl-tert-butyl-ether	<2	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	o-Xylene	<1	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	p,m-Xylene	<2	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	Tetrachloroethene	<2	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	Toluene	1.1	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	trans-1,2-Dichloroethene	<2	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	Trichloroethene	<2	SG Sky Chef North
0242-03-35	7/10/2003	3	SW8260B	Vinyl Chloride	45	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	1,2-Dichloroethane	2.7	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	Benzene	<1	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	cis-1,2-Dichloroethene	<2	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	Ethyl-tert-butyl-ether	<2	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	o-Xylene	1.6	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	p,m-Xylene	6.1	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	Tetrachloroethene	61	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	Toluene	1.1	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	trans-1,2-Dichloroethene	<2	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	Trichloroethene	2.8	SG Sky Chef North
0242-03-36	7/10/2003	3	SW8260B	Vinyl Chloride	17	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	1,2-Dichloroethane	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	Benzene	0.4	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	cis-1,2-Dichloroethene	3.1	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	Ethyl-tert-butyl-ether	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	o-Xylene	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	p,m-Xylene	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	Tetrachloroethene	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	Toluene	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	trans-1,2-Dichloroethene	0.6	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	Trichloroethene	<0.2	SG Sky Chef North
0242-03-37	7/11/2003	3	SW8260B	Vinyl Chloride	14	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	1,2-Dichloroethane	<0.2	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	Benzene	<0.2	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	cis-1,2-Dichloroethene	28	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	Ethyl-tert-butyl-ether	0.3	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	o-Xylene	<0.2	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	p,m-Xylene	<0.2	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	Tetrachloroethene	<0.2	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	Toluene	<0.2	SG Sky Chef North

Table 1
Summary of Soil Gas Data
Targeted Risk Assessment
2701 North Harbor Drive
San Diego, California

Location	DateSample	Depth	Method	Parameter	Results	Area of Concern
0242-03-38	7/11/2003	3	SW8260B	trans-1,2-Dichloroethene	1	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	Trichloroethene	0.3	SG Sky Chef North
0242-03-38	7/11/2003	3	SW8260B	Vinyl Chloride	44	SG Sky Chef North
0513-06-02	37769	3	SW8260B	1,2-Dichloroethane	<0.5	SG Sky Chef North
0513-06-02	37769	3	SW8260B	Benzene	<0.005	SG Sky Chef North
0513-06-02	37769	3	SW8260B	cis-1,2-Dichloroethene	<0.5	SG Sky Chef North
0513-06-02	37769	3	SW8260B	Ethyl-tert-butyl-ether	<0.5	SG Sky Chef North
0513-06-02	37769	3	SW8260B	o-Xylene	<0.5	SG Sky Chef North
0513-06-02	37769	3	SW8260B	p,m-Xylene	<1	SG Sky Chef North
0513-06-02	37769	3	SW8260B	Tetrachloroethene	3.7	SG Sky Chef North
0513-06-02	37769	3	SW8260B	Toluene	<0.5	SG Sky Chef North
0513-06-02	37769	3	SW8260B	trans-1,2-Dichloroethene	<0.5	SG Sky Chef North
0513-06-02	37769	3	SW8260B	Trichloroethene	0.72	SG Sky Chef North
0513-06-02	37769	3	SW8260B	Vinyl Chloride	<0.002	SG Sky Chef North
0513-06-03	37769	3	SW8260B	1,2-Dichloroethane	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	Benzene	<0.005	SG Sky Chef North
0513-06-03	37769	3	SW8260B	cis-1,2-Dichloroethene	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	Ethyl-tert-butyl-ether	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	o-Xylene	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	p,m-Xylene	<1	SG Sky Chef North
0513-06-03	37769	3	SW8260B	Tetrachloroethene	1.6	SG Sky Chef North
0513-06-03	37769	3	SW8260B	Toluene	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	trans-1,2-Dichloroethene	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	Trichloroethene	<0.5	SG Sky Chef North
0513-06-03	37769	3	SW8260B	Vinyl Chloride	<0.002	SG Sky Chef North
0513-06-04	37769	3	SW8260B	1,2-Dichloroethane	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	Benzene	<0.005	SG Sky Chef North
0513-06-04	37769	3	SW8260B	cis-1,2-Dichloroethene	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	Ethyl-tert-butyl-ether	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	o-Xylene	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	p,m-Xylene	<1	SG Sky Chef North
0513-06-04	37769	3	SW8260B	Tetrachloroethene	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	Toluene	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	trans-1,2-Dichloroethene	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	Trichloroethene	<0.5	SG Sky Chef North
0513-06-04	37769	3	SW8260B	Vinyl Chloride	<0.002	SG Sky Chef North
0242-03-12	6/9/2003	3	SW8260B	Benzene	<0.005	SG Sky Chef South
0242-03-12	6/9/2003	3	SW8260B	Toluene	<0.5	SG Sky Chef South
0242-03-12	6/9/2003	3	SW8260B	Vinyl Chloride	<0.002	SG Sky Chef South
0242-03-15	6/9/2003	3	SW8260B	Benzene	8.3	SG Sky Chef South
0242-03-15	6/9/2003	3	SW8260B	Toluene	<1	SG Sky Chef South
0242-03-15	6/9/2003	3	SW8260B	Vinyl Chloride	<0.005	SG Sky Chef South
0105-05-01	5/29/2003	3	SW8260B	Tetrachloroethene	1.4	SG Ticket
0105-05-01	5/29/2003	3	SW8260B	Trichloroethene	0.56	SG Ticket
PARK-OA-01	6/4/2003	3	SW8260B	Tetrachloroethene	<1	SG Ticket
PARK-OA-01	6/4/2003	3	SW8260B	Trichloroethene	<1	SG Ticket
PARK-OA-02	6/2/2003	3	SW8260B	Tetrachloroethene	<1	SG Ticket
PARK-OA-02	6/2/2003	3	SW8260B	Trichloroethene	<1	SG Ticket
0120-OA-24A	6/9/2003	3	SW8260B	1,1-Dichloroethene	<1	SG Guard
0120-OA-24A	6/9/2003	3	SW8260B	Tetrachloroethene	18	SG Guard
PARK-OA-07	6/3/2003	3	SW8260B	1,1-Dichloroethene	0.59	SG Guard
PARK-OA-07	6/3/2003	3	SW8260B	Tetrachloroethene	2	SG Guard

Table 2
Summary of Groundwater Data
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Location	DateSample	Depth	Method	Parameter	Results	Area of Concern
0242-GW-74	7/10/2003	9.5	SW8260B	Benzene	0.3	GW Sky Chef North
0242-GW-74	7/10/2003	9.5	SW8260B	cis-1,2-Dichloroethene	2	GW Sky Chef North
0242-GW-74	7/10/2003	9.5	SW8260B	Tetrachloroethene	0.6	GW Sky Chef North
0242-GW-74	7/10/2003	9.5	SW8260B	Toluene	0.4	GW Sky Chef North
0242-GW-74	7/10/2003	9.5	SW8260B	trans-1,2-Dichloroethene	<0.5	GW Sky Chef North
0242-GW-74	7/10/2003	9.5	SW8260B	Vinyl Chloride	1.8	GW Sky Chef North
0242-GW-74-DUP	7/10/2003	9.5	SW8260B	Benzene	0.3	GW Sky Chef North
0242-GW-74-DUP	7/10/2003	9.5	SW8260B	cis-1,2-Dichloroethene	2	GW Sky Chef North
0242-GW-74-DUP	7/10/2003	9.5	SW8260B	Tetrachloroethene	0.6	GW Sky Chef North
0242-GW-74-DUP	7/10/2003	9.5	SW8260B	Toluene	0.4	GW Sky Chef North
0242-GW-74-DUP	7/10/2003	9.5	SW8260B	trans-1,2-Dichloroethene	<0.5	GW Sky Chef North
0242-GW-74-DUP	7/10/2003	9.5	SW8260B	Vinyl Chloride	1.8	GW Sky Chef North
T-16	7/1/2005		8260B	Acetone	5.1	GW Sky Chef North and South
T-16	7/1/2005		8260B	Benzene	1	GW Sky Chef North and South
T-16	7/1/2005		8260B	cis-1,2-Dichloroethene	1.8	GW Sky Chef North and South
T-16	7/1/2005		8260B	Tetrachloroethene	<0.5	GW Sky Chef North and South
T-16	7/1/2005		8260B	Toluene	<0.5	GW Sky Chef North and South
T-16	7/1/2005		8260B	trans-1,2-Dichloroethene	0.49	GW Sky Chef North and South
T-16	7/1/2005		8260B	Vinyl Chloride	14	GW Sky Chef North and South
T-6	7/5/2005		8260B	Acetone	<10	GW Sky Chef North and South
T-6	7/5/2005		8260B	Benzene	<0.5	GW Sky Chef North and South
T-6	7/5/2005		8260B	cis-1,2-Dichloroethene	0.35	GW Sky Chef North and South
T-6	7/5/2005		8260B	Tetrachloroethene	<0.5	GW Sky Chef North and South
T-6	7/5/2005		8260B	Toluene	<0.5	GW Sky Chef North and South
T-6	7/5/2005		8260B	trans-1,2-Dichloroethene	<0.5	GW Sky Chef North and South
T-6	7/5/2005		8260B	Vinyl Chloride	<0.5	GW Sky Chef North and South
B131-MW1	8/4/2005		8260B	2-Butanone	1.8	GW Sky Chef South
B131-MW1	8/4/2005		8260B	Acetone	5	GW Sky Chef South
B131-MW1	8/4/2005		8260B	Benzene	0.89	GW Sky Chef South
B131-MW1	8/4/2005		8260B	Chloroform	0.22	GW Sky Chef South
B131-MW1	8/4/2005		8260B	cis-1,2-Dichloroethene	<0.5	GW Sky Chef South
B131-MW1	8/4/2005		8260B	trans-1,2-Dichloroethene	0.43	GW Sky Chef South
B131-MW1	8/4/2005		8260B	Vinyl Chloride	4.4	GW Sky Chef South
T-13	6/30/2005		8260B	2-Butanone	1.1	GW Sky Chef South
T-13	6/30/2005		8260B	Acetone	2.8	GW Sky Chef South
T-13	6/30/2005		8260B	Benzene	1.2	GW Sky Chef South
T-13	6/30/2005		8260B	Chloroform	<0.5	GW Sky Chef South
T-13	6/30/2005		8260B	cis-1,2-Dichloroethene	<0.5	GW Sky Chef South
T-13	6/30/2005		8260B	trans-1,2-Dichloroethene	0.65	GW Sky Chef South
T-13	6/30/2005		8260B	Vinyl Chloride	0.59	GW Sky Chef South
T-14	6/30/2005		8260B	2-Butanone	<10	GW Sky Chef South
T-14	6/30/2005		8260B	Acetone	4.2	GW Sky Chef South
T-14	6/30/2005		8260B	Benzene	1.3	GW Sky Chef South
T-14	6/30/2005		8260B	Chloroform	<0.5	GW Sky Chef South
T-14	6/30/2005		8260B	cis-1,2-Dichloroethene	<0.5	GW Sky Chef South
T-14	6/30/2005		8260B	trans-1,2-Dichloroethene	0.5	GW Sky Chef South
T-14	6/30/2005		8260B	Vinyl Chloride	2.8	GW Sky Chef South
T-15	7/1/2005		8260B	2-Butanone	<10	GW Sky Chef South
T-15	7/1/2005		8260B	Acetone	3.1	GW Sky Chef South

Table 2
Summary of Groundwater Data
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Location	DateSample	Depth	Method	Parameter	Results	Area of Concern
T-15	7/1/2005		8260B	Benzene	0.37	GW Sky Chef South
T-15	7/1/2005		8260B	Chloroform	<0.5	GW Sky Chef South
T-15	7/1/2005		8260B	cis-1,2-Dichloroethene	0.23	GW Sky Chef South
T-15	7/1/2005		8260B	trans-1,2-Dichloroethene	0.4	GW Sky Chef South
T-15	7/1/2005		8260B	Vinyl Chloride	12	GW Sky Chef South
T-16	7/1/2005		8260B	2-Butanone	<10	GW Sky Chef North and South
T-16	7/1/2005		8260B	Chloroform	<0.5	GW Sky Chef North and South
T-5	7/5/2005		8260B	2-Butanone	<10	GW Sky Chef South
T-5	7/5/2005		8260B	Acetone	<10	GW Sky Chef South
T-5	7/5/2005		8260B	Benzene	<0.5	GW Sky Chef South
T-5	7/5/2005		8260B	Chloroform	<0.5	GW Sky Chef South
T-5	7/5/2005		8260B	cis-1,2-Dichloroethene	0.22	GW Sky Chef South
T-5	7/5/2005		8260B	trans-1,2-Dichloroethene	<0.5	GW Sky Chef South
T-5	7/5/2005		8260B	Vinyl Chloride	<0.5	GW Sky Chef South
T-6	7/5/2005		8260B	2-Butanone	<10	GW Sky Chef North and South
T-6	7/5/2005		8260B	Chloroform	<0.5	GW Sky Chef North and South
0105-GW-14	6/19/2003	10	SW8260	Acetone	<10	GW Ticket
0105-GW-14	6/19/2003	10	SW8260	Carbon Disulfide	0.4	GW Ticket
0105-GW-14	6/19/2003	10	SW8260	Methyl tert-Butyl Ether	0.3	GW Ticket
0105-GW-14	6/19/2003	10	SW8260	Tetrachloroethene	76	GW Ticket
0105-GW-14	6/19/2003	10	SW8260	Vinyl Chloride	<0.5	GW Ticket
PARK-GW-48	7/2/2003	9	SW8260	Acetone	<10	GW Ticket
PARK-GW-48	7/2/2003	15	SW8260	Acetone	<10	GW Ticket
PARK-GW-48	7/2/2003	9	SW8260	Carbon Disulfide	<0.5	GW Ticket
PARK-GW-48	7/2/2003	15	SW8260	Carbon Disulfide	<0.5	GW Ticket
PARK-GW-48	7/2/2003	9	SW8260	Methyl tert-Butyl Ether	<0.5	GW Ticket
PARK-GW-48	7/2/2003	15	SW8260	Methyl tert-Butyl Ether	0.51	GW Ticket
PARK-GW-48	7/2/2003	9	SW8260	Tetrachloroethene	<0.5	GW Ticket
PARK-GW-48	7/2/2003	15	SW8260	Tetrachloroethene	<0.5	GW Ticket
PARK-GW-48	7/2/2003	9	SW8260	Vinyl Chloride	<0.5	GW Ticket
PARK-GW-48	7/2/2003	15	SW8260	Vinyl Chloride	<0.5	GW Ticket
PARK-GW-54	7/2/2003	9	SW8260	Acetone	15	GW Ticket
PARK-GW-54	7/2/2003	15	SW8260	Acetone	<6	GW Ticket
PARK-GW-54	7/2/2003	9	SW8260	Carbon Disulfide	<0.5	GW Ticket
PARK-GW-54	7/2/2003	15	SW8260	Carbon Disulfide	<0.5	GW Ticket
PARK-GW-54	7/2/2003	9	SW8260	Methyl tert-Butyl Ether	<0.5	GW Ticket
PARK-GW-54	7/2/2003	15	SW8260	Methyl tert-Butyl Ether	<0.5	GW Ticket
PARK-GW-54	7/2/2003	9	SW8260	Tetrachloroethene	<0.5	GW Ticket
PARK-GW-54	7/2/2003	15	SW8260	Tetrachloroethene	<0.5	GW Ticket
PARK-GW-54	7/2/2003	9	SW8260	Vinyl Chloride	<0.5	GW Ticket
PARK-GW-54	7/2/2003	15	SW8260	Vinyl Chloride	1.1	GW Ticket
0120-GW-103	8/27/2003	9	SW8260	1,1,1-Trichloroethane	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	1,1-Dichloroethane	1.7	GW Guard
0120-GW-103	8/27/2003	9	SW8260	1,1-Dichloroethene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Acetone	<10	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Benzene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Bromomethane	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Carbon Disulfide	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Chloroform	<0.5	GW Guard

Table 2
Summary of Groundwater Data
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Location	DateSample	Depth	Method	Parameter	Results	Area of Concern
0120-GW-103	8/27/2003	9	SW8260	Chloromethane	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	cis-1,2-Dichloroethene	0.3	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Methylene Chloride	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Ethyl benzene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Methyl tert-Butyl Ether	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	o-Xylene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	p,m-Xylene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Tetrachloroethene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Toluene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	trans-1,2-Dichloroethene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Trichloroethene	<0.5	GW Guard
0120-GW-103	8/27/2003	9	SW8260	Vinyl Chloride	2	GW Guard
0120-GW-88	8/21/2003	9	SW8260	1,1,1-Trichloroethane	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	1,1-Dichloroethane	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	1,1-Dichloroethene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Acetone	<10	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Benzene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Bromomethane	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Carbon Disulfide	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Chloroform	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Chloromethane	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	cis-1,2-Dichloroethene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Methylene Chloride	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Ethyl benzene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Methyl tert-Butyl Ether	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	o-Xylene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	p,m-Xylene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Tetrachloroethene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Toluene	0.4	GW Guard
0120-GW-88	8/21/2003	9	SW8260	trans-1,2-Dichloroethene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Trichloroethene	<0.5	GW Guard
0120-GW-88	8/21/2003	9	SW8260	Vinyl Chloride	<0.5	GW Guard

Table 3
Site-Specific and Default Exposure Parameters
Targeted Risk Assessment
2701 North Harbor Drive
San Diego, California

Parameter Code	Parameter Definition	Units	North Sky Chef Worker			South Sky Chef Worker			San Park Ticket Attendant			2701 N. Harbor Guard		
			Default	Site-Specific		Default	Site-Specific		Default	Site-Specific		Default	Site-Specific	
			Value Used	Value Used	Source	Value Used	Value Used	Source	Value Used	Value Used	Source	Value Used	Value Used	Source
EF	Exposure Frequency	days/year	**250**	**250**	USEPA 1997	**250**	**250**	USEPA 1997	**250**	**250**	USEPA 1997	**250**	**250**	USEPA 1997
ED_{north}	Exposure Duration	years	**25**	**5**	prof judgment	**25**	**5**	prof judgment	**25**	**25**	USEPA 1991	**25**	**7**	prof judgment
ET	Exposure Time	hours/day	**8**	**8**	USEPA 1997	**8**	**8**	USEPA 1997	**8**	**8**	USEPA 1997	**8**	**8**	USEPA 1997
BW	Body Weight	kilograms	**70**	**70**	USEPA 1989	**70**	**70**	USEPA 1989	**70**	**70**	USEPA 1989	**70**	**70**	USEPA 1989
AT-C	Averaging Time (Cancer)	days	**25,550**	**25,550**	USEPA 1989	**25,550**	**25,550**	USEPA 1989	**25,550**	**25,550**	USEPA 1989	**25,550**	**25,550**	USEPA 1989
AT-N	Averaging Time (Noncancer)	days	**ED x 365**	**ED x 365**	USEPA 1989	**ED x 365**	**ED x 365**	USEPA 1989	**ED x 365**	**ED x 365**	USEPA 1989	**ED x 365**	**ED x 365**	USEPA 1989
InhR	Inhalation Rate	m^3/day	**14**	**14**	Cal-EPA 2005a	**14**	**14**	Cal-EPA 2005a	**14**	**14**	Cal-EPA 2005a	**14**	**14**	Cal-EPA 2005a

Notes:

Qsoil = Based on 5 L/min per 100 m2 of building floor space

Cal-EPA 2005a. Human Health Risk Assessment (HHRA) Note. HERD HHRA Note #1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment At California Military Facilities.

Cal-EPA, 2005b. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* - Interim Final. Department of Toxic Substances Control (DTSC). Revised February 7, 2005.

USEPA 1989. Risk Assessment Guidance for Superfund (RAGS). Volume I: Human Health Evaluation Manual (HHEM), Part A. OERR. EPA/540/1-89/002.

USEPA 1991. RAGS. Volume I: HHEM - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

USEPA 1997. Exposure Factors Handbook. Volumes I-III. An update to EPA/600/8-89/043-May 1989. EPA/600/P-95-002Fa. August.

Table 4
Model Input Parameters
Targeted Risk Assessment
2701 North Harbor Drive
San Diego, California

Model Input Parameter	Site-Specific Value Used	Default Value Used	Rationale
Soil Properties			
Average Soil / Groundwater Temperature (Ts), ^{o}C	18	18	Area-specific average
Depth below grade to bottom of enclosed space floor (L_F), cm	15	15	Slab construction
Soil gas sampling depth below grade (Ls), cm	91.5	91.5	Depth at which samples were collected, 3 feet bgs
Depth below grade to water table (Lwt), cm	213.5	213.5	Average depth to groundwater, 7 feet bgs
Thickness of soil stratum A (h_A), cm	Ls or Lwt	Ls or Lwt	Depth-to-soil gas sample or depth-to water table
Thickness of soil stratum B (h_B), cm	--	--	Not applicable
Thickness of soil stratum C (h_C), cm	--	--	Not applicable
Soil stratum A SCS soil type	LS	LS	Loamy sand soil type
Stratum A soil dry bulk density, gm/cm^3	1.62	1.62	J&E model default for Loamy sand
Stratum A soil total porosity, unitless	0.390	0.390	J&E model default for Loamy sand
Stratum A soil water-filled porosity, cm^3/cm^3	0.076	0.076	J&E model default for Loamy sand
Industrial/Commercial Building Parameters			
Enclosed space floor thickness (L_{crack}), cm	10	10	Default assumption
Floor-wall seam crack width (w), cm	0.1	0.1	Default assumption
Building Parameters for North Sky Chef Building			
Enclosed space floor length (L_B), cm	1678	1678	Proposed 55-foot length of building
Enclosed space floor width (W_B), cm	1678	1678	Proposed 55-foot width of building
Enclosed space height (H_B), cm	244	244	Proposed ceiling height, 8 feet
Average vapor flow rate into building (Qsoil), L/m	14	14	Based on 5 L/min per 100 m^2 of building floor space = (5 x 1678 x 1678) / (1000 x 1000)
Percent of floor area that flux occurs, %	50	100	Professional judgment
Indoor air exchange rate (ER), $hour^{-1}$	5	1	Commercial building assumptions
Building Parameters for South Sky Chef Building			
Enclosed space floor length (L_B), cm	2898	2898	Proposed 95-foot length of building
Enclosed space floor width (W_B), cm	2898	2898	Proposed 95-foot width of building
Enclosed space height (H_B), cm	244	244	Proposed ceiling height, 8 feet
Average vapor flow rate into building (Qsoil), L/m	42	42	Based on 5 L/min per 100 m^2 of building floor space = (5 x 2898 x 2989) / (1000 x 1000)
Percent of floor area that flux occurs, %	100	100	Professional judgment
Indoor air exchange rate (ER), $hour^{-1}$	1	1	Default commercial building assumption
Building Parameters for San Park Attendant			
Enclosed space floor length (L_B), cm	244	244	Proposed 8-foot length of building
Enclosed space floor width (W_B), cm	177	177	Proposed 5.8-foot width of building
Enclosed space height (H_B), cm	231.5	213.5	Proposed ceiling height, 7 feet
Average vapor flow rate into building (Qsoil), L/m	0.22	0.22	Based on 5 L/min per 100 m^2 of building floor space = (5 x 244 x 177) / (1000 x 1000)
Indoor air exchange rate (ER), $hour^{-1}$	1	1	Default commercial building assumption
Building Parameters for 2701 N. Harbor Guard			
Enclosed space floor length (L_B), cm	762.5	762.5	Proposed 25-foot length of building
Enclosed space floor width (W_B), cm	305	305	Proposed 10-foot width of building
Enclosed space height (H_B), cm	244	244	Proposed ceiling height, 8 feet
Average vapor flow rate into building (Qsoil), L/m	1.2	1.2	Based on 5 L/min per 100 m^2 of building floor space = (5 x 762.5 x 305) / (1000 x 1000)
Indoor air exchange rate (ER), $hour^{-1}$	1	1	Default commercial building assumption

Table 5
Chronic Toxicity Criteria
Targeted Risk Assessment
2701 North Harbor Drive
San Diego, California

Analyte	CAS No.	Inhalation RfD (mg/kg-d)		Inhalation RfC or REL (mg/m^3)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		Inhalation Unit Risk Factor $(ug/m^3)^{-1}$
VOCs							
1,1-Dichloroethane	75343	1.4E-01	h	5.0E-01	5.7E-03	c	1.6E-06
1,1-Dichloroethene	75354	2.0E-02	c	7.0E-02	--		--
1,2-Dichloroethane	107062	1.4E-03	n	4.9E-03	7.2E-02	c	2.1E-05
2-Butanone (MEK)	78933	1.4E+00	i	4.9E+00	--		--
Acetone	67641	9.0E-01	r	3.2E+00	--		--
Benzene	71432	1.7E-02	c	6.0E-02	1.0E-01	c	2.9E-05
Carbon Disulfide	75150	2.3E-01	c	8.0E-01	--		--
Chloroform	67663	8.6E-02	c	3.0E-01	1.9E-02	c	5.3E-06
cis-1,2-Dichloroethene	156592	1.0E-02	r	3.5E-02	--		--
Ethyl-tert-butyl ether	637923	8.6E-02	tex	3.0E-01	--		--
Methyl-tert-butyl ether	1634044	2.3E+00	c	8.0E+00	9.1E-04	c	2.6E-07
Tetrachloroethene	127184	1.0E-02	c	3.5E-02	2.1E-02	c	5.9E-06
Toluene	108883	8.6E-02	c	3.0E-01	--		--
trans-1,2-Dichloroethene	156605	2.0E-02	r	7.0E-02	--		--
Trichloroethene	79016	1.7E-01	c	6.0E-01	7.0E-03	c	2.0E-06
Vinyl Chloride	75014	2.9E-02	i	1.0E-01	2.7E-01	c	7.8E-05
Xylenes	1330207	2.0E-01	c	7.0E-01	--		--

References:

c: Cal-EPA (2007) Office of Environmental Health Hazard Assessment (OEHHA), Toxicity Criteria Database http://www.oehha.ca.gov/risk/chemicalDB/index.asp

n: National Center for Environmental Assessment (NCEA), from USEPA 2004

h: Health Effects Assessment Summary Tables (HEAST, USEPA 1997b), from USEPA 2004

i: Integrated Risk Information System (IRIS) Substance File Online Database. Website address: http://www.epa.gov/iriswebp/iris/subst/index.html (USEPA 2007)

REL: Cal-EPA OEHHA, Chronic Reference Exposure Levels (RELs) for Airborne Toxicants, http://www.oehha.org/air/chronic_rels/AllChrels.html

r: route extrapolated value

Cancer Toxicity Value Reference Priority:

1. Cal-EPA OEHHA (2007), Toxicity Criteria Database www.oehha.ca.gov/risk/chemicalDB/index.asp

2. USEPA Region 9 PRG Table (USEPA 2004)

Noncancer Toxicity Value Reference Priority:

The lower value between the REL-to-RfD (1) or the RfD (2) was used for the inhalation noncancer toxicity criteria:

1. Cal-EPA OEHHA (2007), Chronic RELs for Airborne Toxicants, www.oehha.org/air/chronic_rels/AllChrels.html

2. USEPA Region 9 PRG Table (USEPA 2004)

Table 6
Summary of Site-Specific Cancer Risks and Noncancer Hazards
Onsite and Offsite Worker Exposure Scenarios
Targeted Risk Assessment
2701 North Harbor Drive

Exposure Pathway	Chemical	North Sky Chefs Worker		South Sky Chefs Worker		San Park Attendant		2701 N. Harbor Guard	
		Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Soil Gas-to-Indoor Air	1,1-Dichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethene	--	--	--	--	--	--	--	3E-03
	1,2-Dichloroethane	2E-07	2E-02	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	Acetone	--	--	--	--	--	--	--	--
	Benzene	4E-08	3E-04	7E-06	5E-02	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	--	--	--
	Chloroform	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-02	--	--	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	4E-05	--	--	--	--	--	--
	Methyl tertbutyl ether	--	--	--	--	--	--	--	--
	Tetrachloroethene	1E-06	6E-02	--	--	1E-06	2E-02	4E-06	2E-01
	Toluene	--	1E-04	--	8E-04	--	--	--	--
	trans-1,2-Dichloroethene	--	5E-04	--	--	--	--	--	--
	Trichloroethene	2E-08	2E-04	--	--	2E-07	4E-04	--	--
	Vinyl Chloride	1E-05	2E-02	7E-07	1E-03	--	--	--	--
	Xylenes	--	4E-04	--	--	--	--	--	--
Total Risk and Hazard for SG-to-Indoor Air =		**1E-05**	**1E-01**	**7E-06**	**6E-02**	**2E-06**	**2E-02**	**4E-06**	**2E-01**
Groundwater-to-Indoor Air	1,1-Dichloroethane	--	--	--	--	--	--	3E-09	3E-05
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	9E-08	--	--	--	--
	Acetone	--	4E-08	--	4E-07	--	2E-06	--	--
	Benzene	2E-09	2E-05	2E-08	2E-04	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	4E-05	--	--
	Chloroform	--	--	6E-10	5E-06	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-05	--	2E-04	--	--	--	6E-05
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Methyl tertbutyl ether	--	--	--	--	1E-10	1E-07	--	--
	Tetrachloroethene	6E-10	4E-05	--	--	5E-06	7E-02	--	--
	Toluene	--	1E-06	--	--	--	--	--	2E-05
	trans-1,2-Dichloroethene	--	9E-06	--	1E-04	--	--	--	--
	Trichloroethene	--	--	--	--	--	--	--	--
	Vinyl Chloride	5E-07	8E-04	3E-06	5E-03	2E-06	9E-04	1E-06	1E-03
	Xylenes	--	--	--	--	--	--	--	--
Total Risk and Hazard for GW-to-Indoor Air =		**5E-07**	**9E-04**	**3E-06**	**6E-03**	**8E-06**	**7E-02**	**1E-06**	**1E-03**

Note: " -- " not applicable or not available

Table 7
Summary of Default Cancer Risks and Noncancer Hazards
Onsite and Offsite Worker Exposure Scenarios
Targeted Risk Assessment
2701 North Harbor Drive

Exposure Pathway	Chemical	North Sky Chefs Worker		South Sky Chefs Worker		San Park Attendant		2701 N. Harbor Guard	
		Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Soil Gas-to-Indoor Air	1,1-Dichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethene	--	--	--	--	--	--	--	3E-03
	1,2-Dichloroethane	8E-06	2E-01	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	Acetone	--	--	--	--	--	--	--	--
	Benzene	2E-06	3E-03	3E-05	5E-02	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	--	--	--
	Chloroform	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-01	--	--	--	--	--	--
	Ethyl-tert-butyl ether	--	4E-04	--	--	--	--	--	--
	Methyl-tert-butyl ether	--	--	--	--	--	--	--	--
	Tetrachloroethene	5E-05	6E-01	--	--	1E-06	2E-02	1E-05	2E-01
	Toluene	--	1E-03	--	8E-04	--	--	--	--
	trans-1,2-Dichloroethene	--	5E-03	--	--	--	--	--	--
	Trichloroethene	8E-07	2E-03	--	--	2E-07	4E-04	--	--
	Vinyl Chloride	5E-04	2E-01	3E-06	1E-03	--	--	--	--
	Xylenes	--	4E-03	--	--	--	--	--	--
Total Risk and Hazard for SG-to-Indoor Air =		**6E-04**	**1E+00**	**4E-05**	**6E-02**	**2E-06**	**2E-02**	**1E-05**	**2E-01**
Groundwater-to-Indoor Air	1,1-Dichloroethane	--	--	--	--	--	--	9E-09	3E-05
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	9E-08	--	--	--	--
	Acetone	--	4E-07	--	4E-07	--	2E-06	--	--
	Benzene	1E-07	2E-04	1E-07	2E-04	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	4E-05	--	--
	Chloroform	--	--	3E-09	5E-06	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-04	--	2E-04	--	--	--	6E-05
	Ethyl-tert-butyl ether	--	--	--	--	--	--	--	--
	Methyl-tert-butyl ether	--	--	--	--	1E-10	1E-07	--	--
	Tetrachloroethene	3E-08	4E-04	--	--	5E-06	7E-02	--	--
	Toluene	--	1E-05	--	--	--	--	--	2E-05
	trans-1,2-Dichloroethene	--	9E-05	--	1E-04	--	--	--	--
	Trichloroethene	--	--	--	--	--	--	--	--
	Vinyl Chloride	2E-05	8E-03	1E-05	5E-03	2E-06	9E-04	4E-06	1E-03
	Xylenes	--	--	--	--	--	--	--	--
Total Risk and Hazard for GW-to-Indoor Air =		**2E-05**	**9E-03**	**1E-05**	**6E-03**	**8E-06**	**7E-02**	**4E-06**	**1E-03**

Note: " -- " not applicable or not available

Sky Chefs North

Sky Chefs South

San Park Attendant

2701 North Harbor Guard

3.9
0.39
9.6
110
2.4
4
2
0.1
0.2
0.3
1
0.37
0.89
1.3
0.2
0.4
1.2
0.44
0.33
1.6
45
18
3.5
6.2
2.1
12
0.62
0.1
0.21
0.2
0.1 0.1
0.2
0.2
0.2
0.2
0.2
0.4
0.4
0.2
0.52
0.69
0.4
0.2
0.66

Legend

Benzene Results in Parts Per Billion

- Non Detect (Not Labelled)
- 0.01 - 1.6
- 1.61 - 6.2
- 6.21 - 18
- 18.01 - 45
- 45.01 - 110
- Sample Included in Target Risk Assessment
- Target Building
- Site Boundary

150 75 0 150 Feet

Benzene in Groundwater

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | May 2007

Figure 1

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Sky Chefs North
Sky Chefs South
San Park Attendant
2701 North Harbor Guard
N
0.6
21
18
37
140
660
18
4.8
12
22
2.7
61000
39000
330
2000
770
4.8
0.2
91
34
1.4
0.72
0.72
8.6
0.4
9400
240000
60
41000
6400
8.9
1.7
3.1
2.9
10
7.4
5.2
3.1
0.64
8.6
0.2 0.2
29
2.8
11
0.3
48
92
45
4200
34
4600
46
2.2
1000
890
2800
23
5500
3400
4000
1100
2.3
8.6
1.6
360
0.93
2700
86
580
120
59
1.1
68
88
2900
40
6.6
Legend
PCE Results in Parts Per Billion
Non Detect (Not Labelled)
0.01 - 2000
2000.01 - 4600
4600.01 - 9400
9400.01 - 61000
61000.01 - 240000
Sample Included in Target Risk Assessment
Target Building
Site Boundary
150 75 0 150 Feet
PCE in Groundwater
2701 North Harbor Drive
San Diego, California
Geosyntec consultants
San Diego
May 2007
Figure
2
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Sky Chefs North

Sky Chefs South

San Park Attendant

2701 North Harbor Guard

0.13 0.14 0.13 0.13 6.8 8 13 92 850 4.1 41 2.8 0.33 10 1.1 0.27 0.27 6.5 3.2 1.3 5700 7400 10000 1100 1400 3700 1800 0.34 2.8 0.34 2.7 4300 7600 45 9600 3600 0.84 0.26 0.18 1.8 0.63 2.5 15 4.3 1.8 2.3 0.66 3.6 96 51 140 6300 60 3800 48 3.3 990 1.5 1200 1300 26 2700 2900 21000 800 2.2 77 7.4 140 0.89 3000 57 1100 15 440 110 120 32 320 36 0.3 0.96

Legend

TCE Results in Parts Per Billion

- Non Detect (Not Labelled)
- 0.01 - 440
- 440.01 - 1800
- 1800.01 - 4300
- 4300.01 - 10000
- 10000.01 - 21000
- Sample Included in Target Risk Assessment
- Target Building
- Site Boundary

150 75 0 150 Feet

TCE in Groundwater

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | May 2007

Figure 3

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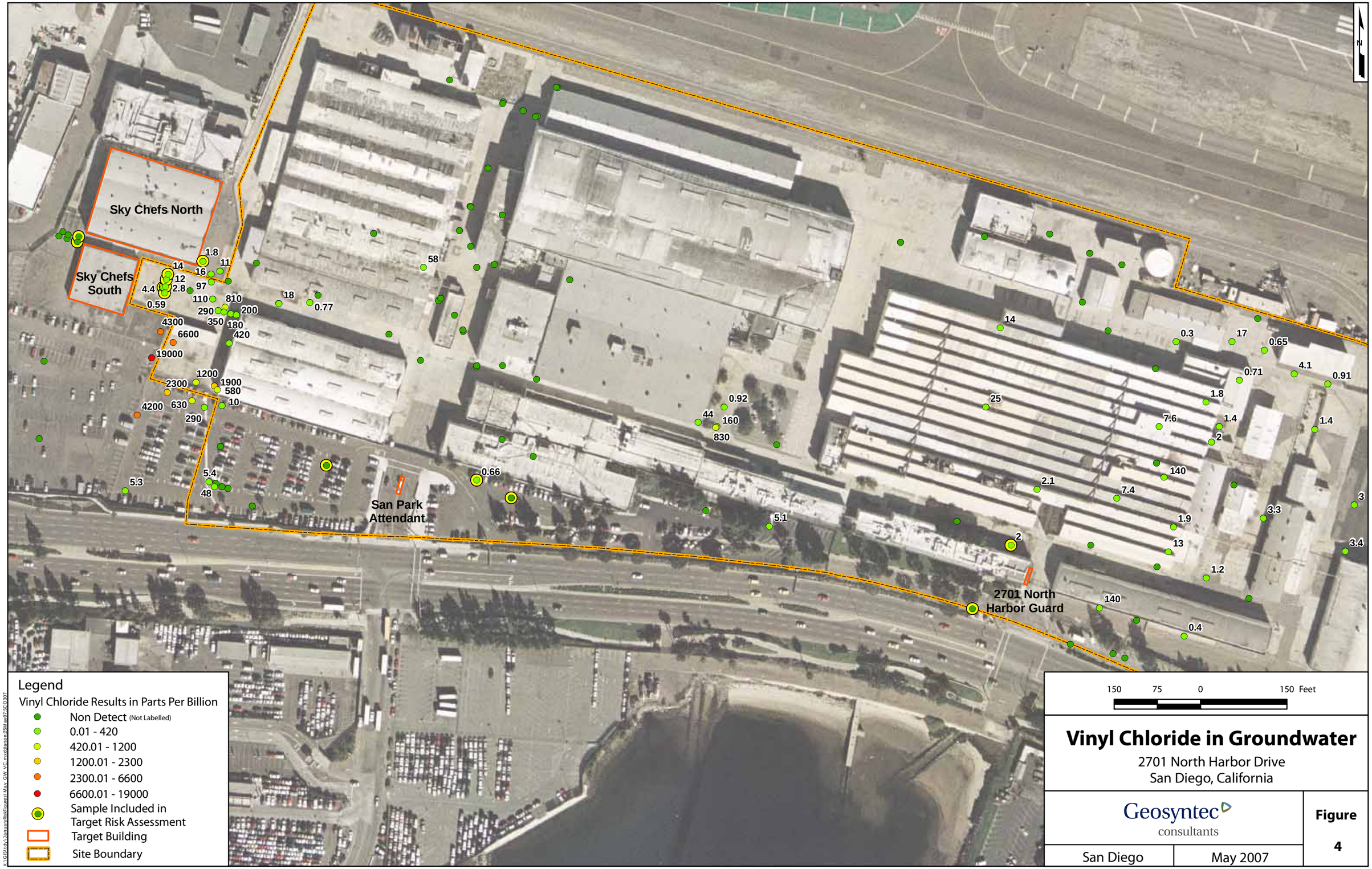
Sky Chefs North
Sky Chefs South
San Park Attendant
2701 North Harbor Guard
1.8
14
16
11
12
4.4
2.8
97
0.59
110
810
290
200
350
180
420
4300
6600
19000
1200
2300
1900
580
10
4200
630
290
5.4
48
5.3
58
18
0.77
0.66
0.92
44
160
830
5.1
2
2.1
14
0.3
17
0.65
4.1
0.71
0.91
1.8
25
7.6
1.4
2
1.4
140
7.4
1.9
13
3.3
3
3.4
1.2
140
0.4
Legend
Vinyl Chloride Results in Parts Per Billion
Non Detect (Not Labelled)
0.01 - 420
420.01 - 1200
1200.01 - 2300
2300.01 - 6600
6600.01 - 19000
Sample Included in Target Risk Assessment
Target Building
Site Boundary
150 75 0 150 Feet
Vinyl Chloride in Groundwater
2701 North Harbor Drive
San Diego, California
Geosyntec consultants
Figure 4
San Diego
May 2007
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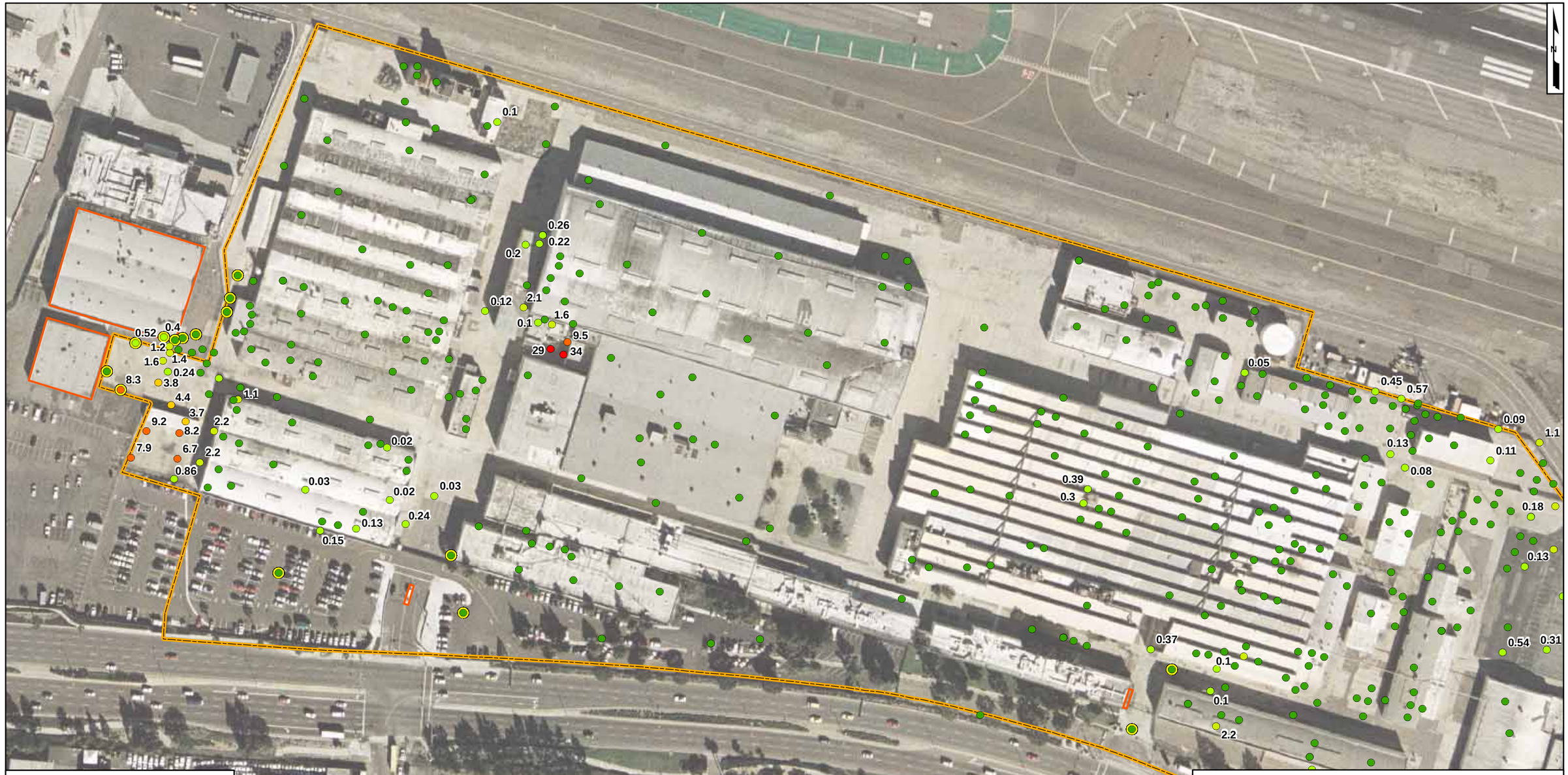

Legend

Benzene Results in Parts Per Billion

- Non Detect (Not Labelled)
- 0.01 - 0.86
- 0.87 - 2.2
- 2.21 - 4.4
- 4.41 - 9.5
- 9.51 - 34
- Sample Included In Target Risk Assessment
- Target Buildings
- Site Boundary

150 75 0 150 Feet

Benzene in Soil Gas

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | May 2007

Figure 5

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Sky Chefs North

Sky Chefs South

San Park Attendant

2701 North Harbor Guard

Legend

PCE Results in Parts Per Billion

- Non Detect (Not Labelled)
- 0.01 - 200
- 200.01 - 520
- 520.01 - 970
- 970.01 - 1900
- 1900.01 - 3000
- Sample Included In Target Risk Assessment
- Target Buildings
- Site Boundary

150 75 0 150 Feet

PCE in Soil Gas

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | May 2007

Figure 6

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Sky Chefs North

Sky Chefs South

San Park Attendant

2701 North Harbor Guard

Legend

TCE Results in Parts Per Billion

- Non Detect (Not Labelled)
- 0.01 - 51
- 51.01 - 140
- 140.01 - 450
- 450.01 - 870
- 870.01 - 2100
- Sample Included In Target Risk Assessment
- Target Buildings
- Site Boundary

150 75 0 150 Feet

TCE in Soil Gas

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | May 2007

Figure 7

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Sky Chefs North

Sky Chefs South

San Park Attendant

2701 North Harbor Guard

0.3 14 44 45 17 210 110 310 0.82 3.9 56 910 1300 12 740 360 8.1 0.13 9.8 1.4 44 34 100 5.7 650 0.21 2 170 470 22 3.8 190 1000 0.13 0.82 5.9 3.3 0.05 0.13 0.005 0.01 0.008 0.01 0.008 0.01 0.006 0.008 0.01 0.008 0.01 6.8 40 100 19 0.008 0.009 0.01 0.007 0.007 0.004 0.008 0.01 0.004 0.01 0.008 0.003 0.003 0.12 0.01 0.008 0.11 0.003 0.01 0.01 0.006 0.3 0.16 0.01 0.6 1.1 0.003 0.02

Legend

Vinyl Chloride Results in Parts Per Billion

- Non Detect (Not Labelled)
- 0.01 - 56
- 56.01 - 210
- 210.01 - 470
- 470.01 - 740
- 740.01 - 1300
- Sample Included In Target Risk Assessment
- Target Buildings
- Site Boundary

150 75 0 150 Feet

Vinyl Chloride in Soil Gas

2701 North Harbor Drive
San Diego, California

Geosyntec consultants

San Diego | May 2007

Figure 8

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Attachment 1

Building Specific Risk Calculations

Attachment 1, Table 1
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: North Sky Chef Worker
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	2.3E-04	3.2E-05	1.4E-03	4.9E-03	2.3E-02	2.3E-06	7.2E-02	1.6E-07
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	4.3E-05	5.8E-06	1.7E-02	6.0E-02	3.4E-04	4.2E-07	1.0E-01	4.2E-08
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	2.1E-03	2.9E-04	1.0E-02	3.5E-02	2.9E-02	2.1E-05	--	--
	Ethyl-Tert-Butyl Ether	2.3E-05	3.1E-06	8.6E-02	3.0E-01	3.6E-05	2.2E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	4.6E-03	6.4E-04	1.0E-02	3.5E-02	6.4E-02	4.5E-05	2.1E-02	9.5E-07
	Toluene	9.0E-05	1.2E-05	8.6E-02	3.0E-01	1.4E-04	8.8E-07	--	--
	trans-1,2-Dichloroethene	7.6E-05	1.0E-05	2.0E-02	7.0E-02	5.2E-04	7.4E-07	--	--
	Trichloroethene	2.2E-04	3.0E-05	1.7E-01	6.0E-01	1.8E-04	2.2E-06	7.0E-03	1.5E-08
	Vinyl Chloride	3.9E-03	5.3E-04	2.9E-02	1.0E-01	1.9E-02	3.8E-05	2.7E-01	1.0E-05
	Xylenes	6.1E-04	8.3E-05	2.0E-01	7.0E-01	4.2E-04	5.9E-06	--	--
						1E-01			1E-05

Attachment 1, Table 2
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: North Sky Chef Worker
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	2.6E-07	3.5E-08	9.0E-01	3.2E+00	3.9E-08	2.5E-09	--	--
	Benzene	1.9E-06	2.7E-07	1.7E-02	6.0E-02	1.6E-05	1.9E-08	1.0E-01	1.9E-09
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	2.5E-06	3.5E-07	1.0E-02	3.5E-02	3.5E-05	2.5E-08	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	3.0E-06	4.1E-07	1.0E-02	3.5E-02	4.1E-05	2.9E-08	2.1E-02	6.1E-10
	Toluene	8.8E-07	1.2E-07	8.6E-02	3.0E-01	1.4E-06	8.6E-09	--	--
	trans-1,2-Dichloroethene	1.4E-06	1.9E-07	2.0E-02	7.0E-02	9.4E-06	1.3E-08	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	1.7E-04	2.4E-05	2.9E-02	1.0E-01	8.3E-04	1.7E-06	2.7E-01	4.6E-07
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						9E-04			5E-07

Attachment 1, Table 3
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: South Sky Chef Worker
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	6.8E-03	9.3E-04	1.7E-02	6.0E-02	5.4E-02	6.6E-05	1.0E-01	6.6E-06
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	--	--	1.0E-02	3.5E-02	--	--	2.1E-02	--
	Toluene	4.8E-04	6.6E-05	8.6E-02	3.0E-01	7.6E-04	4.7E-06	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	2.6E-04	3.5E-05	2.9E-02	1.0E-01	1.2E-03	2.5E-06	2.7E-01	6.8E-07
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						6E-02			7E-06

Attachment 1, Table 4
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: South Sky Chef Worker
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	9.1E-07	1.2E-07	1.4E+00	4.9E+00	8.9E-08	8.9E-09	--	--
	Acetone	2.5E-06	3.4E-07	9.0E-01	3.2E+00	3.8E-07	2.5E-08	--	--
	Benzene	2.1E-05	2.8E-06	1.7E-02	6.0E-02	1.7E-04	2.0E-07	1.0E-01	2.0E-08
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	3.4E-06	4.6E-07	8.6E-02	3.0E-01	5.4E-06	3.3E-08	1.9E-02	6.2E-10
	cis-1,2-Dichloroethene	1.8E-05	2.5E-06	1.0E-02	3.5E-02	2.5E-04	1.8E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	--	--	1.0E-02	3.5E-02	--	--	2.1E-02	--
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	1.5E-05	2.0E-06	2.0E-02	7.0E-02	1.0E-04	1.4E-07	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	1.1E-03	1.5E-04	2.9E-02	1.0E-01	5.3E-03	1.1E-05	2.7E-01	2.9E-06
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						6E-03			3E-06

Attachment 1, Table 5
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: San Park Attendant
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	1.3E-03	1.8E-04	1.0E-02	3.5E-02	1.8E-02	6.4E-05	2.1E-02	1.4E-06
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	5.4E-04	7.4E-05	1.7E-01	6.0E-01	4.3E-04	2.7E-05	7.0E-03	1.9E-07
	Vinyl Chloride	--	--	2.9E-02	1.0E-01	--	--	2.7E-01	--
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						2E-02			2E-06

Attachment 1, Table 6
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: San Park Attendant
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	1.0E-05	1.4E-06	9.0E-01	3.2E+00	1.5E-06	4.9E-07	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	7.1E-05	9.7E-06	2.3E-01	8.0E-01	4.2E-05	3.5E-06	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	2.2E-06	3.0E-07	2.3E+00	8.0E+00	1.3E-07	1.1E-07	9.1E-04	9.8E-11
	Tetrachloroethene	5.3E-03	7.2E-04	1.0E-02	3.5E-02	7.2E-02	2.6E-04	2.1E-02	5.4E-06
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	1.9E-04	2.6E-05	2.9E-02	1.0E-01	9.1E-04	9.3E-06	2.7E-01	2.5E-06
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						7E-02			8E-06

Attachment 1, Table 7
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: 2701 N. Harbor Guard
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	5.0E-04	6.9E-05	2.0E-02	7.0E-02	3.4E-03	6.9E-06	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	1.4E-02	1.9E-03	1.0E-02	3.5E-02	1.9E-01	1.9E-04	2.1E-02	4.1E-06
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	--	--	2.9E-02	1.0E-01	--	--	2.7E-01	--
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						2E-01			4E-06

Attachment 1, Table 8
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: 2701 N. Harbor Guard
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	3.2E-05	4.4E-06	1.4E-01	5.0E-01	3.1E-05	4.4E-07	5.7E-03	2.5E-09
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	4.1E-06	5.7E-07	1.0E-02	3.5E-02	5.7E-05	5.7E-08	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	--	--	1.0E-02	3.5E-02	--	--	2.1E-02	--
	Toluene	9.6E-06	1.3E-06	8.6E-02	3.0E-01	1.5E-05	1.3E-07	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	2.7E-04	3.7E-05	2.9E-02	1.0E-01	1.3E-03	3.7E-06	2.7E-01	1.0E-06
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						1E-03			1E-06

Attachment 1, Table 9
Summary of Cancer Risks and Noncancer Hazards
Onsite and Offsite Worker Exposure Scenarios
Targeted Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	North Sky Chef Worker		South Sky Chef Worker		San Park Attendant		2701 N. Harbor Guard	
		Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Soil Gas-to-	1,1-Dichloroethane	--	--	--	--	--	--	--	--
Indoor Air	1,1-Dichloroethene	--	--	--	--	--	--	--	3E-03
	1,2-Dichloroethane	2E-07	2E-02	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	Acetone	--	--	--	--	--	--	--	--
	Benzene	4E-08	3E-04	7E-06	5E-02	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	--	--	--
	Chloroform	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-02	--	--	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	4E-05	--	--	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
	Tetrachloroethene	1E-06	6E-02	--	--	1E-06	2E-02	4E-06	2E-01
	Toluene	--	1E-04	--	8E-04	--	--	--	--
	trans-1,2-Dichloroethene	--	5E-04	--	--	--	--	--	--
	Trichloroethene	2E-08	2E-04	--	--	2E-07	4E-04	--	--
	Vinyl Chloride	1E-05	2E-02	7E-07	1E-03	--	--	--	--
	Xylenes	--	4E-04	--	--	--	--	--	--
Total Risk and Hazard for SG-to-Indoor Air =		**1E-05**	**1E-01**	**7E-06**	**6E-02**	**2E-06**	**2E-02**	**4E-06**	**2E-01**
Groundwater-to-	1,1-Dichloroethane	--	--	--	--	--	--	3E-09	3E-05
Indoor Air	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	9E-08	--	--	--	--
	Acetone	--	4E-08	--	4E-07	--	2E-06	--	--
	Benzene	2E-09	2E-05	2E-08	2E-04	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	4E-05	--	--
	Chloroform	--	--	6E-10	5E-06	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-05	--	2E-04	--	--	--	6E-05
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	--	1E-10	1E-07	--	--
	Tetrachloroethene	6E-10	4E-05	--	--	5E-06	7E-02	--	--
	Toluene	--	1E-06	--	--	--	--	--	2E-05
	trans-1,2-Dichloroethene	--	9E-06	--	1E-04	--	--	--	--
	Trichloroethene	--	--	--	--	--	--	--	--
	Vinyl Chloride	5E-07	8E-04	3E-06	5E-03	2E-06	9E-04	1E-06	1E-03
	Xylenes	--	--	--	--	--	--	--	--
Total Risk and Hazard for GW-to-Indoor Air =		**5E-07**	**9E-04**	**3E-06**	**6E-03**	**8E-06**	**7E-02**	**1E-06**	**1E-03**

Note: " -- " not applicable or not available

Attachment 1, Table 10
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: North Sky Chef Worker
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	2.3E-03	3.2E-04	1.4E-03	4.9E-03	2.3E-01	1.1E-04	7.2E-02	8.2E-06
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	4.3E-04	5.8E-05	1.7E-02	6.0E-02	3.4E-03	2.1E-05	1.0E-01	2.1E-06
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	2.1E-02	2.9E-03	1.0E-02	3.5E-02	2.9E-01	1.1E-03	--	--
	Ethyl-Tert-Butyl Ether	2.3E-04	3.1E-05	8.6E-02	3.0E-01	3.6E-04	1.1E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	4.6E-02	6.4E-03	1.0E-02	3.5E-02	6.4E-01	2.3E-03	2.1E-02	4.8E-05
	Toluene	9.0E-04	1.2E-04	8.6E-02	3.0E-01	1.4E-03	4.4E-05	--	--
	trans-1,2-Dichloroethene	7.6E-04	1.0E-04	2.0E-02	7.0E-02	5.2E-03	3.7E-05	--	--
	Trichloroethene	2.2E-03	3.0E-04	1.7E-01	6.0E-01	1.8E-03	1.1E-04	7.0E-03	7.6E-07
	Vinyl Chloride	3.9E-02	5.3E-03	2.9E-02	1.0E-01	1.9E-01	1.9E-03	2.7E-01	5.2E-04
	Xylenes	6.1E-03	8.3E-04	2.0E-01	7.0E-01	4.2E-03	3.0E-04	--	--
						1E+00			6E-04

Attachment 1, Table 11
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: North Sky Chef Worker
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	2.6E-06	3.5E-07	9.0E-01	3.2E+00	3.9E-07	1.3E-07	--	--
	Benzene	1.9E-05	2.7E-06	1.7E-02	6.0E-02	1.6E-04	9.5E-07	1.0E-01	9.5E-08
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	2.5E-05	3.5E-06	1.0E-02	3.5E-02	3.5E-04	1.2E-06	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	3.0E-05	4.1E-06	1.0E-02	3.5E-02	4.1E-04	1.5E-06	2.1E-02	3.1E-08
	Toluene	8.8E-06	1.2E-06	8.6E-02	3.0E-01	1.4E-05	4.3E-07	--	--
	trans-1,2-Dichloroethene	1.4E-05	1.9E-06	2.0E-02	7.0E-02	9.4E-05	6.7E-07	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	1.7E-03	2.4E-04	2.9E-02	1.0E-01	8.3E-03	8.5E-05	2.7E-01	2.3E-05
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						9E-03			2E-05

Attachment 1, Table 12
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: South Sky Chef Worker
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	6.8E-03	9.3E-04	1.7E-02	6.0E-02	5.4E-02	3.3E-04	1.0E-01	3.3E-05
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	--	--	1.0E-02	3.5E-02	--	--	2.1E-02	--
	Toluene	4.8E-04	6.6E-05	8.6E-02	3.0E-01	7.6E-04	2.3E-05	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	2.6E-04	3.5E-05	2.9E-02	1.0E-01	1.2E-03	1.3E-05	2.7E-01	3.4E-06
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						6E-02			4E-05

Attachment 1, Table 13
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: South Sky Chef Worker
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	9.1E-07	1.2E-07	1.4E+00	4.9E+00	8.9E-08	4.5E-08	--	--
	Acetone	2.5E-06	3.4E-07	9.0E-01	3.2E+00	3.8E-07	1.2E-07	--	--
	Benzene	2.1E-05	2.8E-06	1.7E-02	6.0E-02	1.7E-04	1.0E-06	1.0E-01	1.0E-07
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	3.4E-06	4.6E-07	8.6E-02	3.0E-01	5.4E-06	1.6E-07	1.9E-02	3.1E-09
	cis-1,2-Dichloroethene	1.8E-05	2.5E-06	1.0E-02	3.5E-02	2.5E-04	8.8E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	--	--	1.0E-02	3.5E-02	--	--	2.1E-02	--
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	1.5E-05	2.0E-06	2.0E-02	7.0E-02	1.0E-04	7.1E-07	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	1.1E-03	1.5E-04	2.9E-02	1.0E-01	5.3E-03	5.4E-05	2.7E-01	1.5E-05
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						6E-03			1E-05

Attachment 1, Table 14
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: San Park Attendant
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	1.3E-03	1.8E-04	1.0E-02	3.5E-02	1.8E-02	6.4E-05	2.1E-02	1.4E-06
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	5.4E-04	7.4E-05	1.7E-01	6.0E-01	4.3E-04	2.7E-05	7.0E-03	1.9E-07
	Vinyl Chloride	--	--	2.9E-02	1.0E-01	--	--	2.7E-01	--
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						2E-02			2E-06

Attachment 1, Table 15
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: San Park Attendant
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	1.0E-05	1.4E-06	9.0E-01	3.2E+00	1.5E-06	4.9E-07	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	7.1E-05	9.7E-06	2.3E-01	8.0E-01	4.2E-05	3.5E-06	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	2.2E-06	3.0E-07	2.3E+00	8.0E+00	1.3E-07	1.1E-07	9.1E-04	9.8E-11
	Tetrachloroethene	5.3E-03	7.2E-04	1.0E-02	3.5E-02	7.2E-02	2.6E-04	2.1E-02	5.4E-06
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	1.9E-04	2.6E-05	2.9E-02	1.0E-01	9.1E-04	9.3E-06	2.7E-01	2.5E-06
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						7E-02			8E-06

Attachment 1, Table 16
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: 2701 N. Harbor Guard
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	--	--	1.4E-01	5.0E-01	--	--	5.7E-03	--
	1,1-Dichloroethene	5.0E-04	6.9E-05	2.0E-02	7.0E-02	3.4E-03	2.5E-05	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	--	--	1.0E-02	3.5E-02	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	1.4E-02	1.9E-03	1.0E-02	3.5E-02	1.9E-01	6.9E-04	2.1E-02	1.5E-05
	Toluene	--	--	8.6E-02	3.0E-01	--	--	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	--	--	2.9E-02	1.0E-01	--	--	2.7E-01	--
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						2E-01			1E-05

Attachment 1, Table 17
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: 2701 N. Harbor Guard
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1-Dichloroethane	3.2E-05	4.4E-06	1.4E-01	5.0E-01	3.1E-05	1.6E-06	5.7E-03	9.0E-09
	1,1-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	--	--	1.7E-02	6.0E-02	--	--	1.0E-01	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	cis-1,2-Dichloroethene	4.1E-06	5.7E-07	1.0E-02	3.5E-02	5.7E-05	2.0E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Tetrachloroethene	--	--	1.0E-02	3.5E-02	--	--	2.1E-02	--
	Toluene	9.6E-06	1.3E-06	8.6E-02	3.0E-01	1.5E-05	4.7E-07	--	--
	trans-1,2-Dichloroethene	--	--	2.0E-02	7.0E-02	--	--	--	--
	Trichloroethene	--	--	1.7E-01	6.0E-01	--	--	7.0E-03	--
	Vinyl Chloride	2.7E-04	3.7E-05	2.9E-02	1.0E-01	1.3E-03	1.3E-05	2.7E-01	3.6E-06
	Xylenes	--	--	2.0E-01	7.0E-01	--	--	--	--
						1E-03			4E-06

Attachment 1, Table 18
Summary of Cancer Risks and Noncancer Hazards
Onsite and Offsite Worker Exposure Scenarios
Targeted Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	North Sky Chef Worker		South Sky Chef Worker		San Park Attendant		2701 N. Harbor Guard	
		Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Soil Gas-to-	1,1-Dichloroethane	--	--	--	--	--	--	--	--
Indoor Air	1,1-Dichloroethene	--	--	--	--	--	--	--	3E-03
	1,2-Dichloroethane	8E-06	2E-01	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	Acetone	--	--	--	--	--	--	--	--
	Benzene	2E-06	3E-03	3E-05	5E-02	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	--	--	--
	Chloroform	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-01	--	--	--	--	--	--
	Ethyl-Tert-Butyl Ether	--	4E-04	--	--	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
	Tetrachloroethene	5E-05	6E-01	--	--	1E-06	2E-02	1E-05	2E-01
	Toluene	--	1E-03	--	8E-04	--	--	--	--
	trans-1,2-Dichloroethene	--	5E-03	--	--	--	--	--	--
	Trichloroethene	8E-07	2E-03	--	--	2E-07	4E-04	--	--
	Vinyl Chloride	5E-04	2E-01	3E-06	1E-03	--	--	--	--
	Xylenes	--	4E-03	--	--	--	--	--	--
Total Risk and Hazard for SG-to-Indoor Air =		**6E-04**	**1E+00**	**4E-05**	**6E-02**	**2E-06**	**2E-02**	**1E-05**	**2E-01**
Groundwater-to-	1,1-Dichloroethane	--	--	--	--	--	--	9E-09	3E-05
Indoor Air	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	9E-08	--	--	--	--
	Acetone	--	4E-07	--	4E-07	--	2E-06	--	--
	Benzene	1E-07	2E-04	1E-07	2E-04	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	4E-05	--	--
	Chloroform	--	--	3E-09	5E-06	--	--	--	--
	cis-1,2-Dichloroethene	--	3E-04	--	2E-04	--	--	--	6E-05
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	--	1E-10	1E-07	--	--
	Tetrachloroethene	3E-08	4E-04	--	--	5E-06	7E-02	--	--
	Toluene	--	1E-05	--	--	--	--	--	2E-05
	trans-1,2-Dichloroethene	--	9E-05	--	1E-04	--	--	--	--
	Trichloroethene	--	--	--	--	--	--	--	--
	Vinyl Chloride	2E-05	8E-03	1E-05	5E-03	2E-06	9E-04	4E-06	1E-03
	Xylenes	--	--	--	--	--	--	--	--
Total Risk and Hazard for GW-to-Indoor Air =		**2E-05**	**9E-03**	**1E-05**	**6E-03**	**8E-06**	**7E-02**	**4E-06**	**1E-03**

Note: " -- " not applicable or not available

Attachment 2

Johnson & Ettinger Model Spreadsheets

DTSC / HERD
Version 2.0-mod1; 07/03

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
107062	2700			1,2-Dichloroethane
71432	520			Benzene
156592	28000			cis-1,2-Dichloroethene
637923	300			ETBE
95476	1600			o-Xylene
106423	6100			p-Xylene
127184	61000			Tetrachloroethene
108883	1100			Toluene
156605	1000			trans-1,2-Dichloroethene
79016	2800			Trichloroethene
75014	45000			Vinyl chloride

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of Ls (cell F24)					
15	91.5	18	91.5			LS		
	3' bgs							

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)
LS	1.62	0.390	0.076					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	1678	1678	244	0.1	5	14
		55 ft	55 ft	8 ft			

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	25	25	250

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)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
1.0E-01	9.9E-06	9.8E-04	25	7,643	356.65	561.00	98.96	2.1E-05	4.0E-01	1,2-Dichloroethane
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	78.11	2.9E-05	6.0E-02	Benzene
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	96.94	0.0E+00	3.5E-02	cis-1,2-Dichloroethene
6.9E-02	7.3E-06	2.4E-03	25	6,678	328.30	497.10	102.18	0.0E+00	3.0E-01	ETBE
8.7E-02	1.0E-05	5.2E-03	25	8,661	417.60	630.30	106.17	0.0E+00	7.0E-01	o-Xylene
7.7E-02	8.4E-06	7.6E-03	25	8,525	411.52	616.20	106.17	0.0E+00	7.0E-01	p-Xylene
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02	Tetrachloroethene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	92.14	0.0E+00	3.0E-01	Toluene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	96.94	0.0E+00	7.0E-02	trans-1,2-Dichloroethene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.36	544.20	131.39	2.0E-06	6.0E-01	Trichloroethene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	62.50	7.8E-05	1.0E-01	Vinyl chloride

Appendix C, Attachment 2
SITE-SPECIFIC PARAMETERS
Soil Gas-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A 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)	
7.9E+08	76.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	6,712	2.7E+03	9.5E+05	1,2-Dichloroethane
										5.2E+02		Benzene
										2.8E+04		cis-1,2-Dichloroethene
										3.0E+02		ETBE
										1.6E+03		o-Xylene
										6.1E+03		p-Xylene
										6.1E+04		Tetrachloroethene
										1.1E+03		Toluene
										1.0E+03		trans-1,2-Dichloroethene
										2.8E+03		Trichloroethene
										4.5E+04		Vinyl chloride

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
2.9E+06	5.0E-03	15	8,435	6.9E-04	2.9E-02	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	76.5	1,2-Dichloroethane
2.9E+06	5.0E-03	15	8,040	4.0E-03	1.7E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Benzene
2.9E+06	5.0E-03	15	7,653	3.0E-03	1.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	cis-1,2-Dichloroethene
2.9E+06	5.0E-03	15	7,192	1.8E-03	7.6E-02	1.8E-04	9.7E-03	0.0E+00	0.0E+00	9.7E-03	76.5	ETBE
2.9E+06	5.0E-03	15	10,314	3.4E-03	1.4E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	o-Xylene
2.9E+06	5.0E-03	15	10,155	5.1E-03	2.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	p-Xylene
2.9E+06	5.0E-03	15	9,472	1.2E-02	5.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Tetrachloroethene
2.9E+06	5.0E-03	15	9,067	4.6E-03	1.9E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Toluene
2.9E+06	5.0E-03	15	7,051	7.0E-03	2.9E-01	1.8E-04	9.8E-03	0.0E+00	0.0E+00	9.8E-03	76.5	trans-1,2-Dichloroethene
2.9E+06	5.0E-03	15	8,458	7.3E-03	3.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	Trichloroethene
2.9E+06	5.0E-03	15	4,910	2.2E-02	9.2E-01	1.8E-04	1.5E-02	0.0E+00	0.0E+00	1.5E-02	76.5	Vinyl chloride

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., $C_{building}$ ($\mu g/m^3$)	Inflnite source bldg. conc., $C_{building}$ (mg/m^3)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	**Adjusted source bldg. conc., $C_{building}$ (mg/m^3)**	
15	2.7E+03	2.17	2.3E+02	1.4E-02	1.5E+04	6.9E+04	1.7E-04	4.7E-01	4.7E-04	2.1E-05	4.0E-01	**2.3E-04**	1,2-Dichloroethane
15	5.2E+02	2.17	2.3E+02	1.2E-02	1.5E+04	5.2E+05	1.6E-04	8.5E-02	8.5E-05	2.9E-05	6.0E-02	**4.3E-05**	Benzene
15	2.8E+04	2.17	2.3E+02	1.0E-02	1.5E+04	6.9E+06	1.5E-04	4.3E+00	4.3E-03	NA	3.5E-02	**2.1E-03**	cis-1,2-Dichloroethene
15	3.0E+02	2.17	2.3E+02	9.7E-03	1.5E+04	1.7E+07	1.5E-04	4.5E-02	4.5E-05	NA	3.0E-01	**2.3E-05**	ETBE
15	1.6E+03	2.17	2.3E+02	1.2E-02	1.5E+04	6.1E+05	1.6E-04	2.6E-01	2.6E-04	NA	7.0E-01	**1.3E-04**	o-Xylene
15	6.1E+03	2.17	2.3E+02	1.1E-02	1.5E+04	3.5E+06	1.6E-04	9.5E-01	9.5E-04	NA	7.0E-01	**4.8E-04**	p-Xylene
15	6.1E+04	2.17	2.3E+02	1.0E-02	1.5E+04	9.7E+06	1.5E-04	9.3E+00	9.3E-03	5.9E-06	3.5E-02	**4.6E-03**	Tetrachloroethene
15	1.1E+03	2.17	2.3E+02	1.2E-02	1.5E+04	6.1E+05	1.6E-04	1.8E-01	1.8E-04	NA	3.0E-01	**9.0E-05**	Toluene
15	1.0E+03	2.17	2.3E+02	9.8E-03	1.5E+04	1.3E+07	1.5E-04	1.5E-01	1.5E-04	NA	7.0E-02	**7.5E-05**	trans-1,2-Dichloroethene
15	2.8E+03	2.17	2.3E+02	1.1E-02	1.5E+04	2.3E+06	1.6E-04	4.4E-01	4.4E-04	2.0E-06	6.0E-01	**2.2E-04**	Trichloroethene
15	4.5E+04	2.17	2.3E+02	1.5E-02	1.5E+04	5.6E+04	1.7E-04	7.8E+00	7.8E-03	7.8E-05	1.0E-01	**3.9E-03**	Vinyl chloride

Appendix C, Attachment 2
SITE-SPECIFIC PARAMETERS
Groundwater-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

DTSC / HERD
Version 3.0-mod1; 07/03

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)		Chemical
67641	5.1		Acetone
71432	1.0		Benzene
156592	2.0		cis-1,2-Dichloroethylene
127184	0.60		Tetrachloroethylene
108883	0.40		Toluene
156605	0.49		trans-1,2-Dichloroethylene
75014	14		Vinyl chloride

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Totals must add up to value of L_{WT} (cell G28) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
18	15	213.5	213.5			A	LS	LS		

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters			
LS	1.62	0.390	0.076								

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP (g/cm-s^2)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	1678	1678	244	0.1	5	14
		55 ft	55 ft	8 ft			

Appendix C, Attachment 2
SITE-SPECIFIC PARAMETERS
Groundwater-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°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)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	5.8E-01	1.0E+06	0.0E+00	3.2E+00	Acetone
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	5.9E+01	1.8E+03	2.9E-05	6.0E-02	Benzene
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	3.6E+01	3.5E+03	0.0E+00	3.5E-02	cis-1,2-Dichloroethylene
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	1.6E+02	2.0E+02	5.9E-06	3.5E-02	Tetrachloroethylene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	1.8E+02	5.3E+02	0.0E+00	3.0E-01	Toluene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	5.3E+01	6.3E+03	0.0E+00	7.0E-02	trans-1,2-Dichloroethylene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	1.9E+01	8.8E+03	7.8E-05	1.0E-01	Vinyl chloride

Appendix C, Attachment 2
SITE-SPECIFIC PARAMETERS
Groundwater-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
7.9E+08	198.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	18.75	0.39	0.087	0.303	6,712

Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
9.5E+05	2.9E+06	5.0E-03	15	7,460	2.9E-05	1.2E-03	1.8E-04	1.7E-02	0.0E+00	0.0E+00	1.4E-03	8.4E-03	198.5
				8,040	4.0E-03	1.7E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.7E-03	
				7,653	3.0E-03	1.2E-01		1.0E-02	0.0E+00	0.0E+00	1.6E-04	1.4E-03	
				9,472	1.2E-02	5.2E-01		1.0E-02	0.0E+00	0.0E+00	1.4E-04	1.3E-03	
				9,067.4005	4.6E-03	1.9E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.6E-03	
				7,051	7.0E-03	2.9E-01		9.8E-03	0.0E+00	0.0E+00	1.4E-04	1.3E-03	
				4,910	2.2E-02	9.2E-01		1.5E-02	0.0E+00	0.0E+00	2.1E-04	2.0E-03	

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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Infinite source bldg. conc., $C_{building}$ (mg/m^3)	**Adjusted source bldg. conc., $C_{building}$ (mg/m^3)**	
15	6.1E+00	2.17	2.3E+02	1.7E-02	1.5E+04	1.1E+04	8.5E-05	5.2E-04	NA	3.2E+00	5.2E-07	**2.6E-07**	Acetone
	1.7E+02			1.2E-02		5.2E+05	2.3E-05	3.9E-03	2.9E-05	6.0E-02	3.9E-06	**1.9E-06**	Benzene
	2.5E+02			1.0E-02		6.9E+06	2.0E-05	5.1E-03	NA	3.5E-02	5.1E-06	**2.5E-06**	cis-1,2-Dichloroethylene
	3.1E+02			1.0E-02		9.7E+06	1.9E-05	6.0E-03	5.9E-06	3.5E-02	6.0E-06	**3.0E-06**	Tetrachloroethylene
	7.7E+01			1.2E-02		6.1E+05	2.3E-05	1.8E-03	NA	3.0E-01	1.8E-06	**8.8E-07**	Toluene
	1.4E+02			9.8E-03		1.3E+07	1.9E-05	2.7E-03	NA	7.0E-02	2.7E-06	**1.4E-06**	trans-1,2-Dichloroethylene
	1.3E+04			1.5E-02		5.6E+04	2.7E-05	3.5E-01	7.8E-05	1.0E-01	3.5E-04	**1.7E-04**	Vinyl chloride

Appendix C, Attachment 2
DEFAULT PARAMETERS
Soil Gas-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

DTSC / HERD
Version 2.0-mod1; 07/03

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
107062	2700			1,2-Dichloroethane
71432	520			Benzene
156592	28000			cis-1,2-Dichloroethene
637923	300			ETBE
95476	1600			o-Xylene
106423	6100			p-Xylene
127184	61000			Tetrachloroethene
108883	1100			Toluene
156605	1000			trans-1,2-Dichloroethene
79016	2800			Trichloroethene
75014	45000			Vinyl chloride

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Totals must add up to value of Ls (cell F24) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
15	91.5 3' bgs	18	91.5			LS		

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)
LS	1.62	0.390	0.076					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	1678 55 ft	1678 55 ft	244 8 ft	0.1	1	14

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	25	25	250

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°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)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
1.0E-01	9.9E-06	9.8E-04	25	7,643	356.65	561.00	98.96	2.1E-05	4.0E-01	1,2-Dichloroethane
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	78.11	2.9E-05	6.0E-02	Benzene
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	96.94	0.0E+00	3.5E-02	cis-1,2-Dichloroethene
6.9E-02	7.3E-06	2.4E-03	25	6,678	328.30	497.10	102.18	0.0E+00	3.0E-01	ETBE
8.7E-02	1.0E-05	5.2E-03	25	8,661	417.60	630.30	106.17	0.0E+00	7.0E-01	o-Xylene
7.7E-02	8.4E-06	7.6E-03	25	8,525	411.52	616.20	106.17	0.0E+00	7.0E-01	p-Xylene
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02	Tetrachloroethene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	92.14	0.0E+00	3.0E-01	Toluene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	96.94	0.0E+00	7.0E-02	trans-1,2-Dichloroethene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.36	544.20	131.39	2.0E-06	6.0E-01	Trichloroethene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	62.50	7.8E-05	1.0E-01	Vinyl chloride

Appendix C, Attachment 2
DEFAULT PARAMETERS
Soil Gas-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc., C_{source} ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	
7.9E+08	76.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	6,712	2.7E+03	1.9E+05	1,2-Dichloroethane
										5.2E+02		Benzene
										2.8E+04		cis-1,2-Dichloroethene
										3.0E+02		ETBE
										1.6E+03		o-Xylene
										6.1E+03		p-Xylene
										6.1E+04		Tetrachloroethene
										1.1E+03		Toluene
										1.0E+03		trans-1,2-Dichloroethene
										2.8E+03		Trichloroethene
										4.5E+04		Vinyl chloride

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
2.9E+06	5.0E-03	15	8,435	6.9E-04	2.9E-02	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	76.5	1,2-Dichloroethane
2.9E+06	5.0E-03	15	8,040	4.0E-03	1.7E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Benzene
2.9E+06	5.0E-03	15	7,653	3.0E-03	1.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	cis-1,2-Dichloroethene
2.9E+06	5.0E-03	15	7,192	1.8E-03	7.6E-02	1.8E-04	9.7E-03	0.0E+00	0.0E+00	9.7E-03	76.5	ETBE
2.9E+06	5.0E-03	15	10,314	3.4E-03	1.4E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	o-Xylene
2.9E+06	5.0E-03	15	10,155	5.1E-03	2.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	p-Xylene
2.9E+06	5.0E-03	15	9,472	1.2E-02	5.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Tetrachloroethene
2.9E+06	5.0E-03	15	9,067	4.6E-03	1.9E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Toluene
2.9E+06	5.0E-03	15	7,051	7.0E-03	2.9E-01	1.8E-04	9.8E-03	0.0E+00	0.0E+00	9.8E-03	76.5	trans-1,2-Dichloroethene
2.9E+06	5.0E-03	15	8,458	7.3E-03	3.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	Trichloroethene
2.9E+06	5.0E-03	15	4,910	2.2E-02	9.2E-01	1.8E-04	1.5E-02	0.0E+00	0.0E+00	1.5E-02	76.5	Vinyl chloride

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., $C_{building}$ ($\mu g/m^3$)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
15	2.7E+03	2.17	2.3E+02	1.4E-02	1.5E+04	6.9E+04	8.6E-04	2.3E+00	**2.3E-03**	2.1E-05	4.0E-01	1,2-Dichloroethane
15	5.2E+02	2.17	2.3E+02	1.2E-02	1.5E+04	5.2E+05	8.2E-04	4.3E-01	**4.3E-04**	2.9E-05	6.0E-02	Benzene
15	2.8E+04	2.17	2.3E+02	1.0E-02	1.5E+04	6.9E+06	7.7E-04	2.1E+01	**2.1E-02**	NA	3.5E-02	cis-1,2-Dichloroethene
15	3.0E+02	2.17	2.3E+02	9.7E-03	1.5E+04	1.7E+07	7.5E-04	2.3E-01	**2.3E-04**	NA	3.0E-01	ETBE
15	1.6E+03	2.17	2.3E+02	1.2E-02	1.5E+04	6.1E+05	8.1E-04	1.3E+00	**1.3E-03**	NA	7.0E-01	o-Xylene
15	6.1E+03	2.17	2.3E+02	1.1E-02	1.5E+04	3.5E+06	7.8E-04	4.8E+00	**4.8E-03**	NA	7.0E-01	p-Xylene
15	6.1E+04	2.17	2.3E+02	1.0E-02	1.5E+04	9.7E+06	7.6E-04	4.6E+01	**4.6E-02**	5.9E-06	3.5E-02	Tetrachloroethene
15	1.1E+03	2.17	2.3E+02	1.2E-02	1.5E+04	6.1E+05	8.1E-04	9.0E-01	**9.0E-04**	NA	3.0E-01	Toluene
15	1.0E+03	2.17	2.3E+02	9.8E-03	1.5E+04	1.3E+07	7.6E-04	7.6E-01	**7.6E-04**	NA	7.0E-02	trans-1,2-Dichloroethene
15	2.8E+03	2.17	2.3E+02	1.1E-02	1.5E+04	2.3E+06	7.9E-04	2.2E+00	**2.2E-03**	2.0E-06	6.0E-01	Trichloroethene
15	4.5E+04	2.17	2.3E+02	1.5E-02	1.5E+04	5.6E+04	8.7E-04	3.9E+01	**3.9E-02**	7.8E-05	1.0E-01	Vinyl chloride

Appendix C, Attachment 2
DEFAULT PARAMETERS
Groundwater-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

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YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)		Chemical
67641	5.1		Acetone
71432	1.0		Benzene
156592	2.0		cis-1,2-Dichloroethylene
127184	0.60		Tetrachloroethylene
108883	0.40		Toluene
156605	0.49		trans-1,2-Dichloroethylene
75014	14		Vinyl chloride

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Totals must add up to value of L_{WT} (cell G28) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
18	15	213.5	213.5			A	LS	LS		

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm³)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm³)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm³)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters			
LS	1.62	0.390	0.076								

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP (g/cm-s²)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	1678	1678	244	0.1	1	14
		55 ft	55 ft	8 ft			

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°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)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	5.8E-01	1.0E+06	0.0E+00	3.2E+00	Acetone
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	5.9E+01	1.8E+03	2.9E-05	6.0E-02	Benzene
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	3.6E+01	3.5E+03	0.0E+00	3.5E-02	cis-1,2-Dichloroethylene
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	1.6E+02	2.0E+02	5.9E-06	3.5E-02	Tetrachloroethylene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	1.8E+02	5.3E+02	0.0E+00	3.0E-01	Toluene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	5.3E+01	6.3E+03	0.0E+00	7.0E-02	trans-1,2-Dichloroethylene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	1.9E+01	8.8E+03	7.8E-05	1.0E-01	Vinyl chloride

Appendix C, Attachment 2
DEFAULT PARAMETERS
Groundwater-to-Indoor Air Pathway
North Sky Chefs Building
2701 North Harbor Drive

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{tc} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
7.9E+08	198.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.5E-08	16.75	0.39	0.087	0.303	6,712

Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
1.9E+05	2.9E+06	5.0E-03	15	7,460	2.9E-05	1.2E-03	1.8E-04	1.7E-02	0.0E+00	0.0E+00	1.4E-03	8.4E-03	198.5
				8,040	4.0E-03	1.7E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.7E-03	
				7,653	3.0E-03	1.2E-01		1.0E-02	0.0E+00	0.0E+00	1.6E-04	1.4E-03	
				9,472	1.2E-02	5.2E-01		1.0E-02	0.0E+00	0.0E+00	1.4E-04	1.3E-03	
				9,067.4005	4.6E-03	1.9E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.6E-03	
				7,051	7.0E-03	2.9E-01		9.8E-03	0.0E+00	0.0E+00	1.4E-04	1.3E-03	
				4,910	2.2E-02	9.2E-01		1.5E-02	0.0E+00	0.0E+00	2.1E-04	2.0E-03	

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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	
15	6.1E+00	2.17	2.3E+02	1.7E-02	1.5E+04	1.1E+04	4.2E-04	2.6E-03	NA	3.2E+00	**2.6E-06**	Acetone
	1.7E+02			1.2E-02		5.2E+05	1.2E-04	1.9E-02	2.9E-05	6.0E-02	**1.9E-05**	Benzene
	2.5E+02			1.0E-02		6.9E+06	1.0E-04	2.5E-02	NA	3.5E-02	**2.5E-05**	cis-1,2-Dichloroethylene
	3.1E+02			1.0E-02		9.7E+06	9.5E-05	3.0E-02	5.9E-06	3.5E-02	**3.0E-05**	Tetrachloroethylene
	7.7E+01			1.2E-02		6.1E+05	1.1E-04	8.8E-03	NA	3.0E-01	**8.8E-06**	Toluene
	1.4E+02			9.8E-03		1.3E+07	9.5E-05	1.4E-02	NA	7.0E-02	**1.4E-05**	trans-1,2-Dichloroethylene
	1.3E+04			1.5E-02		5.6E+04	1.3E-04	1.7E+00	7.8E-05	1.0E-01	**1.7E-03**	Vinyl chloride

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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	8300			Benzene
108883	590			Toluene
75014	300			Vinyl chloride

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of Ls (cell F24)					
15	91.5	18	91.5			LS		
	3' bgs							

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters
LS	1.62	0.390	0.076					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	2898	2898	244	0.1	1	42
		95'	95'	8'			

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	25	25	250

Worksheet: CHEMPROPS

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, ΔH_{vb} (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	78.11	2.9E-05	6.0E-02	Benzene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	92.14	0.0E+00	3.0E-01	Toluene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	62.50	7.8E-05	1.0E-01	Vinyl chloride

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A 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)	
7.9E+08	76.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	11,590	8.3E+03	5.7E+05	Benzene
										5.9E+02		Toluene
										3.0E+02		Vinyl chloride

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
8.6E+06	5.0E-03	15	8,040	4.0E-03	1.7E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Benzene
8.6E+06	5.0E-03	15	9,067	4.6E-03	1.9E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Toluene
8.6E+06	5.0E-03	15	4,910	2.2E-02	9.2E-01	1.8E-04	1.5E-02	0.0E+00	0.0E+00	1.5E-02	76.5	Vinyl chloride

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., $C_{building}$ ($\mu g/m^3$)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
15	8.3E+03	3.70	7.0E+02	1.2E-02	4.3E+04	6.3E+05	8.1E-04	6.8E+00	**6.8E-03**	2.9E-05	6.0E-02	Benzene
15	5.9E+02	3.70	7.0E+02	1.2E-02	4.3E+04	7.4E+05	8.1E-04	4.8E-01	**4.8E-04**	NA	3.0E-01	Toluene
15	3.0E+02	3.70	7.0E+02	1.5E-02	4.3E+04	6.6E+04	8.6E-04	2.6E-01	**2.6E-04**	7.8E-05	1.0E-01	Vinyl chloride

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

DTSC / HERD
Version 3.0-mod1; 07/03

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
78933	1.8	Methyl ethyl ketone (MEK)
67641	5.0	Acetone
71432	1.1	Benzene
67663	0.22	Chloroform
156592	1.4	cis-1,2-Dichloroethylene
156605	0.53	trans-1,2-Dichloroethylene
75014	9.1	Vinyl chloride

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of L_{WT} (cell G28)							
18	15	213.5	213.5			A	LS	LS		
		7'								

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters			
LS	1.62	0.390	0.076								

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	2898	2898	244	0.1	1	42
		95'	95'	8'			

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°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)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
8.1E-02	9.8E-06	5.6E-05	25	7,481	352.50	536.78	2.3E+00	2.2E+05	0.0E+00	5.0E+00	Methyl ethyl ketone (MEK)
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	5.8E-01	1.0E+06	0.0E+00	3.2E+00	Acetone
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	5.9E+01	1.8E+03	2.9E-05	6.0E-02	Benzene
1.0E-01	1.0E-05	3.7E-03	25	6,988	334.32	536.40	4.0E+01	7.9E+03	5.3E-06	3.0E-01	Chloroform
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	3.6E+01	3.5E+03	0.0E+00	3.5E-02	cis-1,2-Dichloroethylene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	5.3E+01	6.3E+03	0.0E+00	7.0E-02	trans-1,2-Dichloroethylene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	1.9E+01	8.8E+03	7.8E-05	1.0E-01	Vinyl chloride

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
7.9E+08	198.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	18.75	0.39	0.087	0.303	11,590

Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
5.7E+05	8.6E+06	5.0E-03	15	8,320	4.0E-05	1.7E-03	1.8E-04	1.1E-02	0.0E+00	0.0E+00	8.8E-04	5.3E-03	198.5
				7,460	2.9E-05	1.2E-03		1.7E-02	0.0E+00	0.0E+00	1.4E-03	8.4E-03	
				8,040	4.0E-03	1.7E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.7E-03	
				7,471	2.7E-03	1.1E-01		1.4E-02	0.0E+00	0.0E+00	2.2E-04	2.0E-03	
				7,653	3.0E-03	1.2E-01		1.0E-02	0.0E+00	0.0E+00	1.6E-04	1.4E-03	
				7,051	7.0E-03	2.9E-01		9.8E-03	0.0E+00	0.0E+00	1.4E-04	1.3E-03	
				4,910	2.2E-02	9.2E-01		1.5E-02	0.0E+00	0.0E+00	2.1E-04	2.0E-03	

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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	
15	3.0E+00	3.70	7.0E+02	1.1E-02	4.3E+04	2.1E+06	3.0E-04	9.1E-04	NA	5.0E+00	**9.1E-07**	Methyl ethyl ketone (MEK)
	6.0E+00			1.7E-02		1.3E+04	4.2E-04	2.5E-03	NA	3.2E+00	**2.5E-06**	Acetone
	1.8E+02			1.2E-02		6.3E+05	1.1E-04	2.1E-02	2.9E-05	6.0E-02	**2.1E-05**	Benzene
	2.5E+01			1.4E-02		8.1E+04	1.3E-04	3.4E-03	5.3E-06	3.0E-01	**3.4E-06**	Chloroform
	1.8E+02			1.0E-02		8.7E+06	1.0E-04	1.8E-02	NA	3.5E-02	**1.8E-05**	cis-1,2-Dichloroethylene
	1.6E+02			9.8E-03		1.7E+07	9.4E-05	1.5E-02	NA	7.0E-02	**1.5E-05**	trans-1,2-Dichloroethylene
	8.4E+03			1.5E-02		6.6E+04	1.3E-04	1.1E+00	7.8E-05	1.0E-01	**1.1E-03**	Vinyl chloride

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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	1400			Tetrachloroethene
79016	560			Trichloroethene

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of Ls (cell F24)					
15	91.5	18	91.5			LS		
	3' bgs							

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters
LS	1.62	0.390	0.076					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)		ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	244	176.9	213.5	0.1	1		0.22
		8'	5.8'	7'				

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	25	25	250

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)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02	Tetrachloroethene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.36	544.20	131.39	2.0E-06	6.0E-01	Trichloroethene

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A 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)	
7.9E+08	76.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	842	1.4E+03	2.6E+03	Tetrachloroethene
										5.6E+02		Trichloroethene

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
5.6E+04	5.0E-03	15	9,472	1.2E-02	5.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Tetrachloroethene
5.6E+04	5.0E-03	15	8,458	7.3E-03	3.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	Trichloroethene

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., $C_{building}$ ($\mu g/m^3$)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
15	1.4E+03	0.33	3.6E+00	1.0E-02	2.8E+02	4.0E+05	9.4E-04	1.3E+00	**1.3E-03**	5.9E-06	3.5E-02	Tetrachloroethene
15	5.6E+02	0.33	3.6E+00	1.1E-02	2.8E+02	1.3E+05	9.7E-04	5.4E-01	**5.4E-04**	2.0E-06	6.0E-01	Trichloroethene

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

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YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)		Chemical
67641	15		Acetone
75150	0.40		Carbon disulfide
1634044	0.51		MTBE
127184	76		Tetrachloroethylene
75014	1.1		Vinyl chloride

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of L_{WT} (cell G28)							
18	15	213.5	213.5			A	LS	LS		
		7'								

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters			
LS	1.62	0.390	0.076								

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	244	176.9	213.5	0.1	1	0.22
		8'	5.8'	7'			

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°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)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	5.8E-01	1.0E+06	0.0E+00	3.2E+00	Acetone
1.0E-01	1.0E-05	3.0E-02	25	6,391	319.00	552.00	4.6E+01	1.2E+03	0.0E+00	8.0E-01	Carbon disulfide
1.0E-01	1.1E-05	6.2E-04	25	6,678	328.30	497.10	7.3E+00	5.1E+04	2.6E-07	8.0E+00	MTBE
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	1.6E+02	2.0E+02	5.9E-06	3.5E-02	Tetrachloroethylene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	1.9E+01	8.8E+03	7.8E-05	1.0E-01	Vinyl chloride

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
7.9E+08	198.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	18.75	0.39	0.087	0.303	842

Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
2.6E+03	5.6E+04	5.0E-03	15	7,460	2.9E-05	1.2E-03	1.8E-04	1.7E-02	0.0E+00	0.0E+00	1.4E-03	8.4E-03	198.5
				6,620	2.3E-02	9.7E-01		1.4E-02	0.0E+00	0.0E+00	2.1E-04	1.9E-03	
				7,192	4.7E-04	1.9E-02		1.4E-02	0.0E+00	0.0E+00	2.7E-04	2.4E-03	
				9,472	1.2E-02	5.2E-01		1.0E-02	0.0E+00	0.0E+00	1.4E-04	1.3E-03	
				4,910	2.2E-02	9.2E-01		1.5E-02	0.0E+00	0.0E+00	2.1E-04	2.0E-03	

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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	
15	1.8E+01	0.33	3.6E+00	1.7E-02	2.8E+02	1.8E+03	5.6E-04	1.0E-02	NA	3.2E+00	**1.0E-05**	Acetone
	3.9E+02			1.4E-02		7.5E+03	1.8E-04	7.1E-02	NA	8.0E-01	**7.1E-05**	Carbon disulfide
	9.9E+00			1.4E-02		8.7E+03	2.2E-04	2.2E-03	2.6E-07	8.0E+00	**2.2E-06**	MTBE
	4.0E+04			1.0E-02		4.0E+05	1.3E-04	5.3E+00	5.9E-06	3.5E-02	**5.3E-03**	Tetrachloroethylene
	1.0E+03			1.5E-02		6.4E+03	1.9E-04	1.9E-01	7.8E-05	1.0E-01	**1.9E-04**	Vinyl chloride

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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
75354	590			1,1-Dichloroethene
127184	18000			Tetrachloroethene

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of Ls (cell F24)					
15	91.5	18	91.5			LS		
	3' bgs							

ENTER Stratum A SCS soil type	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters
LS	1.62	0.390	0.076					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	762.5	305	244	0.1	1	1.2
		25'	10'	8'			

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	25	25	250

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)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
9.0E-02	1.0E-05	2.6E-02	25	6,247	304.75	576.05	96.94	0.0E+00	7.0E-02	1,1-Dichloroethene
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02	Tetrachloroethene

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A 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)	
7.9E+08	76.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	2,135	5.9E+02	1.6E+04	1,1-Dichloroethene
										1.8E+04		Tetrachloroethene

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
2.6E+05	5.0E-03	15	6,339	2.0E-02	8.4E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	1,1-Dichloroethene
2.6E+05	5.0E-03	15	9,472	1.2E-02	5.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Tetrachloroethene

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., $C_{building}$ ($\mu g/m^3$)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
15	5.9E+02	0.62	1.9E+01	1.2E-02	1.3E+03	1.2E+05	8.5E-04	5.0E-01	**5.0E-04**	NA	7.0E-02	1,1-Dichloroethene
15	1.8E+04	0.62	1.9E+01	1.0E-02	1.3E+03	2.3E+06	7.9E-04	1.4E+01	**1.4E-02**	5.9E-06	3.5E-02	Tetrachloroethene

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

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YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)		Chemical
75343	1.7		1,1-Dichloroethane
156592	0.30		cis-1,2-Dichloroethylene
108883	0.40		Toluene
75014	2.0		Vinyl chloride

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Totals must add up to value of L_{WT} (cell G28) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
18	15	213.5	213.5			A	LS	LS		
		7'								

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
LS	1.62	0.390	0.076								

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	762.5	305	244	0.1	1	1.2
		25'	10'	8'			

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°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)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
7.4E-02	1.1E-05	5.6E-03	25	6,895	330.55	523.00	3.2E+01	5.1E+03	1.6E-06	5.0E-01	1,1-Dichloroethane
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	3.6E+01	3.5E+03	0.0E+00	3.5E-02	cis-1,2-Dichloroethylene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	1.8E+02	5.3E+02	0.0E+00	3.0E-01	Toluene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	1.9E+01	8.8E+03	7.8E-05	1.0E-01	Vinyl chloride

Exposure duration, τ	Source-building separation, L_T	Stratum A soil air-filled porosity, θ_a^A	Stratum B soil air-filled porosity, θ_a^B	Stratum C soil air-filled porosity, θ_a^C	Stratum A effective total fluid saturation, S_{te}	Stratum A soil intrinsic permeability, k_i	Stratum A soil relative air permeability, k_{rg}	Stratum A soil effective vapor permeability, k_v	Thickness of capillary zone, L_{cz}	Total porosity in capillary zone, n_{cz}	Air-filled porosity in capillary zone, $\theta_{a,cz}$	Water-filled porosity in capillary zone, $\theta_{w,cz}$	Floor-wall seam perimeter, X_{crack}
(sec)	(cm)	(cm^3/cm^3)	(cm^3/cm^3)	(cm^3/cm^3)	(cm^3/cm^3)	(cm^2)	(cm^2)	(cm^2)	(cm)	(cm^3/cm^3)	(cm^3/cm^3)	(cm^3/cm^3)	(cm)
7.9E+08	198.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	18.75	0.39	0.087	0.303	2,135

Bldg. ventilation rate, $Q_{building}$	Area of enclosed space below grade, A_B	Crack-to-total area ratio, η	Crack depth below grade, Z_{crack}	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$	Henry's law constant at ave. groundwater temperature, H_{TS}	Henry's law constant at ave. groundwater temperature, H'_{TS}	Vapor viscosity at ave. soil temperature, μ_{TS}	Stratum A effective diffusion coefficient, D^{eff}_A	Stratum B effective diffusion coefficient, D^{eff}_B	Stratum C effective diffusion coefficient, D^{eff}_C	Capillary zone effective diffusion coefficient, D^{eff}_{cz}	Total overall effective diffusion coefficient, D^{eff}_T	Diffusion path length, L_d
(cm^3/s)	(cm^2)	(unitless)	(cm)	(cal/mol)	(atm-m^3/mol)	(unitless)	(g/cm-s)	(cm^2/s)	(cm^2/s)	(cm^2/s)	(cm^2/s)	(cm^2/s)	(cm)
1.6E+04	2.6E+05	5.0E-03	15	7,362	4.2E-03	1.7E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.5E-04	1.4E-03	198.5
				7,653	3.0E-03	1.2E-01		1.0E-02	0.0E+00	0.0E+00	1.6E-04	1.4E-03	
				9,067	4.6E-03	1.9E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.6E-03	
				4,910	2.2E-02	9.2E-01		1.5E-02	0.0E+00	0.0E+00	2.1E-04	2.0E-03	

Convection path length, L_p	Source vapor conc., C_{source}	Crack radius, r_{crack}	Average vapor flow rate into bldg., Q_{soil}	Crack effective diffusion coefficient, D^{crack}	Area of crack, A_{crack}	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$	Infinite source indoor attenuation coefficient, α	Infinite source bldg. conc., $C_{building}$	Unit risk factor, URF	Reference conc., RfC	**Infinite source bldg. conc., $C_{building}$**	
(cm)	($\mu g/m^3$)	(cm)	(cm^3/s)	(cm^2/s)	(cm^2)	(unitless)	(unitless)	($\mu g/m^3$)	$(\mu g/m^3)^{-1}$	(mg/m^3)	**(mg/m^3)**	
15	3.0E+02	0.62	1.9E+01	1.0E-02	1.3E+03	1.5E+06	1.1E-04	3.2E-02	1.6E-06	5.0E-01	**3.2E-05**	1,1-Dichloroethane
	3.7E+01			1.0E-02		1.7E+06	1.1E-04	4.1E-03	NA	3.5E-02	**4.1E-06**	cis-1,2-Dichloroethylene
	7.7E+01			1.2E-02		1.8E+05	1.2E-04	9.6E-03	NA	3.0E-01	**9.6E-06**	Toluene
	1.8E+03			1.5E-02		2.1E+04	1.5E-04	2.7E-01	7.8E-05	1.0E-01	**2.7E-04**	Vinyl chloride

APPENDIX D

Detailed Risk Calculations
for the Site-Specific Risk Assessment

Table D-1
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: Offsite Industrial/Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	--	--	2.9E-01	1.0E+00	--	--	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	6.4E-06	8.2E-07	1.4E-01	5.0E-01	5.8E-06	2.9E-07	5.7E-03	1.7E-09
	1,1-Dichloroethene	7.5E-04	9.7E-05	2.0E-02	7.0E-02	4.8E-03	3.5E-05	--	--
	1,1-Dichloropropene	--	--	5.7E-03	2.0E-02	--	--	5.5E-02	--
	1,2,4-Trichlorobenzene	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	4.3E-06	5.5E-07	1.7E-03	6.0E-03	3.3E-04	2.0E-07	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	3.1E-06	4.0E-07	5.7E-02	2.0E-01	7.0E-06	1.4E-07	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	--	--	1.7E-03	6.0E-03	--	--	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	5.2E-05	6.7E-06	2.3E-01	8.0E-01	2.9E-05	2.4E-06	4.0E-02	9.6E-08
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	1.9E-06	2.4E-07	8.6E-01	3.0E+00	2.8E-07	8.7E-08	--	--
	Acenaphthene	4.4E-06	5.7E-07	6.0E-02	2.1E-01	9.4E-06	2.0E-07	--	--
	Acetone	1.5E-06	1.9E-07	9.0E-01	3.2E+00	2.1E-07	6.9E-08	--	--
	Benzene	6.1E-04	7.9E-05	1.7E-02	6.0E-02	4.6E-03	2.8E-05	1.0E-01	2.8E-06
	Bromochloromethane	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	9.0E-05	1.2E-05	2.3E-01	8.0E-01	5.1E-05	4.1E-06	--	--
	Carbon Tetrachloride	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.9E-05	6.3E-06	2.9E-01	1.0E+00	2.2E-05	2.3E-06	--	--
	Chloroethane	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	Chloromethane	8.0E-06	1.0E-06	2.6E-02	9.0E-02	4.0E-05	3.7E-07	--	--
	cis-1,2-Dichloroethene	1.4E-01	1.8E-02	1.0E-02	3.5E-02	1.8E+00	6.4E-03	--	--
	Dibromochloromethane	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	9.4E-06	1.2E-06	5.7E-01	2.0E+00	2.1E-06	4.3E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Freon-113	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	--	--	3.0E-04	1.1E-03	--	--	7.8E-02	--
	Isopropylbenzene	2.1E-03	2.7E-04	1.1E-01	3.9E-01	2.4E-03	9.5E-05	--	--
	Methyl tertbutyl ether (MTBE)	2.6E-05	3.4E-06	2.3E+00	8.0E+00	1.5E-06	1.2E-06	9.1E-04	1.1E-09
	Methylene Chloride	--	--	1.1E-01	4.0E-01	--	--	3.5E-03	--
	Naphthalene	1.1E-04	1.5E-05	2.6E-03	9.0E-03	5.8E-03	5.3E-06	1.2E-01	6.4E-07
	n-Butylbenzene	6.1E-06	7.8E-07	4.0E-02	1.4E-01	2.0E-05	2.8E-07	--	--
	n-Propylbenzene	1.1E-05	1.4E-06	4.0E-02	1.4E-01	3.4E-05	4.9E-07	--	--
	p-Isopropyltoluene	9.8E-05	1.3E-05	1.1E-01	3.9E-01	1.2E-04	4.5E-06	--	--
	Pyrene	8.1E-08	1.0E-08	3.0E-02	1.1E-01	3.5E-07	3.7E-09	--	--

Table D-1
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: Offsite Industrial/Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Styrene	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	2.4E-06	3.1E-07	4.0E-02	1.4E-01	7.7E-06	1.1E-07	--	--
	tert-Butyl alcohol	1.8E-05	2.4E-06	3.0E-01	1.1E+00	7.8E-06	8.4E-07	--	--
	tert-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Tetrachloroethene	1.3E+00	1.7E-01	1.0E-02	3.5E-02	1.7E+01	6.0E-02	2.1E-02	1.3E-03
	Toluene	4.8E-05	6.2E-06	8.6E-02	3.0E-01	7.2E-05	2.2E-06	--	--
	trans-1,2-Dichloroethene	1.6E-03	2.1E-04	2.0E-02	7.0E-02	1.0E-02	7.3E-05	--	--
	Trichloroethene	2.0E-01	2.5E-02	1.7E-01	6.0E-01	1.5E-01	9.0E-03	7.0E-03	6.3E-05
	Vinyl Chloride	2.0E+00	2.6E-01	2.9E-02	1.0E-01	9.0E+00	9.2E-02	2.7E-01	2.5E-02
	Xylenes	2.1E-05	2.7E-06	2.0E-01	7.0E-01	1.3E-05	9.6E-07	--	--
						2.8E+01			2.6E-02

Table D-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	2.7E-05	4.0E-04	6.9E-02	3.9E-07	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	2.2E-05	1.0E-03	2.2E-02	3.1E-07	--	--
	Chromium	7.0E+02	2.3E-03	1.5E+00	1.5E-03	3.2E-05	--	--
	Chromium, Hexavalent	3.5E+01	1.1E-04	3.0E-03	3.8E-02	1.6E-06	--	--
	Cobalt	1.0E+02	3.2E-04	2.0E-02	1.6E-02	4.6E-06	--	--
	Copper	2.0E+02	6.5E-04	4.0E-02	1.6E-02	9.2E-06	--	--
	Cyanide (Amenable)	1.0E+00	3.2E-06	2.0E-02	1.6E-04	4.6E-08	--	--
	Cyanide (Total)	1.7E+00	5.5E-06	2.0E-02	2.7E-04	7.8E-08	--	--
	Mercury	2.3E-01	7.4E-07	3.0E-04	2.5E-03	1.1E-08	--	--
	Molybdenum	1.0E+01	3.2E-05	5.0E-03	6.5E-03	4.6E-07	--	--
	Nickel	1.7E+02	5.5E-04	2.0E-02	2.7E-02	7.8E-06	--	--
	Selenium	3.0E+01	9.7E-05	5.0E-03	1.9E-02	1.4E-06	--	--
	Silver	2.3E+00	7.4E-06	5.0E-03	1.5E-03	1.1E-07	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	2.3E-03	3.0E-01	7.6E-03	3.3E-05	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	1.7E-04	3.0E-02	5.7E-03	2.4E-06	--	--
	Anthracene	1.0E-02	3.2E-08	3.0E-01	1.1E-07	4.6E-10	--	--
	Benzo(a)anthracene	2.0E-01	6.5E-07	--	--	9.2E-09	1.2E+00	1.1E-08
	Benzo(a)Pyrene	4.0E-01	1.3E-06	--	--	1.8E-08	1.2E+01	2.2E-07
	Benzo(b)Fluoranthene	1.3E+00	4.1E-06	--	--	5.8E-08	1.2E+00	7.0E-08
	Benzo(k)Fluoranthene	1.0E-01	3.2E-07	--	--	4.6E-09	1.2E+00	5.5E-09
	Benzo(g,h,i)Perylene	9.0E-01	2.9E-06	3.0E-02	9.7E-05	4.2E-08	--	--
	Chrysene	6.8E-01	2.2E-06	--	--	3.1E-08	1.2E-01	3.8E-09
	Dibenz(a,h)anthracene	8.0E-02	2.6E-07	--	--	3.7E-09	1.2E+01	4.4E-08
	Fluoranthene	2.0E-01	6.5E-07	4.0E-02	1.6E-05	9.2E-09	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.9E-06	--	--	2.8E-08	1.2E+00	3.3E-08
	Phenanthrene	9.8E+00	3.2E-05	3.0E-01	1.1E-04	4.5E-07	--	--
	PCBs							
	Aroclor 1016	3.0E-02	9.7E-08	7.0E-05	1.4E-03	1.4E-09	7.0E-02	9.7E-11
	Aroclor 1242	1.6E-01	5.2E-07	2.0E-05	2.6E-02	7.4E-09	5.0E+00	3.7E-08
	Aroclor 1248	2.9E+02	9.4E-04	2.0E-05	4.7E+01	1.3E-05	5.0E+00	6.7E-05
	Aroclor 1254	1.7E+00	5.5E-06	2.0E-05	2.7E-01	7.8E-08	5.0E+00	3.9E-07
	Aroclor 1260	1.5E+00	4.8E-06	2.0E-05	2.4E-01	6.9E-08	5.0E+00	3.5E-07
	Aroclor 1262	3.3E-01	1.1E-06	2.0E-05	5.3E-02	1.5E-08	5.0E+00	7.6E-08
	Perchlorate							
	Perchlorate	3.6E+00	1.2E-05	7.0E-04	1.7E-02	1.7E-07	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	2.9E-07	--	--	4.2E-09	2.7E-02	1.1E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table D-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	2.9E-07	3.0E-01	9.7E-07	4.2E-09	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	5.4E-03	4.0E-02	1.4E-01	7.8E-05	--	--
	TPH - aliphatic; C9-C18	2.5E+04	8.1E-02	1.0E-01	8.1E-01	1.2E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	7.3E-02	2.0E+00	3.7E-02	1.0E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	5.4E-03	--	--	7.8E-05	--	--
	TPH - aromatic; C9-C18	2.5E+04	8.1E-02	3.0E-02	2.7E+00	1.2E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	7.3E-02	3.0E-02	2.4E+00	1.0E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	1.6E-07	2.8E-01	5.9E-07	2.4E-09	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	9.7E-09	1.0E-01	9.7E-08	1.4E-10	5.7E-03	7.9E-13
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.3E-08	3.0E-02	4.3E-07	1.8E-10	9.1E-02	1.7E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	5.2E-05	5.0E-02	1.0E-03	7.4E-07	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	2.2E-06	5.0E-02	4.4E-05	3.1E-08	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	8.1E-08	3.0E-02	2.7E-06	1.2E-09	5.4E-03	6.2E-12
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	6.5E-06	6.0E-02	1.1E-04	9.2E-08	--	--
	Acetone	6.2E-02	2.0E-07	9.0E-01	2.2E-07	2.9E-09	--	--
	Benzene	2.0E-02	6.5E-08	4.0E-03	1.6E-05	9.2E-10	1.0E-01	9.2E-11
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.8E-08	1.0E-01	2.8E-07	4.0E-10	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	1.3E-08	2.0E-02	6.5E-07	1.8E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	1.3E-08	1.0E-02	1.3E-06	1.8E-10	3.1E-02	5.7E-12
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	3.1E-06	1.0E-02	3.1E-04	4.4E-08	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	3.2E-09	--	--	4.6E-11	--	--
	Ethylbenzene	2.3E+00	7.4E-06	1.0E-01	7.4E-05	1.1E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	1.8E-05	4.0E-02	4.6E-04	2.6E-07	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	5.8E-08	3.0E-04	1.9E-04	8.3E-10	7.8E-02	6.5E-11

Table D-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	5.5E-06	1.0E-01	5.5E-05	7.8E-08	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	3.0E-08	6.0E-02	5.1E-07	4.3E-10	1.4E-02	6.1E-12
	Naphthalene	1.8E+01	5.8E-05	2.0E-02	2.9E-03	8.3E-07	1.2E-01	1.0E-07
	n-Butylbenzene	5.5E+00	1.8E-05	4.0E-02	4.4E-04	2.5E-07	--	--
	n-Propylbenzene	3.7E+00	1.2E-05	4.0E-02	3.0E-04	1.7E-07	--	--
	p-Isopropyltoluene	5.8E+00	1.9E-05	1.0E-01	1.9E-04	2.7E-07	--	--
	Pyrene	3.5E-01	1.1E-06	3.0E-02	3.8E-05	1.6E-08	--	--
	sec-Butylbenzene	2.3E+00	7.4E-06	4.0E-02	1.9E-04	1.1E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.2E-07	3.0E-01	1.1E-06	4.6E-09	--	--
	tert-Butylbenzene	4.0E-03	1.3E-08	4.0E-02	3.2E-07	1.8E-10	--	--
	Tetrachloroethene	2.2E+02	7.1E-04	1.0E-02	7.1E-02	1.0E-05	5.4E-01	5.5E-06
	Toluene	9.9E-03	3.2E-08	2.0E-01	1.6E-07	4.6E-10	--	--
	trans-1,2-Dichloroethene	6.7E-01	2.2E-06	2.0E-02	1.1E-04	3.1E-08	--	--
	Trichloroethene	1.0E+01	3.2E-05	3.0E-04	1.1E-01	4.6E-07	1.3E-02	6.0E-09
	Vinyl Chloride	5.4E-02	1.7E-07	3.0E-03	5.8E-05	2.5E-09	2.7E-01	6.7E-10
	Xylenes	2.4E+00	7.7E-06	2.0E-01	3.9E-05	1.1E-07	--	--
	Cumulative Risk and Hazard =				**5E+01**			**7E-05**
	Cumulative HI for $TPH_{aliphatic}$ =				**1E+00**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**5E+00**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	8.2E-07	4.0E-04	2.1E-03	1.2E-08	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	6.6E-08	1.0E-03	6.6E-05	9.4E-10	--	--
	Chromium	7.0E+02	6.8E-05	1.5E+00	4.5E-05	9.7E-07	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	9.7E-06	2.0E-02	4.8E-04	1.4E-07	--	--
	Copper	2.0E+02	1.9E-05	4.0E-02	4.8E-04	2.8E-07	--	--
	Cyanide (Amenable)	1.0E+00	9.7E-07	2.0E-02	4.8E-05	1.4E-08	--	--
	Cyanide (Total)	1.7E+00	1.6E-06	2.0E-02	8.2E-05	2.4E-08	--	--
	Mercury	2.3E-01	2.2E-08	3.0E-04	7.4E-05	3.2E-10	--	--
	Molybdenum	1.0E+01	9.7E-07	5.0E-03	1.9E-04	1.4E-08	--	--
	Nickel	1.7E+02	1.6E-05	2.0E-02	8.2E-04	2.4E-07	--	--
	Selenium	3.0E+01	2.9E-06	5.0E-03	5.8E-04	4.2E-08	--	--
	Silver	2.3E+00	2.2E-07	5.0E-03	4.5E-05	3.2E-09	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	6.9E-05	3.0E-01	2.3E-04	9.8E-07	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	7.7E-05	3.0E-02	2.6E-03	1.1E-06	--	--
	Anthracene	1.0E-02	1.5E-08	3.0E-01	4.8E-08	2.1E-10	--	--
	Benzo(a)anthracene	2.0E-01	2.9E-07	--	--	4.2E-09	1.2E+00	5.0E-09
	Benzo(a)Pyrene	4.0E-01	5.8E-07	--	--	8.3E-09	1.2E+01	1.0E-07
	Benzo(b)Fluoranthene	1.3E+00	1.8E-06	--	--	2.6E-08	1.2E+00	3.1E-08
	Benzo(k)Fluoranthene	1.0E-01	1.5E-07	--	--	2.1E-09	1.2E+00	2.5E-09
	Benzo(g,h,i)Perylene	9.0E-01	1.3E-06	3.0E-02	4.4E-05	1.9E-08	--	--

Table D-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	9.9E-07	--	--	1.4E-08	1.2E-01	1.7E-09
	Dibenz(a,h)anthracene	8.0E-02	1.2E-07	--	--	1.7E-09	1.2E+01	2.0E-08
	Fluoranthene	2.0E-01	2.9E-07	4.0E-02	7.3E-06	4.2E-09	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	8.7E-07	--	--	1.2E-08	1.2E+00	1.5E-08
	Phenanthrene	9.8E+00	1.4E-05	3.0E-01	4.7E-05	2.0E-07	--	--
	PCBs							
	Aroclor 1016	3.0E-02	4.4E-08	7.0E-05	6.2E-04	6.2E-10	7.0E-02	4.4E-11
	Aroclor 1242	1.6E-01	2.3E-07	2.0E-05	1.2E-02	3.3E-09	5.0E+00	1.7E-08
	Aroclor 1248	2.9E+02	4.2E-04	2.0E-05	2.1E+01	6.0E-06	5.0E+00	3.0E-05
	Aroclor 1254	1.7E+00	2.5E-06	2.0E-05	1.2E-01	3.5E-08	5.0E+00	1.8E-07
	Aroclor 1260	1.5E+00	2.2E-06	2.0E-05	1.1E-01	3.1E-08	5.0E+00	1.6E-07
	Aroclor 1262	3.3E-01	4.8E-07	2.0E-05	2.4E-02	6.9E-09	5.0E+00	3.4E-08
	Perchlorate							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	8.7E-08	--	--	1.2E-09	2.7E-02	3.4E-11
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	8.7E-08	3.0E-01	2.9E-07	1.2E-09	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	2.4E-03	4.0E-02	6.1E-02	3.5E-05	--	--
	TPH - aliphatic; C9-C18	2.5E+04	3.6E-02	1.0E-01	3.6E-01	5.2E-04	--	--
	TPH - aliphatic; C≥19	2.3E+04	3.3E-02	2.0E+00	1.6E-02	4.7E-04	--	--
	TPH - aromatic; C5-C8	1.7E+03	2.4E-03	--	--	3.5E-05	--	--
	TPH - aromatic; C9-C18	2.5E+04	3.6E-02	3.0E-02	1.2E+00	5.2E-04	--	--
	TPH - aromatic; C≥19	2.3E+04	3.3E-02	3.0E-02	1.1E+00	4.7E-04	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	4.9E-08	2.8E-01	1.8E-07	7.1E-10	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	2.9E-09	1.0E-01	2.9E-08	4.2E-11	5.7E-03	2.4E-13
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	3.9E-09	3.0E-02	1.3E-07	5.5E-11	9.1E-02	5.0E-12
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.5E-05	5.0E-02	3.1E-04	2.2E-07	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	6.6E-07	5.0E-02	1.3E-05	9.4E-09	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	2.4E-08	3.0E-02	8.1E-07	3.5E-10	5.4E-03	1.9E-12
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table D-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	2.9E-06	6.0E-02	4.8E-05	4.2E-08	--	--
	Acetone	6.2E-02	6.0E-08	9.0E-01	6.7E-08	8.6E-10	--	--
	Benzene	2.0E-02	1.9E-08	4.0E-03	4.8E-06	2.8E-10	1.0E-01	2.8E-11
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	8.4E-09	1.0E-01	8.4E-08	1.2E-10	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	3.9E-09	2.0E-02	1.9E-07	5.5E-11	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	3.9E-09	1.0E-02	3.9E-07	5.5E-11	3.1E-02	1.7E-12
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	9.3E-07	1.0E-02	9.3E-05	1.3E-08	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	9.7E-10	--	--	1.4E-11	--	--
	Ethylbenzene	2.3E+00	2.2E-06	1.0E-01	2.2E-05	3.2E-08	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	8.3E-06	4.0E-02	2.1E-04	1.2E-07	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.7E-08	3.0E-04	5.8E-05	2.5E-10	7.8E-02	1.9E-11
	Isopropylbenzene	1.7E+00	1.6E-06	1.0E-01	1.6E-05	2.4E-08	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	9.1E-09	6.0E-02	1.5E-07	1.3E-10	1.4E-02	1.8E-12
	Naphthalene	1.8E+01	2.6E-05	2.0E-02	1.3E-03	3.7E-07	1.2E-01	4.5E-08
	n-Butylbenzene	5.5E+00	5.3E-06	4.0E-02	1.3E-04	7.6E-08	--	--
	n-Propylbenzene	3.7E+00	3.6E-06	4.0E-02	9.0E-05	5.1E-08	--	--
	p-Isopropyltoluene	5.8E+00	5.6E-06	1.0E-01	5.6E-05	8.0E-08	--	--
	Pyrene	3.5E-01	3.4E-07	3.0E-02	1.1E-05	4.8E-09	--	--
	sec-Butylbenzene	2.3E+00	2.2E-06	4.0E-02	5.6E-05	3.2E-08	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	9.7E-08	3.0E-01	3.2E-07	1.4E-09	--	--
	tert-Butylbenzene	4.0E-03	3.9E-09	4.0E-02	9.7E-08	5.5E-11	--	--
	Tetrachloroethene	2.2E+02	2.1E-04	1.0E-02	2.1E-02	3.0E-06	5.4E-01	1.6E-06
	Toluene	9.9E-03	9.6E-09	2.0E-01	4.8E-08	1.4E-10	--	--
	trans-1,2-Dichloroethene	6.7E-01	6.5E-07	2.0E-02	3.2E-05	9.3E-09	--	--
	Trichloroethene	1.0E+01	9.7E-06	3.0E-04	3.2E-02	1.4E-07	1.3E-02	1.8E-09
	Vinyl Chloride	5.4E-02	5.2E-08	3.0E-03	1.7E-05	7.5E-10	2.7E-01	2.0E-10
	Xylenes	2.4E+00	2.3E-06	2.0E-01	1.2E-05	3.3E-08	--	--
	Cumulative Risk and Hazard =				**2E+01**			**3E-05**
	Cumulative HI for $TPH_{aliphatic}$ =				**4E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**2E+00**			**--**

Table D-3
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	2.1E-06	3.3E-07	--	--	--	4.8E-09	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	1.7E-06	2.7E-07	5.7E-06	2.0E-05	4.7E-02	3.8E-09	1.5E+01	5.7E-08
	Chromium	7.0E+02	1.8E-04	2.7E-05	--	--	--	3.9E-07	--	--
	Chromium, Hexavalent	3.5E+01	8.8E-06	1.4E-06	5.7E-05	2.0E-04	2.4E-02	2.0E-08	5.1E+02	1.0E-05
	Cobalt	1.0E+02	2.5E-05	3.9E-06	5.7E-06	2.0E-05	6.9E-01	5.6E-08	--	--
	Copper	2.0E+02	5.0E-05	7.8E-06	--	--	--	1.1E-07	--	--
	Cyanide (Amenable)	1.0E+00	2.5E-07	3.9E-08	--	--	--	5.6E-10	--	--
	Cyanide (Total)	1.7E+00	4.3E-07	6.7E-08	--	--	--	9.5E-10	--	--
	Mercury	2.3E-01	5.8E-08	9.0E-09	2.6E-05	9.0E-05	3.5E-04	1.3E-10	--	--
	Molybdenum	1.0E+01	2.5E-06	3.9E-07	--	--	--	5.6E-09	--	--
	Nickel	1.7E+02	4.3E-05	6.7E-06	1.4E-05	5.0E-05	4.7E-01	9.5E-08	9.1E-01	8.6E-08
	Selenium	3.0E+01	7.5E-06	1.2E-06	5.7E-03	2.0E-02	2.1E-04	1.7E-08	--	--
	Silver	2.3E+00	5.8E-07	9.0E-08	--	--	--	1.3E-09	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	1.8E-04	2.8E-05	--	--	--	4.0E-07	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	1.3E-05	2.1E-06	3.0E-02	1.1E-01	6.9E-05	3.0E-08	--	--
	Anthracene	1.0E-02	2.5E-09	3.9E-10	3.0E-01	1.1E+00	1.3E-09	5.6E-12	--	--
	Benzo(a)anthracene	2.0E-01	5.0E-08	7.8E-09	--	--	--	1.1E-10	3.9E-01	4.4E-11
	Benzo(a)Pyrene	4.0E-01	1.0E-07	1.6E-08	--	--	--	2.2E-10	3.9E+00	8.7E-10
	Benzo(b)Fluoranthene	1.3E+00	3.2E-07	4.9E-08	--	--	--	7.0E-10	3.9E-01	2.7E-10
	Benzo(k)Fluoranthene	1.0E-01	2.5E-08	3.9E-09	--	--	--	5.6E-11	3.9E-01	2.2E-11
	Benzo(g,h,i)Perylene	9.0E-01	2.3E-07	3.5E-08	3.0E-02	1.1E-01	1.2E-06	5.0E-10	--	--
	Chrysene	6.8E-01	1.7E-07	2.7E-08	--	--	--	3.8E-10	3.9E-02	1.5E-11
	Dibenz(a,h)anthracene	8.0E-02	2.0E-08	3.1E-09	--	--	--	4.5E-11	3.9E+00	1.7E-10
	Fluoranthene	2.0E-01	5.0E-08	7.8E-09	4.0E-02	1.4E-01	2.0E-07	1.1E-10	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.5E-07	2.3E-08	--	--	--	3.4E-10	3.9E-01	1.3E-10
	Phenanthrene	9.8E+00	2.5E-06	3.8E-07	3.0E-01	1.1E+00	1.3E-06	5.5E-09	--	--
	PCBs									
	Aroclor 1016	3.0E-02	7.5E-09	1.2E-09	7.0E-05	2.5E-04	1.7E-05	1.7E-11	7.0E-02	1.2E-12
	Aroclor 1242	1.6E-01	4.0E-08	6.3E-09	2.0E-05	7.0E-05	3.1E-04	8.9E-11	2.0E+00	1.8E-10
	Aroclor 1248	2.9E+02	7.3E-05	1.1E-05	2.0E-05	7.0E-05	5.7E-01	1.6E-07	2.0E+00	3.2E-07
	Aroclor 1254	1.7E+00	4.3E-07	6.7E-08	2.0E-05	7.0E-05	3.3E-03	9.5E-10	2.0E+00	1.9E-09
	Aroclor 1260	1.5E+00	3.8E-07	5.9E-08	2.0E-05	7.0E-05	2.9E-03	8.4E-10	2.0E+00	1.7E-09
	Aroclor 1262	3.3E-01	8.3E-08	1.3E-08	2.0E-05	7.0E-05	6.5E-04	1.8E-10	2.0E+00	3.7E-10
	Perchlorate									
	Perchlorate	3.6E+00	9.0E-07	1.4E-07	--	--	--	2.0E-09	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	2.3E-08	3.5E-09	8.6E-01	3.0E+00	4.1E-09	5.0E-11	2.7E-02	1.4E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table D-3
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	2.3E-08	3.5E-09	5.7E-02	2.0E-01	6.2E-08	5.0E-11	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	4.2E-04	6.6E-05	6.0E-02	2.1E-01	1.1E-03	9.4E-07	--	--
	TPH - aliphatic; C9-C18	2.5E+04	6.3E-03	9.8E-04	3.0E-01	1.1E+00	3.3E-03	1.4E-05	--	--
	TPH - aliphatic; C≥19	2.3E+04	5.7E-03	8.9E-04	3.0E-01	1.1E+00	3.0E-03	1.3E-05	--	--
	TPH - aromatic; C5-C8	1.7E+03	4.2E-04	6.6E-05	--	--	--	9.4E-07	--	--
	TPH - aromatic; C9-C18	2.5E+04	6.3E-03	9.8E-04	6.0E-03	2.1E-02	1.6E-01	1.4E-05	--	--
	TPH - aromatic; C≥19	2.3E+04	5.7E-03	8.9E-04	--	--	--	1.3E-05	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	3.9E-04	6.1E-05	2.9E-01	1.0E+00	2.1E-04	8.7E-07	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	2.1E-05	3.2E-06	1.4E-01	5.0E-01	2.3E-05	4.6E-08	5.7E-03	2.6E-10
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.0E-09	1.6E-10	5.7E-03	2.0E-02	2.7E-08	2.2E-12	5.5E-02	1.2E-13
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.6E-02	2.5E-03	1.7E-03	6.0E-03	1.5E+00	3.6E-05	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	1.6E-03	2.6E-04	1.7E-03	6.0E-03	1.5E-01	3.7E-06	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	3.8E-05	5.9E-06	2.3E-01	8.0E-01	2.6E-05	8.4E-08	4.0E-02	3.4E-09
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	2.2E-04	3.4E-05	6.0E-02	2.1E-01	5.6E-04	4.8E-07	--	--
	Acetone	6.2E-02	8.2E-05	1.3E-05	9.0E-01	3.2E+00	1.4E-05	1.8E-07	--	--
	Benzene	2.0E-02	1.3E-04	2.0E-05	1.7E-02	6.0E-02	1.2E-03	2.9E-07	1.0E-01	2.9E-08
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	1.1E-04	1.6E-05	2.3E-01	8.0E-01	7.2E-05	2.4E-07	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	1.2E-05	1.9E-06	2.9E-01	1.0E+00	6.7E-06	2.7E-08	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	2.6E-05	4.1E-06	8.6E-02	3.0E-01	4.8E-05	5.9E-08	1.9E-02	1.1E-09
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	5.7E-03	8.9E-04	1.0E-02	3.5E-02	8.9E-02	1.3E-05	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	4.8E-06	7.5E-07	1.1E-01	3.9E-01	6.8E-06	1.1E-08	--	--
	Ethylbenzene	2.3E+00	8.1E-03	1.3E-03	5.7E-01	2.0E+00	2.2E-03	1.8E-05	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	3.1E-04	4.9E-05	4.0E-02	1.4E-01	1.2E-03	7.0E-07	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	3.9E-05	6.2E-06	3.0E-04	1.1E-03	2.1E-02	8.8E-08	7.8E-02	6.9E-09

Table D-3
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	8.7E-03	1.4E-03	1.1E-01	3.9E-01	1.2E-02	1.9E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	6.3E-05	9.8E-06	1.1E-01	4.0E-01	8.6E-05	1.4E-07	3.5E-03	4.9E-10
	Naphthalene	1.8E+01	8.2E-03	1.3E-03	2.6E-03	9.0E-03	5.0E-01	1.8E-05	1.2E-01	2.2E-06
	n-Butylbenzene	5.5E+00	9.5E-03	1.5E-03	4.0E-02	1.4E-01	3.7E-02	2.1E-05	--	--
	n-Propylbenzene	3.7E+00	6.4E-03	1.0E-03	4.0E-02	1.4E-01	2.5E-02	1.4E-05	--	--
	p-Isopropyltoluene	5.8E+00	9.0E-03	1.4E-03	1.1E-01	3.9E-01	1.3E-02	2.0E-05	--	--
	Pyrene	3.5E-01	1.8E-06	2.7E-07	3.0E-02	1.1E-01	9.2E-06	3.9E-09	--	--
	sec-Butylbenzene	2.3E+00	5.4E-03	8.4E-04	4.0E-02	1.4E-01	2.1E-02	1.2E-05	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	1.4E-04	2.2E-05	3.0E-01	1.1E+00	7.3E-05	3.1E-07	--	--
	tert-Butylbenzene	4.0E-03	7.7E-06	1.2E-06	4.0E-02	1.4E-01	3.0E-05	1.7E-08	--	--
	Tetrachloroethene	1.0E+02	6.8E-01	1.1E-01	1.0E-02	3.5E-02	1.1E+01	1.5E-03	2.1E-02	3.2E-05
	Toluene	9.9E-03	4.6E-05	7.2E-06	8.6E-02	3.0E-01	8.5E-05	1.0E-07	--	--
	trans-1,2-Dichloroethene	6.7E-01	4.8E-03	7.5E-04	2.0E-02	7.0E-02	3.8E-02	1.1E-05	--	--
	Trichloroethene	1.0E+01	5.6E-02	8.7E-03	1.7E-01	6.0E-01	5.1E-02	1.2E-04	7.0E-03	8.7E-07
	Vinyl Chloride	5.4E-02	7.0E-04	1.1E-04	2.9E-02	1.0E-01	3.8E-03	1.6E-06	2.7E-01	4.2E-07
	Xylenes	2.4E+00	7.5E-03	1.2E-03	2.0E-01	7.0E-01	5.9E-03	1.7E-05	--	--
						Cumulative Risk and Hazard =	**1E+01**			**5E-05**
						Cumulative HI for $TPH_{aliphatic}$ =	**7E-03**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**2E-01**			**--**

Table D-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**Inorganics**												
	Antimony	3.0E+00	1.0E-03	--	--	--	6.0E-06	1.9E-04	4.0E-04	4.8E-01	2.8E-06	--	--
	Arsenic	7.1E-03	1.0E-03	--	--	--	1.4E-08	4.6E-07	3.0E-04	1.5E-03	6.6E-09	9.5E+00	6.2E-08
	Barium	--	1.0E-03	--	--	--	--	--	7.0E-02	--	--	--	--
	Beryllium	1.0E-02	1.0E-03	--	--	--	2.0E-08	6.5E-07	2.0E-03	3.2E-04	9.2E-09	--	--
	Cadmium	1.0E-02	1.0E-03	--	--	--	2.0E-08	6.5E-07	5.0E-04	1.3E-03	9.2E-09	--	--
	Chromium	6.7E+02	1.0E-03	--	--	--	1.3E-03	4.3E-02	1.5E+00	2.9E-02	6.1E-04	--	--
	Chromium, Hexavalent	6.8E+02	2.0E-03	--	--	--	2.7E-03	8.8E-02	3.0E-03	2.9E+01	1.3E-03	--	--
	Cobalt	1.7E-02	1.0E-03	--	--	--	3.4E-08	1.1E-06	2.0E-02	5.5E-05	1.6E-08	--	--
	Copper	5.5E-03	1.0E-03	--	--	--	1.1E-08	3.6E-07	4.0E-02	8.9E-06	5.1E-09	--	--
	Cyanide (Amenable)	--	1.0E-03	--	--	--	--	--	2.0E-02	--	--	--	--
	Cyanide (Total)	1.0E-02	1.0E-03	--	--	--	2.0E-08	6.5E-07	2.0E-02	3.2E-05	9.2E-09	--	--
	Mercury	--	1.0E-03	--	--	--	--	--	3.0E-04	--	--	--	--
	Molybdenum	2.9E-01	1.0E-03	--	--	--	5.8E-07	1.9E-05	5.0E-03	3.7E-03	2.7E-07	--	--
	Nickel	4.5E-01	2.0E-04	--	--	--	1.8E-07	5.8E-06	2.0E-02	2.9E-04	8.3E-08	--	--
	Selenium	1.2E+00	1.0E-03	--	--	--	2.4E-06	7.7E-05	5.0E-03	1.5E-02	1.1E-06	--	--
	Silver	--	1.0E-03	--	--	--	--	--	5.0E-03	--	--	--	--
	Thallium	2.0E-03	1.0E-03	--	--	--	4.0E-09	1.3E-07	6.6E-05	2.0E-03	1.8E-09	--	--
	Vanadium	1.3E-01	1.0E-03	--	--	--	2.6E-07	8.4E-06	1.0E-03	8.4E-03	1.2E-07	--	--
	Zinc	1.0E-01	6.0E-04	--	--	--	1.2E-07	3.9E-06	3.0E-01	1.3E-05	5.5E-08	--	--
	PAHs												
	2-Methylnaphthalene	3.2E-02	9.2E-02	6.7E-01	1.0E+00	4.2E-01	9.6E-06	3.1E-04	3.0E-02	1.0E-02	4.4E-06	--	--
	Anthracene	--	1.4E-01	1.1E+00	1.0E+00	7.3E-01	--	--	3.0E-01	--	--	--	--
	Benzo(a)anthracene	3.6E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	9.5E-07	3.1E-05	--	--	4.4E-07	1.2E+00	5.3E-07
	Benzo(a)Pyrene	--	7.0E-01	2.7E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+01	--
	Benzo(b)Fluoranthene	--	7.0E-01	2.8E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+00	--
	Benzo(k)Fluoranthene	3.2E-04	6.9E-01	2.8E+00	1.0E+00	4.2E+00	--	--	--	--	--	1.2E+00	--
	Benzo(g,h,i)Perylene	5.8E-04	1.1E+00	3.8E+00	1.0E+00	7.2E+00	5.0E-06	1.6E-04	3.0E-02	5.3E-03	2.3E-06	--	--
	Chrysene	4.4E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	1.2E-06	3.8E-05	--	--	5.4E-07	1.2E-01	6.4E-08
	Dibenz(a,h)anthracene	4.9E-04	1.5E+00	3.9E+00	6.0E-01	9.7E+00	3.4E-06	1.1E-04	--	--	1.6E-06	1.2E+01	1.9E-05
	Fluoranthene	3.7E-03	2.2E-01	1.5E+00	1.0E+00	1.2E+00	3.9E-06	1.3E-04	4.0E-02	3.1E-03	1.8E-06	--	--
	Indeno(1,2,3-cd)pyrene	5.5E-04	1.0E+00	3.8E+00	6.0E-01	6.7E+00	2.6E-06	8.4E-05	--	--	1.2E-06	1.2E+00	1.4E-06
	Phenanthrene	2.3E-03	1.4E-01	1.1E+00	1.0E+00	7.4E-01	1.3E-06	4.3E-05	3.0E-01	1.4E-04	6.2E-07	--	--

Table D-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**PCBs**												
	Aroclor 1016	1.9E-03	3.1E-01	3.0E+00	1.0E+00	1.9E+00	3.9E-06	1.3E-04	7.0E-05	1.8E+00	1.8E-06	7.0E-02	1.3E-07
	Aroclor 1242	--	5.5E-01	4.6E+00	1.0E+00	3.6E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1248	--	5.9E-01	4.6E+00	1.0E+00	3.9E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1254	--	7.5E-01	7.2E+00	1.0E+00	5.2E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1260	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1262	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Perchlorate												
	Perchlorate	--	3.4E-04	4.9E-01	1.0E+00	1.4E-03	--	--	7.0E-04	--	--	--	--
	SVOCs												
	1,4-Dioxane	3.0E+00	3.3E-04	3.3E-01	1.0E+00	1.2E-03	2.7E-06	8.6E-05	--	--	1.2E-06	2.7E-02	3.3E-08
	4-Chloro-3-methylphenol	7.7E-03	2.9E-02	6.7E-01	1.0E+00	1.3E-01	7.2E-07	2.3E-05	1.0E-01	2.3E-04	3.3E-07	--	--
	Aniline	2.2E-03	1.9E-03	3.5E-01	1.0E+00	6.9E-03	1.1E-08	3.6E-07	7.0E-03	5.1E-05	5.1E-09	5.7E-03	2.9E-11
	Benzoic Acid	3.6E-03	5.7E-03	5.1E-01	1.0E+00	2.4E-02	6.1E-08	2.0E-06	4.0E+00	4.9E-07	2.8E-08	--	--
	Bis(2-ethylhexyl)Phthalate	2.1E-01	2.5E-02	1.7E+01	8.0E-01	1.9E-01	6.7E-05	2.2E-03	2.0E-02	1.1E-01	3.1E-05	3.0E-03	9.2E-08
	Diethylphthalate	2.2E-03	3.9E-03	1.9E+00	1.0E+00	2.2E-02	4.6E-08	1.5E-06	8.0E-01	1.9E-06	2.1E-08	--	--
	Diisopropyl Ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Dimethyl Phthalate	1.6E-03	1.4E-03	1.3E+00	1.0E+00	7.4E-03	9.9E-09	3.2E-07	1.0E+01	3.2E-08	4.6E-09	--	--
	Di-n-butylphthalate	3.0E-03	2.4E-02	3.9E+00	9.0E-01	1.5E-01	5.0E-07	1.6E-05	1.0E-01	1.6E-04	2.3E-07	--	--
	Phenol	1.0E-03	4.3E-03	3.6E-01	1.0E+00	1.6E-02	1.2E-08	3.8E-07	3.0E-01	1.3E-06	5.4E-09	--	--
	TPH												
	TPH - aliphatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	1.5E-01	4.0E-02	3.8E+00	2.1E-03	--	--
	TPH - aliphatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	8.0E-03	1.0E-01	8.0E-02	1.1E-04	--	--
	TPH - aliphatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	3.9E-03	2.0E+00	2.0E-03	5.6E-05	--	--
	TPH - aromatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	1.5E-01	--	--	2.1E-03	--	--
	TPH - aromatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	8.0E-03	3.0E-02	2.7E-01	1.1E-04	--	--
	TPH - aromatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	3.9E-03	3.0E-02	1.3E-01	5.6E-05	--	--
	VOCs												
	1,1,1,2-Tetrachloroethane	1.6E-03	1.6E-02	9.3E-01	1.0E+00	7.9E-02	9.6E-08	3.1E-06	3.0E-02	1.0E-04	4.4E-08	2.6E-02	1.1E-09
	1,1,1-Trichloroethane	4.5E-02	1.3E-02	6.0E-01	1.0E+00	5.6E-02	1.8E-06	5.8E-05	2.8E-01	2.1E-04	8.3E-07	--	--
	1,1,2-Trichloroethane	9.4E-03	6.4E-03	6.0E-01	1.0E+00	2.9E-02	1.9E-07	6.2E-06	4.0E-03	1.5E-03	8.9E-08	7.2E-02	6.4E-09
	1,1-Dichloroethane	1.2E-01	6.7E-03	3.8E-01	1.0E+00	2.6E-02	2.2E-06	7.1E-05	1.0E-01	7.1E-04	1.0E-06	5.7E-03	5.8E-09
	1,1-Dichloroethene	5.4E-01	1.2E-02	3.7E-01	1.0E+00	4.4E-02	1.7E-05	5.5E-04	5.0E-02	1.1E-02	7.8E-06	--	--

Table D-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	1,1-Dichloropropene	5.8E-04	4.3E-03	4.5E-01	1.0E+00	1.8E-02	7.2E-09	2.3E-07	3.0E-02	7.7E-06	3.3E-09	9.1E-02	3.0E-10
	1,2,4-Trichlorobenzene	6.8E-04	6.6E-02	1.1E+00	1.0E+00	3.4E-01	1.9E-07	6.0E-06	1.0E-02	6.0E-04	8.6E-08	--	--
	1,2,4-Trimethylbenzene	1.4E-02	8.6E-02	5.0E-01	1.0E+00	3.6E-01	3.4E-06	1.1E-04	5.0E-02	2.2E-03	1.6E-06	--	--
	1,2-Dibromo-3-chloropropane	6.0E-04	6.9E-03	2.3E+00	1.0E+00	4.1E-02	2.4E-08	7.8E-07	5.7E-05	1.4E-02	1.1E-08	7.0E+00	7.8E-08
	1,2-Dichlorobenzene	9.7E-03	4.1E-02	7.1E-01	1.0E+00	1.9E-01	1.3E-06	4.4E-05	9.0E-02	4.8E-04	6.2E-07	--	--
	1,2-Dichloroethane	2.0E-02	4.2E-03	3.8E-01	1.0E+00	1.6E-02	2.3E-07	7.4E-06	2.0E-02	3.7E-04	1.1E-07	4.7E-02	5.0E-09
	1,3,5-Trimethylbenzene	1.6E-02	6.2E-02	5.0E-01	1.0E+00	2.6E-01	2.8E-06	9.1E-05	5.0E-02	1.8E-03	1.3E-06	--	--
	1,3-Dichlorobenzene	5.6E-03	5.8E-02	7.1E-01	1.0E+00	2.7E-01	1.1E-06	3.5E-05	3.0E-02	1.2E-03	5.0E-07	--	--
	1,4-Dichlorobenzene	3.2E-02	4.2E-02	7.1E-01	1.0E+00	2.0E-01	4.5E-06	1.5E-04	3.0E-02	4.9E-03	2.1E-06	5.4E-03	1.1E-08
	2-Butanone (MEK)	3.0E-01	9.6E-04	2.7E-01	1.0E+00	3.1E-03	7.3E-07	2.4E-05	6.0E-01	3.9E-05	3.4E-07	--	--
	2-Chlorotoluene	3.8E-04	5.7E-02	5.5E-01	1.0E+00	2.5E-01	6.4E-08	2.1E-06	2.0E-02	1.0E-04	3.0E-08	--	--
	4-Methyl-2-pentanone	7.2E-04	2.7E-03	3.9E-01	1.0E+00	1.0E-02	5.3E-09	1.7E-07	8.0E-02	2.1E-06	2.4E-09	--	--
	Acenaphthene	2.5E+00	8.6E-02	7.8E-01	1.0E+00	4.1E-01	7.7E-04	2.5E-02	6.0E-02	4.2E-01	3.6E-04	--	--
	Acetone	4.9E-02	5.1E-04	2.3E-01	1.0E+00	1.5E-03	6.1E-08	2.0E-06	9.0E-01	2.2E-06	2.8E-08	--	--
	Benzene	1.1E-01	1.5E-02	2.9E-01	1.0E+00	5.1E-02	4.1E-06	1.3E-04	4.0E-03	3.3E-02	1.9E-06	1.0E-01	1.9E-07
	Bromochloromethane	1.5E-03	2.5E-03	5.7E-01	1.0E+00	1.1E-02	1.2E-08	3.9E-07	2.0E-02	1.9E-05	5.5E-09	--	--
	Bromodichloromethane	2.6E-03	4.6E-03	8.8E-01	1.0E+00	2.3E-02	4.4E-08	1.4E-06	2.0E-02	7.1E-05	2.0E-08	1.3E-01	2.6E-09
	Bromomethane	7.9E-04	2.8E-03	3.6E-01	1.0E+00	1.1E-02	6.1E-09	2.0E-07	1.4E-03	1.4E-04	2.8E-09	--	--
	Carbon Disulfide	3.6E-03	1.7E-02	3.0E-01	1.0E+00	5.9E-02	1.6E-07	5.0E-06	1.0E-01	5.0E-05	7.2E-08	--	--
	Carbon Tetrachloride	--	1.6E-02	7.8E-01	1.0E+00	7.8E-02	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	9.5E-03	2.8E-02	4.6E-01	1.0E+00	1.2E-01	7.5E-07	2.4E-05	2.0E-02	1.2E-03	3.5E-07	--	--
	Chloroethane	3.0E-04	6.1E-03	2.4E-01	1.0E+00	1.9E-02	4.5E-09	1.4E-07	4.0E-01	3.6E-07	2.1E-09	2.9E-03	6.0E-12
	Chloroform	2.7E-02	6.8E-03	5.0E-01	1.0E+00	2.9E-02	5.5E-07	1.8E-05	1.0E-02	1.8E-03	2.5E-07	3.1E-02	7.8E-09
	Chloromethane	9.3E-04	3.3E-03	2.0E-01	1.0E+00	9.0E-03	7.3E-09	2.4E-07	2.6E-02	9.2E-06	3.4E-09	--	--
	cis-1,2-Dichloroethene	5.7E+01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.7E-03	5.4E-02	1.0E-02	5.4E+00	7.8E-04	--	--
	Dibromochloromethane	5.1E-04	3.2E-03	1.6E+00	1.0E+00	1.8E-02	8.0E-09	2.6E-07	2.0E-02	1.3E-05	3.7E-09	9.4E-02	3.5E-10
	Dibromomethane	2.3E-04	2.2E-03	1.0E+00	1.0E+00	1.1E-02	2.0E-09	6.5E-08	1.0E-02	6.5E-06	9.3E-10	--	--
	Diisopropyl ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Ethylbenzene	1.6E-02	4.9E-02	4.2E-01	1.0E+00	2.0E-01	2.1E-06	6.8E-05	1.0E-01	6.8E-04	9.7E-07	--	--
	Ethyl-Tert-Butyl Ether	8.0E-04	7.5E-03	4.0E-01	1.0E+00	2.9E-02	1.7E-08	5.3E-07	1.0E-03	5.3E-04	7.6E-09	--	--
	Fluorene	2.7E-03	1.1E-01	9.1E-01	1.0E+00	5.4E-01	1.1E-06	3.6E-05	4.0E-02	8.9E-04	5.1E-07	--	--
	Freon-113	--	1.8E-02	1.2E+00	1.0E+00	9.2E-02	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	4.0E-04	8.1E-02	3.1E+00	9.0E-01	5.0E-01	2.0E-07	6.5E-06	3.0E-04	2.2E-02	9.2E-08	7.8E-02	7.2E-09

Table D-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Isopropylbenzene	8.9E-02	9.0E-02	5.0E-01	1.0E+00	3.8E-01	2.2E-05	7.2E-04	1.0E-01	7.2E-03	1.0E-05	--	--
	Methyl tertbutyl ether (MTBE)	1.3E-02	2.2E-03	3.2E-01	1.0E+00	7.8E-03	7.5E-08	2.4E-06	8.6E-01	2.8E-06	3.5E-08	1.8E-03	6.2E-11
	Methylene Chloride	1.0E-02	3.5E-03	3.2E-01	1.0E+00	1.3E-02	9.3E-08	3.0E-06	6.0E-02	5.0E-05	4.3E-08	1.4E-02	6.0E-10
	Naphthalene	3.1E-01	4.7E-02	5.6E-01	1.0E+00	2.0E-01	4.3E-05	1.4E-03	2.0E-02	7.0E-02	2.0E-05	1.2E-01	2.4E-06
	n-Butylbenzene	1.4E-01	2.0E-01	6.0E-01	1.0E+00	8.7E-01	8.5E-05	2.7E-03	4.0E-02	6.9E-02	3.9E-05	--	--
	n-Propylbenzene	3.2E-01	1.0E-01	5.0E-01	1.0E+00	4.2E-01	8.9E-05	2.9E-03	4.0E-02	7.2E-02	4.1E-05	--	--
	p-Isopropyltoluene	4.0E-03	1.6E-01	6.0E-01	1.0E+00	7.0E-01	1.9E-06	6.2E-05	1.0E-01	6.2E-04	8.9E-07	--	--
	Pyrene	2.2E-04	2.0E-01	1.5E+00	1.0E+00	1.1E+00	2.1E-07	6.7E-06	3.0E-02	2.2E-04	9.6E-08	--	--
	sec-Butylbenzene	5.4E-02	1.4E-01	6.0E-01	1.0E+00	6.4E-01	2.4E-05	7.8E-04	4.0E-02	1.9E-02	1.1E-05	--	--
	Styrene	9.9E-04	3.7E-02	4.1E-01	1.0E+00	1.5E-01	9.9E-08	3.2E-06	2.0E-01	1.6E-05	4.6E-08	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	4.1E-02	1.7E-03	2.8E-01	1.0E+00	5.7E-03	1.8E-07	5.8E-06	3.0E-01	1.9E-05	8.3E-08	--	--
	tert-Butylbenzene	2.4E-03	1.7E-01	6.0E-01	1.0E+00	7.4E-01	1.2E-06	4.0E-05	4.0E-02	9.9E-04	5.7E-07	--	--
	Tetrachloroethene	2.4E+02	3.3E-02	9.1E-01	1.0E+00	1.7E-01	3.0E-02	9.6E-01	1.0E-02	9.6E+01	1.4E-02	5.4E-01	7.4E-03
	Toluene	6.7E-03	3.1E-02	3.5E-01	1.0E+00	1.1E-01	5.4E-07	1.7E-05	2.0E-01	8.6E-05	2.5E-07	--	--
	trans-1,2-Dichloroethene	5.1E-01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.5E-05	4.9E-04	2.0E-02	2.4E-02	6.9E-06	--	--
	Trichloroethene	2.1E+01	1.2E-02	5.8E-01	1.0E+00	5.1E-02	7.6E-04	2.5E-02	3.0E-04	8.2E+01	3.5E-04	1.3E-02	4.6E-06
	Vinyl Chloride	2.5E+01	5.6E-03	2.4E-01	1.0E+00	1.7E-02	3.4E-04	1.1E-02	3.0E-03	3.7E+00	1.6E-04	2.7E-01	4.3E-05
	Xylenes	7.9E-03	5.3E-02	4.2E-01	1.0E+00	2.1E-01	1.1E-06	3.6E-05	2.0E-01	1.8E-04	5.2E-07	--	--
									Cumulative Risk and Hazard =	**2E+02**			**8E-03**
									Cumulative HI for $TPH_{aliphatic}$ =	**4E+00**			**--**
									Cumulative HI for $TPH_{aromatic}$ =	**4E-01**			**--**

Table D-5
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	2.8E-05	4.4E-06	3.0E-02	1.1E-01	1.5E-04	6.3E-08	2.6E-02	1.6E-09
	1,1,1-Trichloroethane	1.0E-03	1.6E-04	2.9E-01	1.0E+00	5.6E-04	2.3E-06	--	--
	1,1,2-Trichloroethane	2.0E-04	3.2E-05	4.0E-03	1.4E-02	7.9E-03	4.5E-07	5.7E-02	2.6E-08
	1,1-Dichloroethane	3.1E-03	4.9E-04	1.4E-01	5.0E-01	3.5E-03	7.0E-06	5.7E-03	4.0E-08
	1,1-Dichloroethene	1.4E-02	2.3E-03	2.0E-02	7.0E-02	1.1E-01	3.2E-05	--	--
	1,1-Dichloropropene	1.4E-05	2.3E-06	5.7E-03	2.0E-02	4.0E-04	3.2E-08	5.5E-02	1.8E-09
	1,2,4-Trichlorobenzene	1.3E-05	2.0E-06	1.0E-02	3.5E-02	2.0E-04	2.9E-08	--	--
	1,2,4-Trimethylbenzene	3.3E-04	5.2E-05	1.7E-03	6.0E-03	3.1E-02	7.5E-07	--	--
	1,2-Dibromo-3-chloropropane	7.7E-06	1.2E-06	5.7E-05	2.0E-04	2.1E-02	1.7E-08	7.0E+00	1.2E-07
	1,2-Dichlorobenzene	2.1E-04	3.2E-05	5.7E-02	2.0E-01	5.6E-04	4.6E-07	--	--
	1,2-Dichloroethane	5.0E-04	7.8E-05	1.4E-03	4.9E-03	5.6E-02	1.1E-06	7.2E-02	8.1E-08
	1,3,5-Trimethylbenzene	3.8E-04	6.0E-05	1.7E-03	6.0E-03	3.5E-02	8.5E-07	--	--
	1,3-Dichlorobenzene	1.2E-04	1.9E-05	3.0E-02	1.1E-01	6.2E-04	2.7E-07	--	--
	1,4-Dichlorobenzene	6.8E-04	1.1E-04	2.3E-01	8.0E-01	4.7E-04	1.5E-06	4.0E-02	6.1E-08
	2-Butanone (MEK)	2.9E-03	4.5E-04	1.4E+00	4.9E+00	3.2E-04	6.5E-06	--	--
	2-Chlorotoluene	8.8E-06	1.4E-06	2.0E-02	7.0E-02	6.9E-05	2.0E-08	--	--
	4-Methyl-2-pentanone	1.3E-05	2.1E-06	8.6E-01	3.0E+00	2.5E-06	3.0E-08	--	--
	Acenaphthene	4.0E-02	6.2E-03	6.0E-02	2.1E-01	1.0E-01	8.9E-05	--	--
	Acetone	6.5E-04	1.0E-04	9.0E-01	3.2E+00	1.1E-04	1.5E-06	--	--
	Benzene	3.2E-03	5.1E-04	1.7E-02	6.0E-02	3.0E-02	7.3E-06	1.0E-01	7.3E-07
	Bromochloromethane	3.4E-05	5.2E-06	2.0E-02	7.0E-02	2.6E-04	7.5E-08	--	--
	Bromodichloromethane	5.2E-05	8.1E-06	2.0E-02	7.0E-02	4.1E-04	1.2E-07	1.3E-01	1.5E-08
	Bromomethane	2.1E-05	3.3E-06	1.4E-03	5.0E-03	2.3E-03	4.7E-08	--	--
	Carbon Disulfide	1.1E-04	1.7E-05	2.3E-01	8.0E-01	7.4E-05	2.4E-07	--	--
	Carbon Tetrachloride	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	2.3E-04	3.6E-05	2.9E-01	1.0E+00	1.3E-04	5.2E-07	--	--
	Chloroethane	9.8E-06	1.5E-06	8.6E+00	3.0E+01	1.8E-07	2.2E-08	2.9E-03	6.3E-11
	Chloroform	6.4E-04	1.0E-04	8.6E-02	3.0E-01	1.2E-03	1.4E-06	1.9E-02	2.7E-08
	Chloromethane	3.4E-05	5.4E-06	2.6E-02	9.0E-02	2.1E-04	7.7E-08	--	--
	cis-1,2-Dichloroethene	1.5E+00	2.4E-01	1.0E-02	3.5E-02	2.4E+01	3.4E-03	--	--
	Dibromochloromethane	8.8E-06	1.4E-06	2.0E-02	7.0E-02	6.9E-05	2.0E-08	9.4E-02	1.8E-09
	Dibromomethane	4.3E-06	6.8E-07	1.0E-02	3.5E-02	6.8E-05	9.7E-09	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	4.1E-04	6.4E-05	5.7E-01	2.0E+00	1.1E-04	9.1E-07	--	--
	Ethyl-Tert-Butyl Ether	2.0E-05	3.2E-06	8.6E-02	3.0E-01	3.7E-05	4.6E-08	--	--
	Fluorene	3.3E-05	5.1E-06	4.0E-02	1.4E-01	1.3E-04	7.3E-08	--	--
	Freon-113	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	6.5E-06	1.0E-06	3.0E-04	1.1E-03	3.4E-03	1.5E-08	7.8E-02	1.1E-09
	Isopropylbenzene	2.1E-03	3.3E-04	1.1E-01	3.9E-01	3.0E-03	4.8E-06	--	--
	Methyl tertbutyl ether (MTBE)	3.4E-04	5.3E-05	2.3E+00	8.0E+00	2.3E-05	7.6E-07	9.1E-04	6.9E-10
	Methylene Chloride	2.8E-04	4.4E-05	1.1E-01	4.0E-01	3.8E-04	6.2E-07	3.5E-03	2.2E-09
	Naphthalene	6.5E-03	1.0E-03	2.6E-03	9.0E-03	3.9E-01	1.5E-05	1.2E-01	1.7E-06
	n-Butylbenzene	3.2E-03	5.0E-04	4.0E-02	1.4E-01	1.2E-02	7.1E-06	--	--
	n-Propylbenzene	7.7E-03	1.2E-03	4.0E-02	1.4E-01	3.0E-02	1.7E-05	--	--
	p-Isopropyltoluene	9.1E-05	1.4E-05	1.1E-01	3.9E-01	1.3E-04	2.0E-07	--	--
	Pyrene	7.2E-07	1.1E-07	3.0E-02	1.1E-01	3.8E-06	1.6E-09	--	--

Table D-5
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Construction Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	1.2E-03	1.9E-04	4.0E-02	1.4E-01	4.8E-03	2.7E-06	--	--
	Styrene	2.5E-05	3.9E-06	2.6E-01	9.0E-01	1.5E-05	5.6E-08	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	6.9E-04	1.1E-04	3.0E-01	1.1E+00	3.6E-04	1.5E-06	--	--
	tert-Butylbenzene	5.4E-05	8.5E-06	4.0E-02	1.4E-01	2.1E-04	1.2E-07	--	--
	Tetrachloroethene	4.1E+00	6.4E-01	1.0E-02	3.5E-02	6.4E+01	9.1E-03	2.1E-02	1.9E-04
	Toluene	1.8E-04	2.9E-05	8.6E-02	3.0E-01	3.3E-04	4.1E-07	--	--
	trans-1,2-Dichloroethene	1.4E-02	2.1E-03	2.0E-02	7.0E-02	1.1E-01	3.0E-05	--	--
	Trichloroethene	4.8E-01	7.5E-02	1.7E-01	6.0E-01	4.4E-01	1.1E-03	7.0E-03	7.5E-06
	Vinyl Chloride	8.3E-01	1.3E-01	2.9E-02	1.0E-01	4.5E+00	1.9E-03	2.7E-01	5.0E-04
	Xylenes	2.0E-04	3.1E-05	2.0E-01	7.0E-01	1.6E-04	4.5E-07	--	--
					Cumulative Risk and Hazard =	**9E+01**			**7E-04**

Table D-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	1.0E-06	4.0E-04	2.5E-03	1.4E-08	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	8.0E-07	1.0E-03	8.0E-04	1.1E-08	--	--
	Chromium	7.0E+02	8.2E-05	1.5E+00	5.5E-05	1.2E-06	--	--
	Chromium, Hexavalent	3.5E+01	4.1E-06	3.0E-03	1.4E-03	5.9E-08	--	--
	Cobalt	1.0E+02	1.2E-05	2.0E-02	5.9E-04	1.7E-07	--	--
	Copper	2.0E+02	2.3E-05	4.0E-02	5.9E-04	3.4E-07	--	--
	Cyanide (Amenable)	1.0E+00	1.2E-07	2.0E-02	5.9E-06	1.7E-09	--	--
	Cyanide (Total)	1.7E+00	2.0E-07	2.0E-02	1.0E-05	2.9E-09	--	--
	Mercury	2.3E-01	2.7E-08	3.0E-04	9.0E-05	3.9E-10	--	--
	Molybdenum	1.0E+01	1.2E-06	5.0E-03	2.3E-04	1.7E-08	--	--
	Nickel	1.7E+02	2.0E-05	2.0E-02	1.0E-03	2.9E-07	--	--
	Selenium	3.0E+01	3.5E-06	5.0E-03	7.0E-04	5.0E-08	--	--
	Silver	2.3E+00	2.7E-07	5.0E-03	5.4E-05	3.9E-09	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	8.3E-05	3.0E-01	2.8E-04	1.2E-06	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	6.2E-06	3.0E-02	2.1E-04	8.9E-08	--	--
	Anthracene	1.0E-02	1.2E-09	3.0E-01	3.9E-09	1.7E-11	--	--
	Benzo(a)anthracene	2.0E-01	2.3E-08	--	--	3.4E-10	1.2E+00	4.0E-10
	Benzo(a)Pyrene	4.0E-01	4.7E-08	--	--	6.7E-10	1.2E+01	8.1E-09
	Benzo(b)Fluoranthene	1.3E+00	1.5E-07	--	--	2.1E-09	1.2E+00	2.5E-09
	Benzo(k)Fluoranthene	1.0E-01	1.2E-08	--	--	1.7E-10	1.2E+00	2.0E-10
	Benzo(g,h,i)Perylene	9.0E-01	1.1E-07	3.0E-02	3.5E-06	1.5E-09	--	--
	Chrysene	6.8E-01	8.0E-08	--	--	1.1E-09	1.2E-01	1.4E-10
	Dibenz(a,h)anthracene	8.0E-02	9.4E-09	--	--	1.3E-10	1.2E+01	1.6E-09
	Fluoranthene	2.0E-01	2.3E-08	4.0E-02	5.9E-07	3.4E-10	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	7.0E-08	--	--	1.0E-09	1.2E+00	1.2E-09
	Phenanthrene	9.8E+00	1.2E-06	3.0E-01	3.8E-06	1.6E-08	--	--
	PCBs							
	Aroclor 1016	3.0E-02	3.5E-09	7.0E-05	5.0E-05	5.0E-11	7.0E-02	3.5E-12
	Aroclor 1242	1.6E-01	1.9E-08	2.0E-05	9.4E-04	2.7E-10	5.0E+00	1.3E-09
	Aroclor 1248	2.9E+02	3.4E-05	2.0E-05	1.7E+00	4.9E-07	5.0E+00	2.4E-06
	Aroclor 1254	1.7E+00	2.0E-07	2.0E-05	1.0E-02	2.9E-09	5.0E+00	1.4E-08
	Aroclor 1260	1.5E+00	1.8E-07	2.0E-05	8.8E-03	2.5E-09	5.0E+00	1.3E-08
	Aroclor 1262	3.3E-01	3.9E-08	2.0E-05	1.9E-03	5.5E-10	5.0E+00	2.8E-09
	Perchlorate							
	Perchlorate	3.6E+00	4.2E-07	7.0E-04	6.0E-04	6.0E-09	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	1.1E-08	--	--	1.5E-10	2.7E-02	4.1E-12
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table D-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	1.1E-08	3.0E-01	3.5E-08	1.5E-10	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	2.0E-04	4.0E-02	4.9E-03	2.8E-06	--	--
	TPH - aliphatic; C9-C18	2.5E+04	2.9E-03	1.0E-01	2.9E-02	4.2E-05	--	--
	TPH - aliphatic; C≥19	2.3E+04	2.7E-03	2.0E+00	1.3E-03	3.8E-05	--	--
	TPH - aromatic; C5-C8	1.7E+03	2.0E-04	--	--	2.8E-06	--	--
	TPH - aromatic; C9-C18	2.5E+04	2.9E-03	3.0E-02	9.8E-02	4.2E-05	--	--
	TPH - aromatic; C≥19	2.3E+04	2.7E-03	3.0E-02	8.9E-02	3.8E-05	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	6.0E-09	2.8E-01	2.1E-08	8.6E-11	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	3.5E-10	1.0E-01	3.5E-09	5.0E-12	5.7E-03	2.9E-14
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	4.7E-10	3.0E-02	1.6E-08	6.7E-12	9.1E-02	6.1E-13
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.9E-06	5.0E-02	3.8E-05	2.7E-08	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	8.0E-08	5.0E-02	1.6E-06	1.1E-09	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	2.9E-09	3.0E-02	9.8E-08	4.2E-11	5.4E-03	2.3E-13
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	2.3E-07	6.0E-02	3.9E-06	3.4E-09	--	--
	Acetone	6.2E-02	7.3E-09	9.0E-01	8.1E-09	1.0E-10	--	--
	Benzene	2.0E-02	2.3E-09	4.0E-03	5.9E-07	3.4E-11	1.0E-01	3.4E-12
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	1.0E-09	1.0E-01	1.0E-08	1.5E-11	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	4.7E-10	2.0E-02	2.3E-08	6.7E-12	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	4.7E-10	1.0E-02	4.7E-08	6.7E-12	3.1E-02	2.1E-13
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.1E-07	1.0E-02	1.1E-05	1.6E-09	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.2E-10	--	--	1.7E-12	--	--
	Ethylbenzene	2.3E+00	2.7E-07	1.0E-01	2.7E-06	3.9E-09	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	6.7E-07	4.0E-02	1.7E-05	9.6E-09	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	2.1E-09	3.0E-04	7.0E-06	3.0E-11	7.8E-02	2.4E-12

Table D-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	2.0E-07	1.0E-01	2.0E-06	2.9E-09	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	1.1E-09	6.0E-02	1.8E-08	1.6E-11	1.4E-02	2.2E-13
	Naphthalene	1.8E+01	2.1E-06	2.0E-02	1.1E-04	3.0E-08	1.2E-01	3.6E-09
	n-Butylbenzene	5.5E+00	6.5E-07	4.0E-02	1.6E-05	9.2E-09	--	--
	n-Propylbenzene	3.7E+00	4.3E-07	4.0E-02	1.1E-05	6.2E-09	--	--
	p-Isopropyltoluene	5.8E+00	6.8E-07	1.0E-01	6.8E-06	9.7E-09	--	--
	Pyrene	3.5E-01	4.1E-08	3.0E-02	1.4E-06	5.9E-10	--	--
	sec-Butylbenzene	2.3E+00	2.7E-07	4.0E-02	6.8E-06	3.9E-09	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	1.2E-08	3.0E-01	3.9E-08	1.7E-10	--	--
	tert-Butylbenzene	4.0E-03	4.7E-10	4.0E-02	1.2E-08	6.7E-12	--	--
	Tetrachloroethene	2.2E+02	2.6E-05	1.0E-02	2.6E-03	3.7E-07	5.4E-01	2.0E-07
	Toluene	9.9E-03	1.2E-09	2.0E-01	5.8E-09	1.7E-11	--	--
	trans-1,2-Dichloroethene	6.7E-01	7.9E-08	2.0E-02	3.9E-06	1.1E-09	--	--
	Trichloroethene	1.0E+01	1.2E-06	3.0E-04	3.9E-03	1.7E-08	1.3E-02	2.2E-10
	Vinyl Chloride	5.4E-02	6.3E-09	3.0E-03	2.1E-06	9.1E-11	2.7E-01	2.4E-11
	Xylenes	2.4E+00	2.8E-07	2.0E-01	1.4E-06	4.0E-09	--	--
	Cumulative Risk and Hazard =				**2E+00**			**3E-06**
	Cumulative HI for $TPH_{aliphatic}$ =				**4E-02**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**2E-01**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	4.6E-08	4.0E-04	1.2E-04	6.6E-10	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	3.7E-09	1.0E-03	3.7E-06	5.3E-11	--	--
	Chromium	7.0E+02	3.8E-06	1.5E+00	2.5E-06	5.4E-08	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	5.4E-07	2.0E-02	2.7E-05	7.8E-09	--	--
	Copper	2.0E+02	1.1E-06	4.0E-02	2.7E-05	1.6E-08	--	--
	Cyanide (Amenable)	1.0E+00	5.4E-08	2.0E-02	2.7E-06	7.8E-10	--	--
	Cyanide (Total)	1.7E+00	9.3E-08	2.0E-02	4.6E-06	1.3E-09	--	--
	Mercury	2.3E-01	1.3E-09	3.0E-04	4.2E-06	1.8E-11	--	--
	Molybdenum	1.0E+01	5.4E-08	5.0E-03	1.1E-05	7.8E-10	--	--
	Nickel	1.7E+02	9.3E-07	2.0E-02	4.6E-05	1.3E-08	--	--
	Selenium	3.0E+01	1.6E-07	5.0E-03	3.3E-05	2.3E-09	--	--
	Silver	2.3E+00	1.3E-08	5.0E-03	2.5E-06	1.8E-10	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	3.9E-06	3.0E-01	1.3E-05	5.5E-08	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	4.3E-06	3.0E-02	1.4E-04	6.2E-08	--	--
	Anthracene	1.0E-02	8.2E-10	3.0E-01	2.7E-09	1.2E-11	--	--
	Benzo(a)anthracene	2.0E-01	1.6E-08	--	--	2.3E-10	1.2E+00	2.8E-10
	Benzo(a)Pyrene	4.0E-01	3.3E-08	--	--	4.7E-10	1.2E+01	5.6E-09
	Benzo(b)Fluoranthene	1.3E+00	1.0E-07	--	--	1.5E-09	1.2E+00	1.8E-09
	Benzo(k)Fluoranthene	1.0E-01	8.2E-09	--	--	1.2E-10	1.2E+00	1.4E-10
	Benzo(g,h,i)Perylene	9.0E-01	7.4E-08	3.0E-02	2.5E-06	1.1E-09	--	--

Table D-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	5.6E-08	--	--	8.0E-10	1.2E-01	9.6E-11
	Dibenz(a,h)anthracene	8.0E-02	6.5E-09	--	--	9.3E-11	1.2E+01	1.1E-09
	Fluoranthene	2.0E-01	1.6E-08	4.0E-02	4.1E-07	2.3E-10	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	4.9E-08	--	--	7.0E-10	1.2E+00	8.4E-10
	Phenanthrene	9.8E+00	8.0E-07	3.0E-01	2.7E-06	1.1E-08	--	--
	PCBs							
	Aroclor 1016	3.0E-02	2.5E-09	7.0E-05	3.5E-05	3.5E-11	7.0E-02	2.5E-12
	Aroclor 1242	1.6E-01	1.3E-08	2.0E-05	6.5E-04	1.9E-10	5.0E+00	9.3E-10
	Aroclor 1248	2.9E+02	2.4E-05	2.0E-05	1.2E+00	3.4E-07	5.0E+00	1.7E-06
	Aroclor 1254	1.7E+00	1.4E-07	2.0E-05	6.9E-03	2.0E-09	5.0E+00	9.9E-09
	Aroclor 1260	1.5E+00	1.2E-07	2.0E-05	6.1E-03	1.8E-09	5.0E+00	8.8E-09
	Aroclor 1262	3.3E-01	2.7E-08	2.0E-05	1.3E-03	3.9E-10	5.0E+00	1.9E-09
	PCBs							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	4.9E-09	--	--	7.0E-11	2.7E-02	1.9E-12
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	4.9E-09	3.0E-01	1.6E-08	7.0E-11	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.4E-04	4.0E-02	3.4E-03	2.0E-06	--	--
	TPH - aliphatic; C9-C18	2.5E+04	2.1E-03	1.0E-01	2.1E-02	2.9E-05	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.9E-03	2.0E+00	9.3E-04	2.7E-05	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.4E-04	--	--	2.0E-06	--	--
	TPH - aromatic; C9-C18	2.5E+04	2.1E-03	3.0E-02	6.8E-02	2.9E-05	--	--
	TPH - aromatic; C≥19	2.3E+04	1.9E-03	3.0E-02	6.2E-02	2.7E-05	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	2.8E-09	2.8E-01	9.9E-09	4.0E-11	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	1.6E-10	1.0E-01	1.6E-09	2.3E-12	5.7E-03	1.3E-14
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	2.2E-10	3.0E-02	7.3E-09	3.1E-12	9.1E-02	2.8E-13
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	8.7E-07	5.0E-02	1.7E-05	1.2E-08	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.7E-08	5.0E-02	7.4E-07	5.3E-10	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.4E-09	3.0E-02	4.5E-08	1.9E-11	5.4E-03	1.1E-13
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table D-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	1.6E-07	6.0E-02	2.7E-06	2.3E-09	--	--
	Acetone	6.2E-02	3.4E-09	9.0E-01	3.8E-09	4.8E-11	--	--
	Benzene	2.0E-02	1.1E-09	4.0E-03	2.7E-07	1.6E-11	1.0E-01	1.6E-12
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	4.7E-10	1.0E-01	4.7E-09	6.8E-12	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.2E-10	2.0E-02	1.1E-08	3.1E-12	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	2.2E-10	1.0E-02	2.2E-08	3.1E-12	3.1E-02	9.7E-14
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	5.2E-08	1.0E-02	5.2E-06	7.5E-10	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	5.4E-11	--	--	7.8E-13	--	--
	Ethylbenzene	2.3E+00	1.3E-07	1.0E-01	1.3E-06	1.8E-09	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	4.7E-07	4.0E-02	1.2E-05	6.7E-09	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	9.8E-10	3.0E-04	3.3E-06	1.4E-11	7.8E-02	1.1E-12
	Isopropylbenzene	1.7E+00	9.3E-08	1.0E-01	9.3E-07	1.3E-09	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	5.1E-10	6.0E-02	8.5E-09	7.3E-12	1.4E-02	1.0E-13
	Naphthalene	1.8E+01	1.5E-06	2.0E-02	7.4E-05	2.1E-08	1.2E-01	2.5E-09
	n-Butylbenzene	5.5E+00	3.0E-07	4.0E-02	7.5E-06	4.3E-09	--	--
	n-Propylbenzene	3.7E+00	2.0E-07	4.0E-02	5.0E-06	2.9E-09	--	--
	p-Isopropyltoluene	5.8E+00	3.2E-07	1.0E-01	3.2E-06	4.5E-09	--	--
	Pyrene	3.5E-01	1.9E-08	3.0E-02	6.4E-07	2.7E-10	--	--
	sec-Butylbenzene	2.3E+00	1.3E-07	4.0E-02	3.1E-06	1.8E-09	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	5.4E-09	3.0E-01	1.8E-08	7.8E-11	--	--
	tert-Butylbenzene	4.0E-03	2.2E-10	4.0E-02	5.4E-09	3.1E-12	--	--
	Tetrachloroethene	2.2E+02	1.2E-05	1.0E-02	1.2E-03	1.7E-07	5.4E-01	9.2E-08
	Toluene	9.9E-03	5.4E-10	2.0E-01	2.7E-09	7.7E-12	--	--
	trans-1,2-Dichloroethene	6.7E-01	3.7E-08	2.0E-02	1.8E-06	5.2E-10	--	--
	Trichloroethene	1.0E+01	5.4E-07	3.0E-04	1.8E-03	7.8E-09	1.3E-02	1.0E-10
	Vinyl Chloride	5.4E-02	2.9E-09	3.0E-03	9.8E-07	4.2E-11	2.7E-01	1.1E-11
	Xylenes	2.4E+00	1.3E-07	2.0E-01	6.5E-07	1.9E-09	--	--
	Cumulative Risk and Hazard =				**1E+00**			**2E-06**
	Cumulative HI for $TPH_{aliphatic}$ =				**2E-02**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**1E-01**			**--**

Table D-7
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	2.3E-08	5.3E-10	--	--	--	7.5E-12	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	1.8E-08	4.2E-10	5.7E-06	2.0E-05	7.4E-05	6.0E-12	1.5E+01	9.1E-11
	Chromium	7.0E+02	1.9E-06	4.4E-08	--	--	--	6.2E-10	--	--
	Chromium, Hexavalent	3.5E+01	9.3E-08	2.2E-09	5.7E-05	2.0E-04	3.8E-05	3.1E-11	5.1E+02	1.6E-08
	Cobalt	1.0E+02	2.6E-07	6.2E-09	5.7E-06	2.0E-05	1.1E-03	8.9E-11	--	--
	Copper	2.0E+02	5.3E-07	1.2E-08	--	--	--	1.8E-10	--	--
	Cyanide (Amenable)	1.0E+00	2.6E-09	6.2E-11	--	--	--	8.9E-13	--	--
	Cyanide (Total)	1.7E+00	4.5E-09	1.1E-10	--	--	--	1.5E-12	--	--
	Mercury	2.3E-01	6.1E-10	1.4E-11	2.6E-05	9.0E-05	5.6E-07	2.0E-13	--	--
	Molybdenum	1.0E+01	2.6E-08	6.2E-10	--	--	--	8.9E-12	--	--
	Nickel	1.7E+02	4.5E-07	1.1E-08	1.4E-05	5.0E-05	7.4E-04	1.5E-10	9.1E-01	1.4E-10
	Selenium	3.0E+01	7.9E-08	1.9E-09	5.7E-03	2.0E-02	3.3E-07	2.7E-11	--	--
	Silver	2.3E+00	6.1E-09	1.4E-10	--	--	--	2.0E-12	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	1.9E-06	4.4E-08	--	--	--	6.3E-10	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	1.4E-07	3.3E-09	3.0E-02	1.1E-01	1.1E-07	4.7E-11	--	--
	Anthracene	1.0E-02	2.6E-11	6.2E-13	3.0E-01	1.1E+00	2.1E-12	8.9E-15	--	--
	Benzo(a)anthracene	2.0E-01	5.3E-10	1.2E-11	--	--	--	1.8E-13	3.9E-01	6.9E-14
	Benzo(a)Pyrene	4.0E-01	1.1E-09	2.5E-11	--	--	--	3.6E-13	3.9E+00	1.4E-12
	Benzo(b)Fluoranthene	1.3E+00	3.3E-09	7.8E-11	--	--	--	1.1E-12	3.9E-01	4.4E-13
	Benzo(k)Fluoranthene	1.0E-01	2.6E-10	6.2E-12	--	--	--	8.9E-14	3.9E-01	3.5E-14
	Benzo(g,h,i)Perylene	9.0E-01	2.4E-09	5.6E-11	3.0E-02	1.1E-01	1.9E-09	8.0E-13	--	--
	Chrysene	6.8E-01	1.8E-09	4.2E-11	--	--	--	6.1E-13	3.9E-02	2.4E-14
	Dibenz(a,h)anthracene	8.0E-02	2.1E-10	5.0E-12	--	--	--	7.1E-14	3.9E+00	2.8E-13
	Fluoranthene	2.0E-01	5.3E-10	1.2E-11	4.0E-02	1.4E-01	3.1E-10	1.8E-13	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.6E-09	3.7E-11	--	--	--	5.3E-13	3.9E-01	2.1E-13
	Phenanthrene	9.8E+00	2.6E-08	6.1E-10	3.0E-01	1.1E+00	2.0E-09	8.7E-12	--	--
	PCBs									
	Aroclor 1016	3.0E-02	7.9E-11	1.9E-12	7.0E-05	2.5E-04	2.7E-08	2.7E-14	7.0E-02	1.9E-15
	Aroclor 1242	1.6E-01	4.2E-10	9.9E-12	2.0E-05	7.0E-05	5.0E-07	1.4E-13	2.0E+00	2.8E-13
	Aroclor 1248	2.9E+02	7.7E-07	1.8E-08	2.0E-05	7.0E-05	9.0E-04	2.6E-10	2.0E+00	5.2E-10
	Aroclor 1254	1.7E+00	4.5E-09	1.1E-10	2.0E-05	7.0E-05	5.3E-06	1.5E-12	2.0E+00	3.0E-12
	Aroclor 1260	1.5E+00	4.0E-09	9.3E-11	2.0E-05	7.0E-05	4.7E-06	1.3E-12	2.0E+00	2.7E-12
	Aroclor 1262	3.3E-01	8.7E-10	2.1E-11	2.0E-05	7.0E-05	1.0E-06	2.9E-13	2.0E+00	5.9E-13
	Perchlorate									
	Perchlorate	3.6E+00	9.5E-09	2.2E-10	--	--	--	3.2E-12	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	2.4E-10	5.6E-12	8.6E-01	3.0E+00	6.5E-12	8.0E-14	2.7E-02	2.2E-15
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table D-7
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	2.4E-10	5.6E-12	5.7E-02	2.0E-01	9.8E-11	8.0E-14	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	4.5E-06	1.0E-07	6.0E-02	2.1E-01	1.7E-06	1.5E-09	--	--
	TPH - aliphatic; C9-C18	2.5E+04	6.6E-05	1.6E-06	3.0E-01	1.1E+00	5.2E-06	2.2E-08	--	--
	TPH - aliphatic; C≥19	2.3E+04	6.0E-05	1.4E-06	3.0E-01	1.1E+00	4.7E-06	2.0E-08	--	--
	TPH - aromatic; C5-C8	1.7E+03	4.5E-06	1.0E-07	--	--	--	1.5E-09	--	--
	TPH - aromatic; C9-C18	2.5E+04	6.6E-05	1.6E-06	6.0E-03	2.1E-02	2.6E-04	2.2E-08	--	--
	TPH - aromatic; C≥19	2.3E+04	6.0E-05	1.4E-06	--	--	--	2.0E-08	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	1.3E-04	3.0E-06	2.9E-01	1.0E+00	1.0E-05	4.3E-08	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	6.7E-06	1.6E-07	1.4E-01	5.0E-01	1.1E-06	2.3E-09	5.7E-03	1.3E-11
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.1E-11	2.5E-13	5.7E-03	2.0E-02	4.4E-11	3.6E-15	5.5E-02	2.0E-16
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	5.2E-03	1.2E-04	1.7E-03	6.0E-03	7.2E-02	1.7E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	5.4E-04	1.3E-05	1.7E-03	6.0E-03	7.4E-03	1.8E-07	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.2E-05	2.9E-07	2.3E-01	8.0E-01	1.3E-06	4.1E-09	4.0E-02	1.6E-10
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	7.0E-05	1.7E-06	6.0E-02	2.1E-01	2.8E-05	2.4E-08	--	--
	Acetone	6.2E-02	2.7E-05	6.3E-07	9.0E-01	3.2E+00	7.0E-07	9.0E-09	--	--
	Benzene	2.0E-02	4.2E-05	9.8E-07	1.7E-02	6.0E-02	5.7E-05	1.4E-08	1.0E-01	1.4E-09
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	3.4E-05	8.1E-07	2.3E-01	8.0E-01	3.5E-06	1.2E-08	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	4.0E-06	9.3E-08	2.9E-01	1.0E+00	3.3E-07	1.3E-09	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	8.6E-06	2.0E-07	8.6E-02	3.0E-01	2.3E-06	2.9E-09	1.9E-02	5.5E-11
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.9E-03	4.4E-05	1.0E-02	3.5E-02	4.4E-03	6.2E-07	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.6E-06	3.7E-08	1.1E-01	3.9E-01	3.3E-07	5.2E-10	--	--
	Ethylbenzene	2.3E+00	2.6E-03	6.2E-05	5.7E-01	2.0E+00	1.1E-04	8.9E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	1.0E-04	2.4E-06	4.0E-02	1.4E-01	6.0E-05	3.4E-08	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.3E-05	3.0E-07	3.0E-04	1.1E-03	1.0E-03	4.3E-09	7.8E-02	3.4E-10

Table D-7
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	2.8E-03	6.7E-05	1.1E-01	3.9E-01	6.1E-04	9.5E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	2.0E-05	4.8E-07	1.1E-01	4.0E-01	4.2E-06	6.8E-09	3.5E-03	2.4E-11
	Naphthalene	1.8E+01	2.7E-03	6.3E-05	2.6E-03	9.0E-03	2.4E-02	8.9E-07	1.2E-01	1.1E-07
	n-Butylbenzene	5.5E+00	3.1E-03	7.3E-05	4.0E-02	1.4E-01	1.8E-03	1.0E-06	--	--
	n-Propylbenzene	3.7E+00	2.1E-03	4.9E-05	4.0E-02	1.4E-01	1.2E-03	7.0E-07	--	--
	p-Isopropyltoluene	5.8E+00	2.9E-03	6.9E-05	1.1E-01	3.9E-01	6.3E-04	9.9E-07	--	--
	Pyrene	3.5E-01	5.7E-07	1.3E-08	3.0E-02	1.1E-01	4.5E-07	1.9E-10	--	--
	sec-Butylbenzene	2.3E+00	1.8E-03	4.1E-05	4.0E-02	1.4E-01	1.0E-03	5.9E-07	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	4.6E-05	1.1E-06	3.0E-01	1.1E+00	3.6E-06	1.5E-08	--	--
	tert-Butylbenzene	4.0E-03	2.5E-06	5.9E-08	4.0E-02	1.4E-01	1.5E-06	8.5E-10	--	--
	Tetrachloroethene	1.0E+02	2.2E-01	5.2E-03	1.0E-02	3.5E-02	5.2E-01	7.4E-05	2.1E-02	1.6E-06
	Toluene	9.9E-03	1.5E-05	3.5E-07	8.6E-02	3.0E-01	4.1E-06	5.1E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.6E-03	3.7E-05	2.0E-02	7.0E-02	1.8E-03	5.3E-07	--	--
	Trichloroethene	1.0E+01	1.8E-02	4.3E-04	1.7E-01	6.0E-01	2.5E-03	6.1E-06	7.0E-03	4.3E-08
	Vinyl Chloride	5.4E-02	2.29E-04	5.4E-06	2.9E-02	1.0E-01	1.9E-04	7.7E-08	2.7E-01	2.1E-08
	Xylenes	2.4E+00	2.5E-03	5.8E-05	2.0E-01	7.0E-01	2.9E-04	8.2E-07	--	--
						Cumulative Risk and Hazard =	**6E-01**			**2E-06**
						Cumulative HI for $TPH_{aliphatic}$ =	**1E-05**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**3E-04**			**--**

Table D-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**Inorganics**												
	Antimony	3.0E+00	1.0E-03	--	--	--	6.0E-06	4.1E-05	4.0E-04	1.0E-01	5.8E-07	--	--
	Arsenic	7.1E-03	1.0E-03	--	--	--	1.4E-08	9.7E-08	3.0E-04	3.2E-04	1.4E-09	9.5E+00	1.3E-08
	Barium	--	1.0E-03	--	--	--	--	--	7.0E-02	--	--	--	--
	Beryllium	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.4E-07	2.0E-03	6.8E-05	1.9E-09	--	--
	Cadmium	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.4E-07	5.0E-04	2.7E-04	1.9E-09	--	--
	Chromium	6.7E+02	1.0E-03	--	--	--	1.3E-03	9.1E-03	1.5E+00	6.0E-03	1.3E-04	--	--
	Chromium, Hexavalent	6.8E+02	2.0E-03	--	--	--	2.7E-03	1.9E-02	3.0E-03	6.2E+00	2.6E-04	--	--
	Cobalt	1.7E-02	1.0E-03	--	--	--	3.4E-08	2.3E-07	2.0E-02	1.2E-05	3.3E-09	--	--
	Copper	5.5E-03	1.0E-03	--	--	--	1.1E-08	7.5E-08	4.0E-02	1.9E-06	1.1E-09	--	--
	Cyanide (Amenable)	--	1.0E-03	--	--	--	--	--	2.0E-02	--	--	--	--
	Cyanide (Total)	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.4E-07	2.0E-02	6.8E-06	1.9E-09	--	--
	Mercury	--	1.0E-03	--	--	--	--	--	3.0E-04	--	--	--	--
	Molybdenum	2.9E-01	1.0E-03	--	--	--	5.8E-07	3.9E-06	5.0E-03	7.9E-04	5.6E-08	--	--
	Nickel	4.5E-01	2.0E-04	--	--	--	1.8E-07	1.2E-06	2.0E-02	6.1E-05	1.8E-08	--	--
	Selenium	1.2E+00	1.0E-03	--	--	--	2.4E-06	1.6E-05	5.0E-03	3.3E-03	2.3E-07	--	--
	Silver	--	1.0E-03	--	--	--	--	--	5.0E-03	--	--	--	--
	Thallium	2.0E-03	1.0E-03	--	--	--	4.0E-09	2.7E-08	6.6E-05	4.1E-04	3.9E-10	--	--
	Vanadium	1.3E-01	1.0E-03	--	--	--	2.6E-07	1.8E-06	1.0E-03	1.8E-03	2.5E-08	--	--
	Zinc	1.0E-01	6.0E-04	--	--	--	1.2E-07	8.2E-07	3.0E-01	2.7E-06	1.2E-08	--	--
	PAHs												
	2-Methylnaphthalene	3.2E-02	9.2E-02	6.7E-01	1.0E+00	4.2E-01	9.6E-06	6.5E-05	3.0E-02	2.2E-03	9.3E-07	--	--
	Anthracene	--	1.4E-01	1.1E+00	1.0E+00	7.3E-01	--	--	3.0E-01	--	--	--	--
	Benzo(a)anthracene	3.6E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	9.5E-07	6.5E-06	--	--	9.2E-08	1.2E+00	1.1E-07
	Benzo(a)Pyrene	--	7.0E-01	2.7E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+01	--
	Benzo(b)Fluoranthene	--	7.0E-01	2.8E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+00	--
	Benzo(k)Fluoranthene	3.2E-04	6.9E-01	2.8E+00	1.0E+00	4.2E+00	--	--	--	--	--	1.2E+00	--
	Benzo(g,h,i)Perylene	5.8E-04	1.1E+00	3.8E+00	1.0E+00	7.2E+00	5.0E-06	3.4E-05	3.0E-02	1.1E-03	4.8E-07	--	--
	Chrysene	4.4E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	1.2E-06	7.9E-06	--	--	1.1E-07	1.2E-01	1.4E-08
	Dibenz(a,h)anthracene	4.9E-04	1.5E+00	3.9E+00	6.0E-01	9.7E+00	3.4E-06	2.3E-05	--	--	3.3E-07	1.2E+01	4.0E-06
	Fluoranthene	3.7E-03	2.2E-01	1.5E+00	1.0E+00	1.2E+00	3.9E-06	2.7E-05	4.0E-02	6.6E-04	3.8E-07	--	--
	Indeno(1,2,3-cd)pyrene	5.5E-04	1.0E+00	3.8E+00	6.0E-01	6.7E+00	2.6E-06	1.8E-05	--	--	2.5E-07	1.2E+00	3.0E-07
	Phenanthrene	2.3E-03	1.4E-01	1.1E+00	1.0E+00	7.4E-01	1.3E-06	9.1E-06	3.0E-01	3.0E-05	1.3E-07	--	--

Table D-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**PCBs**												
	Aroclor 1016	1.9E-03	3.1E-01	3.0E+00	1.0E+00	1.9E+00	3.9E-06	2.7E-05	7.0E-05	3.8E-01	3.8E-07	7.0E-02	2.7E-08
	Aroclor 1242	--	5.5E-01	4.6E+00	1.0E+00	3.6E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1248	--	5.9E-01	4.6E+00	1.0E+00	3.9E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1254	--	7.5E-01	7.2E+00	1.0E+00	5.2E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1260	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1262	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Perchlorate												
	Perchlorate	--	3.4E-04	4.9E-01	1.0E+00	1.4E-03	--	--	7.0E-04	--	--	--	--
	SVOCs												
	1,4-Dioxane	3.0E+00	3.3E-04	3.3E-01	1.0E+00	1.2E-03	2.7E-06	1.8E-05	--	--	2.6E-07	2.7E-02	7.0E-09
	4-Chloro-3-methylphenol	7.7E-03	2.9E-02	6.7E-01	1.0E+00	1.3E-01	7.2E-07	4.9E-06	1.0E-01	4.9E-05	7.0E-08	--	--
	Aniline	2.2E-03	1.9E-03	3.5E-01	1.0E+00	6.9E-03	1.1E-08	7.5E-08	7.0E-03	1.1E-05	1.1E-09	5.7E-03	6.1E-12
	Benzoic Acid	3.6E-03	5.7E-03	5.1E-01	1.0E+00	2.4E-02	6.1E-08	4.2E-07	4.0E+00	1.0E-07	6.0E-09	--	--
	Bis(2-ethylhexyl)Phthalate	2.1E-01	2.5E-02	1.7E+01	8.0E-01	1.9E-01	6.7E-05	4.5E-04	2.0E-02	2.3E-02	6.5E-06	3.0E-03	1.9E-08
	Diethylphthalate	2.2E-03	3.9E-03	1.9E+00	1.0E+00	2.2E-02	4.6E-08	3.1E-07	8.0E-01	3.9E-07	4.5E-09	--	--
	Diisopropyl Ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Dimethyl Phthalate	1.6E-03	1.4E-03	1.3E+00	1.0E+00	7.4E-03	9.9E-09	6.8E-08	1.0E+01	6.8E-09	9.7E-10	--	--
	Di-n-butylphthalate	3.0E-03	2.4E-02	3.9E+00	9.0E-01	1.5E-01	5.0E-07	3.4E-06	1.0E-01	3.4E-05	4.8E-08	--	--
	Phenol	1.0E-03	4.3E-03	3.6E-01	1.0E+00	1.6E-02	1.2E-08	8.0E-08	3.0E-01	2.7E-07	1.1E-09	--	--
	TPH												
	TPH - aliphatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	3.2E-02	4.0E-02	7.9E-01	4.5E-04	--	--
	TPH - aliphatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	1.7E-03	1.0E-01	1.7E-02	2.4E-05	--	--
	TPH - aliphatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	8.2E-04	2.0E+00	4.1E-04	1.2E-05	--	--
	TPH - aromatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	3.2E-02	--	--	4.5E-04	--	--
	TPH - aromatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	1.7E-03	3.0E-02	5.6E-02	2.4E-05	--	--
	TPH - aromatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	8.2E-04	3.0E-02	2.7E-02	1.2E-05	--	--
	VOCs												
	1,1,1,2-Tetrachloroethane	1.6E-03	1.6E-02	9.3E-01	1.0E+00	7.9E-02	9.6E-08	6.5E-07	3.0E-02	2.2E-05	9.3E-09	2.6E-02	2.4E-10
	1,1,1-Trichloroethane	4.5E-02	1.3E-02	6.0E-01	1.0E+00	5.6E-02	1.8E-06	1.2E-05	2.8E-01	4.4E-05	1.7E-07	--	--
	1,1,2-Trichloroethane	9.4E-03	6.4E-03	6.0E-01	1.0E+00	2.9E-02	1.9E-07	1.3E-06	4.0E-03	3.3E-04	1.9E-08	7.2E-02	1.3E-09
	1,1-Dichloroethane	1.2E-01	6.7E-03	3.8E-01	1.0E+00	2.6E-02	2.2E-06	1.5E-05	1.0E-01	1.5E-04	2.2E-07	5.7E-03	1.2E-09
	1,1-Dichloroethene	5.4E-01	1.2E-02	3.7E-01	1.0E+00	4.4E-02	1.7E-05	1.2E-04	5.0E-02	2.3E-03	1.6E-06	--	--

Table D-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	1,1-Dichloropropene	5.8E-04	4.3E-03	4.5E-01	1.0E+00	1.8E-02	--	--	3.0E-02	--	--	9.1E-02	--
	1,2,4-Trichlorobenzene	6.8E-04	6.6E-02	1.1E+00	1.0E+00	3.4E-01	1.9E-07	1.3E-06	1.0E-02	1.3E-04	1.8E-08	--	--
	1,2,4-Trimethylbenzene	1.4E-02	8.6E-02	5.0E-01	1.0E+00	3.6E-01	3.4E-06	2.3E-05	5.0E-02	4.6E-04	3.3E-07	--	--
	1,2-Dibromo-3-chloropropane	6.0E-04	6.9E-03	2.3E+00	1.0E+00	4.1E-02	2.4E-08	1.6E-07	5.7E-05	2.9E-03	2.3E-09	7.0E+00	1.6E-08
	1,2-Dichlorobenzene	9.7E-03	4.1E-02	7.1E-01	1.0E+00	1.9E-01	1.3E-06	9.2E-06	9.0E-02	1.0E-04	1.3E-07	--	--
	1,2-Dichloroethane	2.0E-02	4.2E-03	3.8E-01	1.0E+00	1.6E-02	2.3E-07	1.6E-06	2.0E-02	7.8E-05	2.2E-08	4.7E-02	1.1E-09
	1,3,5-Trimethylbenzene	1.6E-02	6.2E-02	5.0E-01	1.0E+00	2.6E-01	2.8E-06	1.9E-05	5.0E-02	3.8E-04	2.7E-07	--	--
	1,3-Dichlorobenzene	5.6E-03	5.8E-02	7.1E-01	1.0E+00	2.7E-01	1.1E-06	7.4E-06	3.0E-02	2.5E-04	1.1E-07	--	--
	1,4-Dichlorobenzene	3.2E-02	4.2E-02	7.1E-01	1.0E+00	2.0E-01	4.5E-06	3.1E-05	3.0E-02	1.0E-03	4.4E-07	5.4E-03	2.4E-09
	2-Butanone (MEK)	3.0E-01	9.6E-04	2.7E-01	1.0E+00	3.1E-03	7.3E-07	5.0E-06	6.0E-01	8.3E-06	7.1E-08	--	--
	2-Chlorotoluene	3.8E-04	5.7E-02	5.5E-01	1.0E+00	2.5E-01	6.4E-08	4.4E-07	2.0E-02	2.2E-05	6.2E-09	--	--
	4-Methyl-2-pentanone	7.2E-04	2.7E-03	3.9E-01	1.0E+00	1.0E-02	5.3E-09	3.6E-08	8.0E-02	4.5E-07	5.1E-10	--	--
	Acenaphthene	2.5E+00	8.6E-02	7.8E-01	1.0E+00	4.1E-01	7.7E-04	5.3E-03	6.0E-02	8.8E-02	7.5E-05	--	--
	Acetone	4.9E-02	5.1E-04	2.3E-01	1.0E+00	1.5E-03	6.1E-08	4.2E-07	9.0E-01	4.7E-07	6.0E-09	--	--
	Benzene	1.1E-01	1.5E-02	2.9E-01	1.0E+00	5.1E-02	4.1E-06	2.8E-05	4.0E-03	7.0E-03	4.0E-07	1.0E-01	4.0E-08
	Bromochloromethane	1.5E-03	2.5E-03	5.7E-01	1.0E+00	1.1E-02	1.2E-08	8.1E-08	2.0E-02	4.1E-06	1.2E-09	--	--
	Bromodichloromethane	2.6E-03	4.6E-03	8.8E-01	1.0E+00	2.3E-02	4.4E-08	3.0E-07	2.0E-02	1.5E-05	4.3E-09	1.3E-01	5.6E-10
	Bromomethane	7.9E-04	2.8E-03	3.6E-01	1.0E+00	1.1E-02	6.1E-09	4.1E-08	1.4E-03	3.0E-05	5.9E-10	--	--
	Carbon Disulfide	3.6E-03	1.7E-02	3.0E-01	1.0E+00	5.9E-02	1.6E-07	1.1E-06	1.0E-01	1.1E-05	1.5E-08	--	--
	Carbon Tetrachloride	--	1.6E-02	7.8E-01	1.0E+00	7.8E-02	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	9.5E-03	2.8E-02	4.6E-01	1.0E+00	1.2E-01	7.5E-07	5.1E-06	2.0E-02	2.6E-04	7.3E-08	--	--
	Chloroethane	3.0E-04	6.1E-03	2.4E-01	1.0E+00	1.9E-02	4.5E-09	3.1E-08	4.0E-01	7.6E-08	4.4E-10	2.9E-03	1.3E-12
	Chloroform	2.7E-02	6.8E-03	5.0E-01	1.0E+00	2.9E-02	5.5E-07	3.7E-06	1.0E-02	3.7E-04	5.3E-08	3.1E-02	1.6E-09
	Chloromethane	9.3E-04	3.3E-03	2.0E-01	1.0E+00	9.0E-03	7.3E-09	5.0E-08	2.6E-02	1.9E-06	7.1E-10	--	--
	cis-1,2-Dichloroethene	5.7E+01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.7E-03	1.1E-02	1.0E-02	1.1E+00	1.6E-04	--	--
	Dibromochloromethane	5.1E-04	3.2E-03	1.6E+00	1.0E+00	1.8E-02	8.0E-09	5.5E-08	2.0E-02	2.7E-06	7.8E-10	9.4E-02	7.4E-11
	Dibromomethane	2.3E-04	2.2E-03	1.0E+00	1.0E+00	1.1E-02	2.0E-09	1.4E-08	1.0E-02	1.4E-06	2.0E-10	--	--
	Diisopropyl ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Ethylbenzene	1.6E-02	4.9E-02	4.2E-01	1.0E+00	2.0E-01	2.1E-06	1.4E-05	1.0E-01	1.4E-04	2.0E-07	--	--
	Ethyl-Tert-Butyl Ether	8.0E-04	7.5E-03	4.0E-01	1.0E+00	2.9E-02	1.7E-08	1.1E-07	1.0E-03	1.1E-04	1.6E-09	--	--
	Fluorene	2.7E-03	1.1E-01	9.1E-01	1.0E+00	5.4E-01	1.1E-06	7.5E-06	4.0E-02	1.9E-04	1.1E-07	--	--
	Freon-113	--	1.8E-02	1.2E+00	1.0E+00	9.2E-02	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	4.0E-04	8.1E-02	3.1E+00	9.0E-01	5.0E-01	--	--	3.0E-04	--	--	7.8E-02	--

Table D-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Isopropylbenzene	8.9E-02	9.0E-02	5.0E-01	1.0E+00	3.8E-01	2.2E-05	1.5E-04	1.0E-01	1.5E-03	2.2E-06	--	--
	Methyl tertbutyl ether (MTBE)	1.3E-02	2.2E-03	3.2E-01	1.0E+00	7.8E-03	7.5E-08	5.1E-07	8.6E-01	6.0E-07	7.3E-09	1.8E-03	1.3E-11
	Methylene Chloride	1.0E-02	3.5E-03	3.2E-01	1.0E+00	1.3E-02	9.3E-08	6.3E-07	6.0E-02	1.1E-05	9.0E-09	1.4E-02	1.3E-10
	Naphthalene	3.1E-01	4.7E-02	5.6E-01	1.0E+00	2.0E-01	4.3E-05	3.0E-04	2.0E-02	1.5E-02	4.2E-06	1.2E-01	5.1E-07
	n-Butylbenzene	1.4E-01	2.0E-01	6.0E-01	1.0E+00	8.7E-01	8.5E-05	5.8E-04	4.0E-02	1.4E-02	8.3E-06	--	--
	n-Propylbenzene	3.2E-01	1.0E-01	5.0E-01	1.0E+00	4.2E-01	8.9E-05	6.1E-04	4.0E-02	1.5E-02	8.7E-06	--	--
	p-Isopropyltoluene	4.0E-03	1.6E-01	6.0E-01	1.0E+00	7.0E-01	1.9E-06	1.3E-05	1.0E-01	1.3E-04	1.9E-07	--	--
	Pyrene	2.2E-04	2.0E-01	1.5E+00	1.0E+00	1.1E+00	2.1E-07	1.4E-06	3.0E-02	4.7E-05	2.0E-08	--	--
	sec-Butylbenzene	5.4E-02	1.4E-01	6.0E-01	1.0E+00	6.4E-01	2.4E-05	1.6E-04	4.0E-02	4.1E-03	2.3E-06	--	--
	Styrene	9.9E-04	3.7E-02	4.1E-01	1.0E+00	1.5E-01	9.9E-08	6.7E-07	2.0E-01	3.4E-06	9.6E-09	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	4.1E-02	1.7E-03	2.8E-01	1.0E+00	5.7E-03	--	--	3.0E-01	--	--	--	--
	tert-Butylbenzene	2.4E-03	1.7E-01	6.0E-01	1.0E+00	7.4E-01	1.2E-06	8.4E-06	4.0E-02	2.1E-04	1.2E-07	--	--
	Tetrachloroethene	2.4E+02	3.3E-02	9.1E-01	1.0E+00	1.7E-01	3.0E-02	2.0E-01	1.0E-02	2.0E+01	2.9E-03	5.4E-01	1.6E-03
	Toluene	6.7E-03	3.1E-02	3.5E-01	1.0E+00	1.1E-01	5.4E-07	3.6E-06	2.0E-01	1.8E-05	5.2E-08	--	--
	trans-1,2-Dichloroethene	5.1E-01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.5E-05	1.0E-04	2.0E-02	5.1E-03	1.5E-06	--	--
	Trichloroethene	2.1E+01	1.2E-02	5.8E-01	1.0E+00	5.1E-02	7.6E-04	5.2E-03	3.0E-04	1.7E+01	7.4E-05	1.3E-02	9.7E-07
	Vinyl Chloride	2.5E+01	5.6E-03	2.4E-01	1.0E+00	1.7E-02	3.4E-04	2.3E-03	3.0E-03	7.8E-01	3.3E-05	2.7E-01	9.0E-06
	Xylenes	7.9E-03	5.3E-02	4.2E-01	1.0E+00	2.1E-01	1.1E-06	7.6E-06	2.0E-01	3.8E-05	1.1E-07	--	--
									Cumulative Risk and Hazard =	**5E+01**			**2E-03**
									Cumulative HI for $TPH_{aliphatic}$ =	**8E-01**			**--**
									Cumulative HI for $TPH_{aromatic}$ =	**8E-02**			**--**

Table D-9
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	2.8E-05	6.6E-07	3.0E-02	1.1E-01	2.2E-05	9.5E-09	2.6E-02	2.5E-10
	1,1,1-Trichloroethane	1.0E-03	2.4E-05	2.9E-01	1.0E+00	8.4E-05	3.4E-07	--	--
	1,1,2-Trichloroethane	2.0E-04	4.8E-06	4.0E-03	1.4E-02	1.2E-03	6.8E-08	5.7E-02	3.9E-09
	1,1-Dichloroethane	3.1E-03	7.4E-05	1.4E-01	5.0E-01	5.2E-04	1.1E-06	5.7E-03	6.0E-09
	1,1-Dichloroethene	1.4E-02	3.4E-04	2.0E-02	7.0E-02	1.7E-02	4.8E-06	--	--
	1,1-Dichloropropene	1.4E-05	3.4E-07	5.7E-03	2.0E-02	5.9E-05	4.9E-09	5.5E-02	2.7E-10
	1,2,4-Trichlorobenzene	1.3E-05	3.0E-07	1.0E-02	3.5E-02	3.0E-05	4.3E-09	--	--
	1,2,4-Trimethylbenzene	3.3E-04	7.8E-06	1.7E-03	6.0E-03	4.6E-03	1.1E-07	--	--
	1,2-Dibromo-3-chloropropane	7.7E-06	1.8E-07	5.7E-05	2.0E-04	3.2E-03	2.6E-09	7.0E+00	1.8E-08
	1,2-Dichlorobenzene	2.1E-04	4.8E-06	5.7E-02	2.0E-01	8.4E-05	6.9E-08	--	--
	1,2-Dichloroethane	5.0E-04	1.2E-05	1.4E-03	4.9E-03	8.4E-03	1.7E-07	7.2E-02	1.2E-08
	1,3,5-Trimethylbenzene	3.8E-04	9.0E-06	1.7E-03	6.0E-03	5.3E-03	1.3E-07	--	--
	1,3-Dichlorobenzene	1.2E-04	2.8E-06	3.0E-02	1.1E-01	9.3E-05	4.0E-08	--	--
	1,4-Dichlorobenzene	6.8E-04	1.6E-05	2.3E-01	8.0E-01	7.0E-05	2.3E-07	4.0E-02	9.1E-09
	2-Butanone (MEK)	2.9E-03	6.8E-05	1.4E+00	4.9E+00	4.9E-05	9.7E-07	--	--
	2-Chlorotoluene	8.8E-06	2.1E-07	2.0E-02	7.0E-02	1.0E-05	2.9E-09	--	--
	4-Methyl-2-pentanone	1.3E-05	3.2E-07	8.6E-01	3.0E+00	3.7E-07	4.5E-09	--	--
	Acenaphthene	4.0E-02	9.3E-04	6.0E-02	2.1E-01	1.6E-02	1.3E-05	--	--
	Acetone	6.5E-04	1.5E-05	9.0E-01	3.2E+00	1.7E-05	2.2E-07	--	--
	Benzene	3.2E-03	7.6E-05	1.7E-02	6.0E-02	4.5E-03	1.1E-06	1.0E-01	1.1E-07
	Bromochloromethane	3.4E-05	7.9E-07	2.0E-02	7.0E-02	3.9E-05	1.1E-08	--	--
	Bromodichloromethane	5.2E-05	1.2E-06	2.0E-02	7.0E-02	6.1E-05	1.7E-08	1.3E-01	2.3E-09
	Bromomethane	2.1E-05	5.0E-07	1.4E-03	5.0E-03	3.5E-04	7.1E-09	--	--
	Carbon Disulfide	1.1E-04	2.6E-06	2.3E-01	8.0E-01	1.1E-05	3.6E-08	--	--
	Carbon Tetrachloride	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	2.3E-04	5.5E-06	2.9E-01	1.0E+00	1.9E-05	7.8E-08	--	--
	Chloroethane	9.8E-06	2.3E-07	8.6E+00	3.0E+01	2.7E-08	3.3E-09	2.9E-03	9.5E-12
	Chloroform	6.4E-04	1.5E-05	8.6E-02	3.0E-01	1.8E-04	2.2E-07	1.9E-02	4.1E-09
	Chloromethane	3.4E-05	8.0E-07	2.6E-02	9.0E-02	3.1E-05	1.1E-08	--	--
	cis-1,2-Dichloroethene	1.5E+00	3.5E-02	1.0E-02	3.5E-02	3.5E+00	5.1E-04	--	--
	Dibromochloromethane	8.8E-06	2.1E-07	2.0E-02	7.0E-02	1.0E-05	2.9E-09	9.4E-02	2.8E-10
	Dibromomethane	4.3E-06	1.0E-07	1.0E-02	3.5E-02	1.0E-05	1.5E-09	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	4.1E-04	9.5E-06	5.7E-01	2.0E+00	1.7E-05	1.4E-07	--	--
	Ethyl-Tert-Butyl Ether	2.0E-05	4.8E-07	8.6E-02	3.0E-01	5.6E-06	6.8E-09	--	--
	Fluorene	3.3E-05	7.7E-07	4.0E-02	1.4E-01	1.9E-05	1.1E-08	--	--
	Freon-113	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	6.5E-06	1.5E-07	3.0E-04	1.1E-03	5.1E-04	2.2E-09	7.8E-02	1.7E-10
	Isopropylbenzene	2.1E-03	5.0E-05	1.1E-01	3.9E-01	4.6E-04	7.2E-07	--	--
	Methyl tertbutyl ether (MTBE)	3.4E-04	7.9E-06	2.3E+00	8.0E+00	3.5E-06	1.1E-07	9.1E-04	1.0E-10
	Methylene Chloride	2.8E-04	6.5E-06	1.1E-01	4.0E-01	5.7E-05	9.3E-08	3.5E-03	3.3E-10
	Naphthalene	6.5E-03	1.5E-04	2.6E-03	9.0E-03	5.9E-02	2.2E-06	1.2E-01	2.6E-07
	n-Butylbenzene	3.2E-03	7.5E-05	4.0E-02	1.4E-01	1.9E-03	1.1E-06	--	--
	n-Propylbenzene	7.7E-03	1.8E-04	4.0E-02	1.4E-01	4.5E-03	2.6E-06	--	--
	p-Isopropyltoluene	9.1E-05	2.1E-06	1.1E-01	3.9E-01	1.9E-05	3.0E-08	--	--
	Pyrene	7.2E-07	1.7E-08	3.0E-02	1.1E-01	5.7E-07	2.4E-10	--	--

Table D-9
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Trench Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	1.2E-03	2.9E-05	4.0E-02	1.4E-01	7.2E-04	4.1E-07	--	--
	Styrene	2.5E-05	5.9E-07	2.6E-01	9.0E-01	2.3E-06	8.4E-09	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	6.9E-04	1.6E-05	3.0E-01	1.1E+00	5.4E-05	2.3E-07	--	--
	tert-Butylbenzene	5.4E-05	1.3E-06	4.0E-02	1.4E-01	3.2E-05	1.8E-08	--	--
	Tetrachloroethene	4.1E+00	9.6E-02	1.0E-02	3.5E-02	9.6E+00	1.4E-03	2.1E-02	2.9E-05
	Toluene	1.8E-04	4.3E-06	8.6E-02	3.0E-01	5.0E-05	6.1E-08	--	--
	trans-1,2-Dichloroethene	1.4E-02	3.2E-04	2.0E-02	7.0E-02	1.6E-02	4.6E-06	--	--
	Trichloroethene	4.8E-01	1.1E-02	1.7E-01	6.0E-01	6.6E-02	1.6E-04	7.0E-03	1.1E-06
	Vinyl Chloride	8.3E-01	1.9E-02	2.9E-02	1.0E-01	6.8E-01	2.8E-04	2.7E-01	7.5E-05
	Xylenes	2.0E-04	4.7E-06	2.0E-01	7.0E-01	2.4E-05	6.7E-08	--	--
					Cumulative Risk and Hazard =	**1E+01**			**1E-04**

Table D-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	8.3E-06	4.0E-04	2.1E-02	3.0E-06	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	6.7E-06	1.0E-03	6.7E-03	2.4E-06	--	--
	Chromium	7.0E+02	6.8E-04	1.5E+00	4.6E-04	2.4E-04	--	--
	Chromium, Hexavalent	3.5E+01	3.4E-05	3.0E-03	1.1E-02	1.2E-05	--	--
	Cobalt	1.0E+02	9.8E-05	2.0E-02	4.9E-03	3.5E-05	--	--
	Copper	2.0E+02	2.0E-04	4.0E-02	4.9E-03	7.0E-05	--	--
	Cyanide (Amenable)	1.0E+00	9.8E-07	2.0E-02	4.9E-05	3.5E-07	--	--
	Cyanide (Total)	1.7E+00	1.7E-06	2.0E-02	8.3E-05	5.9E-07	--	--
	Mercury	2.3E-01	2.3E-07	3.0E-04	7.5E-04	8.0E-08	--	--
	Molybdenum	1.0E+01	9.8E-06	5.0E-03	2.0E-03	3.5E-06	--	--
	Nickel	1.7E+02	1.7E-04	2.0E-02	8.3E-03	5.9E-05	--	--
	Selenium	3.0E+01	2.9E-05	5.0E-03	5.9E-03	1.0E-05	--	--
	Silver	2.3E+00	2.3E-06	5.0E-03	4.5E-04	8.0E-07	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	6.9E-04	3.0E-01	2.3E-03	2.5E-04	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	5.2E-05	3.0E-02	1.7E-03	1.9E-05	--	--
	Anthracene	1.0E-02	9.8E-09	3.0E-01	3.3E-08	3.5E-09	--	--
	Benzo(a)anthracene	2.0E-01	2.0E-07	--	--	7.0E-08	1.2E+00	8.4E-08
	Benzo(a)Pyrene	4.0E-01	3.9E-07	--	--	1.4E-07	1.2E+01	1.7E-06
	Benzo(b)Fluoranthene	1.3E+00	1.2E-06	--	--	4.4E-07	1.2E+00	5.3E-07
	Benzo(k)Fluoranthene	1.0E-01	9.8E-08	--	--	3.5E-08	1.2E+00	4.2E-08
	Benzo(g,h,i)Perylene	9.0E-01	8.8E-07	3.0E-02	2.9E-05	3.1E-07	--	--
	Chrysene	6.8E-01	6.7E-07	--	--	2.4E-07	1.2E-01	2.9E-08
	Dibenz(a,h)anthracene	8.0E-02	7.8E-08	--	--	2.8E-08	1.2E+01	3.4E-07
	Fluoranthene	2.0E-01	2.0E-07	4.0E-02	4.9E-06	7.0E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	5.9E-07	--	--	2.1E-07	1.2E+00	2.5E-07
	Phenanthrene	9.8E+00	9.6E-06	3.0E-01	3.2E-05	3.4E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	2.9E-08	7.0E-05	4.2E-04	1.0E-08	7.0E-02	7.3E-10
	Aroclor 1242	1.6E-01	1.6E-07	2.0E-05	7.8E-03	5.6E-08	5.0E+00	2.8E-07
	Aroclor 1248	2.9E+02	2.8E-04	2.0E-05	1.4E+01	1.0E-04	5.0E+00	5.1E-04
	Aroclor 1254	1.7E+00	1.7E-06	2.0E-05	8.3E-02	5.9E-07	5.0E+00	3.0E-06
	Aroclor 1260	1.5E+00	1.5E-06	2.0E-05	7.3E-02	5.2E-07	5.0E+00	2.6E-06
	Aroclor 1262	3.3E-01	3.2E-07	2.0E-05	1.6E-02	1.2E-07	5.0E+00	5.8E-07
	Perchlorate							
	Perchlorate	3.6E+00	3.5E-06	7.0E-04	5.0E-03	1.3E-06	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	8.8E-08	--	--	3.1E-08	2.7E-02	8.5E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table D-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	8.8E-08	3.0E-01	2.9E-07	3.1E-08	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.6E-03	4.0E-02	4.1E-02	5.9E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	2.5E-02	1.0E-01	2.5E-01	8.8E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	2.2E-02	2.0E+00	1.1E-02	7.9E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.6E-03	--	--	5.9E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	2.5E-02	3.0E-02	8.2E-01	8.8E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	2.2E-02	3.0E-02	7.4E-01	7.9E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	5.0E-08	2.8E-01	1.8E-07	1.8E-08	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	2.9E-09	1.0E-01	2.9E-08	1.0E-09	5.7E-03	6.0E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	3.9E-09	3.0E-02	1.3E-07	1.4E-09	9.1E-02	1.3E-10
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.6E-05	5.0E-02	3.1E-04	5.6E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	6.7E-07	5.0E-02	1.3E-05	2.4E-07	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	2.4E-08	3.0E-02	8.2E-07	8.7E-09	5.4E-03	4.7E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	2.0E-06	6.0E-02	3.3E-05	7.0E-07	--	--
	Acetone	6.2E-02	6.1E-08	9.0E-01	6.7E-08	2.2E-08	--	--
	Benzene	2.0E-02	2.0E-08	4.0E-03	4.9E-06	7.0E-09	1.0E-01	7.0E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	8.5E-09	1.0E-01	8.5E-08	3.0E-09	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	3.9E-09	2.0E-02	2.0E-07	1.4E-09	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	3.9E-09	1.0E-02	3.9E-07	1.4E-09	3.1E-02	4.3E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	9.4E-07	1.0E-02	9.4E-05	3.4E-07	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	9.8E-10	--	--	3.5E-10	--	--
	Ethylbenzene	2.3E+00	2.3E-06	1.0E-01	2.3E-05	8.0E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	5.6E-06	4.0E-02	1.4E-04	2.0E-06	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.8E-08	3.0E-04	5.9E-05	6.3E-09	7.8E-02	4.9E-10

Table D-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	1.7E-06	1.0E-01	1.7E-05	5.9E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	9.2E-09	6.0E-02	1.5E-07	3.3E-09	1.4E-02	4.6E-11
	Naphthalene	1.8E+01	1.8E-05	2.0E-02	8.8E-04	6.3E-06	1.2E-01	7.5E-07
	n-Butylbenzene	5.5E+00	5.4E-06	4.0E-02	1.3E-04	1.9E-06	--	--
	n-Propylbenzene	3.7E+00	3.6E-06	4.0E-02	9.1E-05	1.3E-06	--	--
	p-Isopropyltoluene	5.8E+00	5.7E-06	1.0E-01	5.7E-05	2.0E-06	--	--
	Pyrene	3.5E-01	3.4E-07	3.0E-02	1.1E-05	1.2E-07	--	--
	sec-Butylbenzene	2.3E+00	2.3E-06	4.0E-02	5.6E-05	8.0E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	9.8E-08	3.0E-01	3.3E-07	3.5E-08	--	--
	tert-Butylbenzene	4.0E-03	3.9E-09	4.0E-02	9.8E-08	1.4E-09	--	--
	Tetrachloroethene	2.2E+02	2.2E-04	1.0E-02	2.2E-02	7.7E-05	5.4E-01	4.2E-05
	Toluene	9.9E-03	9.7E-09	2.0E-01	4.8E-08	3.5E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	6.6E-07	2.0E-02	3.3E-05	2.3E-07	--	--
	Trichloroethene	1.0E+01	9.8E-06	3.0E-04	3.3E-02	3.5E-06	1.3E-02	4.5E-08
	Vinyl Chloride	5.4E-02	5.3E-08	3.0E-03	1.8E-05	1.9E-08	2.7E-01	5.1E-09
	Xylenes	2.4E+00	2.3E-06	2.0E-01	1.2E-05	8.4E-07	--	--
	Cumulative Risk and Hazard =				**1E+01**			**6E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**3E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**2E+00**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	1.9E-07	4.0E-04	4.8E-04	6.9E-08	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	1.5E-08	1.0E-03	1.5E-05	5.5E-09	--	--
	Chromium	7.0E+02	1.6E-05	1.5E+00	1.1E-05	5.7E-06	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	2.3E-06	2.0E-02	1.1E-04	8.1E-07	--	--
	Copper	2.0E+02	4.5E-06	4.0E-02	1.1E-04	1.6E-06	--	--
	Cyanide (Amenable)	1.0E+00	2.3E-07	2.0E-02	1.1E-05	8.1E-08	--	--
	Cyanide (Total)	1.7E+00	3.8E-07	2.0E-02	1.9E-05	1.4E-07	--	--
	Mercury	2.3E-01	5.2E-09	3.0E-04	1.7E-05	1.9E-09	--	--
	Molybdenum	1.0E+01	2.3E-07	5.0E-03	4.5E-05	8.1E-08	--	--
	Nickel	1.7E+02	3.8E-06	2.0E-02	1.9E-04	1.4E-06	--	--
	Selenium	3.0E+01	6.8E-07	5.0E-03	1.4E-04	2.4E-07	--	--
	Silver	2.3E+00	5.2E-08	5.0E-03	1.0E-05	1.9E-08	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	1.6E-05	3.0E-01	5.3E-05	5.7E-06	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	1.8E-05	3.0E-02	6.0E-04	6.4E-06	--	--
	Anthracene	1.0E-02	3.4E-09	3.0E-01	1.1E-08	1.2E-09	--	--
	Benzo(a)anthracene	2.0E-01	6.8E-08	--	--	2.4E-08	1.2E+00	2.9E-08
	Benzo(a)Pyrene	4.0E-01	1.4E-07	--	--	4.8E-08	1.2E+01	5.8E-07
	Benzo(b)Fluoranthene	1.3E+00	4.3E-07	--	--	1.5E-07	1.2E+00	1.8E-07
	Benzo(k)Fluoranthene	1.0E-01	3.4E-08	--	--	1.2E-08	1.2E+00	1.5E-08
	Benzo(g,h,i)Perylene	9.0E-01	3.1E-07	3.0E-02	1.0E-05	1.1E-07	--	--

Table D-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	2.3E-07	--	--	8.3E-08	1.2E-01	9.9E-09
	Dibenz(a,h)anthracene	8.0E-02	2.7E-08	--	--	9.7E-09	1.2E+01	1.2E-07
	Fluoranthene	2.0E-01	6.8E-08	4.0E-02	1.7E-06	2.4E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	2.0E-07	--	--	7.3E-08	1.2E+00	8.7E-08
	Phenanthrene	9.8E+00	3.3E-06	3.0E-01	1.1E-05	1.2E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	1.0E-08	7.0E-05	1.5E-04	3.6E-09	7.0E-02	2.5E-10
	Aroclor 1242	1.6E-01	5.4E-08	2.0E-05	2.7E-03	1.9E-08	5.0E+00	9.7E-08
	Aroclor 1248	2.9E+02	9.8E-05	2.0E-05	4.9E+00	3.5E-05	5.0E+00	1.8E-04
	Aroclor 1254	1.7E+00	5.8E-07	2.0E-05	2.9E-02	2.1E-07	5.0E+00	1.0E-06
	Aroclor 1260	1.5E+00	5.1E-07	2.0E-05	2.5E-02	1.8E-07	5.0E+00	9.1E-07
	Aroclor 1262	3.3E-01	1.1E-07	2.0E-05	5.6E-03	4.0E-08	5.0E+00	2.0E-07
	Perchlorate							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	2.0E-08	--	--	7.3E-09	2.7E-02	2.0E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	2.0E-08	3.0E-01	6.8E-08	7.3E-09	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	5.7E-04	4.0E-02	1.4E-02	2.0E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	8.5E-03	1.0E-01	8.5E-02	3.0E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	7.7E-03	2.0E+00	3.8E-03	2.7E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	5.7E-04	--	--	2.0E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	8.5E-03	3.0E-02	2.8E-01	3.0E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	7.7E-03	3.0E-02	2.6E-01	2.7E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	1.2E-08	2.8E-01	4.1E-08	4.1E-09	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	6.8E-10	1.0E-01	6.8E-09	2.4E-10	5.7E-03	1.4E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	9.0E-10	3.0E-02	3.0E-08	3.2E-10	9.1E-02	2.9E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	3.6E-06	5.0E-02	7.2E-05	1.3E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	1.5E-07	5.0E-02	3.1E-06	5.5E-08	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	5.7E-09	3.0E-02	1.9E-07	2.0E-09	5.4E-03	1.1E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table D-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	6.8E-07	6.0E-02	1.1E-05	2.4E-07	--	--
	Acetone	6.2E-02	1.4E-08	9.0E-01	1.6E-08	5.0E-09	--	--
	Benzene	2.0E-02	4.5E-09	4.0E-03	1.1E-06	1.6E-09	1.0E-01	1.6E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.0E-09	1.0E-01	2.0E-08	7.0E-10	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	9.0E-10	2.0E-02	4.5E-08	3.2E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	9.0E-10	1.0E-02	9.0E-08	3.2E-10	3.1E-02	1.0E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	2.2E-07	1.0E-02	2.2E-05	7.7E-08	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	2.3E-10	--	--	8.1E-11	--	--
	Ethylbenzene	2.3E+00	5.2E-07	1.0E-01	5.2E-06	1.9E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	1.9E-06	4.0E-02	4.8E-05	6.9E-07	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	4.1E-09	3.0E-04	1.4E-05	1.5E-09	7.8E-02	1.1E-10
	Isopropylbenzene	1.7E+00	3.8E-07	1.0E-01	3.8E-06	1.4E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	2.1E-09	6.0E-02	3.5E-08	7.6E-10	1.4E-02	1.1E-11
	Naphthalene	1.8E+01	6.1E-06	2.0E-02	3.1E-04	2.2E-06	1.2E-01	2.6E-07
	n-Butylbenzene	5.5E+00	1.2E-06	4.0E-02	3.1E-05	4.4E-07	--	--
	n-Propylbenzene	3.7E+00	8.4E-07	4.0E-02	2.1E-05	3.0E-07	--	--
	p-Isopropyltoluene	5.8E+00	1.3E-06	1.0E-01	1.3E-05	4.7E-07	--	--
	Pyrene	3.5E-01	7.9E-08	3.0E-02	2.6E-06	2.8E-08	--	--
	sec-Butylbenzene	2.3E+00	5.2E-07	4.0E-02	1.3E-05	1.9E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	2.3E-08	3.0E-01	7.5E-08	8.1E-09	--	--
	tert-Butylbenzene	4.0E-03	9.0E-10	4.0E-02	2.3E-08	3.2E-10	--	--
	Tetrachloroethene	2.2E+02	5.0E-05	1.0E-02	5.0E-03	1.8E-05	5.4E-01	9.6E-06
	Toluene	9.9E-03	2.2E-09	2.0E-01	1.1E-08	8.0E-10	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.5E-07	2.0E-02	7.6E-06	5.4E-08	--	--
	Trichloroethene	1.0E+01	2.3E-06	3.0E-04	7.5E-03	8.1E-07	1.3E-02	1.0E-08
	Vinyl Chloride	5.4E-02	1.2E-08	3.0E-03	4.1E-06	4.4E-09	2.7E-01	1.2E-09
	Xylenes	2.4E+00	5.4E-07	2.0E-01	2.7E-06	1.9E-07	--	--
	Cumulative Risk and Hazard =				**5E+00**			**2E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**1E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**5E-01**			**--**

Table D-11
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	4.1E-09	5.3E-10	--	--	--	1.9E-10	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	3.3E-09	4.3E-10	5.7E-06	2.0E-05	7.5E-05	1.5E-10	1.5E+01	2.3E-09
	Chromium	7.0E+02	3.4E-07	4.4E-08	--	--	--	1.6E-08	--	--
	Chromium, Hexavalent	3.5E+01	1.7E-08	2.2E-09	5.7E-05	2.0E-04	3.8E-05	7.8E-10	5.1E+02	4.0E-07
	Cobalt	1.0E+02	4.9E-08	6.3E-09	5.7E-06	2.0E-05	1.1E-03	2.2E-09	--	--
	Copper	2.0E+02	9.7E-08	1.3E-08	--	--	--	4.5E-09	--	--
	Cyanide (Amenable)	1.0E+00	4.9E-10	6.3E-11	--	--	--	2.2E-11	--	--
	Cyanide (Total)	1.7E+00	8.2E-10	1.1E-10	--	--	--	3.8E-11	--	--
	Mercury	2.3E-01	1.1E-10	1.4E-11	2.6E-05	9.0E-05	5.6E-07	5.1E-12	--	--
	Molybdenum	1.0E+01	4.9E-09	6.3E-10	--	--	--	2.2E-10	--	--
	Nickel	1.7E+02	8.2E-08	1.1E-08	1.4E-05	5.0E-05	7.5E-04	3.8E-09	9.1E-01	3.5E-09
	Selenium	3.0E+01	1.5E-08	1.9E-09	5.7E-03	2.0E-02	3.3E-07	6.7E-10	--	--
	Silver	2.3E+00	1.1E-09	1.4E-10	--	--	--	5.1E-11	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	3.4E-07	4.5E-08	--	--	--	1.6E-08	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	2.6E-08	3.3E-09	3.0E-02	1.1E-01	1.1E-07	1.2E-09	--	--
	Anthracene	1.0E-02	4.9E-12	6.3E-13	3.0E-01	1.1E+00	2.1E-12	2.2E-13	--	--
	Benzo(a)anthracene	2.0E-01	9.7E-11	1.3E-11	--	--	--	4.5E-12	3.9E-01	1.7E-12
	Benzo(a)Pyrene	4.0E-01	1.9E-10	2.5E-11	--	--	--	9.0E-12	3.9E+00	3.5E-11
	Benzo(b)Fluoranthene	1.3E+00	6.1E-10	7.9E-11	--	--	--	2.8E-11	3.9E-01	1.1E-11
	Benzo(k)Fluoranthene	1.0E-01	4.9E-11	6.3E-12	--	--	--	2.2E-12	3.9E-01	8.7E-13
	Benzo(g,h,i)Perylene	9.0E-01	4.4E-10	5.6E-11	3.0E-02	1.1E-01	1.9E-09	2.0E-11	--	--
	Chrysene	6.8E-01	3.3E-10	4.3E-11	--	--	--	1.5E-11	3.9E-02	6.0E-13
	Dibenz(a,h)anthracene	8.0E-02	3.9E-11	5.0E-12	--	--	--	1.8E-12	3.9E+00	7.0E-12
	Fluoranthene	2.0E-01	9.7E-11	1.3E-11	4.0E-02	1.4E-01	3.1E-10	4.5E-12	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	2.9E-10	3.8E-11	--	--	--	1.3E-11	3.9E-01	5.2E-12
	Phenanthrene	9.8E+00	4.8E-09	6.1E-10	3.0E-01	1.1E+00	2.0E-09	2.2E-10	--	--
	PCBs									
	Aroclor 1016	3.0E-02	1.5E-11	1.9E-12	7.0E-05	2.5E-04	2.7E-08	6.7E-13	7.0E-02	4.7E-14
	Aroclor 1242	1.6E-01	7.8E-11	1.0E-11	2.0E-05	7.0E-05	5.0E-07	3.6E-12	2.0E+00	7.2E-12
	Aroclor 1248	2.9E+02	1.4E-07	1.8E-08	2.0E-05	7.0E-05	9.1E-04	6.5E-09	2.0E+00	1.3E-08
	Aroclor 1254	1.7E+00	8.2E-10	1.1E-10	2.0E-05	7.0E-05	5.3E-06	3.8E-11	2.0E+00	7.6E-11
	Aroclor 1260	1.5E+00	7.3E-10	9.4E-11	2.0E-05	7.0E-05	4.7E-06	3.4E-11	2.0E+00	6.7E-11
	Aroclor 1262	3.3E-01	1.6E-10	2.1E-11	2.0E-05	7.0E-05	1.0E-06	7.4E-12	2.0E+00	1.5E-11
	Perchlorate									
	Perchlorate	3.6E+00	1.7E-09	2.3E-10	--	--	--	8.1E-11	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	4.4E-11	5.6E-12	8.6E-01	3.0E+00	6.6E-12	2.0E-12	2.7E-02	5.4E-14
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table D-11
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	4.4E-11	5.6E-12	5.7E-02	2.0E-01	9.9E-11	2.0E-12	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	8.2E-07	1.1E-07	6.0E-02	2.1E-01	1.8E-06	3.8E-08	--	--
	TPH - aliphatic; C9-C18	2.5E+04	1.2E-05	1.6E-06	3.0E-01	1.1E+00	5.2E-06	5.6E-07	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.1E-05	1.4E-06	3.0E-01	1.1E+00	4.7E-06	5.1E-07	--	--
	TPH - aromatic; C5-C8	1.7E+03	8.2E-07	1.1E-07	--	--	--	3.8E-08	--	--
	TPH - aromatic; C9-C18	2.5E+04	1.2E-05	1.6E-06	6.0E-03	2.1E-02	2.6E-04	5.6E-07	--	--
	TPH - aromatic; C≥19	2.3E+04	1.1E-05	1.4E-06	--	--	--	5.1E-07	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	8.5E-05	1.1E-05	2.9E-01	1.0E+00	3.8E-05	3.9E-06	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	4.5E-06	5.8E-07	1.4E-01	5.0E-01	4.1E-06	2.1E-07	5.7E-03	1.2E-09
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.9E-12	2.5E-13	5.7E-03	2.0E-02	4.4E-11	9.0E-14	5.5E-02	4.9E-15
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	3.5E-03	4.5E-04	1.7E-03	6.0E-03	2.6E-01	1.6E-04	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.6E-04	4.6E-05	1.7E-03	6.0E-03	2.7E-02	1.6E-05	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	8.2E-06	1.1E-06	2.3E-01	8.0E-01	4.6E-06	3.8E-07	4.0E-02	1.5E-08
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	4.7E-05	6.1E-06	6.0E-02	2.1E-01	1.0E-04	2.2E-06	--	--
	Acetone	6.2E-02	1.8E-05	2.3E-06	9.0E-01	3.2E+00	2.6E-06	8.2E-07	--	--
	Benzene	2.0E-02	2.8E-05	3.6E-06	1.7E-02	6.0E-02	2.1E-04	1.3E-06	1.0E-01	1.3E-07
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.3E-05	3.0E-06	2.3E-01	8.0E-01	1.3E-05	1.1E-06	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.6E-06	3.4E-07	2.9E-01	1.0E+00	1.2E-06	1.2E-07	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	5.7E-06	7.4E-07	8.6E-02	3.0E-01	8.6E-06	2.6E-07	1.9E-02	5.0E-09
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.2E-03	1.6E-04	1.0E-02	3.5E-02	1.6E-02	5.7E-05	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.0E-06	1.3E-07	1.1E-01	3.9E-01	1.2E-06	4.8E-08	--	--
	Ethylbenzene	2.3E+00	1.8E-03	2.3E-04	5.7E-01	2.0E+00	4.0E-04	8.1E-05	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	6.8E-05	8.7E-06	4.0E-02	1.4E-01	2.2E-04	3.1E-06	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	8.6E-06	1.1E-06	3.0E-04	1.1E-03	3.7E-03	4.0E-07	7.8E-02	3.1E-08

Table D-11
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	1.9E-03	2.4E-04	1.1E-01	3.9E-01	2.2E-03	8.7E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	1.4E-05	1.8E-06	1.1E-01	4.0E-01	1.5E-05	6.3E-07	3.5E-03	2.2E-09
	Naphthalene	1.8E+01	1.8E-03	2.3E-04	2.6E-03	9.0E-03	8.9E-02	8.2E-05	1.2E-01	9.8E-06
	n-Butylbenzene	5.5E+00	2.1E-03	2.7E-04	4.0E-02	1.4E-01	6.7E-03	9.5E-05	--	--
	n-Propylbenzene	3.7E+00	1.4E-03	1.8E-04	4.0E-02	1.4E-01	4.5E-03	6.4E-05	--	--
	p-Isopropyltoluene	5.8E+00	2.0E-03	2.5E-04	1.1E-01	3.9E-01	2.3E-03	9.1E-05	--	--
	Pyrene	3.5E-01	3.8E-07	4.9E-08	3.0E-02	1.1E-01	1.6E-06	1.8E-08	--	--
	sec-Butylbenzene	2.3E+00	1.2E-03	1.5E-04	4.0E-02	1.4E-01	3.8E-03	5.4E-05	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.0E-05	3.9E-06	3.0E-01	1.1E+00	1.3E-05	1.4E-06	--	--
	tert-Butylbenzene	4.0E-03	1.7E-06	2.2E-07	4.0E-02	1.4E-01	5.4E-06	7.8E-08	--	--
	Tetrachloroethene	1.0E+02	1.5E-01	1.9E-02	1.0E-02	3.5E-02	1.9E+00	6.8E-03	2.1E-02	1.4E-04
	Toluene	9.9E-03	1.0E-05	1.3E-06	8.6E-02	3.0E-01	1.5E-05	4.6E-07	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.0E-03	1.4E-04	2.0E-02	7.0E-02	6.8E-03	4.8E-05	--	--
	Trichloroethene	1.0E+01	1.2E-02	1.6E-03	1.7E-01	6.0E-01	9.1E-03	5.6E-04	7.0E-03	3.9E-06
	Vinyl Chloride	5.4E-02	1.5E-04	2.0E-05	2.9E-02	1.0E-01	6.9E-04	7.0E-06	2.7E-01	1.9E-06
	Xylenes	2.4E+00	1.6E-03	2.1E-04	2.0E-01	7.0E-01	1.1E-03	7.5E-05	--	--
						Cumulative Risk and Hazard =	**2E+00**			**2E-04**
						Cumulative HI for $TPH_{aliphatic}$ =	**1E-05**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**3E-04**			**--**

Table D-12
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	1.6E-01	2.0E-02	2.9E-01	1.0E+00	7.0E-02	7.2E-03	--	--
	1,1,2-Trichloroethane	1.2E-02	1.6E-03	4.0E-03	1.4E-02	4.0E-01	5.7E-04	5.7E-02	3.3E-05
	1,1-Dichloroethane	1.2E+00	1.5E-01	1.4E-01	5.0E-01	1.1E+00	5.4E-02	5.7E-03	3.1E-04
	1,1-Dichloroethene	1.8E-02	2.3E-03	2.0E-02	7.0E-02	1.2E-01	8.3E-04	--	--
	1,1-Dichloropropene	--	--	5.7E-03	2.0E-02	--	--	5.5E-02	--
	1,2,4-Trichlorobenzene	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	1.7E-03	6.0E-03	--	--	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	1.5E-03	2.0E-04	1.4E-03	4.9E-03	1.4E-01	7.1E-05	7.2E-02	5.1E-06
	1,3,5-Trimethylbenzene	7.0E-04	9.1E-05	1.7E-03	6.0E-03	5.3E-02	3.2E-05	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	--	--	2.3E-01	8.0E-01	--	--	4.0E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	--	--	6.0E-02	2.1E-01	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	1.8E-02	2.4E-03	1.7E-02	6.0E-02	1.4E-01	8.5E-04	1.0E-01	8.5E-05
	Bromochloromethane	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	3.4E-04	4.4E-05	1.4E-03	5.0E-03	3.1E-02	1.6E-05	--	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Carbon Tetrachloride	2.1E-02	2.7E-03	1.1E-02	4.0E-02	2.3E-01	9.6E-04	1.5E-01	1.4E-04
	Chlorobenzene	--	--	2.9E-01	1.0E+00	--	--	--	--
	Chloroethane	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	5.5E-04	7.1E-05	8.6E-02	3.0E-01	8.3E-04	2.5E-05	1.9E-02	4.8E-07
	Chloromethane	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	1.3E+00	1.6E-01	1.0E-02	3.5E-02	1.6E+01	5.8E-02	--	--
	Dibromochloromethane	8.2E-04	1.1E-04	2.0E-02	7.0E-02	5.3E-03	3.8E-05	9.4E-02	3.5E-06
	Dibromomethane	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	1.1E-03	1.5E-04	5.7E-01	2.0E+00	2.5E-04	5.2E-05	--	--
	Ethyl-Tert-Butyl Ether	5.0E-03	6.4E-04	8.6E-02	3.0E-01	7.5E-03	2.3E-04	--	--
	Fluorene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Freon-113	9.8E-03	1.3E-03	8.6E+00	3.0E+01	1.5E-04	4.5E-04	--	--
	Hexachlorobutadiene	--	--	3.0E-04	1.1E-03	--	--	7.8E-02	--
	Isopropylbenzene	3.0E-04	3.9E-05	1.1E-01	3.9E-01	3.5E-04	1.4E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	8.0E-04	1.0E-04	1.1E-01	4.0E-01	9.0E-04	3.7E-05	3.5E-03	1.3E-07
	Naphthalene	--	--	2.6E-03	9.0E-03	--	--	1.2E-01	--
	n-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	n-Propylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	p-Isopropyltoluene	--	--	1.1E-01	3.9E-01	--	--	--	--
	Pyrene	--	--	3.0E-02	1.1E-01	--	--	--	--

Table D-12
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: Commercial Worker
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Styrene	3.4E-04	4.4E-05	2.6E-01	9.0E-01	1.7E-04	1.6E-05	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.7E-02	2.2E-03	3.0E-01	1.1E+00	7.4E-03	7.9E-04	--	--
	tert-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Tetrachloroethene	1.5E+00	1.9E-01	1.0E-02	3.5E-02	1.9E+01	7.0E-02	2.1E-02	1.5E-03
	Toluene	8.1E-03	1.0E-03	8.6E-02	3.0E-01	1.2E-02	3.7E-04	--	--
	trans-1,2-Dichloroethene	1.1E-02	1.4E-03	2.0E-02	7.0E-02	7.1E-02	5.1E-04	--	--
	Trichloroethene	1.1E+00	1.4E-01	1.7E-01	6.0E-01	8.2E-01	5.0E-02	7.0E-03	3.5E-04
	Vinyl Chloride	7.5E-01	9.6E-02	2.9E-02	1.0E-01	3.4E+00	3.4E-02	2.7E-01	9.3E-03
	Xylenes	1.2E-02	1.5E-03	2.0E-01	7.0E-01	7.5E-03	5.4E-04	--	--
					Cumulative Risk and Hazard =	**4E+01**			**1E-02**

Table D-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	1.7E-06	4.0E-04	4.2E-03	5.9E-07	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	1.3E-06	1.0E-03	1.3E-03	4.8E-07	--	--
	Chromium	7.0E+02	1.4E-04	1.5E+00	9.1E-05	4.9E-05	--	--
	Chromium, Hexavalent	3.5E+01	6.8E-06	3.0E-03	2.3E-03	2.4E-06	--	--
	Cobalt	1.0E+02	2.0E-05	2.0E-02	9.8E-04	7.0E-06	--	--
	Copper	2.0E+02	3.9E-05	4.0E-02	9.8E-04	1.4E-05	--	--
	Cyanide (Amenable)	1.0E+00	2.0E-07	2.0E-02	9.8E-06	7.0E-08	--	--
	Cyanide (Total)	1.7E+00	3.3E-07	2.0E-02	1.7E-05	1.2E-07	--	--
	Mercury	2.3E-01	4.5E-08	3.0E-04	1.5E-04	1.6E-08	--	--
	Molybdenum	1.0E+01	2.0E-06	5.0E-03	3.9E-04	7.0E-07	--	--
	Nickel	1.7E+02	3.3E-05	2.0E-02	1.7E-03	1.2E-05	--	--
	Selenium	3.0E+01	5.9E-06	5.0E-03	1.2E-03	2.1E-06	--	--
	Silver	2.3E+00	4.5E-07	5.0E-03	9.0E-05	1.6E-07	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	1.4E-04	3.0E-01	4.6E-04	5.0E-05	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	1.0E-05	3.0E-02	3.5E-04	3.7E-06	--	--
	Anthracene	1.0E-02	2.0E-09	3.0E-01	6.5E-09	7.0E-10	--	--
	Benzo(a)anthracene	2.0E-01	3.9E-08	--	--	1.4E-08	1.2E+00	1.7E-08
	Benzo(a)Pyrene	4.0E-01	7.8E-08	--	--	2.8E-08	1.2E+01	3.4E-07
	Benzo(b)Fluoranthene	1.3E+00	2.5E-07	--	--	8.8E-08	1.2E+00	1.1E-07
	Benzo(k)Fluoranthene	1.0E-01	2.0E-08	--	--	7.0E-09	1.2E+00	8.4E-09
	Benzo(g,h,i)Perylene	9.0E-01	1.8E-07	3.0E-02	5.9E-06	6.3E-08	--	--
	Chrysene	6.8E-01	1.3E-07	--	--	4.8E-08	1.2E-01	5.7E-09
	Dibenz(a,h)anthracene	8.0E-02	1.6E-08	--	--	5.6E-09	1.2E+01	6.7E-08
	Fluoranthene	2.0E-01	3.9E-08	4.0E-02	9.8E-07	1.4E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.2E-07	--	--	4.2E-08	1.2E+00	5.0E-08
	Phenanthrene	9.8E+00	1.9E-06	3.0E-01	6.4E-06	6.8E-07	--	--
	PCBs							
	Aroclor 1016	3.0E-02	5.9E-09	7.0E-05	8.4E-05	2.1E-09	7.0E-02	1.5E-10
	Aroclor 1242	1.6E-01	3.1E-08	2.0E-05	1.6E-03	1.1E-08	5.0E+00	5.6E-08
	Aroclor 1248	2.9E+02	5.7E-05	2.0E-05	2.8E+00	2.0E-05	5.0E+00	1.0E-04
	Aroclor 1254	1.7E+00	3.3E-07	2.0E-05	1.7E-02	1.2E-07	5.0E+00	5.9E-07
	Aroclor 1260	1.5E+00	2.9E-07	2.0E-05	1.5E-02	1.0E-07	5.0E+00	5.2E-07
	Aroclor 1262	3.3E-01	6.5E-08	2.0E-05	3.2E-03	2.3E-08	5.0E+00	1.2E-07
	Perchlorate							
	Perchlorate	3.6E+00	7.0E-07	7.0E-04	1.0E-03	2.5E-07	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	1.8E-08	--	--	6.3E-09	2.7E-02	1.7E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table D-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	1.8E-08	3.0E-01	5.9E-08	6.3E-09	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	3.3E-04	4.0E-02	8.2E-03	1.2E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	4.9E-03	1.0E-01	4.9E-02	1.8E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	4.4E-03	2.0E+00	2.2E-03	1.6E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	3.3E-04	--	--	1.2E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	4.9E-03	3.0E-02	1.6E-01	1.8E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	4.4E-03	3.0E-02	1.5E-01	1.6E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	1.0E-08	2.8E-01	3.6E-08	3.6E-09	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	5.9E-10	1.0E-01	5.9E-09	2.1E-10	5.7E-03	1.2E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	7.8E-10	3.0E-02	2.6E-08	2.8E-10	9.1E-02	2.5E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	3.1E-06	5.0E-02	6.3E-05	1.1E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	1.3E-07	5.0E-02	2.7E-06	4.8E-08	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	4.9E-09	3.0E-02	1.6E-07	1.7E-09	5.4E-03	9.4E-12
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	3.9E-07	6.0E-02	6.5E-06	1.4E-07	--	--
	Acetone	6.2E-02	1.2E-08	9.0E-01	1.3E-08	4.3E-09	--	--
	Benzene	2.0E-02	3.9E-09	4.0E-03	9.8E-07	1.4E-09	1.0E-01	1.4E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	1.7E-09	1.0E-01	1.7E-08	6.1E-10	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	7.8E-10	2.0E-02	3.9E-08	2.8E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	7.8E-10	1.0E-02	7.8E-08	2.8E-10	3.1E-02	8.7E-12
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.9E-07	1.0E-02	1.9E-05	6.7E-08	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	2.0E-10	--	--	7.0E-11	--	--
	Ethylbenzene	2.3E+00	4.5E-07	1.0E-01	4.5E-06	1.6E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	1.1E-06	4.0E-02	2.8E-05	4.0E-07	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	3.5E-09	3.0E-04	1.2E-05	1.3E-09	7.8E-02	9.8E-11

Table D-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	3.3E-07	1.0E-01	3.3E-06	1.2E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	1.8E-09	6.0E-02	3.1E-08	6.6E-10	1.4E-02	9.2E-12
	Naphthalene	1.8E+01	3.5E-06	2.0E-02	1.8E-04	1.3E-06	1.2E-01	1.5E-07
	n-Butylbenzene	5.5E+00	1.1E-06	4.0E-02	2.7E-05	3.8E-07	--	--
	n-Propylbenzene	3.7E+00	7.2E-07	4.0E-02	1.8E-05	2.6E-07	--	--
	p-Isopropyltoluene	5.8E+00	1.1E-06	1.0E-01	1.1E-05	4.1E-07	--	--
	Pyrene	3.5E-01	6.8E-08	3.0E-02	2.3E-06	2.4E-08	--	--
	sec-Butylbenzene	2.3E+00	4.5E-07	4.0E-02	1.1E-05	1.6E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	2.0E-08	3.0E-01	6.5E-08	7.0E-09	--	--
	tert-Butylbenzene	4.0E-03	7.8E-10	4.0E-02	2.0E-08	2.8E-10	--	--
	Tetrachloroethene	2.2E+02	4.3E-05	1.0E-02	4.3E-03	1.5E-05	5.4E-01	8.3E-06
	Toluene	9.9E-03	1.9E-09	2.0E-01	9.7E-09	6.9E-10	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.3E-07	2.0E-02	6.6E-06	4.7E-08	--	--
	Trichloroethene	1.0E+01	2.0E-06	3.0E-04	6.5E-03	7.0E-07	1.3E-02	9.1E-09
	Vinyl Chloride	5.4E-02	1.1E-08	3.0E-03	3.5E-06	3.8E-09	2.7E-01	1.0E-09
	Xylenes	2.4E+00	4.7E-07	2.0E-01	2.3E-06	1.7E-07	--	--
	Cumulative Risk and Hazard =				**3E+00**			**1E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**6E-02**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**3E-01**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	4.7E-07	4.0E-04	1.2E-03	1.7E-07	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	3.8E-08	1.0E-03	3.8E-05	1.4E-08	--	--
	Chromium	7.0E+02	3.9E-05	1.5E+00	2.6E-05	1.4E-05	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	5.6E-06	2.0E-02	2.8E-04	2.0E-06	--	--
	Copper	2.0E+02	1.1E-05	4.0E-02	2.8E-04	4.0E-06	--	--
	Cyanide (Amenable)	1.0E+00	5.6E-07	2.0E-02	2.8E-05	2.0E-07	--	--
	Cyanide (Total)	1.7E+00	9.5E-07	2.0E-02	4.7E-05	3.4E-07	--	--
	Mercury	2.3E-01	1.3E-08	3.0E-04	4.3E-05	4.6E-09	--	--
	Molybdenum	1.0E+01	5.6E-07	5.0E-03	1.1E-04	2.0E-07	--	--
	Nickel	1.7E+02	9.5E-06	2.0E-02	4.7E-04	3.4E-06	--	--
	Selenium	3.0E+01	1.7E-06	5.0E-03	3.3E-04	6.0E-07	--	--
	Silver	2.3E+00	1.3E-07	5.0E-03	2.6E-05	4.6E-08	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	4.0E-05	3.0E-01	1.3E-04	1.4E-05	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	4.4E-05	3.0E-02	1.5E-03	1.6E-05	--	--
	Anthracene	1.0E-02	8.4E-09	3.0E-01	2.8E-08	3.0E-09	--	--
	Benzo(a)anthracene	2.0E-01	1.7E-07	--	--	6.0E-08	1.2E+00	7.2E-08
	Benzo(a)Pyrene	4.0E-01	3.3E-07	--	--	1.2E-07	1.2E+01	1.4E-06
	Benzo(b)Fluoranthene	1.3E+00	1.1E-06	--	--	3.8E-07	1.2E+00	4.5E-07
	Benzo(k)Fluoranthene	1.0E-01	8.4E-08	--	--	3.0E-08	1.2E+00	3.6E-08
	Benzo(g,h,i)Perylene	9.0E-01	7.5E-07	3.0E-02	2.5E-05	2.7E-07	--	--

Table D-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	5.7E-07	--	--	2.0E-07	1.2E-01	2.4E-08
	Dibenz(a,h)anthracene	8.0E-02	6.7E-08	--	--	2.4E-08	1.2E+01	2.9E-07
	Fluoranthene	2.0E-01	1.7E-07	4.0E-02	4.2E-06	6.0E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	5.0E-07	--	--	1.8E-07	1.2E+00	2.2E-07
	Phenanthrene	9.8E+00	8.2E-06	3.0E-01	2.7E-05	2.9E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	2.5E-08	7.0E-05	3.6E-04	9.0E-09	7.0E-02	6.3E-10
	Aroclor 1242	1.6E-01	1.3E-07	2.0E-05	6.7E-03	4.8E-08	5.0E+00	2.4E-07
	Aroclor 1248	2.9E+02	2.4E-04	2.0E-05	1.2E+01	8.7E-05	5.0E+00	4.3E-04
	Aroclor 1254	1.7E+00	1.4E-06	2.0E-05	7.1E-02	5.1E-07	5.0E+00	2.5E-06
	Aroclor 1260	1.5E+00	1.3E-06	2.0E-05	6.3E-02	4.5E-07	5.0E+00	2.2E-06
	Aroclor 1262	3.3E-01	2.8E-07	2.0E-05	1.4E-02	9.9E-08	5.0E+00	4.9E-07
	Perchlorate							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	5.0E-08	--	--	1.8E-08	2.7E-02	4.8E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	5.0E-08	3.0E-01	1.7E-07	1.8E-08	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.4E-03	4.0E-02	3.5E-02	5.0E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	2.1E-02	1.0E-01	2.1E-01	7.5E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.9E-02	2.0E+00	9.5E-03	6.8E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.4E-03	--	--	5.0E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	2.1E-02	3.0E-02	7.0E-01	7.5E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	1.9E-02	3.0E-02	6.3E-01	6.8E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	2.8E-08	2.8E-01	1.0E-07	1.0E-08	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	1.7E-09	1.0E-01	1.7E-08	6.0E-10	5.7E-03	3.4E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	2.2E-09	3.0E-02	7.4E-08	8.0E-10	9.1E-02	7.3E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	8.9E-06	5.0E-02	1.8E-04	3.2E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.8E-07	5.0E-02	7.6E-06	1.4E-07	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.4E-08	3.0E-02	4.6E-07	5.0E-09	5.4E-03	2.7E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table D-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	1.7E-06	6.0E-02	2.8E-05	6.0E-07	--	--
	Acetone	6.2E-02	3.5E-08	9.0E-01	3.8E-08	1.2E-08	--	--
	Benzene	2.0E-02	1.1E-08	4.0E-03	2.8E-06	4.0E-09	1.0E-01	4.0E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	4.9E-09	1.0E-01	4.9E-08	1.7E-09	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.2E-09	2.0E-02	1.1E-07	8.0E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	2.2E-09	1.0E-02	2.2E-07	8.0E-10	3.1E-02	2.5E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	5.4E-07	1.0E-02	5.4E-05	1.9E-07	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	5.6E-10	--	--	2.0E-10	--	--
	Ethylbenzene	2.3E+00	1.3E-06	1.0E-01	1.3E-05	4.6E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	4.8E-06	4.0E-02	1.2E-04	1.7E-06	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.0E-08	3.0E-04	3.3E-05	3.6E-09	7.8E-02	2.8E-10
	Isopropylbenzene	1.7E+00	9.5E-07	1.0E-01	9.5E-06	3.4E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	5.2E-09	6.0E-02	8.7E-08	1.9E-09	1.4E-02	2.6E-11
	Naphthalene	1.8E+01	1.5E-05	2.0E-02	7.5E-04	5.4E-06	1.2E-01	6.5E-07
	n-Butylbenzene	5.5E+00	3.1E-06	4.0E-02	7.7E-05	1.1E-06	--	--
	n-Propylbenzene	3.7E+00	2.1E-06	4.0E-02	5.2E-05	7.4E-07	--	--
	p-Isopropyltoluene	5.8E+00	3.2E-06	1.0E-01	3.2E-05	1.2E-06	--	--
	Pyrene	3.5E-01	2.0E-07	3.0E-02	6.5E-06	7.0E-08	--	--
	sec-Butylbenzene	2.3E+00	1.3E-06	4.0E-02	3.2E-05	4.6E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	5.6E-08	3.0E-01	1.9E-07	2.0E-08	--	--
	tert-Butylbenzene	4.0E-03	2.2E-09	4.0E-02	5.6E-08	8.0E-10	--	--
	Tetrachloroethene	2.2E+02	1.2E-04	1.0E-02	1.2E-02	4.4E-05	5.4E-01	2.4E-05
	Toluene	9.9E-03	5.5E-09	2.0E-01	2.8E-08	2.0E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	3.7E-07	2.0E-02	1.9E-05	1.3E-07	--	--
	Trichloroethene	1.0E+01	5.6E-06	3.0E-04	1.9E-02	2.0E-06	1.3E-02	2.6E-08
	Vinyl Chloride	5.4E-02	3.0E-08	3.0E-03	1.0E-05	1.1E-08	2.7E-01	2.9E-09
	Xylenes	2.4E+00	1.3E-06	2.0E-01	6.7E-06	4.8E-07	--	--
	Cumulative Risk and Hazard =				**1E+01**			**5E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**3E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**1E+00**			**--**

Table D-14
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	4.1E-09	1.3E-10	--	--	--	4.6E-11	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	3.3E-09	1.0E-10	5.7E-06	2.0E-05	1.8E-05	3.7E-11	1.5E+01	5.5E-10
	Chromium	7.0E+02	3.4E-07	1.1E-08	--	--	--	3.8E-09	--	--
	Chromium, Hexavalent	3.5E+01	1.7E-08	5.3E-10	5.7E-05	2.0E-04	9.3E-06	1.9E-10	5.1E+02	9.7E-08
	Cobalt	1.0E+02	4.9E-08	1.5E-09	5.7E-06	2.0E-05	2.7E-04	5.4E-10	--	--
	Copper	2.0E+02	9.7E-08	3.0E-09	--	--	--	1.1E-09	--	--
	Cyanide (Amenable)	1.0E+00	4.9E-10	1.5E-11	--	--	--	5.4E-12	--	--
	Cyanide (Total)	1.7E+00	8.2E-10	2.6E-11	--	--	--	9.2E-12	--	--
	Mercury	2.3E-01	1.1E-10	3.5E-12	2.6E-05	9.0E-05	1.4E-07	1.2E-12	--	--
	Molybdenum	1.0E+01	4.9E-09	1.5E-10	--	--	--	5.4E-11	--	--
	Nickel	1.7E+02	8.2E-08	2.6E-09	1.4E-05	5.0E-05	1.8E-04	9.2E-10	9.1E-01	8.4E-10
	Selenium	3.0E+01	1.5E-08	4.6E-10	5.7E-03	2.0E-02	8.0E-08	1.6E-10	--	--
	Silver	2.3E+00	1.1E-09	3.5E-11	--	--	--	1.2E-11	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	3.4E-07	1.1E-08	--	--	--	3.9E-09	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	2.6E-08	8.1E-10	3.0E-02	1.1E-01	2.7E-08	2.9E-10	--	--
	Anthracene	1.0E-02	4.9E-12	1.5E-13	3.0E-01	1.1E+00	5.1E-13	5.4E-14	--	--
	Benzo(a)anthracene	2.0E-01	9.7E-11	3.0E-12	--	--	--	1.1E-12	3.9E-01	4.2E-13
	Benzo(a)Pyrene	4.0E-01	1.9E-10	6.1E-12	--	--	--	2.2E-12	3.9E+00	8.5E-12
	Benzo(b)Fluoranthene	1.3E+00	6.1E-10	1.9E-11	--	--	--	6.8E-12	3.9E-01	2.7E-12
	Benzo(k)Fluoranthene	1.0E-01	4.9E-11	1.5E-12	--	--	--	5.4E-13	3.9E-01	2.1E-13
	Benzo(g,h,i)Perylene	9.0E-01	4.4E-10	1.4E-11	3.0E-02	1.1E-01	4.6E-10	4.9E-12	--	--
	Chrysene	6.8E-01	3.3E-10	1.0E-11	--	--	--	3.7E-12	3.9E-02	1.4E-13
	Dibenz(a,h)anthracene	8.0E-02	3.9E-11	1.2E-12	--	--	--	4.3E-13	3.9E+00	1.7E-12
	Fluoranthene	2.0E-01	9.7E-11	3.0E-12	4.0E-02	1.4E-01	7.6E-11	1.1E-12	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	2.9E-10	9.1E-12	--	--	--	3.3E-12	3.9E-01	1.3E-12
	Phenanthrene	9.8E+00	4.8E-09	1.5E-10	3.0E-01	1.1E+00	5.0E-10	5.3E-11	--	--
	PCBs									
	Aroclor 1016	3.0E-02	1.5E-11	4.6E-13	7.0E-05	2.5E-04	6.5E-09	1.6E-13	7.0E-02	1.1E-14
	Aroclor 1242	1.6E-01	7.8E-11	2.4E-12	2.0E-05	7.0E-05	1.2E-07	8.7E-13	2.0E+00	1.7E-12
	Aroclor 1248	2.9E+02	1.4E-07	4.4E-09	2.0E-05	7.0E-05	2.2E-04	1.6E-09	2.0E+00	3.1E-09
	Aroclor 1254	1.7E+00	8.2E-10	2.6E-11	2.0E-05	7.0E-05	1.3E-06	9.2E-12	2.0E+00	1.8E-11
	Aroclor 1260	1.5E+00	7.3E-10	2.3E-11	2.0E-05	7.0E-05	1.1E-06	8.1E-12	2.0E+00	1.6E-11
	Aroclor 1262	3.3E-01	1.6E-10	5.0E-12	2.0E-05	7.0E-05	2.5E-07	1.8E-12	2.0E+00	3.6E-12
	Perchlorate									
	Perchlorate	3.6E+00	1.7E-09	5.5E-11	--	--	--	2.0E-11	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	4.4E-11	1.4E-12	8.6E-01	3.0E+00	1.6E-12	4.9E-13	2.7E-02	1.3E-14
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table D-14
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	4.4E-11	1.4E-12	5.7E-02	2.0E-01	2.4E-11	4.9E-13	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	8.2E-07	2.6E-08	6.0E-02	2.1E-01	4.3E-07	9.1E-09	--	--
	TPH - aliphatic; C9-C18	2.5E+04	1.2E-05	3.8E-07	3.0E-01	1.1E+00	1.3E-06	1.4E-07	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.1E-05	3.4E-07	3.0E-01	1.1E+00	1.1E-06	1.2E-07	--	--
	TPH - aromatic; C5-C8	1.7E+03	8.2E-07	2.6E-08	--	--	--	9.1E-09	--	--
	TPH - aromatic; C9-C18	2.5E+04	1.2E-05	3.8E-07	6.0E-03	2.1E-02	6.4E-05	1.4E-07	--	--
	TPH - aromatic; C≥19	2.3E+04	1.1E-05	3.4E-07	--	--	--	1.2E-07	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	8.5E-05	2.7E-06	2.9E-01	1.0E+00	9.3E-06	9.5E-07	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	4.5E-06	1.4E-07	1.4E-01	5.0E-01	9.8E-07	5.0E-08	5.7E-03	2.9E-10
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.9E-12	6.1E-14	5.7E-03	2.0E-02	1.1E-11	2.2E-14	5.5E-02	1.2E-15
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	3.5E-03	1.1E-04	1.7E-03	6.0E-03	6.4E-02	3.9E-05	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.6E-04	1.1E-05	1.7E-03	6.0E-03	6.6E-03	4.0E-06	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	8.2E-06	2.6E-07	2.3E-01	8.0E-01	1.1E-06	9.2E-08	4.0E-02	3.7E-09
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	4.7E-05	1.5E-06	6.0E-02	2.1E-01	2.5E-05	5.3E-07	--	--
	Acetone	6.2E-02	1.8E-05	5.6E-07	9.0E-01	3.2E+00	6.2E-07	2.0E-07	--	--
	Benzene	2.0E-02	2.8E-05	8.7E-07	1.7E-02	6.0E-02	5.1E-05	3.1E-07	1.0E-01	3.1E-08
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.3E-05	7.2E-07	2.3E-01	8.0E-01	3.1E-06	2.6E-07	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.6E-06	8.3E-08	2.9E-01	1.0E+00	2.9E-07	3.0E-08	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	5.7E-06	1.8E-07	8.6E-02	3.0E-01	2.1E-06	6.4E-08	1.9E-02	1.2E-09
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.2E-03	3.9E-05	1.0E-02	3.5E-02	3.9E-03	1.4E-05	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.0E-06	3.2E-08	1.1E-01	3.9E-01	3.0E-07	1.2E-08	--	--
	Ethylbenzene	2.3E+00	1.8E-03	5.5E-05	5.7E-01	2.0E+00	9.7E-05	2.0E-05	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	6.8E-05	2.1E-06	4.0E-02	1.4E-01	5.3E-05	7.6E-07	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	8.6E-06	2.7E-07	3.0E-04	1.1E-03	8.9E-04	9.6E-08	7.8E-02	7.5E-09

Table D-14
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Landscaper
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	1.9E-03	5.9E-05	1.1E-01	3.9E-01	5.4E-04	2.1E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	1.4E-05	4.3E-07	1.1E-01	4.0E-01	3.7E-06	1.5E-07	3.5E-03	5.3E-10
	Naphthalene	1.8E+01	1.8E-03	5.6E-05	2.6E-03	9.0E-03	2.2E-02	2.0E-05	1.2E-01	2.4E-06
	n-Butylbenzene	5.5E+00	2.1E-03	6.5E-05	4.0E-02	1.4E-01	1.6E-03	2.3E-05	--	--
	n-Propylbenzene	3.7E+00	1.4E-03	4.3E-05	4.0E-02	1.4E-01	1.1E-03	1.6E-05	--	--
	p-Isopropyltoluene	5.8E+00	2.0E-03	6.1E-05	1.1E-01	3.9E-01	5.6E-04	2.2E-05	--	--
	Pyrene	3.5E-01	3.8E-07	1.2E-08	3.0E-02	1.1E-01	4.0E-07	4.3E-09	--	--
	sec-Butylbenzene	2.3E+00	1.2E-03	3.7E-05	4.0E-02	1.4E-01	9.2E-04	1.3E-05	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.0E-05	9.5E-07	3.0E-01	1.1E+00	3.2E-06	3.4E-07	--	--
	tert-Butylbenzene	4.0E-03	1.7E-06	5.3E-08	4.0E-02	1.4E-01	1.3E-06	1.9E-08	--	--
	Tetrachloroethene	1.0E+02	1.5E-01	4.6E-03	1.0E-02	3.5E-02	4.6E-01	1.7E-03	2.1E-02	3.5E-05
	Toluene	9.9E-03	1.0E-05	3.2E-07	8.6E-02	3.0E-01	3.7E-06	1.1E-07	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.0E-03	3.3E-05	2.0E-02	7.0E-02	1.6E-03	1.2E-05	--	--
	Trichloroethene	1.0E+01	1.2E-02	3.8E-04	1.7E-01	6.0E-01	2.2E-03	1.4E-04	7.0E-03	9.5E-07
	Vinyl Chloride	5.4E-02	1.5E-04	4.8E-06	2.9E-02	1.0E-01	1.7E-04	1.7E-06	2.7E-01	4.6E-07
	Xylenes	2.4E+00	1.6E-03	5.1E-05	2.0E-01	7.0E-01	2.6E-04	1.8E-05	--	--
						Cumulative Risk and Hazard =	**6E-01**			**4E-05**
						Cumulative HI for $TPH_{aliphatic}$ =	**3E-06**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**6E-05**			**--**

Table D-15
Summary of Cancer Risks and Noncancer Hazards
Offsite Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-	**VOCs**								
to-Indoor Air	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	--	--	--	--
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	--	1.7E-09	--	1.7E-09	--	5.8E-06	--	5.8E-06
	1,1-Dichloroethene	--	--	--	--	--	4.8E-03	--	4.8E-03
	1,1-Dichloropropene	--	--	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	--	3.3E-04	--	3.3E-04
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	7.0E-06	--	7.0E-06
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	--	9.6E-08	--	9.6E-08	--	2.9E-05	--	2.9E-05
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	2.8E-07	--	2.8E-07
	Acenaphthene	--	--	--	--	--	9.4E-06	--	9.4E-06
	Acetone	--	--	--	--	--	2.1E-07	--	2.1E-07
	Benzene	--	2.8E-06	--	2.8E-06	--	4.6E-03	--	4.6E-03
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	5.1E-05	--	5.1E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	2.2E-05	--	2.2E-05
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	--	--	--	--	--	--	--	--
	Chloromethane	--	--	--	--	--	4.0E-05	--	4.0E-05
	cis-1,2-Dichloroethene	--	--	--	--	--	1.8E+00	--	1.8E+00
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	2.1E-06	--	2.1E-06
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	--	--	--	--
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	--	--	--	--	--	--	--
	Isopropylbenzene	--	--	--	--	--	2.4E-03	--	2.4E-03
	Methyl tertbutyl ether (MTBE)	--	1.1E-09	--	1.1E-09	--	1.5E-06	--	1.5E-06
	Methylene Chloride	--	--	--	--	--	--	--	--
	Naphthalene	--	6.4E-07	--	6.4E-07	--	5.8E-03	--	5.8E-03
	n-Butylbenzene	--	--	--	--	--	2.0E-05	--	2.0E-05
	n-Propylbenzene	--	--	--	--	--	3.4E-05	--	3.4E-05
	p-Isopropyltoluene	--	--	--	--	--	1.2E-04	--	1.2E-04
	Pyrene	--	--	--	--	--	3.5E-07	--	3.5E-07

Table D-15
Summary of Cancer Risks and Noncancer Hazards
Offsite Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-to-Indoor Air	sec-Butylbenzene	--	--	--	--	--	--	--	--
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	7.7E-06	--	7.7E-06
	tert-Butyl alcohol	--	--	--	--	--	7.8E-06	--	7.8E-06
	tert-Butylbenzene	--	--	--	--	--	--	--	--
	Tetrachloroethene	--	1.3E-03	--	1.3E-03	--	1.7E+01	--	1.7E+01
	Toluene	--	--	--	--	--	7.2E-05	--	7.2E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	1.0E-02	--	1.0E-02
	Trichloroethene	--	6.3E-05	--	6.3E-05	--	1.5E-01	--	1.5E-01
	Vinyl Chloride	--	2.5E-02	--	2.5E-02	--	9.0E+00	--	9.0E+00
	Xylenes	--	--	--	--	--	1.3E-05	--	1.3E-05
	Cumulative Risk and Hazard =	--	**3E-02**	**--**	**3E-02**	**--**	**3E+01**	**--**	**3E+01**

Note: " -- " not applicable or not available

Table D-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	6.9E-02	--	2.1E-03	7.1E-02
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	5.7E-08	--	5.7E-08	2.2E-02	4.7E-02	6.6E-05	6.9E-02
	Chromium	--	--	--	--	1.5E-03	--	4.5E-05	1.6E-03
	Chromium, Hexavalent	--	1.0E-05	--	1.0E-05	3.8E-02	2.4E-02	0.0E+00	6.2E-02
	Cobalt	--	--	--	--	1.6E-02	6.9E-01	4.8E-04	7.0E-01
	Copper	--	--	--	--	1.6E-02	--	4.8E-04	1.7E-02
	Cyanide (Amenable)	--	--	--	--	1.6E-04	--	4.8E-05	2.1E-04
	Cyanide (Total)	--	--	--	--	2.7E-04	--	8.2E-05	3.6E-04
	Mercury	--	--	--	--	2.5E-03	3.5E-04	7.4E-05	2.9E-03
	Molybdenum	--	--	--	--	6.5E-03	--	1.9E-04	6.7E-03
	Nickel	--	8.6E-08	--	8.6E-08	2.7E-02	4.7E-01	8.2E-04	4.9E-01
	Selenium	--	--	--	--	1.9E-02	2.1E-04	5.8E-04	2.0E-02
	Silver	--	--	--	--	1.5E-03	--	4.5E-05	1.5E-03
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	7.6E-03	--	2.3E-04	7.9E-03
	PAHs								
	2-Methylnaphthalene	--	--	--	--	5.7E-03	6.9E-05	2.6E-03	8.3E-03
	Anthracene	--	--	--	--	1.1E-07	1.3E-09	4.8E-08	1.6E-07
	Benzo(a)anthracene	1.1E-08	4.4E-11	5.0E-09	1.6E-08	--	--	--	--
	Benzo(a)Pyrene	2.2E-07	8.7E-10	1.0E-07	3.2E-07	--	--	--	--
	Benzo(b)Fluoranthene	7.0E-08	2.7E-10	3.1E-08	1.0E-07	--	--	--	--
	Benzo(k)Fluoranthene	5.5E-09	2.2E-11	2.5E-09	8.0E-09	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	9.7E-05	1.2E-06	4.4E-05	1.4E-04
	Chrysene	3.8E-09	1.5E-11	1.7E-09	5.5E-09	--	--	--	--
	Dibenz(a,h)anthracene	4.4E-08	1.7E-10	2.0E-08	6.4E-08	--	--	--	--
	Fluoranthene	--	--	--	--	1.6E-05	2.0E-07	7.3E-06	2.4E-05
	Indeno(1,2,3-cd)pyrene	3.3E-08	1.3E-10	1.5E-08	4.8E-08	--	--	--	--
	Phenanthrene	--	--	--	--	1.1E-04	1.3E-06	4.7E-05	1.5E-04
	PCBs								
	Aroclor 1016	9.7E-11	1.2E-12	4.4E-11	1.4E-10	1.4E-03	1.7E-05	6.2E-04	2.0E-03
	Aroclor 1242	3.7E-08	1.8E-10	1.7E-08	5.4E-08	2.6E-02	3.1E-04	1.2E-02	3.8E-02
	Aroclor 1248	6.7E-05	3.2E-07	3.0E-05	9.7E-05	4.7E+01	5.7E-01	2.1E+01	6.8E+01
	Aroclor 1254	3.9E-07	1.9E-09	1.8E-07	5.7E-07	2.7E-01	3.3E-03	1.2E-01	4.0E-01
	Aroclor 1260	3.5E-07	1.7E-09	1.6E-07	5.0E-07	2.4E-01	2.9E-03	1.1E-01	3.5E-01
	Aroclor 1262	7.6E-08	3.7E-10	3.4E-08	1.1E-07	5.3E-02	6.5E-04	2.4E-02	7.8E-02
	Perchlorate								
	Perchlorate	--	--	--	--	1.7E-02	--	0.0E+00	1.7E-02
	SVOCs								
	1,4-Dioxane	1.1E-10	1.4E-12	3.4E-11	1.5E-10	--	4.1E-09	--	4.1E-09
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table D-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	9.7E-07	6.2E-08	2.9E-07	1.3E-06
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	1.4E-01	1.1E-03	6.1E-02	2.0E-01
	TPH - aliphatic; C9-C18	--	--	--	--	8.1E-01	3.3E-03	3.6E-01	1.2E+00
	TPH - aliphatic; C≥19	--	--	--	--	3.7E-02	3.0E-03	1.6E-02	5.6E-02
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	2.7E+00	1.6E-01	1.2E+00	4.1E+00
	TPH - aromatic; C≥19	--	--	--	--	2.4E+00	--	1.1E+00	3.5E+00
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	5.9E-07	2.1E-04	1.8E-07	2.1E-04
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	7.9E-13	2.6E-10	2.4E-13	2.6E-10	9.7E-08	2.3E-05	2.9E-08	2.3E-05
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	1.7E-11	1.2E-13	5.0E-12	2.2E-11	4.3E-07	2.7E-08	1.3E-07	5.9E-07
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	1.0E-03	1.5E+00	3.1E-04	1.5E+00
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	4.4E-05	1.5E-01	1.3E-05	1.5E-01
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	6.2E-12	3.4E-09	1.9E-12	3.4E-09	2.7E-06	2.6E-05	8.1E-07	2.9E-05
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	1.1E-04	5.6E-04	4.8E-05	7.2E-04
	Acetone	--	--	--	--	2.2E-07	1.4E-05	6.7E-08	1.5E-05
	Benzene	9.2E-11	2.9E-08	2.8E-11	2.9E-08	1.6E-05	1.2E-03	4.8E-06	1.2E-03
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	2.8E-07	7.2E-05	8.4E-08	7.2E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	6.5E-07	6.7E-06	1.9E-07	7.5E-06
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	5.7E-12	1.1E-09	1.7E-12	1.1E-09	1.3E-06	4.8E-05	3.9E-07	5.0E-05
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	3.1E-04	8.9E-02	9.3E-05	8.9E-02
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	6.8E-06	--	6.8E-06
	Ethylbenzene	--	--	--	--	7.4E-05	2.2E-03	2.2E-05	2.3E-03
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	4.6E-04	1.2E-03	2.1E-04	1.9E-03
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	6.5E-11	6.9E-09	1.9E-11	6.9E-09	1.9E-04	2.1E-02	5.8E-05	2.1E-02

Table D-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	5.5E-05	1.2E-02	1.6E-05	1.2E-02
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	6.1E-12	4.9E-10	1.8E-12	5.0E-10	5.1E-07	8.6E-05	1.5E-07	8.6E-05
Outdoor Inhalation	Naphthalene	1.0E-07	2.2E-06	4.5E-08	2.3E-06	2.9E-03	5.0E-01	1.3E-03	5.0E-01
	n-Butylbenzene	--	--	--	--	4.4E-04	3.7E-02	1.3E-04	3.8E-02
	n-Propylbenzene	--	--	--	--	3.0E-04	2.5E-02	9.0E-05	2.5E-02
	p-Isopropyltoluene	--	--	--	--	1.9E-04	1.3E-02	5.6E-05	1.3E-02
	Pyrene	--	--	--	--	3.8E-05	9.2E-06	1.1E-05	5.8E-05
	sec-Butylbenzene	--	--	--	--	1.9E-04	2.1E-02	5.6E-05	2.1E-02
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	1.1E-06	7.3E-05	3.2E-07	7.4E-05
	tert-Butylbenzene	--	--	--	--	3.2E-07	3.0E-05	9.7E-08	3.1E-05
	Tetrachloroethene	5.5E-06	3.2E-05	1.6E-06	3.9E-05	7.1E-02	1.1E+01	2.1E-02	1.1E+01
	Toluene	--	--	--	--	1.6E-07	8.5E-05	4.8E-08	8.5E-05
	trans-1,2-Dichloroethene	--	--	--	--	1.1E-04	3.8E-02	3.2E-05	3.8E-02
	Trichloroethene	6.0E-09	8.7E-07	1.8E-09	8.8E-07	1.1E-01	5.1E-02	3.2E-02	1.9E-01
	Vinyl Chloride	6.7E-10	4.2E-07	2.0E-10	4.2E-07	5.8E-05	3.8E-03	1.7E-05	3.9E-03
	Xylenes	--	--	--	--	3.9E-05	5.9E-03	1.2E-05	5.9E-03
	Cumulative Risk and Hazard =	**7E-05**	**5E-05**	**3E-05**	**2E-04**	**5E+01**	**1E+01**	**2E+01**	**8E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**1E+00**	**7E-03**	**4E-01**	**1E+00**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**5E+00**	**2E-01**	**2E+00**	**8E+00**
Groundwater:	**Inorganics**								
Dermal Contact	Antimony	--	--	--	--	--	--	4.8E-01	4.8E-01
	Arsenic	--	--	6.2E-08	6.2E-08	--	--	1.5E-03	1.5E-03
	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	3.2E-04	3.2E-04
	Cadmium	--	--	--	--	--	--	1.3E-03	1.3E-03
	Chromium	--	--	--	--	--	--	2.9E-02	2.9E-02
	Chromium, Hexavalent	--	--	--	--	--	--	2.9E+01	2.9E+01
	Cobalt	--	--	--	--	--	--	5.5E-05	5.5E-05
	Copper	--	--	--	--	--	--	8.9E-06	8.9E-06
	Cyanide (Amenable)	--	--	--	--	--	--	--	--
	Cyanide (Total)	--	--	--	--	--	--	3.2E-05	3.2E-05
	Mercury	--	--	--	--	--	--	--	--
	Molybdenum	--	--	--	--	--	--	3.7E-03	3.7E-03
	Nickel	--	--	--	--	--	--	2.9E-04	2.9E-04
	Selenium	--	--	--	--	--	--	1.5E-02	1.5E-02
	Silver	--	--	--	--	--	--	--	--
	Thallium	--	--	--	--	--	--	2.0E-03	2.0E-03
	Vanadium	--	--	--	--	--	--	8.4E-03	8.4E-03
	Zinc	--	--	--	--	--	--	1.3E-05	1.3E-05
	PAHs								
	2-Methylnaphthalene	--	--	--	--	--	--	1.0E-02	1.0E-02
	Anthracene	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	--	--	5.3E-07	5.3E-07	--	--	--	--
	Benzo(a)Pyrene	--	--	--	--	--	--	--	--
	Benzo(b)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(k)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	--	--	5.3E-03	5.3E-03

Table D-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Chrysene	--	--	6.4E-08	6.4E-08	--	--	--	--
Dermal Contact	Dibenz(a,h)anthracene	--	--	1.9E-05	1.9E-05	--	--	--	--
	Fluoranthene	--	--	--	--	--	--	3.1E-03	3.1E-03
	Indeno(1,2,3-cd)pyrene	--	--	1.4E-06	1.4E-06	--	--	--	--
	Phenanthrene	--	--	--	--	--	--	1.4E-04	1.4E-04
	PCBs								
	Aroclor 1016	--	--	1.3E-07	1.3E-07	--	--	1.8E+00	1.8E+00
	Aroclor 1242	--	--	--	--	--	--	--	--
	Aroclor 1248	--	--	--	--	--	--	--	--
	Aroclor 1254	--	--	--	--	--	--	--	--
	Aroclor 1260	--	--	--	--	--	--	--	--
	Aroclor 1262	--	--	--	--	--	--	--	--
	Perchlorate								
	Perchlorate	--	--	--	--	--	--	--	--
	SVOCs								
	1,4-Dioxane	--	--	3.3E-08	3.3E-08	--	--	--	--
	4-Chloro-3-methylphenol	--	--	--	--	--	--	2.3E-04	2.3E-04
	Aniline	--	--	2.9E-11	2.9E-11	--	--	5.1E-05	5.1E-05
	Benzoic Acid	--	--	--	--	--	--	4.9E-07	4.9E-07
	Bis(2-ethylhexyl)Phthalate	--	--	9.2E-08	9.2E-08	--	--	1.1E-01	1.1E-01
	Diethylphthalate	--	--	--	--	--	--	1.9E-06	1.9E-06
	Diisopropyl Ether	--	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	--	--	--	--	3.2E-08	3.2E-08
	Di-n-butylphthalate	--	--	--	--	--	--	1.6E-04	1.6E-04
	Phenol	--	--	--	--	--	--	1.3E-06	1.3E-06
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	--	--	3.8E+00	3.8E+00
	TPH - aliphatic; C9-C18	--	--	--	--	--	--	8.0E-02	8.0E-02
	TPH - aliphatic; C≥19	--	--	--	--	--	--	2.0E-03	2.0E-03
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	--	--	2.7E-01	2.7E-01
	TPH - aromatic; C≥19	--	--	--	--	--	--	1.3E-01	1.3E-01
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	1.1E-09	1.1E-09	--	--	1.0E-04	1.0E-04
	1,1,1-Trichloroethane	--	--	--	--	--	--	2.1E-04	2.1E-04
	1,1,2-Trichloroethane	--	--	6.4E-09	6.4E-09	--	--	1.5E-03	1.5E-03
	1,1-Dichloroethane	--	--	5.8E-09	5.8E-09	--	--	7.1E-04	7.1E-04
	1,1-Dichloroethene	--	--	--	--	--	--	1.1E-02	1.1E-02
	1,1-Dichloropropene	--	--	3.0E-10	3.0E-10	--	--	7.7E-06	7.7E-06
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	6.0E-04	6.0E-04
	1,2,4-Trimethylbenzene	--	--	--	--	--	--	2.2E-03	2.2E-03
	1,2-Dibromo-3-chloropropane	--	--	7.8E-08	7.8E-08	--	--	1.4E-02	1.4E-02
	1,2-Dichlorobenzene	--	--	--	--	--	--	4.8E-04	4.8E-04
	1,2-Dichloroethane	--	--	5.0E-09	5.0E-09	--	--	3.7E-04	3.7E-04
	1,3,5-Trimethylbenzene	--	--	--	--	--	--	1.8E-03	1.8E-03
	1,3-Dichlorobenzene	--	--	--	--	--	--	1.2E-03	1.2E-03
	1,4-Dichlorobenzene	--	--	1.1E-08	1.1E-08	--	--	4.9E-03	4.9E-03
	2-Butanone (MEK)	--	--	--	--	--	--	3.9E-05	3.9E-05
	2-Chlorotoluene	--	--	--	--	--	--	1.0E-04	1.0E-04
	4-Methyl-2-pentanone	--	--	--	--	--	--	2.1E-06	2.1E-06

Table D-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Acenaphthene	--	--	--	--	--	--	4.2E-01	4.2E-01
Dermal Contact	Acetone	--	--	--	--	--	--	2.2E-06	2.2E-06
	Benzene	--	--	1.9E-07	1.9E-07	--	--	3.3E-02	3.3E-02
	Bromochloromethane	--	--	--	--	--	--	1.9E-05	1.9E-05
	Bromodichloromethane	--	--	2.6E-09	2.6E-09	--	--	7.1E-05	7.1E-05
	Bromomethane	--	--	--	--	--	--	1.4E-04	1.4E-04
	Carbon Disulfide	--	--	--	--	--	--	5.0E-05	5.0E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	--	1.2E-03	1.2E-03
	Chloroethane	--	--	6.0E-12	6.0E-12	--	--	3.6E-07	3.6E-07
	Chloroform	--	--	7.8E-09	7.8E-09	--	--	1.8E-03	1.8E-03
	Chloromethane	--	--	--	--	--	--	9.2E-06	9.2E-06
	cis-1,2-Dichloroethene	--	--	--	--	--	--	5.4E+00	5.4E+00
	Dibromochloromethane	--	--	3.5E-10	3.5E-10	--	--	1.3E-05	1.3E-05
	Dibromomethane	--	--	--	--	--	--	6.5E-06	6.5E-06
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	--	6.8E-04	6.8E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	5.3E-04	5.3E-04
	Fluorene	--	--	--	--	--	--	8.9E-04	8.9E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	--	7.2E-09	7.2E-09	--	--	2.2E-02	2.2E-02
	Isopropylbenzene	--	--	--	--	--	--	7.2E-03	7.2E-03
	Methyl tertbutyl ether (MTBE)	--	--	6.2E-11	6.2E-11	--	--	2.8E-06	2.8E-06
	Methylene Chloride	--	--	6.0E-10	6.0E-10	--	--	5.0E-05	5.0E-05
	Naphthalene	--	--	2.4E-06	2.4E-06	--	--	7.0E-02	7.0E-02
	n-Butylbenzene	--	--	--	--	--	--	6.9E-02	6.9E-02
	n-Propylbenzene	--	--	--	--	--	--	7.2E-02	7.2E-02
	p-Isopropyltoluene	--	--	--	--	--	--	6.2E-04	6.2E-04
	Pyrene	--	--	--	--	--	--	2.2E-04	2.2E-04
	sec-Butylbenzene	--	--	--	--	--	--	1.9E-02	1.9E-02
	Styrene	--	--	--	--	--	--	1.6E-05	1.6E-05
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	--	1.9E-05	1.9E-05
	tert-Butylbenzene	--	--	--	--	--	--	9.9E-04	9.9E-04
	Tetrachloroethene	--	--	7.4E-03	7.4E-03	--	--	9.6E+01	9.6E+01
	Toluene	--	--	--	--	--	--	8.6E-05	8.6E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	--	2.4E-02	2.4E-02
	Trichloroethene	--	--	4.6E-06	4.6E-06	--	--	8.2E+01	8.2E+01
	Vinyl Chloride	--	--	4.3E-05	4.3E-05	--	--	3.7E+00	3.7E+00
	Xylenes	--	--	--	--	--	--	1.8E-04	1.8E-04
	Cumulative Risk and Hazard =	**--**	**--**	**8E-03**	**8E-03**	**--**	**--**	**2E+02**	**2E+02**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**4E+00**	**4E+00**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**4E-01**	**4E-01**
Groundwater-to-	**VOCs**								
Outdoor Air	1,1,1,2-Tetrachloroethane	--	1.6E-09	--	1.6E-09	--	1.5E-04	--	1.5E-04
	1,1,1-Trichloroethane	--	--	--	--	--	5.6E-04	--	5.6E-04
	1,1,2-Trichloroethane	--	2.6E-08	--	2.6E-08	--	7.9E-03	--	7.9E-03
	1,1-Dichloroethane	--	4.0E-08	--	4.0E-08	--	3.5E-03	--	3.5E-03
	1,1-Dichloroethene	--	--	--	--	--	1.1E-01	--	1.1E-01
	1,1-Dichloropropene	--	1.8E-09	--	1.8E-09	--	4.0E-04	--	4.0E-04
	1,2,4-Trichlorobenzene	--	--	--	--	--	2.0E-04	--	2.0E-04

Table D-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-to-	1,2,4-Trimethylbenzene	--	--	--	--	--	3.1E-02	--	3.1E-02
Outdoor Air	1,2-Dibromo-3-chloropropane	--	1.2E-07	--	1.2E-07	--	2.1E-02	--	2.1E-02
	1,2-Dichlorobenzene	--	--	--	--	--	5.6E-04	--	5.6E-04
	1,2-Dichloroethane	--	8.1E-08	--	8.1E-08	--	5.6E-02	--	5.6E-02
	1,3,5-Trimethylbenzene	--	--	--	--	--	3.5E-02	--	3.5E-02
	1,3-Dichlorobenzene	--	--	--	--	--	6.2E-04	--	6.2E-04
	1,4-Dichlorobenzene	--	6.1E-08	--	6.1E-08	--	4.7E-04	--	4.7E-04
	2-Butanone (MEK)	--	--	--	--	--	3.2E-04	--	3.2E-04
	2-Chlorotoluene	--	--	--	--	--	6.9E-05	--	6.9E-05
	4-Methyl-2-pentanone	--	--	--	--	--	2.5E-06	--	2.5E-06
	Acenaphthene	--	--	--	--	--	1.0E-01	--	1.0E-01
	Acetone	--	--	--	--	--	1.1E-04	--	1.1E-04
	Benzene	--	7.3E-07	--	7.3E-07	--	3.0E-02	--	3.0E-02
	Bromochloromethane	--	--	--	--	--	2.6E-04	--	2.6E-04
	Bromodichloromethane	--	1.5E-08	--	1.5E-08	--	4.1E-04	--	4.1E-04
	Bromomethane	--	--	--	--	--	2.3E-03	--	2.3E-03
	Carbon Disulfide	--	--	--	--	--	7.4E-05	--	7.4E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	1.3E-04	--	1.3E-04
	Chloroethane	--	6.3E-11	--	6.3E-11	--	1.8E-07	--	1.8E-07
	Chloroform	--	2.7E-08	--	2.7E-08	--	1.2E-03	--	1.2E-03
	Chloromethane	--	--	--	--	--	2.1E-04	--	2.1E-04
	cis-1,2-Dichloroethene	--	--	--	--	--	2.4E+01	--	2.4E+01
	Dibromochloromethane	--	1.8E-09	--	1.8E-09	--	6.9E-05	--	6.9E-05
	Dibromomethane	--	--	--	--	--	6.8E-05	--	6.8E-05
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	1.1E-04	--	1.1E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	3.7E-05	--	3.7E-05
	Fluorene	--	--	--	--	--	1.3E-04	--	1.3E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	1.1E-09	--	1.1E-09	--	3.4E-03	--	3.4E-03
	Isopropylbenzene	--	--	--	--	--	3.0E-03	--	3.0E-03
	Methyl tertbutyl ether (MTBE)	--	6.9E-10	--	6.9E-10	--	2.3E-05	--	2.3E-05
	Methylene Chloride	--	2.2E-09	--	2.2E-09	--	3.8E-04	--	3.8E-04
	Naphthalene	--	1.7E-06	--	1.7E-06	--	3.9E-01	--	3.9E-01
	n-Butylbenzene	--	--	--	--	--	1.2E-02	--	1.2E-02
	n-Propylbenzene	--	--	--	--	--	3.0E-02	--	3.0E-02
	p-Isopropyltoluene	--	--	--	--	--	1.3E-04	--	1.3E-04
	Pyrene	--	--	--	--	--	3.8E-06	--	3.8E-06
	sec-Butylbenzene	--	--	--	--	--	4.8E-03	--	4.8E-03
	Styrene	--	--	--	--	--	1.5E-05	--	1.5E-05
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	3.6E-04	--	3.6E-04
	tert-Butylbenzene	--	--	--	--	--	2.1E-04	--	2.1E-04
	Tetrachloroethene	--	1.9E-04	--	1.9E-04	--	6.4E+01	--	6.4E+01
	Toluene	--	--	--	--	--	3.3E-04	--	3.3E-04
	trans-1,2-Dichloroethene	--	--	--	--	--	1.1E-01	--	1.1E-01
	Trichloroethene	--	7.5E-06	--	7.5E-06	--	4.4E-01	--	4.4E-01
	Vinyl Chloride	--	5.0E-04	--	5.0E-04	--	4.5E+00	--	4.5E+00
	Xylenes	--	--	--	--	--	1.6E-04	--	1.6E-04
	Cumulative Risk and Hazard =	--	**7E-04**	**--**	**7E-04**	**--**	**9E+01**	**--**	**9E+01**

Note: " -- " not applicable or not available

Table D-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	2.5E-03	--	1.2E-04	2.6E-03
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	9.1E-11	--	9.1E-11	8.0E-04	7.4E-05	3.7E-06	8.8E-04
	Chromium	--	--	--	--	5.5E-05	--	2.5E-06	5.7E-05
	Chromium, Hexavalent	--	1.6E-08	--	1.6E-08	1.4E-03	3.8E-05	0.0E+00	1.4E-03
	Cobalt	--	--	--	--	5.9E-04	1.1E-03	2.7E-05	1.7E-03
	Copper	--	--	--	--	5.9E-04	--	2.7E-05	6.1E-04
	Cyanide (Amenable)	--	--	--	--	5.9E-06	--	2.7E-06	8.6E-06
	Cyanide (Total)	--	--	--	--	1.0E-05	--	4.6E-06	1.5E-05
	Mercury	--	--	--	--	9.0E-05	5.6E-07	4.2E-06	9.5E-05
	Molybdenum	--	--	--	--	2.3E-04	--	1.1E-05	2.5E-04
	Nickel	--	1.4E-10	--	1.4E-10	1.0E-03	7.4E-04	4.6E-05	1.8E-03
	Selenium	--	--	--	--	7.0E-04	3.3E-07	3.3E-05	7.4E-04
	Silver	--	--	--	--	5.4E-05	--	2.5E-06	5.7E-05
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	2.8E-04	--	1.3E-05	2.9E-04
	PAHs								
	2-Methylnaphthalene	--	--	--	--	2.1E-04	1.1E-07	1.4E-04	3.5E-04
	Anthracene	--	--	--	--	3.9E-09	2.1E-12	2.7E-09	6.6E-09
	Benzo(a)anthracene	4.0E-10	6.9E-14	2.8E-10	6.8E-10	--	--	--	--
	Benzo(a)Pyrene	8.1E-09	1.4E-12	5.6E-09	1.4E-08	--	--	--	--
	Benzo(b)Fluoranthene	2.5E-09	4.4E-13	1.8E-09	4.3E-09	--	--	--	--
	Benzo(k)Fluoranthene	2.0E-10	3.5E-14	1.4E-10	3.4E-10	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	3.5E-06	1.9E-09	2.5E-06	6.0E-06
	Chrysene	1.4E-10	2.4E-14	9.6E-11	2.3E-10	--	--	--	--
	Dibenz(a,h)anthracene	1.6E-09	2.8E-13	1.1E-09	2.7E-09	--	--	--	--
	Fluoranthene	--	--	--	--	5.9E-07	3.1E-10	4.1E-07	1.0E-06
	Indeno(1,2,3-cd)pyrene	1.2E-09	2.1E-13	8.4E-10	2.0E-09	--	--	--	--
	Phenanthrene	--	--	--	--	3.8E-06	2.0E-09	2.7E-06	6.5E-06
	PCBs								
	Aroclor 1016	3.5E-12	1.9E-15	2.5E-12	6.0E-12	5.0E-05	2.7E-08	3.5E-05	8.5E-05
	Aroclor 1242	1.3E-09	2.8E-13	9.3E-10	2.3E-09	9.4E-04	5.0E-07	6.5E-04	1.6E-03
	Aroclor 1248	2.4E-06	5.2E-10	1.7E-06	4.1E-06	1.7E+00	9.0E-04	1.2E+00	2.9E+00
	Aroclor 1254	1.4E-08	3.0E-12	9.9E-09	2.4E-08	1.0E-02	5.3E-06	6.9E-03	1.7E-02
	Aroclor 1260	1.3E-08	2.7E-12	8.8E-09	2.1E-08	8.8E-03	4.7E-06	6.1E-03	1.5E-02
	Aroclor 1262	2.8E-09	5.9E-13	1.9E-09	4.7E-09	1.9E-03	1.0E-06	1.3E-03	3.3E-03
	Perchlorate								
	Perchlorate	--	--	--	--	6.0E-04	--	0.0E+00	6.0E-04
	SVOCs								
	1,4-Dioxane	4.1E-12	2.2E-15	1.9E-12	6.0E-12	--	6.5E-12	--	6.5E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table D-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	3.5E-08	9.8E-11	1.6E-08	5.2E-08
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	4.9E-03	1.7E-06	3.4E-03	8.4E-03
	TPH - aliphatic; C9-C18	--	--	--	--	2.9E-02	5.2E-06	2.1E-02	5.0E-02
	TPH - aliphatic; C≥19	--	--	--	--	1.3E-03	4.7E-06	9.3E-04	2.3E-03
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	9.8E-02	2.6E-04	6.8E-02	1.7E-01
	TPH - aromatic; C≥19	--	--	--	--	8.9E-02	--	6.2E-02	1.5E-01
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	2.1E-08	1.0E-05	9.9E-09	1.0E-05
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	2.9E-14	1.3E-11	1.3E-14	1.3E-11	3.5E-09	1.1E-06	1.6E-09	1.1E-06
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	6.1E-13	2.0E-16	2.8E-13	8.9E-13	1.6E-08	4.4E-11	7.3E-09	2.3E-08
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	3.8E-05	7.2E-02	1.7E-05	7.2E-02
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	1.6E-06	7.4E-03	7.4E-07	7.4E-03
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	2.3E-13	1.6E-10	1.1E-13	1.7E-10	9.8E-08	1.3E-06	4.5E-08	1.4E-06
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	3.9E-06	2.8E-05	2.7E-06	3.4E-05
	Acetone	--	--	--	--	8.1E-09	7.0E-07	3.8E-09	7.1E-07
	Benzene	3.4E-12	1.4E-09	1.6E-12	1.4E-09	5.9E-07	5.7E-05	2.7E-07	5.8E-05
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	1.0E-08	3.5E-06	4.7E-09	3.5E-06
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	2.3E-08	3.3E-07	1.1E-08	3.6E-07
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	2.1E-13	5.5E-11	9.7E-14	5.5E-11	4.7E-08	2.3E-06	2.2E-08	2.4E-06
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	1.1E-05	4.4E-03	5.2E-06	4.4E-03
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	3.3E-07	--	3.3E-07
	Ethylbenzene	--	--	--	--	2.7E-06	1.1E-04	1.3E-06	1.1E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	1.7E-05	6.0E-05	1.2E-05	8.8E-05
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	2.4E-12	3.4E-10	1.1E-12	3.4E-10	7.0E-06	1.0E-03	3.3E-06	1.0E-03

Table D-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	2.0E-06	6.1E-04	9.3E-07	6.1E-04
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	2.2E-13	2.4E-11	1.0E-13	2.4E-11	1.8E-08	4.2E-06	8.5E-09	4.2E-06
Outdoor Inhalation	Naphthalene	3.6E-09	1.1E-07	2.5E-09	1.1E-07	1.1E-04	2.4E-02	7.4E-05	2.5E-02
	n-Butylbenzene	--	--	--	--	1.6E-05	1.8E-03	7.5E-06	1.8E-03
	n-Propylbenzene	--	--	--	--	1.1E-05	1.2E-03	5.0E-06	1.2E-03
	p-Isopropyltoluene	--	--	--	--	6.8E-06	6.3E-04	3.2E-06	6.4E-04
	Pyrene	--	--	--	--	1.4E-06	4.5E-07	6.4E-07	2.5E-06
	sec-Butylbenzene	--	--	--	--	6.8E-06	1.0E-03	3.1E-06	1.0E-03
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	3.9E-08	3.6E-06	1.8E-08	3.6E-06
	tert-Butylbenzene	--	--	--	--	1.2E-08	1.5E-06	5.4E-09	1.5E-06
	Tetrachloroethene	2.0E-07	1.6E-06	9.2E-08	1.9E-06	2.6E-03	5.2E-01	1.2E-03	5.3E-01
	Toluene	--	--	--	--	5.8E-09	4.1E-06	2.7E-09	4.1E-06
	trans-1,2-Dichloroethene	--	--	--	--	3.9E-06	1.8E-03	1.8E-06	1.8E-03
	Trichloroethene	2.2E-10	4.3E-08	1.0E-10	4.3E-08	3.9E-03	2.5E-03	1.8E-03	8.2E-03
	Vinyl Chloride	2.4E-11	2.1E-08	1.1E-11	2.1E-08	2.1E-06	1.9E-04	9.8E-07	1.9E-04
	Xylenes	--	--	--	--	1.4E-06	2.9E-04	6.5E-07	2.9E-04
	Cumulative Risk and Hazard =	**3E-06**	**2E-06**	**2E-06**	**6E-06**	**2E+00**	**6E-01**	**1E+00**	**4E+00**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**4E-02**	**1E-05**	**2E-02**	**6E-02**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**2E-01**	**3E-04**	**1E-01**	**3E-01**
Groundwater:	**Inorganics**								
Dermal Contact	Antimony	--	--	--	--	--	--	1.0E-01	1.0E-01
	Arsenic	--	--	1.3E-08	1.3E-08	--	--	3.2E-04	3.2E-04
	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	6.8E-05	6.8E-05
	Cadmium	--	--	--	--	--	--	2.7E-04	2.7E-04
	Chromium	--	--	--	--	--	--	6.0E-03	6.0E-03
	Chromium, Hexavalent	--	--	--	--	--	--	6.2E+00	6.2E+00
	Cobalt	--	--	--	--	--	--	1.2E-05	1.2E-05
	Copper	--	--	--	--	--	--	1.9E-06	1.9E-06
	Cyanide (Amenable)	--	--	--	--	--	--	--	--
	Cyanide (Total)	--	--	--	--	--	--	6.8E-06	6.8E-06
	Mercury	--	--	--	--	--	--	--	--
	Molybdenum	--	--	--	--	--	--	7.9E-04	7.9E-04
	Nickel	--	--	--	--	--	--	6.1E-05	6.1E-05
	Selenium	--	--	--	--	--	--	3.3E-03	3.3E-03
	Silver	--	--	--	--	--	--	--	--
	Thallium	--	--	--	--	--	--	4.1E-04	4.1E-04
	Vanadium	--	--	--	--	--	--	1.8E-03	1.8E-03
	Zinc	--	--	--	--	--	--	2.7E-06	2.7E-06
	PAHs								
	2-Methylnaphthalene	--	--	--	--	--	--	2.2E-03	2.2E-03
	Anthracene	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	--	--	1.1E-07	1.1E-07	--	--	--	--
	Benzo(a)Pyrene	--	--	--	--	--	--	--	--
	Benzo(b)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(k)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	--	--	1.1E-03	1.1E-03

Table D-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Chrysene	--	--	1.4E-08	1.4E-08	--	--	--	--
Dermal Contact	Dibenz(a,h)anthracene	--	--	4.0E-06	4.0E-06	--	--	--	--
	Fluoranthene	--	--	--	--	--	--	6.6E-04	6.6E-04
	Indeno(1,2,3-cd)pyrene	--	--	3.0E-07	3.0E-07	--	--	--	--
	Phenanthrene	--	--	--	--	--	--	3.0E-05	3.0E-05
	PCBs								
	Aroclor 1016	--	--	2.7E-08	2.7E-08	--	--	3.8E-01	3.8E-01
	Aroclor 1242	--	--	--	--	--	--	--	--
	Aroclor 1248	--	--	--	--	--	--	--	--
	Aroclor 1254	--	--	--	--	--	--	--	--
	Aroclor 1260	--	--	--	--	--	--	--	--
	Aroclor 1262	--	--	--	--	--	--	--	--
	Perchlorate								
	Perchlorate	--	--	--	--	--	--	--	--
	SVOCs								
	1,4-Dioxane	--	--	7.0E-09	7.0E-09	--	--	--	--
	4-Chloro-3-methylphenol	--	--	--	--	--	--	4.9E-05	4.9E-05
	Aniline	--	--	6.1E-12	6.1E-12	--	--	1.1E-05	1.1E-05
	Benzoic Acid	--	--	--	--	--	--	1.0E-07	1.0E-07
	Bis(2-ethylhexyl)Phthalate	--	--	1.9E-08	1.9E-08	--	--	2.3E-02	2.3E-02
	Diethylphthalate	--	--	--	--	--	--	3.9E-07	3.9E-07
	Diisopropyl Ether	--	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	--	--	--	--	6.8E-09	6.8E-09
	Di-n-butylphthalate	--	--	--	--	--	--	3.4E-05	3.4E-05
	Phenol	--	--	--	--	--	--	2.7E-07	2.7E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	--	--	7.9E-01	7.9E-01
	TPH - aliphatic; C9-C18	--	--	--	--	--	--	1.7E-02	1.7E-02
	TPH - aliphatic; C≥19	--	--	--	--	--	--	4.1E-04	4.1E-04
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	--	--	5.6E-02	5.6E-02
	TPH - aromatic; C≥19	--	--	--	--	--	--	2.7E-02	2.7E-02
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	2.4E-10	2.4E-10	--	--	2.2E-05	2.2E-05
	1,1,1-Trichloroethane	--	--	--	--	--	--	4.4E-05	4.4E-05
	1,1,2-Trichloroethane	--	--	1.3E-09	1.3E-09	--	--	3.3E-04	3.3E-04
	1,1-Dichloroethane	--	--	1.2E-09	1.2E-09	--	--	1.5E-04	1.5E-04
	1,1-Dichloroethene	--	--	--	--	--	--	2.3E-03	2.3E-03
	1,1-Dichloropropene	--	--	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	1.3E-04	1.3E-04
	1,2,4-Trimethylbenzene	--	--	--	--	--	--	4.6E-04	4.6E-04
	1,2-Dibromo-3-chloropropane	--	--	1.6E-08	1.6E-08	--	--	2.9E-03	2.9E-03
	1,2-Dichlorobenzene	--	--	--	--	--	--	1.0E-04	1.0E-04
	1,2-Dichloroethane	--	--	1.1E-09	1.1E-09	--	--	7.8E-05	7.8E-05
	1,3,5-Trimethylbenzene	--	--	--	--	--	--	3.8E-04	3.8E-04
	1,3-Dichlorobenzene	--	--	--	--	--	--	2.5E-04	2.5E-04
	1,4-Dichlorobenzene	--	--	2.4E-09	2.4E-09	--	--	1.0E-03	1.0E-03
	2-Butanone (MEK)	--	--	--	--	--	--	8.3E-06	8.3E-06
	2-Chlorotoluene	--	--	--	--	--	--	2.2E-05	2.2E-05
	4-Methyl-2-pentanone	--	--	--	--	--	--	4.5E-07	4.5E-07

Table D-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Acenaphthene	--	--	--	--	--	--	8.8E-02	8.8E-02
Dermal Contact	Acetone	--	--	--	--	--	--	4.7E-07	4.7E-07
	Benzene	--	--	4.0E-08	4.0E-08	--	--	7.0E-03	7.0E-03
	Bromochloromethane	--	--	--	--	--	--	4.1E-06	4.1E-06
	Bromodichloromethane	--	--	5.6E-10	5.6E-10	--	--	1.5E-05	1.5E-05
	Bromomethane	--	--	--	--	--	--	3.0E-05	3.0E-05
	Carbon Disulfide	--	--	--	--	--	--	1.1E-05	1.1E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	--	2.6E-04	2.6E-04
	Chloroethane	--	--	1.3E-12	1.3E-12	--	--	7.6E-08	7.6E-08
	Chloroform	--	--	1.6E-09	1.6E-09	--	--	3.7E-04	3.7E-04
	Chloromethane	--	--	--	--	--	--	1.9E-06	1.9E-06
	cis-1,2-Dichloroethene	--	--	--	--	--	--	1.1E+00	1.1E+00
	Dibromochloromethane	--	--	7.4E-11	7.4E-11	--	--	2.7E-06	2.7E-06
	Dibromomethane	--	--	--	--	--	--	1.4E-06	1.4E-06
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	--	1.4E-04	1.4E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	1.1E-04	1.1E-04
	Fluorene	--	--	--	--	--	--	1.9E-04	1.9E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	--	--	--	--	--	--	--
	Isopropylbenzene	--	--	--	--	--	--	1.5E-03	1.5E-03
	Methyl tertbutyl ether (MTBE)	--	--	1.3E-11	1.3E-11	--	--	6.0E-07	6.0E-07
	Methylene Chloride	--	--	1.3E-10	1.3E-10	--	--	1.1E-05	1.1E-05
	Naphthalene	--	--	5.1E-07	5.1E-07	--	--	1.5E-02	1.5E-02
	n-Butylbenzene	--	--	--	--	--	--	1.4E-02	1.4E-02
	n-Propylbenzene	--	--	--	--	--	--	1.5E-02	1.5E-02
	p-Isopropyltoluene	--	--	--	--	--	--	1.3E-04	1.3E-04
	Pyrene	--	--	--	--	--	--	4.7E-05	4.7E-05
	sec-Butylbenzene	--	--	--	--	--	--	4.1E-03	4.1E-03
	Styrene	--	--	--	--	--	--	3.4E-06	3.4E-06
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	--	--	--
	tert-Butylbenzene	--	--	--	--	--	--	2.1E-04	2.1E-04
	Tetrachloroethene	--	--	1.6E-03	1.6E-03	--	--	2.0E+01	2.0E+01
	Toluene	--	--	--	--	--	--	1.8E-05	1.8E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	--	5.1E-03	5.1E-03
	Trichloroethene	--	--	9.7E-07	9.7E-07	--	--	1.7E+01	1.7E+01
	Vinyl Chloride	--	--	9.0E-06	9.0E-06	--	--	7.8E-01	7.8E-01
	Xylenes	--	--	--	--	--	--	3.8E-05	3.8E-05
	Cumulative Risk and Hazard =	**--**	**--**	**2E-03**	**2E-03**	**--**	**--**	**5E+01**	**5E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**8E-01**	**8E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**8E-02**	**8E-02**
Groundwater-to-	**VOCs**								
Outdoor Air	1,1,1,2-Tetrachloroethane	--	2.5E-10	--	2.5E-10	--	2.2E-05	--	2.2E-05
	1,1,1-Trichloroethane	--	--	--	--	--	8.4E-05	--	8.4E-05
	1,1,2-Trichloroethane	--	3.9E-09	--	3.9E-09	--	1.2E-03	--	1.2E-03
	1,1-Dichloroethane	--	6.0E-09	--	6.0E-09	--	5.2E-04	--	5.2E-04
	1,1-Dichloroethene	--	--	--	--	--	1.7E-02	--	1.7E-02
	1,1-Dichloropropene	--	2.7E-10	--	2.7E-10	--	5.9E-05	--	5.9E-05
	1,2,4-Trichlorobenzene	--	--	--	--	--	3.0E-05	--	3.0E-05

Table D-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-to-Outdoor Air	1,2,4-Trimethylbenzene	--	--	--	--	--	4.6E-03	--	4.6E-03
	1,2-Dibromo-3-chloropropane	--	1.8E-08	--	1.8E-08	--	3.2E-03	--	3.2E-03
	1,2-Dichlorobenzene	--	--	--	--	--	8.4E-05	--	8.4E-05
	1,2-Dichloroethane	--	1.2E-08	--	1.2E-08	--	8.4E-03	--	8.4E-03
	1,3,5-Trimethylbenzene	--	--	--	--	--	5.3E-03	--	5.3E-03
	1,3-Dichlorobenzene	--	--	--	--	--	9.3E-05	--	9.3E-05
	1,4-Dichlorobenzene	--	9.1E-09	--	9.1E-09	--	7.0E-05	--	7.0E-05
	2-Butanone (MEK)	--	--	--	--	--	4.9E-05	--	4.9E-05
	2-Chlorotoluene	--	--	--	--	--	1.0E-05	--	1.0E-05
	4-Methyl-2-pentanone	--	--	--	--	--	3.7E-07	--	3.7E-07
	Acenaphthene	--	--	--	--	--	1.6E-02	--	1.6E-02
	Acetone	--	--	--	--	--	1.7E-05	--	1.7E-05
	Benzene	--	1.1E-07	--	1.1E-07	--	4.5E-03	--	4.5E-03
	Bromochloromethane	--	--	--	--	--	3.9E-05	--	3.9E-05
	Bromodichloromethane	--	2.3E-09	--	2.3E-09	--	6.1E-05	--	6.1E-05
	Bromomethane	--	--	--	--	--	3.5E-04	--	3.5E-04
	Carbon Disulfide	--	--	--	--	--	1.1E-05	--	1.1E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	1.9E-05	--	1.9E-05
	Chloroethane	--	9.5E-12	--	9.5E-12	--	2.7E-08	--	2.7E-08
	Chloroform	--	4.1E-09	--	4.1E-09	--	1.8E-04	--	1.8E-04
	Chloromethane	--	--	--	--	--	3.1E-05	--	3.1E-05
	cis-1,2-Dichloroethene	--	--	--	--	--	3.5E+00	--	3.5E+00
	Dibromochloromethane	--	2.8E-10	--	2.8E-10	--	1.0E-05	--	1.0E-05
	Dibromomethane	--	--	--	--	--	1.0E-05	--	1.0E-05
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	1.7E-05	--	1.7E-05
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	5.6E-06	--	5.6E-06
	Fluorene	--	--	--	--	--	1.9E-05	--	1.9E-05
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	1.7E-10	--	1.7E-10	--	5.1E-04	--	5.1E-04
	Isopropylbenzene	--	--	--	--	--	4.6E-04	--	4.6E-04
	Methyl tertbutyl ether (MTBE)	--	1.0E-10	--	1.0E-10	--	3.5E-06	--	3.5E-06
	Methylene Chloride	--	3.3E-10	--	3.3E-10	--	5.7E-05	--	5.7E-05
	Naphthalene	--	2.6E-07	--	2.6E-07	--	5.9E-02	--	5.9E-02
	n-Butylbenzene	--	--	--	--	--	1.9E-03	--	1.9E-03
	n-Propylbenzene	--	--	--	--	--	4.5E-03	--	4.5E-03
	p-Isopropyltoluene	--	--	--	--	--	1.9E-05	--	1.9E-05
	Pyrene	--	--	--	--	--	5.7E-07	--	5.7E-07
	sec-Butylbenzene	--	--	--	--	--	7.2E-04	--	7.2E-04
	Styrene	--	--	--	--	--	2.3E-06	--	2.3E-06
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	5.4E-05	--	5.4E-05
	tert-Butylbenzene	--	--	--	--	--	3.2E-05	--	3.2E-05
	Tetrachloroethene	--	2.9E-05	--	2.9E-05	--	9.6E+00	--	9.6E+00
	Toluene	--	--	--	--	--	5.0E-05	--	5.0E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	1.6E-02	--	1.6E-02
	Trichloroethene	--	1.1E-06	--	1.1E-06	--	6.6E-02	--	6.6E-02
	Vinyl Chloride	--	7.5E-05	--	7.5E-05	--	6.8E-01	--	6.8E-01
	Xylenes	--	--	--	--	--	2.4E-05	--	2.4E-05
	Cumulative Risk and Hazard =	--	**1E-04**	**--**	**1E-04**	**--**	**1E+01**	**--**	**1E+01**

Note: " -- " not applicable or not available

Table D-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	2.1E-02	--	4.8E-04	2.1E-02
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	2.3E-09	--	2.3E-09	6.7E-03	7.5E-05	1.5E-05	6.7E-03
	Chromium	--	--	--	--	4.6E-04	--	1.1E-05	4.7E-04
	Chromium, Hexavalent	--	4.0E-07	--	4.0E-07	1.1E-02	3.8E-05	0.0E+00	1.1E-02
	Cobalt	--	--	--	--	4.9E-03	1.1E-03	1.1E-04	6.1E-03
	Copper	--	--	--	--	4.9E-03	--	1.1E-04	5.0E-03
	Cyanide (Amenable)	--	--	--	--	4.9E-05	--	1.1E-05	6.0E-05
	Cyanide (Total)	--	--	--	--	8.3E-05	--	1.9E-05	1.0E-04
	Mercury	--	--	--	--	7.5E-04	5.6E-07	1.7E-05	7.7E-04
	Molybdenum	--	--	--	--	2.0E-03	--	4.5E-05	2.0E-03
	Nickel	--	3.5E-09	--	3.5E-09	8.3E-03	7.5E-04	1.9E-04	9.3E-03
	Selenium	--	--	--	--	5.9E-03	3.3E-07	1.4E-04	6.0E-03
	Silver	--	--	--	--	4.5E-04	--	1.0E-05	4.6E-04
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	2.3E-03	--	5.3E-05	2.4E-03
	PAHs								
	2-Methylnaphthalene	--	--	--	--	1.7E-03	1.1E-07	6.0E-04	2.3E-03
	Anthracene	--	--	--	--	3.3E-08	2.1E-12	1.1E-08	4.4E-08
	Benzo(a)anthracene	8.4E-08	1.7E-12	2.9E-08	1.1E-07	--	--	--	--
	Benzo(a)Pyrene	1.7E-06	3.5E-11	5.8E-07	2.3E-06	--	--	--	--
	Benzo(b)Fluoranthene	5.3E-07	1.1E-11	1.8E-07	7.1E-07	--	--	--	--
	Benzo(k)Fluoranthene	4.2E-08	8.7E-13	1.5E-08	5.6E-08	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	2.9E-05	1.9E-09	1.0E-05	4.0E-05
	Chrysene	2.9E-08	6.0E-13	9.9E-09	3.9E-08	--	--	--	--
	Dibenz(a,h)anthracene	3.4E-07	7.0E-12	1.2E-07	4.5E-07	--	--	--	--
	Fluoranthene	--	--	--	--	4.9E-06	3.1E-10	1.7E-06	6.6E-06
	Indeno(1,2,3-cd)pyrene	2.5E-07	5.2E-12	8.7E-08	3.4E-07	--	--	--	--
	Phenanthrene	--	--	--	--	3.2E-05	2.0E-09	1.1E-05	4.3E-05
	PCBs								
	Aroclor 1016	7.3E-10	4.7E-14	2.5E-10	9.9E-10	4.2E-04	2.7E-08	1.5E-04	5.6E-04
	Aroclor 1242	2.8E-07	7.2E-12	9.7E-08	3.8E-07	7.8E-03	5.0E-07	2.7E-03	1.1E-02
	Aroclor 1248	5.1E-04	1.3E-08	1.8E-04	6.8E-04	1.4E+01	9.1E-04	4.9E+00	1.9E+01
	Aroclor 1254	3.0E-06	7.6E-11	1.0E-06	4.0E-06	8.3E-02	5.3E-06	2.9E-02	1.1E-01
	Aroclor 1260	2.6E-06	6.7E-11	9.1E-07	3.5E-06	7.3E-02	4.7E-06	2.5E-02	9.9E-02
	Aroclor 1262	5.8E-07	1.5E-11	2.0E-07	7.8E-07	1.6E-02	1.0E-06	5.6E-03	2.2E-02
	Perchlorate								
	Perchlorate	--	--	--	--	5.0E-03	--	0.0E+00	5.0E-03
	SVOCs								
	1,4-Dioxane	8.5E-10	5.4E-14	2.0E-10	1.0E-09	--	6.6E-12	--	6.6E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table D-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	2.9E-07	9.9E-11	6.8E-08	3.6E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	4.1E-02	1.8E-06	1.4E-02	5.5E-02
	TPH - aliphatic; C9-C18	--	--	--	--	2.5E-01	5.2E-06	8.5E-02	3.3E-01
	TPH - aliphatic; C≥19	--	--	--	--	1.1E-02	4.7E-06	3.8E-03	1.5E-02
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	8.2E-01	2.6E-04	2.8E-01	1.1E+00
	TPH - aromatic; C≥19	--	--	--	--	7.4E-01	--	2.6E-01	1.0E+00
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	1.8E-07	3.8E-05	4.1E-08	3.9E-05
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	6.0E-12	1.2E-09	1.4E-12	1.2E-09	2.9E-08	4.1E-06	6.8E-09	4.1E-06
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	1.3E-10	4.9E-15	2.9E-11	1.6E-10	1.3E-07	4.4E-11	3.0E-08	1.6E-07
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	3.1E-04	2.6E-01	7.2E-05	2.6E-01
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	1.3E-05	2.7E-02	3.1E-06	2.7E-02
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	4.7E-11	1.5E-08	1.1E-11	1.5E-08	8.2E-07	4.6E-06	1.9E-07	5.6E-06
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	3.3E-05	1.0E-04	1.1E-05	1.5E-04
	Acetone	--	--	--	--	6.7E-08	2.6E-06	1.6E-08	2.6E-06
	Benzene	7.0E-10	1.3E-07	1.6E-10	1.3E-07	4.9E-06	2.1E-04	1.1E-06	2.2E-04
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	8.5E-08	1.3E-05	2.0E-08	1.3E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	2.0E-07	1.2E-06	4.5E-08	1.4E-06
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	4.3E-11	5.0E-09	1.0E-11	5.1E-09	3.9E-07	8.6E-06	9.0E-08	9.1E-06
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	9.4E-05	1.6E-02	2.2E-05	1.6E-02
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	1.2E-06	--	1.2E-06
	Ethylbenzene	--	--	--	--	2.3E-05	4.0E-04	5.2E-06	4.3E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	1.4E-04	2.2E-04	4.8E-05	4.1E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	4.9E-10	3.1E-08	1.1E-10	3.1E-08	5.9E-05	3.7E-03	1.4E-05	3.8E-03

Table D-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	1.7E-05	2.2E-03	3.8E-06	2.2E-03
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	4.6E-11	2.2E-09	1.1E-11	2.3E-09	1.5E-07	1.5E-05	3.5E-08	1.6E-05
Outdoor Inhalation	Naphthalene	7.5E-07	9.8E-06	2.6E-07	1.1E-05	8.8E-04	8.9E-02	3.1E-04	9.0E-02
	n-Butylbenzene	--	--	--	--	1.3E-04	6.7E-03	3.1E-05	6.8E-03
	n-Propylbenzene	--	--	--	--	9.1E-05	4.5E-03	2.1E-05	4.6E-03
	p-Isopropyltoluene	--	--	--	--	5.7E-05	2.3E-03	1.3E-05	2.4E-03
	Pyrene	--	--	--	--	1.1E-05	1.6E-06	2.6E-06	1.6E-05
	sec-Butylbenzene	--	--	--	--	5.6E-05	3.8E-03	1.3E-05	3.9E-03
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	3.3E-07	1.3E-05	7.5E-08	1.4E-05
	tert-Butylbenzene	--	--	--	--	9.8E-08	5.4E-06	2.3E-08	5.5E-06
	Tetrachloroethene	4.2E-05	1.4E-04	9.6E-06	1.9E-04	2.2E-02	1.9E+00	5.0E-03	1.9E+00
	Toluene	--	--	--	--	4.8E-08	1.5E-05	1.1E-08	1.5E-05
	trans-1,2-Dichloroethene	--	--	--	--	3.3E-05	6.8E-03	7.6E-06	6.8E-03
	Trichloroethene	4.5E-08	3.9E-06	1.0E-08	4.0E-06	3.3E-02	9.1E-03	7.5E-03	4.9E-02
	Vinyl Chloride	5.1E-09	1.9E-06	1.2E-09	1.9E-06	1.8E-05	6.9E-04	4.1E-06	7.1E-04
	Xylenes	--	--	--	--	1.2E-05	1.1E-03	2.7E-06	1.1E-03
	Cumulative Risk and Hazard =	**6E-04**	**2E-04**	**2E-04**	**9E-04**	**1E+01**	**2E+00**	**5E+00**	**2E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**3E-01**	**1E-05**	**1E-01**	**4E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**2E+00**	**3E-04**	**5E-01**	**2E+00**
Soil Gas-to-	**VOCs**								
Indoor Air	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	--	7.0E-02	--	7.0E-02
	1,1,2-Trichloroethane	--	3.3E-05	--	3.3E-05	--	4.0E-01	--	4.0E-01
	1,1-Dichloroethane	--	3.1E-04	--	3.1E-04	--	1.1E+00	--	1.1E+00
	1,1-Dichloroethene	--	--	--	--	--	1.2E-01	--	1.2E-01
	1,1-Dichloropropene	--	--	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	5.1E-06	--	5.1E-06	--	1.4E-01	--	1.4E-01
	1,3,5-Trimethylbenzene	--	--	--	--	--	5.3E-02	--	5.3E-02
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	--	--	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	--	--	--	--
	Acetone	--	--	--	--	--	--	--	--
	Benzene	--	8.5E-05	--	8.5E-05	--	1.4E-01	--	1.4E-01
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	3.1E-02	--	3.1E-02
	Carbon Disulfide	--	--	--	--	--	--	--	--
	Carbon Tetrachloride	--	1.4E-04	--	1.4E-04	--	2.3E-01	--	2.3E-01
	Chlorobenzene	--	--	--	--	--	--	--	--
	Chloroethane	--	--	--	--	--	--	--	--

Table D-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil Gas-to-	Chloroform	--	4.8E-07	--	4.8E-07	--	8.3E-04	--	8.3E-04
Indoor Air	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	--	1.6E+01	--	1.6E+01
	Dibromochloromethane	--	3.5E-06	--	3.5E-06	--	5.3E-03	--	5.3E-03
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	2.5E-04	--	2.5E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	7.5E-03	--	7.5E-03
	Fluorene	--	--	--	--	--	--	--	--
	Freon-113	--	--	--	--	--	1.5E-04	--	1.5E-04
	Hexachlorobutadiene	--	--	--	--	--	--	--	--
	Isopropylbenzene	--	--	--	--	--	3.5E-04	--	3.5E-04
	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
	Methylene Chloride	--	1.3E-07	--	1.3E-07	--	9.0E-04	--	9.0E-04
	Naphthalene	--	--	--	--	--	--	--	--
	n-Butylbenzene	--	--	--	--	--	--	--	--
	n-Propylbenzene	--	--	--	--	--	--	--	--
	p-Isopropyltoluene	--	--	--	--	--	--	--	--
	Pyrene	--	--	--	--	--	--	--	--
	sec-Butylbenzene	--	--	--	--	--	--	--	--
	Styrene	--	--	--	--	--	1.7E-04	--	1.7E-04
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	7.4E-03	--	7.4E-03
	tert-Butylbenzene	--	--	--	--	--	--	--	--
	Tetrachloroethene	--	1.5E-03	--	1.5E-03	--	1.9E+01	--	1.9E+01
	Toluene	--	--	--	--	--	1.2E-02	--	1.2E-02
	trans-1,2-Dichloroethene	--	--	--	--	--	7.1E-02	--	7.1E-02
	Trichloroethene	--	3.5E-04	--	3.5E-04	--	8.2E-01	--	8.2E-01
	Vinyl Chloride	--	9.3E-03	--	9.3E-03	--	3.4E+00	--	3.4E+00
	Xylenes	--	--	--	--	--	7.5E-03	--	7.5E-03
	Cumulative Risk and Hazard =	**--**	**1E-02**	**--**	**1E-02**	**--**	**4E+01**	**--**	**4E+01**

Note: " -- " not applicable or not available

Table D-19
Summary of Cancer Risks and Noncancer Hazards
Landscaper Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	4.2E-03	--	1.2E-03	5.3E-03
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	5.5E-10	--	5.5E-10	1.3E-03	1.8E-05	3.8E-05	1.4E-03
	Chromium	--	--	--	--	9.1E-05	--	2.6E-05	1.2E-04
	Chromium, Hexavalent	--	9.7E-08	--	9.7E-08	2.3E-03	9.3E-06	0.0E+00	2.3E-03
	Cobalt	--	--	--	--	9.8E-04	2.7E-04	2.8E-04	1.5E-03
	Copper	--	--	--	--	9.8E-04	--	2.8E-04	1.3E-03
	Cyanide (Amenable)	--	--	--	--	9.8E-06	--	2.8E-05	3.8E-05
	Cyanide (Total)	--	--	--	--	1.7E-05	--	4.7E-05	6.4E-05
	Mercury	--	--	--	--	1.5E-04	1.4E-07	4.3E-05	1.9E-04
	Molybdenum	--	--	--	--	3.9E-04	--	1.1E-04	5.0E-04
	Nickel	--	8.4E-10	--	8.4E-10	1.7E-03	1.8E-04	4.7E-04	2.3E-03
	Selenium	--	--	--	--	1.2E-03	8.0E-08	3.3E-04	1.5E-03
	Silver	--	--	--	--	9.0E-05	--	2.6E-05	1.2E-04
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	4.6E-04	--	1.3E-04	6.0E-04
	PAHs								
	2-Methylnaphthalene	--	--	--	--	3.5E-04	2.7E-08	1.5E-03	1.8E-03
	Anthracene	--	--	--	--	6.5E-09	5.1E-13	2.8E-08	3.4E-08
	Benzo(a)anthracene	1.7E-08	4.2E-13	7.2E-08	8.8E-08	--	--	--	--
	Benzo(a)Pyrene	3.4E-07	8.5E-12	1.4E-06	1.8E-06	--	--	--	--
	Benzo(b)Fluoranthene	1.1E-07	2.7E-12	4.5E-07	5.6E-07	--	--	--	--
	Benzo(k)Fluoranthene	8.4E-09	2.1E-13	3.6E-08	4.4E-08	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	5.9E-06	4.6E-10	2.5E-05	3.1E-05
	Chrysene	5.7E-09	1.4E-13	2.4E-08	3.0E-08	--	--	--	--
	Dibenz(a,h)anthracene	6.7E-08	1.7E-12	2.9E-07	3.5E-07	--	--	--	--
	Fluoranthene	--	--	--	--	9.8E-07	7.6E-11	4.2E-06	5.2E-06
	Indeno(1,2,3-cd)pyrene	5.0E-08	1.3E-12	2.2E-07	2.7E-07	--	--	--	--
	Phenanthrene	--	--	--	--	6.4E-06	5.0E-10	2.7E-05	3.4E-05
	PCBs								
	Aroclor 1016	1.5E-10	1.1E-14	6.3E-10	7.7E-10	8.4E-05	6.5E-09	3.6E-04	4.4E-04
	Aroclor 1242	5.6E-08	1.7E-12	2.4E-07	2.9E-07	1.6E-03	1.2E-07	6.7E-03	8.3E-03
	Aroclor 1248	1.0E-04	3.1E-09	4.3E-04	5.3E-04	2.8E+00	2.2E-04	1.2E+01	1.5E+01
	Aroclor 1254	5.9E-07	1.8E-11	2.5E-06	3.1E-06	1.7E-02	1.3E-06	7.1E-02	8.8E-02
	Aroclor 1260	5.2E-07	1.6E-11	2.2E-06	2.8E-06	1.5E-02	1.1E-06	6.3E-02	7.7E-02
	Aroclor 1262	1.2E-07	3.6E-12	4.9E-07	6.1E-07	3.2E-03	2.5E-07	1.4E-02	1.7E-02
	Perchlorate								
	Perchlorate	--	--	--	--	1.0E-03	--	0.0E+00	1.0E-03
	SVOCs								
	1,4-Dioxane	1.7E-10	1.3E-14	4.8E-10	6.5E-10	--	1.6E-12	--	1.6E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table D-19
Summary of Cancer Risks and Noncancer Hazards
Landscaper Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	5.9E-08	2.4E-11	1.7E-07	2.3E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	8.2E-03	4.3E-07	3.5E-02	4.3E-02
	TPH - aliphatic; C9-C18	--	--	--	--	4.9E-02	1.3E-06	2.1E-01	2.6E-01
	TPH - aliphatic; C≥19	--	--	--	--	2.2E-03	1.1E-06	9.5E-03	1.2E-02
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	1.6E-01	6.4E-05	7.0E-01	8.6E-01
	TPH - aromatic; C≥19	--	--	--	--	1.5E-01	--	6.3E-01	7.8E-01
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	3.6E-08	9.3E-06	1.0E-07	9.4E-06
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	1.2E-12	2.9E-10	3.4E-12	2.9E-10	5.9E-09	9.8E-07	1.7E-08	1.0E-06
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	2.5E-11	1.2E-15	7.3E-11	9.8E-11	2.6E-08	1.1E-11	7.4E-08	1.0E-07
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	6.3E-05	6.4E-02	1.8E-04	6.4E-02
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	2.7E-06	6.6E-03	7.6E-06	6.6E-03
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	9.4E-12	3.7E-09	2.7E-11	3.7E-09	1.6E-07	1.1E-06	4.6E-07	1.7E-06
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	6.5E-06	2.5E-05	2.8E-05	5.9E-05
	Acetone	--	--	--	--	1.3E-08	6.2E-07	3.8E-08	6.7E-07
	Benzene	1.4E-10	3.1E-08	4.0E-10	3.2E-08	9.8E-07	5.1E-05	2.8E-06	5.5E-05
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	1.7E-08	3.1E-06	4.9E-08	3.2E-06
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	3.9E-08	2.9E-07	1.1E-07	4.4E-07
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	8.7E-12	1.2E-09	2.5E-11	1.2E-09	7.8E-08	2.1E-06	2.2E-07	2.4E-06
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	1.9E-05	3.9E-03	5.4E-05	3.9E-03
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	3.0E-07	--	3.0E-07
	Ethylbenzene	--	--	--	--	4.5E-06	9.7E-05	1.3E-05	1.1E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	2.8E-05	5.3E-05	1.2E-04	2.0E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	9.8E-11	7.5E-09	2.8E-10	7.8E-09	1.2E-05	8.9E-04	3.3E-05	9.4E-04

Table D-19
Summary of Cancer Risks and Noncancer Hazards
Landscaper Exposure Scenario
Site Wide Risk Assessment: SITE-SPECIFIC
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	3.3E-06	5.4E-04	9.5E-06	5.5E-04
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	9.2E-12	5.3E-10	2.6E-11	5.7E-10	3.1E-08	3.7E-06	8.7E-08	3.8E-06
Outdoor Inhalation	Naphthalene	1.5E-07	2.4E-06	6.5E-07	3.2E-06	1.8E-04	2.2E-02	7.5E-04	2.3E-02
	n-Butylbenzene	--	--	--	--	2.7E-05	1.6E-03	7.7E-05	1.7E-03
	n-Propylbenzene	--	--	--	--	1.8E-05	1.1E-03	5.2E-05	1.2E-03
	p-Isopropyltoluene	--	--	--	--	1.1E-05	5.6E-04	3.2E-05	6.0E-04
	Pyrene	--	--	--	--	2.3E-06	4.0E-07	6.5E-06	9.2E-06
	sec-Butylbenzene	--	--	--	--	1.1E-05	9.2E-04	3.2E-05	9.6E-04
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	6.5E-08	3.2E-06	1.9E-07	3.4E-06
	tert-Butylbenzene	--	--	--	--	2.0E-08	1.3E-06	5.6E-08	1.4E-06
	Tetrachloroethene	8.3E-06	3.5E-05	2.4E-05	6.7E-05	4.3E-03	4.6E-01	1.2E-02	4.8E-01
	Toluene	--	--	--	--	9.7E-09	3.7E-06	2.8E-08	3.7E-06
	trans-1,2-Dichloroethene	--	--	--	--	6.6E-06	1.6E-03	1.9E-05	1.7E-03
	Trichloroethene	9.1E-09	9.5E-07	2.6E-08	9.8E-07	6.5E-03	2.2E-03	1.9E-02	2.7E-02
	Vinyl Chloride	1.0E-09	4.6E-07	2.9E-09	4.6E-07	3.5E-06	1.7E-04	1.0E-05	1.8E-04
	Xylenes	--	--	--	--	2.3E-06	2.6E-04	6.7E-06	2.7E-04
	Cumulative Risk and Hazard =	**1E-04**	**4E-05**	**5E-04**	**6E-04**	**3E+00**	**6E-01**	**1E+01**	**2E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**6E-02**	**3E-06**	**3E-01**	**3E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**3E-01**	**6E-05**	**1E+00**	**2E+00**

Note: " -- " not applicable or not available

APPENDIX E

Detailed Risk Calculations for the Default Risk Assessment

Table E-1
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: Offsite Industrial/Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	--	--	2.9E-01	1.0E+00	--	--	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	6.4E-06	8.7E-07	1.4E-01	5.0E-01	6.1E-06	3.1E-07	5.7E-03	1.8E-09
	1,1-Dichloroethene	7.5E-04	1.0E-04	2.0E-02	7.0E-02	5.1E-03	3.7E-05	--	--
	1,1-Dichloropropene	--	--	5.7E-03	2.0E-02	--	--	5.5E-02	--
	1,2,4-Trichlorobenzene	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	4.3E-06	5.9E-07	1.7E-03	6.0E-03	3.4E-04	2.1E-07	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	3.1E-06	4.2E-07	5.7E-02	2.0E-01	7.4E-06	1.5E-07	--	--
	1,2-Dichloroethane	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	--	--	1.7E-03	6.0E-03	--	--	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	5.2E-05	7.1E-06	2.3E-01	8.0E-01	3.1E-05	2.5E-06	4.0E-02	1.0E-07
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	1.9E-06	2.6E-07	8.6E-01	3.0E+00	3.0E-07	9.2E-08	--	--
	Acenaphthene	4.4E-06	6.0E-07	6.0E-02	2.1E-01	1.0E-05	2.1E-07	--	--
	Acetone	1.5E-06	2.0E-07	9.0E-01	3.2E+00	2.3E-07	7.3E-08	--	--
	Benzene	6.1E-04	8.4E-05	1.7E-02	6.0E-02	4.9E-03	3.0E-05	1.0E-01	3.0E-06
	Bromochloromethane	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	9.0E-05	1.2E-05	2.3E-01	8.0E-01	5.4E-05	4.4E-06	--	--
	Carbon Tetrachloride	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.9E-05	6.7E-06	2.9E-01	1.0E+00	2.3E-05	2.4E-06	--	--
	Chloroethane	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	--	--	8.6E-02	3.0E-01	--	--	1.9E-02	--
	Chloromethane	8.0E-06	1.1E-06	2.6E-02	9.0E-02	4.2E-05	3.9E-07	--	--
	cis-1,2-Dichloroethene	1.4E-01	1.9E-02	1.0E-02	3.5E-02	1.9E+00	6.8E-03	--	--
	Dibromochloromethane	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	9.4E-06	1.3E-06	5.7E-01	2.0E+00	2.2E-06	4.6E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Freon-113	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	--	--	3.0E-04	1.1E-03	--	--	7.8E-02	--
	Isopropylbenzene	2.1E-03	2.8E-04	1.1E-01	3.9E-01	2.6E-03	1.0E-04	--	--
	Methyl tertbutyl ether (MTBE)	2.6E-05	3.6E-06	2.3E+00	8.0E+00	1.6E-06	1.3E-06	9.1E-04	1.2E-09
	Methylene Chloride	--	--	1.1E-01	4.0E-01	--	--	3.5E-03	--
	Naphthalene	1.1E-04	1.6E-05	2.6E-03	9.0E-03	6.1E-03	5.6E-06	1.2E-01	6.7E-07
	n-Butylbenzene	6.1E-06	8.3E-07	4.0E-02	1.4E-01	2.1E-05	3.0E-07	--	--
	n-Propylbenzene	1.1E-05	1.4E-06	4.0E-02	1.4E-01	3.6E-05	5.2E-07	--	--
	p-Isopropyltoluene	9.8E-05	1.3E-05	1.1E-01	3.9E-01	1.2E-04	4.8E-06	--	--
	Pyrene	8.1E-08	1.1E-08	3.0E-02	1.1E-01	3.7E-07	3.9E-09	--	--

Table E-1
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Groundwater Vapors: Offsite Industrial/Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Indoor Air EPC mg/m^3	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Styrene	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	2.4E-06	3.3E-07	4.0E-02	1.4E-01	8.1E-06	1.2E-07	--	--
	tert-Butyl alcohol	1.8E-05	2.5E-06	3.0E-01	1.1E+00	8.3E-06	8.9E-07	--	--
	tert-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Tetrachloroethene	1.3E+00	1.8E-01	1.0E-02	3.5E-02	1.8E+01	6.4E-02	2.1E-02	1.3E-03
	Toluene	4.8E-05	6.6E-06	8.6E-02	3.0E-01	7.6E-05	2.3E-06	--	--
	trans-1,2-Dichloroethene	1.6E-03	2.2E-04	2.0E-02	7.0E-02	1.1E-02	7.8E-05	--	--
	Trichloroethene	2.0E-01	2.7E-02	1.7E-01	6.0E-01	1.6E-01	9.6E-03	7.0E-03	6.7E-05
	Vinyl Chloride	2.0E+00	2.7E-01	2.9E-02	1.0E-01	9.5E+00	9.7E-02	2.7E-01	2.6E-02
	Xylenes	2.1E-05	2.9E-06	2.0E-01	7.0E-01	1.4E-05	1.0E-06	--	--
						2.9E+01			2.8E-02

Table E-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	2.7E-05	4.0E-04	6.9E-02	3.9E-07	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	2.2E-05	1.0E-03	2.2E-02	3.1E-07	--	--
	Chromium	7.0E+02	2.3E-03	1.5E+00	1.5E-03	3.2E-05	--	--
	Chromium, Hexavalent	3.5E+01	1.1E-04	3.0E-03	3.8E-02	1.6E-06	--	--
	Cobalt	1.0E+02	3.2E-04	2.0E-02	1.6E-02	4.6E-06	--	--
	Copper	2.0E+02	6.5E-04	4.0E-02	1.6E-02	9.2E-06	--	--
	Cyanide (Amenable)	1.0E+00	3.2E-06	2.0E-02	1.6E-04	4.6E-08	--	--
	Cyanide (Total)	1.7E+00	5.5E-06	2.0E-02	2.7E-04	7.8E-08	--	--
	Mercury	2.3E-01	7.4E-07	3.0E-04	2.5E-03	1.1E-08	--	--
	Molybdenum	1.0E+01	3.2E-05	5.0E-03	6.5E-03	4.6E-07	--	--
	Nickel	1.7E+02	5.5E-04	2.0E-02	2.7E-02	7.8E-06	--	--
	Selenium	3.0E+01	9.7E-05	5.0E-03	1.9E-02	1.4E-06	--	--
	Silver	2.3E+00	7.4E-06	5.0E-03	1.5E-03	1.1E-07	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	2.3E-03	3.0E-01	7.6E-03	3.3E-05	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	1.7E-04	3.0E-02	5.7E-03	2.4E-06	--	--
	Anthracene	1.0E-02	3.2E-08	3.0E-01	1.1E-07	4.6E-10	--	--
	Benzo(a)anthracene	2.0E-01	6.5E-07	--	--	9.2E-09	1.2E+00	1.1E-08
	Benzo(a)Pyrene	4.0E-01	1.3E-06	--	--	1.8E-08	1.2E+01	2.2E-07
	Benzo(b)Fluoranthene	1.3E+00	4.1E-06	--	--	5.8E-08	1.2E+00	7.0E-08
	Benzo(k)Fluoranthene	1.0E-01	3.2E-07	--	--	4.6E-09	1.2E+00	5.5E-09
	Benzo(g,h,i)Perylene	9.0E-01	2.9E-06	3.0E-02	9.7E-05	4.2E-08	--	--
	Chrysene	6.8E-01	2.2E-06	--	--	3.1E-08	1.2E-01	3.8E-09
	Dibenz(a,h)anthracene	8.0E-02	2.6E-07	--	--	3.7E-09	1.2E+01	4.4E-08
	Fluoranthene	2.0E-01	6.5E-07	4.0E-02	1.6E-05	9.2E-09	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.9E-06	--	--	2.8E-08	1.2E+00	3.3E-08
	Phenanthrene	9.8E+00	3.2E-05	3.0E-01	1.1E-04	4.5E-07	--	--
	PCBs							
	Aroclor 1016	3.0E-02	9.7E-08	7.0E-05	1.4E-03	1.4E-09	7.0E-02	9.7E-11
	Aroclor 1242	1.6E-01	5.2E-07	2.0E-05	2.6E-02	7.4E-09	5.0E+00	3.7E-08
	Aroclor 1248	2.9E+02	9.4E-04	2.0E-05	4.7E+01	1.3E-05	5.0E+00	6.7E-05
	Aroclor 1254	1.7E+00	5.5E-06	2.0E-05	2.7E-01	7.8E-08	5.0E+00	3.9E-07
	Aroclor 1260	1.5E+00	4.8E-06	2.0E-05	2.4E-01	6.9E-08	5.0E+00	3.5E-07
	Aroclor 1262	3.3E-01	1.1E-06	2.0E-05	5.3E-02	1.5E-08	5.0E+00	7.6E-08
	Perchlorate							
	Perchlorate	3.6E+00	1.2E-05	7.0E-04	1.7E-02	1.7E-07	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	2.9E-07	--	--	4.2E-09	2.7E-02	1.1E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table E-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	2.9E-07	3.0E-01	9.7E-07	4.2E-09	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	5.4E-03	4.0E-02	1.4E-01	7.8E-05	--	--
	TPH - aliphatic; C9-C18	2.5E+04	8.1E-02	1.0E-01	8.1E-01	1.2E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	7.3E-02	2.0E+00	3.7E-02	1.0E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	5.4E-03	--	--	7.8E-05	--	--
	TPH - aromatic; C9-C18	2.5E+04	8.1E-02	3.0E-02	2.7E+00	1.2E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	7.3E-02	3.0E-02	2.4E+00	1.0E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	1.6E-07	2.8E-01	5.9E-07	2.4E-09	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	9.7E-09	1.0E-01	9.7E-08	1.4E-10	5.7E-03	7.9E-13
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.3E-08	3.0E-02	4.3E-07	1.8E-10	9.1E-02	1.7E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	5.2E-05	5.0E-02	1.0E-03	7.4E-07	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	2.2E-06	5.0E-02	4.4E-05	3.1E-08	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	8.1E-08	3.0E-02	2.7E-06	1.2E-09	5.4E-03	6.2E-12
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	6.5E-06	6.0E-02	1.1E-04	9.2E-08	--	--
	Acetone	6.2E-02	2.0E-07	9.0E-01	2.2E-07	2.9E-09	--	--
	Benzene	2.0E-02	6.5E-08	4.0E-03	1.6E-05	9.2E-10	1.0E-01	9.2E-11
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.8E-08	1.0E-01	2.8E-07	4.0E-10	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	1.3E-08	2.0E-02	6.5E-07	1.8E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	1.3E-08	1.0E-02	1.3E-06	1.8E-10	3.1E-02	5.7E-12
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	3.1E-06	1.0E-02	3.1E-04	4.4E-08	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	3.2E-09	--	--	4.6E-11	--	--
	Ethylbenzene	2.3E+00	7.4E-06	1.0E-01	7.4E-05	1.1E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	1.8E-05	4.0E-02	4.6E-04	2.6E-07	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	5.8E-08	3.0E-04	1.9E-04	8.3E-10	7.8E-02	6.5E-11

Table E-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	5.5E-06	1.0E-01	5.5E-05	7.8E-08	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	3.0E-08	6.0E-02	5.1E-07	4.3E-10	1.4E-02	6.1E-12
	Naphthalene	1.8E+01	5.8E-05	2.0E-02	2.9E-03	8.3E-07	1.2E-01	1.0E-07
	n-Butylbenzene	5.5E+00	1.8E-05	4.0E-02	4.4E-04	2.5E-07	--	--
	n-Propylbenzene	3.7E+00	1.2E-05	4.0E-02	3.0E-04	1.7E-07	--	--
	p-Isopropyltoluene	5.8E+00	1.9E-05	1.0E-01	1.9E-04	2.7E-07	--	--
	Pyrene	3.5E-01	1.1E-06	3.0E-02	3.8E-05	1.6E-08	--	--
	sec-Butylbenzene	2.3E+00	7.4E-06	4.0E-02	1.9E-04	1.1E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.2E-07	3.0E-01	1.1E-06	4.6E-09	--	--
	tert-Butylbenzene	4.0E-03	1.3E-08	4.0E-02	3.2E-07	1.8E-10	--	--
	Tetrachloroethene	2.2E+02	7.1E-04	1.0E-02	7.1E-02	1.0E-05	5.4E-01	5.5E-06
	Toluene	9.9E-03	3.2E-08	2.0E-01	1.6E-07	4.6E-10	--	--
	trans-1,2-Dichloroethene	6.7E-01	2.2E-06	2.0E-02	1.1E-04	3.1E-08	--	--
	Trichloroethene	1.0E+01	3.2E-05	3.0E-04	1.1E-01	4.6E-07	1.3E-02	6.0E-09
	Vinyl Chloride	5.4E-02	1.7E-07	3.0E-03	5.8E-05	2.5E-09	2.7E-01	6.7E-10
	Xylenes	2.4E+00	7.7E-06	2.0E-01	3.9E-05	1.1E-07	--	--
	Cumulative Risk and Hazard =				**5E+01**			**7E-05**
	Cumulative HI for $TPH_{aliphatic}$ =				**1E+00**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**5E+00**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	3.8E-06	4.0E-04	9.5E-03	5.4E-08	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	3.0E-07	1.0E-03	3.0E-04	4.3E-09	--	--
	Chromium	7.0E+02	3.1E-04	1.5E+00	2.1E-04	4.5E-06	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	4.5E-05	2.0E-02	2.2E-03	6.4E-07	--	--
	Copper	2.0E+02	8.9E-05	4.0E-02	2.2E-03	1.3E-06	--	--
	Cyanide (Amenable)	1.0E+00	4.5E-06	2.0E-02	2.2E-04	6.4E-08	--	--
	Cyanide (Total)	1.7E+00	7.6E-06	2.0E-02	3.8E-04	1.1E-07	--	--
	Mercury	2.3E-01	1.0E-07	3.0E-04	3.4E-04	1.5E-09	--	--
	Molybdenum	1.0E+01	4.5E-06	5.0E-03	8.9E-04	6.4E-08	--	--
	Nickel	1.7E+02	7.6E-05	2.0E-02	3.8E-03	1.1E-06	--	--
	Selenium	3.0E+01	1.3E-05	5.0E-03	2.7E-03	1.9E-07	--	--
	Silver	2.3E+00	1.0E-06	5.0E-03	2.1E-04	1.5E-08	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	3.2E-04	3.0E-01	1.1E-03	4.5E-06	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	3.5E-04	3.0E-02	1.2E-02	5.1E-06	--	--
	Anthracene	1.0E-02	6.7E-08	3.0E-01	2.2E-07	9.6E-10	--	--
	Benzo(a)anthracene	2.0E-01	1.3E-06	--	--	1.9E-08	1.2E+00	2.3E-08
	Benzo(a)Pyrene	4.0E-01	2.7E-06	--	--	3.8E-08	1.2E+01	4.6E-07
	Benzo(b)Fluoranthene	1.3E+00	8.4E-06	--	--	1.2E-07	1.2E+00	1.4E-07
	Benzo(k)Fluoranthene	1.0E-01	6.7E-07	--	--	9.6E-09	1.2E+00	1.1E-08
	Benzo(g,h,i)Perylene	9.0E-01	6.0E-06	3.0E-02	2.0E-04	8.6E-08	--	--

Table E-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	4.6E-06	--	--	6.5E-08	1.2E-01	7.8E-09
	Dibenz(a,h)anthracene	8.0E-02	5.4E-07	--	--	7.6E-09	1.2E+01	9.2E-08
	Fluoranthene	2.0E-01	1.3E-06	4.0E-02	3.3E-05	1.9E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	4.0E-06	--	--	5.7E-08	1.2E+00	6.9E-08
	Phenanthrene	9.8E+00	6.6E-05	3.0E-01	2.2E-04	9.4E-07	--	--
	PCBs							
	Aroclor 1016	3.0E-02	2.0E-07	7.0E-05	2.9E-03	2.9E-09	7.0E-02	2.0E-10
	Aroclor 1242	1.6E-01	1.1E-06	2.0E-05	5.4E-02	1.5E-08	5.0E+00	7.6E-08
	Aroclor 1248	2.9E+02	1.9E-03	2.0E-05	9.7E+01	2.8E-05	5.0E+00	1.4E-04
	Aroclor 1254	1.7E+00	1.1E-05	2.0E-05	5.7E-01	1.6E-07	5.0E+00	8.1E-07
	Aroclor 1260	1.5E+00	1.0E-05	2.0E-05	5.0E-01	1.4E-07	5.0E+00	7.2E-07
	Aroclor 1262	3.3E-01	2.2E-06	2.0E-05	1.1E-01	3.2E-08	5.0E+00	1.6E-07
	Perchlorate							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	4.0E-07	--	--	5.7E-09	2.7E-02	1.5E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	4.0E-07	3.0E-01	1.3E-06	5.7E-09	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.1E-02	4.0E-02	2.8E-01	1.6E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	1.7E-01	1.0E-01	1.7E+00	2.4E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.5E-01	2.0E+00	7.6E-02	2.2E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.1E-02	--	--	1.6E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	1.7E-01	3.0E-02	5.6E+00	2.4E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	1.5E-01	3.0E-02	5.1E+00	2.2E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	2.3E-07	2.8E-01	8.1E-07	3.3E-09	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	1.3E-08	1.0E-01	1.3E-07	1.9E-10	5.7E-03	1.1E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.8E-08	3.0E-02	5.9E-07	2.5E-10	9.1E-02	2.3E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	7.1E-05	5.0E-02	1.4E-03	1.0E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.0E-06	5.0E-02	6.1E-05	4.3E-08	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.1E-07	3.0E-02	3.7E-06	1.6E-09	5.4E-03	8.6E-12
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table E-2
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	1.3E-05	6.0E-02	2.2E-04	1.9E-07	--	--
	Acetone	6.2E-02	2.8E-07	9.0E-01	3.1E-07	4.0E-09	--	--
	Benzene	2.0E-02	8.9E-08	4.0E-03	2.2E-05	1.3E-09	1.0E-01	1.3E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	3.9E-08	1.0E-01	3.9E-07	5.5E-10	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	1.8E-08	2.0E-02	8.9E-07	2.5E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	1.8E-08	1.0E-02	1.8E-06	2.5E-10	3.1E-02	7.9E-12
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	4.3E-06	1.0E-02	4.3E-04	6.1E-08	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	4.5E-09	--	--	6.4E-11	--	--
	Ethylbenzene	2.3E+00	1.0E-05	1.0E-01	1.0E-04	1.5E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	3.8E-05	4.0E-02	9.5E-04	5.4E-07	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	8.0E-08	3.0E-04	2.7E-04	1.1E-09	7.8E-02	8.9E-11
	Isopropylbenzene	1.7E+00	7.6E-06	1.0E-01	7.6E-05	1.1E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	4.2E-08	6.0E-02	7.0E-07	6.0E-10	1.4E-02	8.4E-12
	Naphthalene	1.8E+01	1.2E-04	2.0E-02	6.0E-03	1.7E-06	1.2E-01	2.1E-07
	n-Butylbenzene	5.5E+00	2.5E-05	4.0E-02	6.1E-04	3.5E-07	--	--
	n-Propylbenzene	3.7E+00	1.7E-05	4.0E-02	4.1E-04	2.4E-07	--	--
	p-Isopropyltoluene	5.8E+00	2.6E-05	1.0E-01	2.6E-04	3.7E-07	--	--
	Pyrene	3.5E-01	1.6E-06	3.0E-02	5.2E-05	2.2E-08	--	--
	sec-Butylbenzene	2.3E+00	1.0E-05	4.0E-02	2.6E-04	1.5E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	4.5E-07	3.0E-01	1.5E-06	6.4E-09	--	--
	tert-Butylbenzene	4.0E-03	1.8E-08	4.0E-02	4.5E-07	2.5E-10	--	--
	Tetrachloroethene	2.2E+02	9.8E-04	1.0E-02	9.8E-02	1.4E-05	5.4E-01	7.6E-06
	Toluene	9.9E-03	4.4E-08	2.0E-01	2.2E-07	6.3E-10	--	--
	trans-1,2-Dichloroethene	6.7E-01	3.0E-06	2.0E-02	1.5E-04	4.3E-08	--	--
	Trichloroethene	1.0E+01	4.5E-05	3.0E-04	1.5E-01	6.4E-07	1.3E-02	8.3E-09
	Vinyl Chloride	5.4E-02	2.4E-07	3.0E-03	8.0E-05	3.4E-09	2.7E-01	9.3E-10
	Xylenes	2.4E+00	1.1E-05	2.0E-01	5.4E-05	1.5E-07	--	--
	Cumulative Risk and Hazard =				**1E+02**			**1E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**2E+00**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**1E+01**			**--**

Table E-3
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	2.1E-06	4.2E-07	--	--	--	5.9E-09	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	1.7E-06	3.3E-07	5.7E-06	2.0E-05	5.8E-02	4.8E-09	1.5E+01	7.1E-08
	Chromium	7.0E+02	1.8E-04	3.4E-05	--	--	--	4.9E-07	--	--
	Chromium, Hexavalent	3.5E+01	8.8E-06	1.7E-06	5.7E-05	2.0E-04	3.0E-02	2.4E-08	5.1E+02	1.2E-05
	Cobalt	1.0E+02	2.5E-05	4.9E-06	5.7E-06	2.0E-05	8.6E-01	7.0E-08	--	--
	Copper	2.0E+02	5.0E-05	9.8E-06	--	--	--	1.4E-07	--	--
	Cyanide (Amenable)	1.0E+00	2.5E-07	4.9E-08	--	--	--	7.0E-10	--	--
	Cyanide (Total)	1.7E+00	4.3E-07	8.3E-08	--	--	--	1.2E-09	--	--
	Mercury	2.3E-01	5.8E-08	1.1E-08	2.6E-05	9.0E-05	4.4E-04	1.6E-10	--	--
	Molybdenum	1.0E+01	2.5E-06	4.9E-07	--	--	--	7.0E-09	--	--
	Nickel	1.7E+02	4.3E-05	8.3E-06	1.4E-05	5.0E-05	5.8E-01	1.2E-07	9.1E-01	1.1E-07
	Selenium	3.0E+01	7.5E-06	1.5E-06	5.7E-03	2.0E-02	2.6E-04	2.1E-08	--	--
	Silver	2.3E+00	5.8E-07	1.1E-07	--	--	--	1.6E-09	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	1.8E-04	3.5E-05	--	--	--	5.0E-07	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	1.3E-05	2.6E-06	3.0E-02	1.1E-01	8.6E-05	3.7E-08	--	--
	Anthracene	1.0E-02	2.5E-09	4.9E-10	3.0E-01	1.1E+00	1.6E-09	7.0E-12	--	--
	Benzo(a)anthracene	2.0E-01	5.0E-08	9.8E-09	--	--	--	1.4E-10	3.9E-01	5.5E-11
	Benzo(a)Pyrene	4.0E-01	1.0E-07	2.0E-08	--	--	--	2.8E-10	3.9E+00	1.1E-09
	Benzo(b)Fluoranthene	1.3E+00	3.2E-07	6.2E-08	--	--	--	8.8E-10	3.9E-01	3.4E-10
	Benzo(k)Fluoranthene	1.0E-01	2.5E-08	4.9E-09	--	--	--	7.0E-11	3.9E-01	2.7E-11
	Benzo(g,h,i)Perylene	9.0E-01	2.3E-07	4.4E-08	3.0E-02	1.1E-01	1.5E-06	6.3E-10	--	--
	Chrysene	6.8E-01	1.7E-07	3.3E-08	--	--	--	4.8E-10	3.9E-02	1.9E-11
	Dibenz(a,h)anthracene	8.0E-02	2.0E-08	3.9E-09	--	--	--	5.6E-11	3.9E+00	2.2E-10
	Fluoranthene	2.0E-01	5.0E-08	9.8E-09	4.0E-02	1.4E-01	2.4E-07	1.4E-10	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.5E-07	2.9E-08	--	--	--	4.2E-10	3.9E-01	1.6E-10
	Phenanthrene	9.8E+00	2.5E-06	4.8E-07	3.0E-01	1.1E+00	1.6E-06	6.8E-09	--	--
	PCBs									
	Aroclor 1016	3.0E-02	7.5E-09	1.5E-09	7.0E-05	2.5E-04	2.1E-05	2.1E-11	7.0E-02	1.5E-12
	Aroclor 1242	1.6E-01	4.0E-08	7.8E-09	2.0E-05	7.0E-05	3.9E-04	1.1E-10	2.0E+00	2.2E-10
	Aroclor 1248	2.9E+02	7.3E-05	1.4E-05	2.0E-05	7.0E-05	7.1E-01	2.0E-07	2.0E+00	4.1E-07
	Aroclor 1254	1.7E+00	4.3E-07	8.3E-08	2.0E-05	7.0E-05	4.2E-03	1.2E-09	2.0E+00	2.4E-09
	Aroclor 1260	1.5E+00	3.8E-07	7.3E-08	2.0E-05	7.0E-05	3.7E-03	1.0E-09	2.0E+00	2.1E-09
	Aroclor 1262	3.3E-01	8.3E-08	1.6E-08	2.0E-05	7.0E-05	8.1E-04	2.3E-10	2.0E+00	4.6E-10
	Perchlorate									
	Perchlorate	3.6E+00	9.0E-07	1.8E-07	--	--	--	2.5E-09	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	2.3E-08	4.4E-09	8.6E-01	3.0E+00	5.1E-09	6.3E-11	2.7E-02	1.7E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table E-3
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	2.3E-08	4.4E-09	5.7E-02	2.0E-01	7.7E-08	6.3E-11	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	4.2E-04	8.2E-05	6.0E-02	2.1E-01	1.4E-03	1.2E-06	--	--
	TPH - aliphatic; C9-C18	2.5E+04	6.3E-03	1.2E-03	3.0E-01	1.1E+00	4.1E-03	1.8E-05	--	--
	TPH - aliphatic; C≥19	2.3E+04	5.7E-03	1.1E-03	3.0E-01	1.1E+00	3.7E-03	1.6E-05	--	--
	TPH - aromatic; C5-C8	1.7E+03	4.2E-04	8.2E-05	--	--	--	1.2E-06	--	--
	TPH - aromatic; C9-C18	2.5E+04	6.3E-03	1.2E-03	6.0E-03	2.1E-02	2.0E-01	1.8E-05	--	--
	TPH - aromatic; C≥19	2.3E+04	5.7E-03	1.1E-03	--	--	--	1.6E-05	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	3.9E-04	7.6E-05	2.9E-01	1.0E+00	2.7E-04	1.1E-06	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	2.1E-05	4.0E-06	1.4E-01	5.0E-01	2.8E-05	5.8E-08	5.7E-03	3.3E-10
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.0E-09	2.0E-10	5.7E-03	2.0E-02	3.4E-08	2.8E-12	5.5E-02	1.5E-13
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.6E-02	3.1E-03	1.7E-03	6.0E-03	1.8E+00	4.5E-05	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	1.6E-03	3.2E-04	1.7E-03	6.0E-03	1.9E-01	4.6E-06	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	3.8E-05	7.4E-06	2.3E-01	8.0E-01	3.2E-05	1.1E-07	4.0E-02	4.2E-09
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	2.2E-04	4.2E-05	6.0E-02	2.1E-01	7.0E-04	6.0E-07	--	--
	Acetone	6.2E-02	8.2E-05	1.6E-05	9.0E-01	3.2E+00	1.8E-05	2.3E-07	--	--
	Benzene	2.0E-02	1.3E-04	2.5E-05	1.7E-02	6.0E-02	1.5E-03	3.6E-07	1.0E-01	3.6E-08
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	1.1E-04	2.1E-05	2.3E-01	8.0E-01	9.0E-05	2.9E-07	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	1.2E-05	2.4E-06	2.9E-01	1.0E+00	8.3E-06	3.4E-08	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	2.6E-05	5.1E-06	8.6E-02	3.0E-01	6.0E-05	7.3E-08	1.9E-02	1.4E-09
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	5.7E-03	1.1E-03	1.0E-02	3.5E-02	1.1E-01	1.6E-05	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	4.8E-06	9.3E-07	1.1E-01	3.9E-01	8.5E-06	1.3E-08	--	--
	Ethylbenzene	2.3E+00	8.1E-03	1.6E-03	5.7E-01	2.0E+00	2.8E-03	2.3E-05	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	3.1E-04	6.1E-05	4.0E-02	1.4E-01	1.5E-03	8.7E-07	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	3.9E-05	7.7E-06	3.0E-04	1.1E-03	2.6E-02	1.1E-07	7.8E-02	8.6E-09

Table E-3
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	8.7E-03	1.7E-03	1.1E-01	3.9E-01	1.5E-02	2.4E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	6.3E-05	1.2E-05	1.1E-01	4.0E-01	1.1E-04	1.7E-07	3.5E-03	6.1E-10
	Naphthalene	1.8E+01	8.2E-03	1.6E-03	2.6E-03	9.0E-03	6.2E-01	2.3E-05	1.2E-01	2.7E-06
	n-Butylbenzene	5.5E+00	9.5E-03	1.9E-03	4.0E-02	1.4E-01	4.6E-02	2.6E-05	--	--
	n-Propylbenzene	3.7E+00	6.4E-03	1.2E-03	4.0E-02	1.4E-01	3.1E-02	1.8E-05	--	--
	p-Isopropyltoluene	5.8E+00	9.0E-03	1.8E-03	1.1E-01	3.9E-01	1.6E-02	2.5E-05	--	--
	Pyrene	3.5E-01	1.8E-06	3.4E-07	3.0E-02	1.1E-01	1.1E-05	4.9E-09	--	--
	sec-Butylbenzene	2.3E+00	5.4E-03	1.1E-03	4.0E-02	1.4E-01	2.6E-02	1.5E-05	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	1.4E-04	2.7E-05	3.0E-01	1.1E+00	9.1E-05	3.9E-07	--	--
	tert-Butylbenzene	4.0E-03	7.7E-06	1.5E-06	4.0E-02	1.4E-01	3.8E-05	2.2E-08	--	--
	Tetrachloroethene	1.0E+02	6.8E-01	1.3E-01	1.0E-02	3.5E-02	1.3E+01	1.9E-03	2.1E-02	4.0E-05
	Toluene	9.9E-03	4.6E-05	9.1E-06	8.6E-02	3.0E-01	1.1E-04	1.3E-07	--	--
	trans-1,2-Dichloroethene	6.7E-01	4.8E-03	9.4E-04	2.0E-02	7.0E-02	4.7E-02	1.3E-05	--	--
	Trichloroethene	1.0E+01	5.6E-02	1.1E-02	1.7E-01	6.0E-01	6.4E-02	1.6E-04	7.0E-03	1.1E-06
	Vinyl Chloride	5.4E-02	7.0E-04	1.4E-04	2.9E-02	1.0E-01	4.8E-03	2.0E-06	2.7E-01	5.3E-07
	Xylenes	2.4E+00	7.5E-03	1.5E-03	2.0E-01	7.0E-01	7.4E-03	2.1E-05	--	--
						Cumulative Risk and Hazard =	**2E+01**			**6E-05**
						Cumulative HI for $TPH_{aliphatic}$ =	**9E-03**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**2E-01**			**--**

Table E-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**Inorganics**												
	Antimony	3.0E+00	1.0E-03	--	--	--	6.0E-06	3.3E-04	4.0E-04	8.4E-01	4.8E-06	--	--
	Arsenic	7.1E-03	1.0E-03	--	--	--	1.4E-08	7.9E-07	3.0E-04	2.6E-03	1.1E-08	9.5E+00	1.1E-07
	Barium	--	1.0E-03	--	--	--	--	--	7.0E-02	--	--	--	--
	Beryllium	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.1E-06	2.0E-03	5.6E-04	1.6E-08	--	--
	Cadmium	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.1E-06	5.0E-04	2.2E-03	1.6E-08	--	--
	Chromium	6.7E+02	1.0E-03	--	--	--	1.3E-03	7.4E-02	1.5E+00	4.9E-02	1.1E-03	--	--
	Chromium, Hexavalent	6.8E+02	2.0E-03	--	--	--	2.7E-03	1.5E-01	3.0E-03	5.1E+01	2.2E-03	--	--
	Cobalt	1.7E-02	1.0E-03	--	--	--	3.4E-08	1.9E-06	2.0E-02	9.5E-05	2.7E-08	--	--
	Copper	5.5E-03	1.0E-03	--	--	--	1.1E-08	6.1E-07	4.0E-02	1.5E-05	8.8E-09	--	--
	Cyanide (Amenable)	--	1.0E-03	--	--	--	--	--	2.0E-02	--	--	--	--
	Cyanide (Total)	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.1E-06	2.0E-02	5.6E-05	1.6E-08	--	--
	Mercury	--	1.0E-03	--	--	--	--	--	3.0E-04	--	--	--	--
	Molybdenum	2.9E-01	1.0E-03	--	--	--	5.8E-07	3.2E-05	5.0E-03	6.5E-03	4.6E-07	--	--
	Nickel	4.5E-01	2.0E-04	--	--	--	1.8E-07	1.0E-05	2.0E-02	5.0E-04	1.4E-07	--	--
	Selenium	1.2E+00	1.0E-03	--	--	--	2.4E-06	1.3E-04	5.0E-03	2.7E-02	1.9E-06	--	--
	Silver	--	1.0E-03	--	--	--	--	--	5.0E-03	--	--	--	--
	Thallium	2.0E-03	1.0E-03	--	--	--	4.0E-09	2.2E-07	6.6E-05	3.4E-03	3.2E-09	--	--
	Vanadium	1.3E-01	1.0E-03	--	--	--	2.6E-07	1.5E-05	1.0E-03	1.5E-02	2.1E-07	--	--
	Zinc	1.0E-01	6.0E-04	--	--	--	1.2E-07	6.7E-06	3.0E-01	2.2E-05	9.6E-08	--	--
	PAHs												
	2-Methylnaphthalene	3.2E-02	9.2E-02	6.7E-01	1.0E+00	4.2E-01	9.6E-06	5.3E-04	3.0E-02	1.8E-02	7.6E-06	--	--
	Anthracene	--	1.4E-01	1.1E+00	1.0E+00	7.3E-01	--	--	3.0E-01	--	--	--	--
	Benzo(a)anthracene	3.6E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	9.5E-07	5.3E-05	--	--	7.6E-07	1.2E+00	9.1E-07
	Benzo(a)Pyrene	--	7.0E-01	2.7E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+01	--
	Benzo(b)Fluoranthene	--	7.0E-01	2.8E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+00	--
	Benzo(k)Fluoranthene	3.2E-04	6.9E-01	2.8E+00	1.0E+00	4.2E+00	--	--	--	--	--	1.2E+00	--
	Benzo(g,h,i)Perylene	5.8E-04	1.1E+00	3.8E+00	1.0E+00	7.2E+00	5.0E-06	2.8E-04	3.0E-02	9.2E-03	3.9E-06	--	--
	Chrysene	4.4E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	1.2E-06	6.5E-05	--	--	9.3E-07	1.2E-01	1.1E-07
	Dibenz(a,h)anthracene	4.9E-04	1.5E+00	3.9E+00	6.0E-01	9.7E+00	3.4E-06	1.9E-04	--	--	2.7E-06	1.2E+01	3.3E-05
	Fluoranthene	3.7E-03	2.2E-01	1.5E+00	1.0E+00	1.2E+00	3.9E-06	2.2E-04	4.0E-02	5.4E-03	3.1E-06	--	--
	Indeno(1,2,3-cd)pyrene	5.5E-04	1.0E+00	3.8E+00	6.0E-01	6.7E+00	2.6E-06	1.5E-04	--	--	2.1E-06	1.2E+00	2.5E-06
	Phenanthrene	2.3E-03	1.4E-01	1.1E+00	1.0E+00	7.4E-01	1.3E-06	7.5E-05	3.0E-01	2.5E-04	1.1E-06	--	--

Table E-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**PCBs**												
	Aroclor 1016	1.9E-03	3.1E-01	3.0E+00	1.0E+00	1.9E+00	3.9E-06	2.2E-04	7.0E-05	3.1E+00	3.1E-06	7.0E-02	2.2E-07
	Aroclor 1242	--	5.5E-01	4.6E+00	1.0E+00	3.6E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1248	--	5.9E-01	4.6E+00	1.0E+00	3.9E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1254	--	7.5E-01	7.2E+00	1.0E+00	5.2E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1260	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1262	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Perchlorate												
	Perchlorate	--	3.4E-04	4.9E-01	1.0E+00	1.4E-03	--	--	7.0E-04	--	--	--	--
	SVOCs												
	1,4-Dioxane	3.0E+00	3.3E-04	3.3E-01	1.0E+00	1.2E-03	2.7E-06	1.5E-04	--	--	2.1E-06	2.7E-02	5.7E-08
	4-Chloro-3-methylphenol	7.7E-03	2.9E-02	6.7E-01	1.0E+00	1.3E-01	7.2E-07	4.0E-05	1.0E-01	4.0E-04	5.7E-07	--	--
	Aniline	2.2E-03	1.9E-03	3.5E-01	1.0E+00	6.9E-03	1.1E-08	6.2E-07	7.0E-03	8.8E-05	8.8E-09	5.7E-03	5.0E-11
	Benzoic Acid	3.6E-03	5.7E-03	5.1E-01	1.0E+00	2.4E-02	6.1E-08	3.4E-06	4.0E+00	8.5E-07	4.9E-08	--	--
	Bis(2-ethylhexyl)Phthalate	2.1E-01	2.5E-02	1.7E+01	8.0E-01	1.9E-01	6.7E-05	3.7E-03	2.0E-02	1.9E-01	5.3E-05	3.0E-03	1.6E-07
	Diethylphthalate	2.2E-03	3.9E-03	1.9E+00	1.0E+00	2.2E-02	4.6E-08	2.6E-06	8.0E-01	3.2E-06	3.7E-08	--	--
	Diisopropyl Ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Dimethyl Phthalate	1.6E-03	1.4E-03	1.3E+00	1.0E+00	7.4E-03	9.9E-09	5.5E-07	1.0E+01	5.5E-08	7.9E-09	--	--
	Di-n-butylphthalate	3.0E-03	2.4E-02	3.9E+00	9.0E-01	1.5E-01	5.0E-07	2.8E-05	1.0E-01	2.8E-04	4.0E-07	--	--
	Phenol	1.0E-03	4.3E-03	3.6E-01	1.0E+00	1.6E-02	1.2E-08	6.5E-07	3.0E-01	2.2E-06	9.3E-09	--	--
	TPH												
	TPH - aliphatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	2.6E-01	4.0E-02	6.5E+00	3.7E-03	--	--
	TPH - aliphatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	1.4E-02	1.0E-01	1.4E-01	2.0E-04	--	--
	TPH - aliphatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	6.7E-03	2.0E+00	3.4E-03	9.6E-05	--	--
	TPH - aromatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	2.6E-01	--	--	3.7E-03	--	--
	TPH - aromatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	1.4E-02	3.0E-02	4.6E-01	2.0E-04	--	--
	TPH - aromatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	6.7E-03	3.0E-02	2.2E-01	9.6E-05	--	--
	VOCs												
	1,1,1,2-Tetrachloroethane	1.6E-03	1.6E-02	9.3E-01	1.0E+00	7.9E-02	9.6E-08	5.3E-06	3.0E-02	1.8E-04	7.6E-08	2.6E-02	2.0E-09
	1,1,1-Trichloroethane	4.5E-02	1.3E-02	6.0E-01	1.0E+00	5.6E-02	1.8E-06	1.0E-04	2.8E-01	3.6E-04	1.4E-06	--	--
	1,1,2-Trichloroethane	9.4E-03	6.4E-03	6.0E-01	1.0E+00	2.9E-02	1.9E-07	1.1E-05	4.0E-03	2.7E-03	1.5E-07	7.2E-02	1.1E-08
	1,1-Dichloroethane	1.2E-01	6.7E-03	3.8E-01	1.0E+00	2.6E-02	2.2E-06	1.2E-04	1.0E-01	1.2E-03	1.8E-06	5.7E-03	1.0E-08
	1,1-Dichloroethene	5.4E-01	1.2E-02	3.7E-01	1.0E+00	4.4E-02	1.7E-05	9.5E-04	5.0E-02	1.9E-02	1.4E-05	--	--

Table E-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	1,1-Dichloropropene	5.8E-04	4.3E-03	4.5E-01	1.0E+00	1.8E-02	7.2E-09	4.0E-07	3.0E-02	1.3E-05	5.7E-09	9.1E-02	5.2E-10
	1,2,4-Trichlorobenzene	6.8E-04	6.6E-02	1.1E+00	1.0E+00	3.4E-01	1.9E-07	1.0E-05	1.0E-02	1.0E-03	1.5E-07	--	--
	1,2,4-Trimethylbenzene	1.4E-02	8.6E-02	5.0E-01	1.0E+00	3.6E-01	3.4E-06	1.9E-04	5.0E-02	3.8E-03	2.7E-06	--	--
	1,2-Dibromo-3-chloropropane	6.0E-04	6.9E-03	2.3E+00	1.0E+00	4.1E-02	2.4E-08	1.3E-06	5.7E-05	2.4E-02	1.9E-08	7.0E+00	1.3E-07
	1,2-Dichlorobenzene	9.7E-03	4.1E-02	7.1E-01	1.0E+00	1.9E-01	1.3E-06	7.5E-05	9.0E-02	8.4E-04	1.1E-06	--	--
	1,2-Dichloroethane	2.0E-02	4.2E-03	3.8E-01	1.0E+00	1.6E-02	2.3E-07	1.3E-05	2.0E-02	6.4E-04	1.8E-07	4.7E-02	8.6E-09
	1,3,5-Trimethylbenzene	1.6E-02	6.2E-02	5.0E-01	1.0E+00	2.6E-01	2.8E-06	1.6E-04	5.0E-02	3.2E-03	2.3E-06	--	--
	1,3-Dichlorobenzene	5.6E-03	5.8E-02	7.1E-01	1.0E+00	2.7E-01	1.1E-06	6.1E-05	3.0E-02	2.0E-03	8.7E-07	--	--
	1,4-Dichlorobenzene	3.2E-02	4.2E-02	7.1E-01	1.0E+00	2.0E-01	4.5E-06	2.5E-04	3.0E-02	8.4E-03	3.6E-06	5.4E-03	1.9E-08
	2-Butanone (MEK)	3.0E-01	9.6E-04	2.7E-01	1.0E+00	3.1E-03	7.3E-07	4.1E-05	6.0E-01	6.8E-05	5.8E-07	--	--
	2-Chlorotoluene	3.8E-04	5.7E-02	5.5E-01	1.0E+00	2.5E-01	6.4E-08	3.6E-06	2.0E-02	1.8E-04	5.1E-08	--	--
	4-Methyl-2-pentanone	7.2E-04	2.7E-03	3.9E-01	1.0E+00	1.0E-02	5.3E-09	2.9E-07	8.0E-02	3.7E-06	4.2E-09	--	--
	Acenaphthene	2.5E+00	8.6E-02	7.8E-01	1.0E+00	4.1E-01	7.7E-04	4.3E-02	6.0E-02	7.2E-01	6.2E-04	--	--
	Acetone	4.9E-02	5.1E-04	2.3E-01	1.0E+00	1.5E-03	6.1E-08	3.4E-06	9.0E-01	3.8E-06	4.9E-08	--	--
	Benzene	1.1E-01	1.5E-02	2.9E-01	1.0E+00	5.1E-02	4.1E-06	2.3E-04	4.0E-03	5.7E-02	3.3E-06	1.0E-01	3.3E-07
	Bromochloromethane	1.5E-03	2.5E-03	5.7E-01	1.0E+00	1.1E-02	1.2E-08	6.7E-07	2.0E-02	3.3E-05	9.5E-09	--	--
	Bromodichloromethane	2.6E-03	4.6E-03	8.8E-01	1.0E+00	2.3E-02	4.4E-08	2.5E-06	2.0E-02	1.2E-04	3.5E-08	1.3E-01	4.6E-09
	Bromomethane	7.9E-04	2.8E-03	3.6E-01	1.0E+00	1.1E-02	6.1E-09	3.4E-07	1.4E-03	2.4E-04	4.8E-09	--	--
	Carbon Disulfide	3.6E-03	1.7E-02	3.0E-01	1.0E+00	5.9E-02	1.6E-07	8.7E-06	1.0E-01	8.7E-05	1.2E-07	--	--
	Carbon Tetrachloride	--	1.6E-02	7.8E-01	1.0E+00	7.8E-02	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	9.5E-03	2.8E-02	4.6E-01	1.0E+00	1.2E-01	7.5E-07	4.2E-05	2.0E-02	2.1E-03	6.0E-07	--	--
	Chloroethane	3.0E-04	6.1E-03	2.4E-01	1.0E+00	1.9E-02	4.5E-09	2.5E-07	4.0E-01	6.3E-07	3.6E-09	2.9E-03	1.0E-11
	Chloroform	2.7E-02	6.8E-03	5.0E-01	1.0E+00	2.9E-02	5.5E-07	3.1E-05	1.0E-02	3.1E-03	4.4E-07	3.1E-02	1.4E-08
	Chloromethane	9.3E-04	3.3E-03	2.0E-01	1.0E+00	9.0E-03	7.3E-09	4.1E-07	2.6E-02	1.6E-05	5.8E-09	--	--
	cis-1,2-Dichloroethene	5.7E+01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.7E-03	9.4E-02	1.0E-02	9.4E+00	1.3E-03	--	--
	Dibromochloromethane	5.1E-04	3.2E-03	1.6E+00	1.0E+00	1.8E-02	8.0E-09	4.5E-07	2.0E-02	2.2E-05	6.4E-09	9.4E-02	6.0E-10
	Dibromomethane	2.3E-04	2.2E-03	1.0E+00	1.0E+00	1.1E-02	2.0E-09	1.1E-07	1.0E-02	1.1E-05	1.6E-09	--	--
	Diisopropyl ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Ethylbenzene	1.6E-02	4.9E-02	4.2E-01	1.0E+00	2.0E-01	2.1E-06	1.2E-04	1.0E-01	1.2E-03	1.7E-06	--	--
	Ethyl-Tert-Butyl Ether	8.0E-04	7.5E-03	4.0E-01	1.0E+00	2.9E-02	1.7E-08	9.2E-07	1.0E-03	9.2E-04	1.3E-08	--	--
	Fluorene	2.7E-03	1.1E-01	9.1E-01	1.0E+00	5.4E-01	1.1E-06	6.2E-05	4.0E-02	1.5E-03	8.8E-07	--	--
	Freon-113	--	1.8E-02	1.2E+00	1.0E+00	9.2E-02	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	4.0E-04	8.1E-02	3.1E+00	9.0E-01	5.0E-01	2.0E-07	1.1E-05	3.0E-04	3.7E-02	1.6E-07	7.8E-02	1.2E-08

Table E-4
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Isopropylbenzene	8.9E-02	9.0E-02	5.0E-01	1.0E+00	3.8E-01	2.2E-05	1.3E-03	1.0E-01	1.3E-02	1.8E-05	--	--
	Methyl tertbutyl ether (MTBE)	1.3E-02	2.2E-03	3.2E-01	1.0E+00	7.8E-03	7.5E-08	4.2E-06	8.6E-01	4.9E-06	6.0E-08	1.8E-03	1.1E-10
	Methylene Chloride	1.0E-02	3.5E-03	3.2E-01	1.0E+00	1.3E-02	9.3E-08	5.2E-06	6.0E-02	8.6E-05	7.4E-08	1.4E-02	1.0E-09
	Naphthalene	3.1E-01	4.7E-02	5.6E-01	1.0E+00	2.0E-01	4.3E-05	2.4E-03	2.0E-02	1.2E-01	3.5E-05	1.2E-01	4.1E-06
	n-Butylbenzene	1.4E-01	2.0E-01	6.0E-01	1.0E+00	8.7E-01	8.5E-05	4.7E-03	4.0E-02	1.2E-01	6.8E-05	--	--
	n-Propylbenzene	3.2E-01	1.0E-01	5.0E-01	1.0E+00	4.2E-01	8.9E-05	5.0E-03	4.0E-02	1.2E-01	7.1E-05	--	--
	p-Isopropyltoluene	4.0E-03	1.6E-01	6.0E-01	1.0E+00	7.0E-01	1.9E-06	1.1E-04	1.0E-01	1.1E-03	1.5E-06	--	--
	Pyrene	2.2E-04	2.0E-01	1.5E+00	1.0E+00	1.1E+00	2.1E-07	1.2E-05	3.0E-02	3.9E-04	1.7E-07	--	--
	sec-Butylbenzene	5.4E-02	1.4E-01	6.0E-01	1.0E+00	6.4E-01	2.4E-05	1.3E-03	4.0E-02	3.4E-02	1.9E-05	--	--
	Styrene	9.9E-04	3.7E-02	4.1E-01	1.0E+00	1.5E-01	9.9E-08	5.5E-06	2.0E-01	2.8E-05	7.9E-08	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	4.1E-02	1.7E-03	2.8E-01	1.0E+00	5.7E-03	1.8E-07	1.0E-05	3.0E-01	3.4E-05	1.4E-07	--	--
	tert-Butylbenzene	2.4E-03	1.7E-01	6.0E-01	1.0E+00	7.4E-01	1.2E-06	6.8E-05	4.0E-02	1.7E-03	9.8E-07	--	--
	Tetrachloroethene	2.4E+02	3.3E-02	9.1E-01	1.0E+00	1.7E-01	3.0E-02	1.7E+00	1.0E-02	1.7E+02	2.4E-02	5.4E-01	1.3E-02
	Toluene	6.7E-03	3.1E-02	3.5E-01	1.0E+00	1.1E-01	5.4E-07	3.0E-05	2.0E-01	1.5E-04	4.3E-07	--	--
	trans-1,2-Dichloroethene	5.1E-01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.5E-05	8.4E-04	2.0E-02	4.2E-02	1.2E-05	--	--
	Trichloroethene	2.1E+01	1.2E-02	5.8E-01	1.0E+00	5.1E-02	7.6E-04	4.3E-02	3.0E-04	1.4E+02	6.1E-04	1.3E-02	7.9E-06
	Vinyl Chloride	2.5E+01	5.6E-03	2.4E-01	1.0E+00	1.7E-02	3.4E-04	1.9E-02	3.0E-03	6.4E+00	2.7E-04	2.7E-01	7.4E-05
	Xylenes	7.9E-03	5.3E-02	4.2E-01	1.0E+00	2.1E-01	1.1E-06	6.2E-05	2.0E-01	3.1E-04	8.9E-07	--	--
									Cumulative Risk and Hazard =	**4E+02**			**1E-02**
									Cumulative HI for $TPH_{aliphatic}$ =	**7E+00**			**--**
									Cumulative HI for $TPH_{aromatic}$ =	**7E-01**			**--**

Table E-5
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	2.8E-05	5.5E-06	3.0E-02	1.1E-01	1.8E-04	7.9E-08	2.6E-02	2.0E-09
	1,1,1-Trichloroethane	1.0E-03	2.0E-04	2.9E-01	1.0E+00	7.0E-04	2.9E-06	--	--
	1,1,2-Trichloroethane	2.0E-04	4.0E-05	4.0E-03	1.4E-02	9.9E-03	5.7E-07	5.7E-02	3.2E-08
	1,1-Dichloroethane	3.1E-03	6.2E-04	1.4E-01	5.0E-01	4.3E-03	8.8E-06	5.7E-03	5.0E-08
	1,1-Dichloroethene	1.4E-02	2.8E-03	2.0E-02	7.0E-02	1.4E-01	4.0E-05	--	--
	1,1-Dichloropropene	1.4E-05	2.8E-06	5.7E-03	2.0E-02	5.0E-04	4.0E-08	5.5E-02	2.2E-09
	1,2,4-Trichlorobenzene	1.3E-05	2.5E-06	1.0E-02	3.5E-02	2.5E-04	3.6E-08	--	--
	1,2,4-Trimethylbenzene	3.3E-04	6.5E-05	1.7E-03	6.0E-03	3.8E-02	9.3E-07	--	--
	1,2-Dibromo-3-chloropropane	7.7E-06	1.5E-06	5.7E-05	2.0E-04	2.6E-02	2.2E-08	7.0E+00	1.5E-07
	1,2-Dichlorobenzene	2.1E-04	4.0E-05	5.7E-02	2.0E-01	7.0E-04	5.7E-07	--	--
	1,2-Dichloroethane	5.0E-04	9.8E-05	1.4E-03	4.9E-03	7.0E-02	1.4E-06	7.2E-02	1.0E-07
	1,3,5-Trimethylbenzene	3.8E-04	7.5E-05	1.7E-03	6.0E-03	4.4E-02	1.1E-06	--	--
	1,3-Dichlorobenzene	1.2E-04	2.3E-05	3.0E-02	1.1E-01	7.7E-04	3.3E-07	--	--
	1,4-Dichlorobenzene	6.8E-04	1.3E-04	2.3E-01	8.0E-01	5.8E-04	1.9E-06	4.0E-02	7.6E-08
	2-Butanone (MEK)	2.9E-03	5.7E-04	1.4E+00	4.9E+00	4.1E-04	8.1E-06	--	--
	2-Chlorotoluene	8.8E-06	1.7E-06	2.0E-02	7.0E-02	8.6E-05	2.5E-08	--	--
	4-Methyl-2-pentanone	1.3E-05	2.6E-06	8.6E-01	3.0E+00	3.1E-06	3.8E-08	--	--
	Acenaphthene	4.0E-02	7.8E-03	6.0E-02	2.1E-01	1.3E-01	1.1E-04	--	--
	Acetone	6.5E-04	1.3E-04	9.0E-01	3.2E+00	1.4E-04	1.8E-06	--	--
	Benzene	3.2E-03	6.4E-04	1.7E-02	6.0E-02	3.7E-02	9.1E-06	1.0E-01	9.1E-07
	Bromochloromethane	3.4E-05	6.6E-06	2.0E-02	7.0E-02	3.3E-04	9.4E-08	--	--
	Bromodichloromethane	5.2E-05	1.0E-05	2.0E-02	7.0E-02	5.1E-04	1.4E-07	1.3E-01	1.9E-08
	Bromomethane	2.1E-05	4.1E-06	1.4E-03	5.0E-03	2.9E-03	5.9E-08	--	--
	Carbon Disulfide	1.1E-04	2.1E-05	2.3E-01	8.0E-01	9.3E-05	3.0E-07	--	--
	Carbon Tetrachloride	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	2.3E-04	4.5E-05	2.9E-01	1.0E+00	1.6E-04	6.5E-07	--	--
	Chloroethane	9.8E-06	1.9E-06	8.6E+00	3.0E+01	2.2E-07	2.7E-08	2.9E-03	7.9E-11
	Chloroform	6.4E-04	1.3E-04	8.6E-02	3.0E-01	1.5E-03	1.8E-06	1.9E-02	3.4E-08
	Chloromethane	3.4E-05	6.7E-06	2.6E-02	9.0E-02	2.6E-04	9.6E-08	--	--
	cis-1,2-Dichloroethene	1.5E+00	2.9E-01	1.0E-02	3.5E-02	2.9E+01	4.2E-03	--	--
	Dibromochloromethane	8.8E-06	1.7E-06	2.0E-02	7.0E-02	8.6E-05	2.4E-08	9.4E-02	2.3E-09
	Dibromomethane	4.3E-06	8.5E-07	1.0E-02	3.5E-02	8.5E-05	1.2E-08	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	4.1E-04	8.0E-05	5.7E-01	2.0E+00	1.4E-04	1.1E-06	--	--
	Ethyl-Tert-Butyl Ether	2.0E-05	4.0E-06	8.6E-02	3.0E-01	4.7E-05	5.7E-08	--	--
	Fluorene	3.3E-05	6.4E-06	4.0E-02	1.4E-01	1.6E-04	9.2E-08	--	--
	Freon-113	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	6.5E-06	1.3E-06	3.0E-04	1.1E-03	4.3E-03	1.8E-08	7.8E-02	1.4E-09
	Isopropylbenzene	2.1E-03	4.2E-04	1.1E-01	3.9E-01	3.8E-03	6.0E-06	--	--
	Methyl tertbutyl ether (MTBE)	3.4E-04	6.6E-05	2.3E+00	8.0E+00	2.9E-05	9.4E-07	9.1E-04	8.6E-10
	Methylene Chloride	2.8E-04	5.5E-05	1.1E-01	4.0E-01	4.8E-04	7.8E-07	3.5E-03	2.7E-09
	Naphthalene	6.5E-03	1.3E-03	2.6E-03	9.0E-03	4.9E-01	1.8E-05	1.2E-01	2.2E-06
	n-Butylbenzene	3.2E-03	6.2E-04	4.0E-02	1.4E-01	1.6E-02	8.9E-06	--	--
	n-Propylbenzene	7.7E-03	1.5E-03	4.0E-02	1.4E-01	3.8E-02	2.1E-05	--	--
	p-Isopropyltoluene	9.1E-05	1.8E-05	1.1E-01	3.9E-01	1.6E-04	2.5E-07	--	--
	Pyrene	7.2E-07	1.4E-07	3.0E-02	1.1E-01	4.7E-06	2.0E-09	--	--

Table E-5
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Construction Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	1.2E-03	2.4E-04	4.0E-02	1.4E-01	6.0E-03	3.4E-06	--	--
	Styrene	2.5E-05	4.9E-06	2.6E-01	9.0E-01	1.9E-05	7.0E-08	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	6.9E-04	1.3E-04	3.0E-01	1.1E+00	4.5E-04	1.9E-06	--	--
	tert-Butylbenzene	5.4E-05	1.1E-05	4.0E-02	1.4E-01	2.7E-04	1.5E-07	--	--
	Tetrachloroethene	4.1E+00	8.0E-01	1.0E-02	3.5E-02	8.0E+01	1.1E-02	2.1E-02	2.4E-04
	Toluene	1.8E-04	3.6E-05	8.6E-02	3.0E-01	4.2E-04	5.1E-07	--	--
	trans-1,2-Dichloroethene	1.4E-02	2.7E-03	2.0E-02	7.0E-02	1.3E-01	3.8E-05	--	--
	Trichloroethene	4.8E-01	9.4E-02	1.7E-01	6.0E-01	5.5E-01	1.3E-03	7.0E-03	9.4E-06
	Vinyl Chloride	8.3E-01	1.6E-01	2.9E-02	1.0E-01	5.7E+00	2.3E-03	2.7E-01	6.3E-04
	Xylenes	2.0E-04	3.9E-05	2.0E-01	7.0E-01	2.0E-04	5.6E-07	--	--
					Cumulative Risk and Hazard =	**1E+02**			**9E-04**

Table E-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	3.3E-06	4.0E-04	8.2E-03	4.7E-08	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	2.6E-06	1.0E-03	2.6E-03	3.8E-08	--	--
	Chromium	7.0E+02	2.7E-04	1.5E+00	1.8E-04	3.9E-06	--	--
	Chromium, Hexavalent	3.5E+01	1.4E-05	3.0E-03	4.5E-03	1.9E-07	--	--
	Cobalt	1.0E+02	3.9E-05	2.0E-02	1.9E-03	5.5E-07	--	--
	Copper	2.0E+02	7.7E-05	4.0E-02	1.9E-03	1.1E-06	--	--
	Cyanide (Amenable)	1.0E+00	3.9E-07	2.0E-02	1.9E-05	5.5E-09	--	--
	Cyanide (Total)	1.7E+00	6.6E-07	2.0E-02	3.3E-05	9.4E-09	--	--
	Mercury	2.3E-01	8.9E-08	3.0E-04	3.0E-04	1.3E-09	--	--
	Molybdenum	1.0E+01	3.9E-06	5.0E-03	7.7E-04	5.5E-08	--	--
	Nickel	1.7E+02	6.6E-05	2.0E-02	3.3E-03	9.4E-07	--	--
	Selenium	3.0E+01	1.2E-05	5.0E-03	2.3E-03	1.7E-07	--	--
	Silver	2.3E+00	8.9E-07	5.0E-03	1.8E-04	1.3E-08	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	2.8E-04	3.0E-01	9.2E-04	3.9E-06	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	2.1E-05	3.0E-02	6.8E-04	2.9E-07	--	--
	Anthracene	1.0E-02	3.9E-09	3.0E-01	1.3E-08	5.5E-11	--	--
	Benzo(a)anthracene	2.0E-01	7.7E-08	--	--	1.1E-09	1.2E+00	1.3E-09
	Benzo(a)Pyrene	4.0E-01	1.5E-07	--	--	2.2E-09	1.2E+01	2.7E-08
	Benzo(b)Fluoranthene	1.3E+00	4.9E-07	--	--	7.0E-09	1.2E+00	8.4E-09
	Benzo(k)Fluoranthene	1.0E-01	3.9E-08	--	--	5.5E-10	1.2E+00	6.6E-10
	Benzo(g,h,i)Perylene	9.0E-01	3.5E-07	3.0E-02	1.2E-05	5.0E-09	--	--
	Chrysene	6.8E-01	2.6E-07	--	--	3.8E-09	1.2E-01	4.5E-10
	Dibenz(a,h)anthracene	8.0E-02	3.1E-08	--	--	4.4E-10	1.2E+01	5.3E-09
	Fluoranthene	2.0E-01	7.7E-08	4.0E-02	1.9E-06	1.1E-09	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	2.3E-07	--	--	3.3E-09	1.2E+00	4.0E-09
	Phenanthrene	9.8E+00	3.8E-06	3.0E-01	1.3E-05	5.4E-08	--	--
	PCBs							
	Aroclor 1016	3.0E-02	1.2E-08	7.0E-05	1.7E-04	1.7E-10	7.0E-02	1.2E-11
	Aroclor 1242	1.6E-01	6.2E-08	2.0E-05	3.1E-03	8.9E-10	5.0E+00	4.4E-09
	Aroclor 1248	2.9E+02	1.1E-04	2.0E-05	5.6E+00	1.6E-06	5.0E+00	8.0E-06
	Aroclor 1254	1.7E+00	6.6E-07	2.0E-05	3.3E-02	9.4E-09	5.0E+00	4.7E-08
	Aroclor 1260	1.5E+00	5.8E-07	2.0E-05	2.9E-02	8.3E-09	5.0E+00	4.2E-08
	Aroclor 1262	3.3E-01	1.3E-07	2.0E-05	6.4E-03	1.8E-09	5.0E+00	9.1E-09
	Perchlorate							
	Perchlorate	3.6E+00	1.4E-06	7.0E-04	2.0E-03	2.0E-08	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	3.5E-08	--	--	5.0E-10	2.7E-02	1.3E-11
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table E-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	3.5E-08	3.0E-01	1.2E-07	5.0E-10	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	6.5E-04	4.0E-02	1.6E-02	9.3E-06	--	--
	TPH - aliphatic; C9-C18	2.5E+04	9.7E-03	1.0E-01	9.7E-02	1.4E-04	--	--
	TPH - aliphatic; C≥19	2.3E+04	8.8E-03	2.0E+00	4.4E-03	1.3E-04	--	--
	TPH - aromatic; C5-C8	1.7E+03	6.5E-04	--	--	9.3E-06	--	--
	TPH - aromatic; C9-C18	2.5E+04	9.7E-03	3.0E-02	3.2E-01	1.4E-04	--	--
	TPH - aromatic; C≥19	2.3E+04	8.8E-03	3.0E-02	2.9E-01	1.3E-04	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	2.0E-08	2.8E-01	7.1E-08	2.8E-10	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	1.2E-09	1.0E-01	1.2E-08	1.7E-11	5.7E-03	9.5E-14
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.5E-09	3.0E-02	5.2E-08	2.2E-11	9.1E-02	2.0E-12
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	6.2E-06	5.0E-02	1.2E-04	8.9E-08	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	2.6E-07	5.0E-02	5.3E-06	3.8E-09	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	9.7E-09	3.0E-02	3.2E-07	1.4E-10	5.4E-03	7.5E-13
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	7.7E-07	6.0E-02	1.3E-05	1.1E-08	--	--
	Acetone	6.2E-02	2.4E-08	9.0E-01	2.7E-08	3.4E-10	--	--
	Benzene	2.0E-02	7.7E-09	4.0E-03	1.9E-06	1.1E-10	1.0E-01	1.1E-11
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	3.4E-09	1.0E-01	3.4E-08	4.8E-11	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	1.5E-09	2.0E-02	7.7E-08	2.2E-11	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	1.5E-09	1.0E-02	1.5E-07	2.2E-11	3.1E-02	6.9E-13
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	3.7E-07	1.0E-02	3.7E-05	5.3E-09	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	3.9E-10	--	--	5.5E-12	--	--
	Ethylbenzene	2.3E+00	8.9E-07	1.0E-01	8.9E-06	1.3E-08	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	2.2E-06	4.0E-02	5.5E-05	3.2E-08	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	7.0E-09	3.0E-04	2.3E-05	1.0E-10	7.8E-02	7.8E-12

Table E-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	6.6E-07	1.0E-01	6.6E-06	9.4E-09	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	3.6E-09	6.0E-02	6.1E-08	5.2E-11	1.4E-02	7.3E-13
	Naphthalene	1.8E+01	7.0E-06	2.0E-02	3.5E-04	1.0E-07	1.2E-01	1.2E-08
	n-Butylbenzene	5.5E+00	2.1E-06	4.0E-02	5.3E-05	3.0E-08	--	--
	n-Propylbenzene	3.7E+00	1.4E-06	4.0E-02	3.6E-05	2.0E-08	--	--
	p-Isopropyltoluene	5.8E+00	2.2E-06	1.0E-01	2.2E-05	3.2E-08	--	--
	Pyrene	3.5E-01	1.4E-07	3.0E-02	4.5E-06	1.9E-09	--	--
	sec-Butylbenzene	2.3E+00	8.9E-07	4.0E-02	2.2E-05	1.3E-08	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.9E-08	3.0E-01	1.3E-07	5.5E-10	--	--
	tert-Butylbenzene	4.0E-03	1.5E-09	4.0E-02	3.9E-08	2.2E-11	--	--
	Tetrachloroethene	2.2E+02	8.5E-05	1.0E-02	8.5E-03	1.2E-06	5.4E-01	6.6E-07
	Toluene	9.9E-03	3.8E-09	2.0E-01	1.9E-08	5.5E-11	--	--
	trans-1,2-Dichloroethene	6.7E-01	2.6E-07	2.0E-02	1.3E-05	3.7E-09	--	--
	Trichloroethene	1.0E+01	3.9E-06	3.0E-04	1.3E-02	5.5E-08	1.3E-02	7.2E-10
	Vinyl Chloride	5.4E-02	2.1E-08	3.0E-03	7.0E-06	3.0E-10	2.7E-01	8.1E-11
	Xylenes	2.4E+00	9.3E-07	2.0E-01	4.6E-06	1.3E-08	--	--
	Cumulative Risk and Hazard =				**6E+00**			**9E-06**
	Cumulative HI for $TPH_{aliphatic}$ =				**1E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**6E-01**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	4.6E-07	4.0E-04	1.1E-03	6.5E-09	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	3.6E-08	1.0E-03	3.6E-05	5.2E-10	--	--
	Chromium	7.0E+02	3.7E-05	1.5E+00	2.5E-05	5.4E-07	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	5.4E-06	2.0E-02	2.7E-04	7.6E-08	--	--
	Copper	2.0E+02	1.1E-05	4.0E-02	2.7E-04	1.5E-07	--	--
	Cyanide (Amenable)	1.0E+00	5.4E-07	2.0E-02	2.7E-05	7.6E-09	--	--
	Cyanide (Total)	1.7E+00	9.1E-07	2.0E-02	4.6E-05	1.3E-08	--	--
	Mercury	2.3E-01	1.2E-08	3.0E-04	4.1E-05	1.8E-10	--	--
	Molybdenum	1.0E+01	5.4E-07	5.0E-03	1.1E-04	7.6E-09	--	--
	Nickel	1.7E+02	9.1E-06	2.0E-02	4.6E-04	1.3E-07	--	--
	Selenium	3.0E+01	1.6E-06	5.0E-03	3.2E-04	2.3E-08	--	--
	Silver	2.3E+00	1.2E-07	5.0E-03	2.5E-05	1.8E-09	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	3.8E-05	3.0E-01	1.3E-04	5.4E-07	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	4.3E-05	3.0E-02	1.4E-03	6.1E-07	--	--
	Anthracene	1.0E-02	8.0E-09	3.0E-01	2.7E-08	1.1E-10	--	--
	Benzo(a)anthracene	2.0E-01	1.6E-07	--	--	2.3E-09	1.2E+00	2.8E-09
	Benzo(a)Pyrene	4.0E-01	3.2E-07	--	--	4.6E-09	1.2E+01	5.5E-08
	Benzo(b)Fluoranthene	1.3E+00	1.0E-06	--	--	1.4E-08	1.2E+00	1.7E-08
	Benzo(k)Fluoranthene	1.0E-01	8.0E-08	--	--	1.1E-09	1.2E+00	1.4E-09
	Benzo(g,h,i)Perylene	9.0E-01	7.2E-07	3.0E-02	2.4E-05	1.0E-08	--	--

Table E-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	5.5E-07	--	--	7.8E-09	1.2E-01	9.4E-10
	Dibenz(a,h)anthracene	8.0E-02	6.4E-08	--	--	9.2E-10	1.2E+01	1.1E-08
	Fluoranthene	2.0E-01	1.6E-07	4.0E-02	4.0E-06	2.3E-09	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	4.8E-07	--	--	6.9E-09	1.2E+00	8.3E-09
	Phenanthrene	9.8E+00	7.9E-06	3.0E-01	2.6E-05	1.1E-07	--	--
	PCBs							
	Aroclor 1016	3.0E-02	2.4E-08	7.0E-05	3.4E-04	3.4E-10	7.0E-02	2.4E-11
	Aroclor 1242	1.6E-01	1.3E-07	2.0E-05	6.4E-03	1.8E-09	5.0E+00	9.2E-09
	Aroclor 1248	2.9E+02	2.3E-04	2.0E-05	1.2E+01	3.3E-06	5.0E+00	1.7E-05
	Aroclor 1254	1.7E+00	1.4E-06	2.0E-05	6.8E-02	2.0E-08	5.0E+00	9.8E-08
	Aroclor 1260	1.5E+00	1.2E-06	2.0E-05	6.0E-02	1.7E-08	5.0E+00	8.6E-08
	Aroclor 1262	3.3E-01	2.7E-07	2.0E-05	1.3E-02	3.8E-09	5.0E+00	1.9E-08
	PCBs							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	4.8E-08	--	--	6.9E-10	2.7E-02	1.9E-11
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	4.8E-08	3.0E-01	1.6E-07	6.9E-10	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.4E-03	4.0E-02	3.4E-02	1.9E-05	--	--
	TPH - aliphatic; C9-C18	2.5E+04	2.0E-02	1.0E-01	2.0E-01	2.9E-04	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.8E-02	2.0E+00	9.1E-03	2.6E-04	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.4E-03	--	--	1.9E-05	--	--
	TPH - aromatic; C9-C18	2.5E+04	2.0E-02	3.0E-02	6.7E-01	2.9E-04	--	--
	TPH - aromatic; C≥19	2.3E+04	1.8E-02	3.0E-02	6.1E-01	2.6E-04	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	2.7E-08	2.8E-01	9.8E-08	3.9E-10	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	1.6E-09	1.0E-01	1.6E-08	2.3E-11	5.7E-03	1.3E-13
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	2.1E-09	3.0E-02	7.1E-08	3.1E-11	9.1E-02	2.8E-12
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	8.6E-06	5.0E-02	1.7E-04	1.2E-07	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.6E-07	5.0E-02	7.3E-06	5.2E-09	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.3E-08	3.0E-02	4.5E-07	1.9E-10	5.4E-03	1.0E-12
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table E-6
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	1.6E-06	6.0E-02	2.7E-05	2.3E-08	--	--
	Acetone	6.2E-02	3.3E-08	9.0E-01	3.7E-08	4.7E-10	--	--
	Benzene	2.0E-02	1.1E-08	4.0E-03	2.7E-06	1.5E-10	1.0E-01	1.5E-11
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	4.7E-09	1.0E-01	4.7E-08	6.7E-11	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.1E-09	2.0E-02	1.1E-07	3.1E-11	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	2.1E-09	1.0E-02	2.1E-07	3.1E-11	3.1E-02	9.5E-13
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	5.1E-07	1.0E-02	5.1E-05	7.3E-09	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	5.4E-10	--	--	7.6E-12	--	--
	Ethylbenzene	2.3E+00	1.2E-06	1.0E-01	1.2E-05	1.8E-08	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	4.6E-06	4.0E-02	1.1E-04	6.5E-08	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	9.6E-09	3.0E-04	3.2E-05	1.4E-10	7.8E-02	1.1E-11
	Isopropylbenzene	1.7E+00	9.1E-07	1.0E-01	9.1E-06	1.3E-08	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	5.0E-09	6.0E-02	8.4E-08	7.2E-11	1.4E-02	1.0E-12
	Naphthalene	1.8E+01	1.4E-05	2.0E-02	7.2E-04	2.1E-07	1.2E-01	2.5E-08
	n-Butylbenzene	5.5E+00	2.9E-06	4.0E-02	7.4E-05	4.2E-08	--	--
	n-Propylbenzene	3.7E+00	2.0E-06	4.0E-02	5.0E-05	2.8E-08	--	--
	p-Isopropyltoluene	5.8E+00	3.1E-06	1.0E-01	3.1E-05	4.4E-08	--	--
	Pyrene	3.5E-01	1.9E-07	3.0E-02	6.2E-06	2.7E-09	--	--
	sec-Butylbenzene	2.3E+00	1.2E-06	4.0E-02	3.1E-05	1.8E-08	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	5.4E-08	3.0E-01	1.8E-07	7.6E-10	--	--
	tert-Butylbenzene	4.0E-03	2.1E-09	4.0E-02	5.4E-08	3.1E-11	--	--
	Tetrachloroethene	2.2E+02	1.2E-04	1.0E-02	1.2E-02	1.7E-06	5.4E-01	9.1E-07
	Toluene	9.9E-03	5.3E-09	2.0E-01	2.7E-08	7.6E-11	--	--
	trans-1,2-Dichloroethene	6.7E-01	3.6E-07	2.0E-02	1.8E-05	5.1E-09	--	--
	Trichloroethene	1.0E+01	5.4E-06	3.0E-04	1.8E-02	7.6E-08	1.3E-02	9.9E-10
	Vinyl Chloride	5.4E-02	2.9E-08	3.0E-03	9.6E-06	4.1E-10	2.7E-01	1.1E-10
	Xylenes	2.4E+00	1.3E-06	2.0E-01	6.4E-06	1.8E-08	--	--
	Cumulative Risk and Hazard =				**1E+01**			**2E-05**
	Cumulative HI for $TPH_{aliphatic}$ =				**2E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**1E+00**			**--**

Table E-7
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	2.3E-08	5.3E-10	--	--	--	7.5E-12	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	1.8E-08	4.2E-10	5.7E-06	2.0E-05	7.4E-05	6.0E-12	1.5E+01	9.1E-11
	Chromium	7.0E+02	1.9E-06	4.4E-08	--	--	--	6.2E-10	--	--
	Chromium, Hexavalent	3.5E+01	9.3E-08	2.2E-09	5.7E-05	2.0E-04	3.8E-05	3.1E-11	5.1E+02	1.6E-08
	Cobalt	1.0E+02	2.6E-07	6.2E-09	5.7E-06	2.0E-05	1.1E-03	8.9E-11	--	--
	Copper	2.0E+02	5.3E-07	1.2E-08	--	--	--	1.8E-10	--	--
	Cyanide (Amenable)	1.0E+00	2.6E-09	6.2E-11	--	--	--	8.9E-13	--	--
	Cyanide (Total)	1.7E+00	4.5E-09	1.1E-10	--	--	--	1.5E-12	--	--
	Mercury	2.3E-01	6.1E-10	1.4E-11	2.6E-05	9.0E-05	5.6E-07	2.0E-13	--	--
	Molybdenum	1.0E+01	2.6E-08	6.2E-10	--	--	--	8.9E-12	--	--
	Nickel	1.7E+02	4.5E-07	1.1E-08	1.4E-05	5.0E-05	7.4E-04	1.5E-10	9.1E-01	1.4E-10
	Selenium	3.0E+01	7.9E-08	1.9E-09	5.7E-03	2.0E-02	3.3E-07	2.7E-11	--	--
	Silver	2.3E+00	6.1E-09	1.4E-10	--	--	--	2.0E-12	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	1.9E-06	4.4E-08	--	--	--	6.3E-10	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	1.4E-07	3.3E-09	3.0E-02	1.1E-01	1.1E-07	4.7E-11	--	--
	Anthracene	1.0E-02	2.6E-11	6.2E-13	3.0E-01	1.1E+00	2.1E-12	8.9E-15	--	--
	Benzo(a)anthracene	2.0E-01	5.3E-10	1.2E-11	--	--	--	1.8E-13	3.9E-01	6.9E-14
	Benzo(a)Pyrene	4.0E-01	1.1E-09	2.5E-11	--	--	--	3.6E-13	3.9E+00	1.4E-12
	Benzo(b)Fluoranthene	1.3E+00	3.3E-09	7.8E-11	--	--	--	1.1E-12	3.9E-01	4.4E-13
	Benzo(k)Fluoranthene	1.0E-01	2.6E-10	6.2E-12	--	--	--	8.9E-14	3.9E-01	3.5E-14
	Benzo(g,h,i)Perylene	9.0E-01	2.4E-09	5.6E-11	3.0E-02	1.1E-01	1.9E-09	8.0E-13	--	--
	Chrysene	6.8E-01	1.8E-09	4.2E-11	--	--	--	6.1E-13	3.9E-02	2.4E-14
	Dibenz(a,h)anthracene	8.0E-02	2.1E-10	5.0E-12	--	--	--	7.1E-14	3.9E+00	2.8E-13
	Fluoranthene	2.0E-01	5.3E-10	1.2E-11	4.0E-02	1.4E-01	3.1E-10	1.8E-13	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.6E-09	3.7E-11	--	--	--	5.3E-13	3.9E-01	2.1E-13
	Phenanthrene	9.8E+00	2.6E-08	6.1E-10	3.0E-01	1.1E+00	2.0E-09	8.7E-12	--	--
	PCBs									
	Aroclor 1016	3.0E-02	7.9E-11	1.9E-12	7.0E-05	2.5E-04	2.7E-08	2.7E-14	7.0E-02	1.9E-15
	Aroclor 1242	1.6E-01	4.2E-10	9.9E-12	2.0E-05	7.0E-05	5.0E-07	1.4E-13	2.0E+00	2.8E-13
	Aroclor 1248	2.9E+02	7.7E-07	1.8E-08	2.0E-05	7.0E-05	9.0E-04	2.6E-10	2.0E+00	5.2E-10
	Aroclor 1254	1.7E+00	4.5E-09	1.1E-10	2.0E-05	7.0E-05	5.3E-06	1.5E-12	2.0E+00	3.0E-12
	Aroclor 1260	1.5E+00	4.0E-09	9.3E-11	2.0E-05	7.0E-05	4.7E-06	1.3E-12	2.0E+00	2.7E-12
	Aroclor 1262	3.3E-01	8.7E-10	2.1E-11	2.0E-05	7.0E-05	1.0E-06	2.9E-13	2.0E+00	5.9E-13
	Perchlorate									
	Perchlorate	3.6E+00	9.5E-09	2.2E-10	--	--	--	3.2E-12	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	2.4E-10	5.6E-12	8.6E-01	3.0E+00	6.5E-12	8.0E-14	2.7E-02	2.2E-15
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table E-7
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	2.4E-10	5.6E-12	5.7E-02	2.0E-01	9.8E-11	8.0E-14	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	4.5E-06	1.0E-07	6.0E-02	2.1E-01	1.7E-06	1.5E-09	--	--
	TPH - aliphatic; C9-C18	2.5E+04	6.6E-05	1.6E-06	3.0E-01	1.1E+00	5.2E-06	2.2E-08	--	--
	TPH - aliphatic; C≥19	2.3E+04	6.0E-05	1.4E-06	3.0E-01	1.1E+00	4.7E-06	2.0E-08	--	--
	TPH - aromatic; C5-C8	1.7E+03	4.5E-06	1.0E-07	--	--	--	1.5E-09	--	--
	TPH - aromatic; C9-C18	2.5E+04	6.6E-05	1.6E-06	6.0E-03	2.1E-02	2.6E-04	2.2E-08	--	--
	TPH - aromatic; C≥19	2.3E+04	6.0E-05	1.4E-06	--	--	--	2.0E-08	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	1.3E-04	3.0E-06	2.9E-01	1.0E+00	1.0E-05	4.3E-08	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	6.7E-06	1.6E-07	1.4E-01	5.0E-01	1.1E-06	2.3E-09	5.7E-03	1.3E-11
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.1E-11	2.5E-13	5.7E-03	2.0E-02	4.4E-11	3.6E-15	5.5E-02	2.0E-16
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	5.2E-03	1.2E-04	1.7E-03	6.0E-03	7.2E-02	1.7E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	5.4E-04	1.3E-05	1.7E-03	6.0E-03	7.4E-03	1.8E-07	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.2E-05	2.9E-07	2.3E-01	8.0E-01	1.3E-06	4.1E-09	4.0E-02	1.6E-10
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	7.0E-05	1.7E-06	6.0E-02	2.1E-01	2.8E-05	2.4E-08	--	--
	Acetone	6.2E-02	2.7E-05	6.3E-07	9.0E-01	3.2E+00	7.0E-07	9.0E-09	--	--
	Benzene	2.0E-02	4.2E-05	9.8E-07	1.7E-02	6.0E-02	5.7E-05	1.4E-08	1.0E-01	1.4E-09
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	3.4E-05	8.1E-07	2.3E-01	8.0E-01	3.5E-06	1.2E-08	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	4.0E-06	9.3E-08	2.9E-01	1.0E+00	3.3E-07	1.3E-09	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	8.6E-06	2.0E-07	8.6E-02	3.0E-01	2.3E-06	2.9E-09	1.9E-02	5.5E-11
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.9E-03	4.4E-05	1.0E-02	3.5E-02	4.4E-03	6.2E-07	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.6E-06	3.7E-08	1.1E-01	3.9E-01	3.3E-07	5.2E-10	--	--
	Ethylbenzene	2.3E+00	2.6E-03	6.2E-05	5.7E-01	2.0E+00	1.1E-04	8.9E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	1.0E-04	2.4E-06	4.0E-02	1.4E-01	6.0E-05	3.4E-08	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.3E-05	3.0E-07	3.0E-04	1.1E-03	1.0E-03	4.3E-09	7.8E-02	3.4E-10

Table E-7
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	2.8E-03	6.7E-05	1.1E-01	3.9E-01	6.1E-04	9.5E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	2.0E-05	4.8E-07	1.1E-01	4.0E-01	4.2E-06	6.8E-09	3.5E-03	2.4E-11
	Naphthalene	1.8E+01	2.7E-03	6.3E-05	2.6E-03	9.0E-03	2.4E-02	8.9E-07	1.2E-01	1.1E-07
	n-Butylbenzene	5.5E+00	3.1E-03	7.3E-05	4.0E-02	1.4E-01	1.8E-03	1.0E-06	--	--
	n-Propylbenzene	3.7E+00	2.1E-03	4.9E-05	4.0E-02	1.4E-01	1.2E-03	7.0E-07	--	--
	p-Isopropyltoluene	5.8E+00	2.9E-03	6.9E-05	1.1E-01	3.9E-01	6.3E-04	9.9E-07	--	--
	Pyrene	3.5E-01	5.7E-07	1.3E-08	3.0E-02	1.1E-01	4.5E-07	1.9E-10	--	--
	sec-Butylbenzene	2.3E+00	1.8E-03	4.1E-05	4.0E-02	1.4E-01	1.0E-03	5.9E-07	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	4.6E-05	1.1E-06	3.0E-01	1.1E+00	3.6E-06	1.5E-08	--	--
	tert-Butylbenzene	4.0E-03	2.5E-06	5.9E-08	4.0E-02	1.4E-01	1.5E-06	8.5E-10	--	--
	Tetrachloroethene	1.0E+02	2.2E-01	5.2E-03	1.0E-02	3.5E-02	5.2E-01	7.4E-05	2.1E-02	1.6E-06
	Toluene	9.9E-03	1.5E-05	3.5E-07	8.6E-02	3.0E-01	4.1E-06	5.1E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.6E-03	3.7E-05	2.0E-02	7.0E-02	1.8E-03	5.3E-07	--	--
	Trichloroethene	1.0E+01	1.8E-02	4.3E-04	1.7E-01	6.0E-01	2.5E-03	6.1E-06	7.0E-03	4.3E-08
	Vinyl Chloride	5.4E-02	2.29E-04	5.4E-06	2.9E-02	1.0E-01	1.9E-04	7.7E-08	2.7E-01	2.1E-08
	Xylenes	2.4E+00	2.5E-03	5.8E-05	2.0E-01	7.0E-01	2.9E-04	8.2E-07	--	--
						Cumulative Risk and Hazard =	**6E-01**			**2E-06**
						Cumulative HI for $TPH_{aliphatic}$ =	**1E-05**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**3E-04**			**--**

Table E-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**Inorganics**												
	Antimony	3.0E+00	1.0E-03	--	--	--	6.0E-06	4.0E-05	4.0E-04	1.0E-01	5.7E-07	--	--
	Arsenic	7.1E-03	1.0E-03	--	--	--	1.4E-08	9.5E-08	3.0E-04	3.2E-04	1.4E-09	9.5E+00	1.3E-08
	Barium	--	1.0E-03	--	--	--	--	--	7.0E-02	--	--	--	--
	Beryllium	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.3E-07	2.0E-03	6.7E-05	1.9E-09	--	--
	Cadmium	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.3E-07	5.0E-04	2.7E-04	1.9E-09	--	--
	Chromium	6.7E+02	1.0E-03	--	--	--	1.3E-03	8.9E-03	1.5E+00	5.9E-03	1.3E-04	--	--
	Chromium, Hexavalent	6.8E+02	2.0E-03	--	--	--	2.7E-03	1.8E-02	3.0E-03	6.1E+00	2.6E-04	--	--
	Cobalt	1.7E-02	1.0E-03	--	--	--	3.4E-08	2.3E-07	2.0E-02	1.1E-05	3.3E-09	--	--
	Copper	5.5E-03	1.0E-03	--	--	--	1.1E-08	7.4E-08	4.0E-02	1.8E-06	1.1E-09	--	--
	Cyanide (Amenable)	--	1.0E-03	--	--	--	--	--	2.0E-02	--	--	--	--
	Cyanide (Total)	1.0E-02	1.0E-03	--	--	--	2.0E-08	1.3E-07	2.0E-02	6.7E-06	1.9E-09	--	--
	Mercury	--	1.0E-03	--	--	--	--	--	3.0E-04	--	--	--	--
	Molybdenum	2.9E-01	1.0E-03	--	--	--	5.8E-07	3.9E-06	5.0E-03	7.8E-04	5.5E-08	--	--
	Nickel	4.5E-01	2.0E-04	--	--	--	1.8E-07	1.2E-06	2.0E-02	6.0E-05	1.7E-08	--	--
	Selenium	1.2E+00	1.0E-03	--	--	--	2.4E-06	1.6E-05	5.0E-03	3.2E-03	2.3E-07	--	--
	Silver	--	1.0E-03	--	--	--	--	--	5.0E-03	--	--	--	--
	Thallium	2.0E-03	1.0E-03	--	--	--	4.0E-09	2.7E-08	6.6E-05	4.1E-04	3.8E-10	--	--
	Vanadium	1.3E-01	1.0E-03	--	--	--	2.6E-07	1.7E-06	1.0E-03	1.7E-03	2.5E-08	--	--
	Zinc	1.0E-01	6.0E-04	--	--	--	1.2E-07	8.0E-07	3.0E-01	2.7E-06	1.1E-08	--	--
	PAHs												
	2-Methylnaphthalene	3.2E-02	9.2E-02	6.7E-01	1.0E+00	4.2E-01	9.6E-06	6.4E-05	3.0E-02	2.1E-03	9.1E-07	--	--
	Anthracene	--	1.4E-01	1.1E+00	1.0E+00	7.3E-01	--	--	3.0E-01	--	--	--	--
	Benzo(a)anthracene	3.6E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	9.5E-07	6.4E-06	--	--	9.1E-08	1.2E+00	1.1E-07
	Benzo(a)Pyrene	--	7.0E-01	2.7E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+01	--
	Benzo(b)Fluoranthene	--	7.0E-01	2.8E+00	1.0E+00	4.3E+00	--	--	--	--	--	1.2E+00	--
	Benzo(k)Fluoranthene	3.2E-04	6.9E-01	2.8E+00	1.0E+00	4.2E+00	--	--	--	--	--	1.2E+00	--
	Benzo(g,h,i)Perylene	5.8E-04	1.1E+00	3.8E+00	1.0E+00	7.2E+00	5.0E-06	3.3E-05	3.0E-02	1.1E-03	4.7E-07	--	--
	Chrysene	4.4E-04	4.7E-01	2.0E+00	1.0E+00	2.8E+00	1.2E-06	7.8E-06	--	--	1.1E-07	1.2E-01	1.3E-08
	Dibenz(a,h)anthracene	4.9E-04	1.5E+00	3.9E+00	6.0E-01	9.7E+00	3.4E-06	2.3E-05	--	--	3.3E-07	1.2E+01	3.9E-06
	Fluoranthene	3.7E-03	2.2E-01	1.5E+00	1.0E+00	1.2E+00	3.9E-06	2.6E-05	4.0E-02	6.5E-04	3.7E-07	--	--
	Indeno(1,2,3-cd)pyrene	5.5E-04	1.0E+00	3.8E+00	6.0E-01	6.7E+00	2.6E-06	1.7E-05	--	--	2.5E-07	1.2E+00	3.0E-07
	Phenanthrene	2.3E-03	1.4E-01	1.1E+00	1.0E+00	7.4E-01	1.3E-06	9.0E-06	3.0E-01	3.0E-05	1.3E-07	--	--

Table E-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	**PCBs**												
	Aroclor 1016	1.9E-03	3.1E-01	3.0E+00	1.0E+00	1.9E+00	3.9E-06	2.6E-05	7.0E-05	3.7E-01	3.7E-07	7.0E-02	2.6E-08
	Aroclor 1242	--	5.5E-01	4.6E+00	1.0E+00	3.6E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1248	--	5.9E-01	4.6E+00	1.0E+00	3.9E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1254	--	7.5E-01	7.2E+00	1.0E+00	5.2E+00	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1260	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Aroclor 1262	--	3.0E+00	1.8E+01	1.0E+00	2.3E+01	--	--	2.0E-05	--	--	5.0E+00	--
	Perchlorate												
	Perchlorate	--	3.4E-04	4.9E-01	1.0E+00	1.4E-03	--	--	7.0E-04	--	--	--	--
	SVOCs												
	1,4-Dioxane	3.0E+00	3.3E-04	3.3E-01	1.0E+00	1.2E-03	2.7E-06	1.8E-05	--	--	2.5E-07	2.7E-02	6.8E-09
	4-Chloro-3-methylphenol	7.7E-03	2.9E-02	6.7E-01	1.0E+00	1.3E-01	7.2E-07	4.8E-06	1.0E-01	4.8E-05	6.9E-08	--	--
	Aniline	2.2E-03	1.9E-03	3.5E-01	1.0E+00	6.9E-03	1.1E-08	7.4E-08	7.0E-03	1.1E-05	1.1E-09	5.7E-03	6.0E-12
	Benzoic Acid	3.6E-03	5.7E-03	5.1E-01	1.0E+00	2.4E-02	6.1E-08	4.1E-07	4.0E+00	1.0E-07	5.9E-09	--	--
	Bis(2-ethylhexyl)Phthalate	2.1E-01	2.5E-02	1.7E+01	8.0E-01	1.9E-01	6.7E-05	4.5E-04	2.0E-02	2.2E-02	6.4E-06	3.0E-03	1.9E-08
	Diethylphthalate	2.2E-03	3.9E-03	1.9E+00	1.0E+00	2.2E-02	4.6E-08	3.1E-07	8.0E-01	3.8E-07	4.4E-09	--	--
	Diisopropyl Ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Dimethyl Phthalate	1.6E-03	1.4E-03	1.3E+00	1.0E+00	7.4E-03	9.9E-09	6.6E-08	1.0E+01	6.6E-09	9.5E-10	--	--
	Di-n-butylphthalate	3.0E-03	2.4E-02	3.9E+00	9.0E-01	1.5E-01	5.0E-07	3.3E-06	1.0E-01	3.3E-05	4.8E-08	--	--
	Phenol	1.0E-03	4.3E-03	3.6E-01	1.0E+00	1.6E-02	1.2E-08	7.8E-08	3.0E-01	2.6E-07	1.1E-09	--	--
	TPH												
	TPH - aliphatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	3.1E-02	4.0E-02	7.8E-01	4.5E-04	--	--
	TPH - aliphatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	1.7E-03	1.0E-01	1.7E-02	2.4E-05	--	--
	TPH - aliphatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	8.1E-04	2.0E+00	4.0E-04	1.2E-05	--	--
	TPH - aromatic; C5-C8	5.0E+01	4.7E-02	--	--	--	4.7E-03	3.1E-02	--	--	4.5E-04	--	--
	TPH - aromatic; C9-C18	2.7E+00	4.7E-02	--	--	--	2.5E-04	1.7E-03	3.0E-02	5.5E-02	2.4E-05	--	--
	TPH - aromatic; C≥19	1.3E+00	4.7E-02	--	--	--	1.2E-04	8.1E-04	3.0E-02	2.7E-02	1.2E-05	--	--
	VOCs												
	1,1,1,2-Tetrachloroethane	1.6E-03	1.6E-02	9.3E-01	1.0E+00	7.9E-02	9.6E-08	6.4E-07	3.0E-02	2.1E-05	9.1E-09	2.6E-02	2.4E-10
	1,1,1-Trichloroethane	4.5E-02	1.3E-02	6.0E-01	1.0E+00	5.6E-02	1.8E-06	1.2E-05	2.8E-01	4.3E-05	1.7E-07	--	--
	1,1,2-Trichloroethane	9.4E-03	6.4E-03	6.0E-01	1.0E+00	2.9E-02	1.9E-07	1.3E-06	4.0E-03	3.2E-04	1.8E-08	7.2E-02	1.3E-09
	1,1-Dichloroethane	1.2E-01	6.7E-03	3.8E-01	1.0E+00	2.6E-02	2.2E-06	1.5E-05	1.0E-01	1.5E-04	2.1E-07	5.7E-03	1.2E-09
	1,1-Dichloroethene	5.4E-01	1.2E-02	3.7E-01	1.0E+00	4.4E-02	1.7E-05	1.1E-04	5.0E-02	2.3E-03	1.6E-06	--	--

Table E-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	1,1-Dichloropropene	5.8E-04	4.3E-03	4.5E-01	1.0E+00	1.8E-02	--	--	3.0E-02	--	--	9.1E-02	--
	1,2,4-Trichlorobenzene	6.8E-04	6.6E-02	1.1E+00	1.0E+00	3.4E-01	1.9E-07	1.2E-06	1.0E-02	1.2E-04	1.8E-08	--	--
	1,2,4-Trimethylbenzene	1.4E-02	8.6E-02	5.0E-01	1.0E+00	3.6E-01	3.4E-06	2.3E-05	5.0E-02	4.5E-04	3.2E-07	--	--
	1,2-Dibromo-3-chloropropane	6.0E-04	6.9E-03	2.3E+00	1.0E+00	4.1E-02	2.4E-08	1.6E-07	5.7E-05	2.8E-03	2.3E-09	7.0E+00	1.6E-08
	1,2-Dichlorobenzene	9.7E-03	4.1E-02	7.1E-01	1.0E+00	1.9E-01	1.3E-06	9.0E-06	9.0E-02	1.0E-04	1.3E-07	--	--
	1,2-Dichloroethane	2.0E-02	4.2E-03	3.8E-01	1.0E+00	1.6E-02	2.3E-07	1.5E-06	2.0E-02	7.7E-05	2.2E-08	4.7E-02	1.0E-09
	1,3,5-Trimethylbenzene	1.6E-02	6.2E-02	5.0E-01	1.0E+00	2.6E-01	2.8E-06	1.9E-05	5.0E-02	3.8E-04	2.7E-07	--	--
	1,3-Dichlorobenzene	5.6E-03	5.8E-02	7.1E-01	1.0E+00	2.7E-01	1.1E-06	7.3E-06	3.0E-02	2.4E-04	1.0E-07	--	--
	1,4-Dichlorobenzene	3.2E-02	4.2E-02	7.1E-01	1.0E+00	2.0E-01	4.5E-06	3.0E-05	3.0E-02	1.0E-03	4.3E-07	5.4E-03	2.3E-09
	2-Butanone (MEK)	3.0E-01	9.6E-04	2.7E-01	1.0E+00	3.1E-03	7.3E-07	4.9E-06	6.0E-01	8.2E-06	7.0E-08	--	--
	2-Chlorotoluene	3.8E-04	5.7E-02	5.5E-01	1.0E+00	2.5E-01	6.4E-08	4.3E-07	2.0E-02	2.1E-05	6.1E-09	--	--
	4-Methyl-2-pentanone	7.2E-04	2.7E-03	3.9E-01	1.0E+00	1.0E-02	5.3E-09	3.5E-08	8.0E-02	4.4E-07	5.1E-10	--	--
	Acenaphthene	2.5E+00	8.6E-02	7.8E-01	1.0E+00	4.1E-01	7.7E-04	5.2E-03	6.0E-02	8.6E-02	7.4E-05	--	--
	Acetone	4.9E-02	5.1E-04	2.3E-01	1.0E+00	1.5E-03	6.1E-08	4.1E-07	9.0E-01	4.6E-07	5.9E-09	--	--
	Benzene	1.1E-01	1.5E-02	2.9E-01	1.0E+00	5.1E-02	4.1E-06	2.8E-05	4.0E-03	6.9E-03	3.9E-07	1.0E-01	3.9E-08
	Bromochloromethane	1.5E-03	2.5E-03	5.7E-01	1.0E+00	1.1E-02	1.2E-08	8.0E-08	2.0E-02	4.0E-06	1.1E-09	--	--
	Bromodichloromethane	2.6E-03	4.6E-03	8.8E-01	1.0E+00	2.3E-02	4.4E-08	3.0E-07	2.0E-02	1.5E-05	4.2E-09	1.3E-01	5.5E-10
	Bromomethane	7.9E-04	2.8E-03	3.6E-01	1.0E+00	1.1E-02	6.1E-09	4.1E-08	1.4E-03	2.9E-05	5.8E-10	--	--
	Carbon Disulfide	3.6E-03	1.7E-02	3.0E-01	1.0E+00	5.9E-02	1.6E-07	1.0E-06	1.0E-01	1.0E-05	1.5E-08	--	--
	Carbon Tetrachloride	--	1.6E-02	7.8E-01	1.0E+00	7.8E-02	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	9.5E-03	2.8E-02	4.6E-01	1.0E+00	1.2E-01	7.5E-07	5.0E-06	2.0E-02	2.5E-04	7.2E-08	--	--
	Chloroethane	3.0E-04	6.1E-03	2.4E-01	1.0E+00	1.9E-02	4.5E-09	3.0E-08	4.0E-01	7.5E-08	4.3E-10	2.9E-03	1.2E-12
	Chloroform	2.7E-02	6.8E-03	5.0E-01	1.0E+00	2.9E-02	5.5E-07	3.7E-06	1.0E-02	3.7E-04	5.2E-08	3.1E-02	1.6E-09
	Chloromethane	9.3E-04	3.3E-03	2.0E-01	1.0E+00	9.0E-03	7.3E-09	4.9E-08	2.6E-02	1.9E-06	7.0E-10	--	--
	cis-1,2-Dichloroethene	5.7E+01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.7E-03	1.1E-02	1.0E-02	1.1E+00	1.6E-04	--	--
	Dibromochloromethane	5.1E-04	3.2E-03	1.6E+00	1.0E+00	1.8E-02	8.0E-09	5.4E-08	2.0E-02	2.7E-06	7.7E-10	9.4E-02	7.2E-11
	Dibromomethane	2.3E-04	2.2E-03	1.0E+00	1.0E+00	1.1E-02	2.0E-09	1.3E-08	1.0E-02	1.3E-06	1.9E-10	--	--
	Diisopropyl ether	--	4.3E-03	4.0E-01	1.0E+00	1.7E-02	--	--	--	--	--	--	--
	Ethylbenzene	1.6E-02	4.9E-02	4.2E-01	1.0E+00	2.0E-01	2.1E-06	1.4E-05	1.0E-01	1.4E-04	2.0E-07	--	--
	Ethyl-Tert-Butyl Ether	8.0E-04	7.5E-03	4.0E-01	1.0E+00	2.9E-02	1.7E-08	1.1E-07	1.0E-03	1.1E-04	1.6E-09	--	--
	Fluorene	2.7E-03	1.1E-01	9.1E-01	1.0E+00	5.4E-01	1.1E-06	7.4E-06	4.0E-02	1.8E-04	1.1E-07	--	--
	Freon-113	--	1.8E-02	1.2E+00	1.0E+00	9.2E-02	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	4.0E-04	8.1E-02	3.1E+00	9.0E-01	5.0E-01	--	--	3.0E-04	--	--	7.8E-02	--

Table E-8
Estimation of Noncancer Hazard and Cancer Risk
Dermal Absorption of Groundwater: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Groundwater EPC (mg/L)	Water Permeability Coefficients (cm/hour)	τ_{event}	FA	B	DA_{event} (mg/cm^2-event)	Noncancer Intake (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Isopropylbenzene	8.9E-02	9.0E-02	5.0E-01	1.0E+00	3.8E-01	2.2E-05	1.5E-04	1.0E-01	1.5E-03	2.1E-06	--	--
	Methyl tertbutyl ether (MTBE)	1.3E-02	2.2E-03	3.2E-01	1.0E+00	7.8E-03	7.5E-08	5.0E-07	8.6E-01	5.9E-07	7.2E-09	1.8E-03	1.3E-11
	Methylene Chloride	1.0E-02	3.5E-03	3.2E-01	1.0E+00	1.3E-02	9.3E-08	6.2E-07	6.0E-02	1.0E-05	8.9E-09	1.4E-02	1.2E-10
	Naphthalene	3.1E-01	4.7E-02	5.6E-01	1.0E+00	2.0E-01	4.3E-05	2.9E-04	2.0E-02	1.4E-02	4.1E-06	1.2E-01	5.0E-07
	n-Butylbenzene	1.4E-01	2.0E-01	6.0E-01	1.0E+00	8.7E-01	8.5E-05	5.7E-04	4.0E-02	1.4E-02	8.1E-06	--	--
	n-Propylbenzene	3.2E-01	1.0E-01	5.0E-01	1.0E+00	4.2E-01	8.9E-05	6.0E-04	4.0E-02	1.5E-02	8.6E-06	--	--
	p-Isopropyltoluene	4.0E-03	1.6E-01	6.0E-01	1.0E+00	7.0E-01	1.9E-06	1.3E-05	1.0E-01	1.3E-04	1.8E-07	--	--
	Pyrene	2.2E-04	2.0E-01	1.5E+00	1.0E+00	1.1E+00	2.1E-07	1.4E-06	3.0E-02	4.6E-05	2.0E-08	--	--
	sec-Butylbenzene	5.4E-02	1.4E-01	6.0E-01	1.0E+00	6.4E-01	2.4E-05	1.6E-04	4.0E-02	4.0E-03	2.3E-06	--	--
	Styrene	9.9E-04	3.7E-02	4.1E-01	1.0E+00	1.5E-01	9.9E-08	6.6E-07	2.0E-01	3.3E-06	9.4E-09	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	4.1E-02	1.7E-03	2.8E-01	1.0E+00	5.7E-03	--	--	3.0E-01	--	--	--	--
	tert-Butylbenzene	2.4E-03	1.7E-01	6.0E-01	1.0E+00	7.4E-01	1.2E-06	8.2E-06	4.0E-02	2.1E-04	1.2E-07	--	--
	Tetrachloroethene	2.4E+02	3.3E-02	9.1E-01	1.0E+00	1.7E-01	3.0E-02	2.0E-01	1.0E-02	2.0E+01	2.9E-03	5.4E-01	1.5E-03
	Toluene	6.7E-03	3.1E-02	3.5E-01	1.0E+00	1.1E-01	5.4E-07	3.6E-06	2.0E-01	1.8E-05	5.1E-08	--	--
	trans-1,2-Dichloroethene	5.1E-01	1.1E-02	3.7E-01	1.0E+00	4.1E-02	1.5E-05	1.0E-04	2.0E-02	5.0E-03	1.4E-06	--	--
	Trichloroethene	2.1E+01	1.2E-02	5.8E-01	1.0E+00	5.1E-02	7.6E-04	5.1E-03	3.0E-04	1.7E+01	7.3E-05	1.3E-02	9.5E-07
	Vinyl Chloride	2.5E+01	5.6E-03	2.4E-01	1.0E+00	1.7E-02	3.4E-04	2.3E-03	3.0E-03	7.7E-01	3.3E-05	2.7E-01	8.9E-06
	Xylenes	7.9E-03	5.3E-02	4.2E-01	1.0E+00	2.1E-01	1.1E-06	7.5E-06	2.0E-01	3.7E-05	1.1E-07	--	--
									Cumulative Risk and Hazard =	**5E+01**			**2E-03**
									Cumulative HI for $TPH_{aliphatic}$ =	**8E-01**			**--**
									Cumulative HI for $TPH_{aromatic}$ =	**8E-02**			**--**

Table E-9
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	2.8E-05	6.6E-07	3.0E-02	1.1E-01	2.2E-05	9.5E-09	2.6E-02	2.5E-10
	1,1,1-Trichloroethane	1.0E-03	2.4E-05	2.9E-01	1.0E+00	8.4E-05	3.4E-07	--	--
	1,1,2-Trichloroethane	2.0E-04	4.8E-06	4.0E-03	1.4E-02	1.2E-03	6.8E-08	5.7E-02	3.9E-09
	1,1-Dichloroethane	3.1E-03	7.4E-05	1.4E-01	5.0E-01	5.2E-04	1.1E-06	5.7E-03	6.0E-09
	1,1-Dichloroethene	1.4E-02	3.4E-04	2.0E-02	7.0E-02	1.7E-02	4.8E-06	--	--
	1,1-Dichloropropene	1.4E-05	3.4E-07	5.7E-03	2.0E-02	5.9E-05	4.9E-09	5.5E-02	2.7E-10
	1,2,4-Trichlorobenzene	1.3E-05	3.0E-07	1.0E-02	3.5E-02	3.0E-05	4.3E-09	--	--
	1,2,4-Trimethylbenzene	3.3E-04	7.8E-06	1.7E-03	6.0E-03	4.6E-03	1.1E-07	--	--
	1,2-Dibromo-3-chloropropane	7.7E-06	1.8E-07	5.7E-05	2.0E-04	3.2E-03	2.6E-09	7.0E+00	1.8E-08
	1,2-Dichlorobenzene	2.1E-04	4.8E-06	5.7E-02	2.0E-01	8.4E-05	6.9E-08	--	--
	1,2-Dichloroethane	5.0E-04	1.2E-05	1.4E-03	4.9E-03	8.4E-03	1.7E-07	7.2E-02	1.2E-08
	1,3,5-Trimethylbenzene	3.8E-04	9.0E-06	1.7E-03	6.0E-03	5.3E-03	1.3E-07	--	--
	1,3-Dichlorobenzene	1.2E-04	2.8E-06	3.0E-02	1.1E-01	9.3E-05	4.0E-08	--	--
	1,4-Dichlorobenzene	6.8E-04	1.6E-05	2.3E-01	8.0E-01	7.0E-05	2.3E-07	4.0E-02	9.1E-09
	2-Butanone (MEK)	2.9E-03	6.8E-05	1.4E+00	4.9E+00	4.9E-05	9.7E-07	--	--
	2-Chlorotoluene	8.8E-06	2.1E-07	2.0E-02	7.0E-02	1.0E-05	2.9E-09	--	--
	4-Methyl-2-pentanone	1.3E-05	3.2E-07	8.6E-01	3.0E+00	3.7E-07	4.5E-09	--	--
	Acenaphthene	4.0E-02	9.3E-04	6.0E-02	2.1E-01	1.6E-02	1.3E-05	--	--
	Acetone	6.5E-04	1.5E-05	9.0E-01	3.2E+00	1.7E-05	2.2E-07	--	--
	Benzene	3.2E-03	7.6E-05	1.7E-02	6.0E-02	4.5E-03	1.1E-06	1.0E-01	1.1E-07
	Bromochloromethane	3.4E-05	7.9E-07	2.0E-02	7.0E-02	3.9E-05	1.1E-08	--	--
	Bromodichloromethane	5.2E-05	1.2E-06	2.0E-02	7.0E-02	6.1E-05	1.7E-08	1.3E-01	2.3E-09
	Bromomethane	2.1E-05	5.0E-07	1.4E-03	5.0E-03	3.5E-04	7.1E-09	--	--
	Carbon Disulfide	1.1E-04	2.6E-06	2.3E-01	8.0E-01	1.1E-05	3.6E-08	--	--
	Carbon Tetrachloride	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	2.3E-04	5.5E-06	2.9E-01	1.0E+00	1.9E-05	7.8E-08	--	--
	Chloroethane	9.8E-06	2.3E-07	8.6E+00	3.0E+01	2.7E-08	3.3E-09	2.9E-03	9.5E-12
	Chloroform	6.4E-04	1.5E-05	8.6E-02	3.0E-01	1.8E-04	2.2E-07	1.9E-02	4.1E-09
	Chloromethane	3.4E-05	8.0E-07	2.6E-02	9.0E-02	3.1E-05	1.1E-08	--	--
	cis-1,2-Dichloroethene	1.5E+00	3.5E-02	1.0E-02	3.5E-02	3.5E+00	5.1E-04	--	--
	Dibromochloromethane	8.8E-06	2.1E-07	2.0E-02	7.0E-02	1.0E-05	2.9E-09	9.4E-02	2.8E-10
	Dibromomethane	4.3E-06	1.0E-07	1.0E-02	3.5E-02	1.0E-05	1.5E-09	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	4.1E-04	9.5E-06	5.7E-01	2.0E+00	1.7E-05	1.4E-07	--	--
	Ethyl-Tert-Butyl Ether	2.0E-05	4.8E-07	8.6E-02	3.0E-01	5.6E-06	6.8E-09	--	--
	Fluorene	3.3E-05	7.7E-07	4.0E-02	1.4E-01	1.9E-05	1.1E-08	--	--
	Freon-113	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	6.5E-06	1.5E-07	3.0E-04	1.1E-03	5.1E-04	2.2E-09	7.8E-02	1.7E-10
	Isopropylbenzene	2.1E-03	5.0E-05	1.1E-01	3.9E-01	4.6E-04	7.2E-07	--	--
	Methyl tertbutyl ether (MTBE)	3.4E-04	7.9E-06	2.3E+00	8.0E+00	3.5E-06	1.1E-07	9.1E-04	1.0E-10
	Methylene Chloride	2.8E-04	6.5E-06	1.1E-01	4.0E-01	5.7E-05	9.3E-08	3.5E-03	3.3E-10
	Naphthalene	6.5E-03	1.5E-04	2.6E-03	9.0E-03	5.9E-02	2.2E-06	1.2E-01	2.6E-07
	n-Butylbenzene	3.2E-03	7.5E-05	4.0E-02	1.4E-01	1.9E-03	1.1E-06	--	--
	n-Propylbenzene	7.7E-03	1.8E-04	4.0E-02	1.4E-01	4.5E-03	2.6E-06	--	--
	p-Isopropyltoluene	9.1E-05	2.1E-06	1.1E-01	3.9E-01	1.9E-05	3.0E-08	--	--
	Pyrene	7.2E-07	1.7E-08	3.0E-02	1.1E-01	5.7E-07	2.4E-10	--	--

Table E-9
Estimation of Noncancer Hazard and Cancer Risk
Outdoor Air Inhalation of Groundwater Vapors: Trench Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	GW-to-Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	1.2E-03	2.9E-05	4.0E-02	1.4E-01	7.2E-04	4.1E-07	--	--
	Styrene	2.5E-05	5.9E-07	2.6E-01	9.0E-01	2.3E-06	8.4E-09	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	6.9E-04	1.6E-05	3.0E-01	1.1E+00	5.4E-05	2.3E-07	--	--
	tert-Butylbenzene	5.4E-05	1.3E-06	4.0E-02	1.4E-01	3.2E-05	1.8E-08	--	--
	Tetrachloroethene	4.1E+00	9.6E-02	1.0E-02	3.5E-02	9.6E+00	1.4E-03	2.1E-02	2.9E-05
	Toluene	1.8E-04	4.3E-06	8.6E-02	3.0E-01	5.0E-05	6.1E-08	--	--
	trans-1,2-Dichloroethene	1.4E-02	3.2E-04	2.0E-02	7.0E-02	1.6E-02	4.6E-06	--	--
	Trichloroethene	4.8E-01	1.1E-02	1.7E-01	6.0E-01	6.6E-02	1.6E-04	7.0E-03	1.1E-06
	Vinyl Chloride	8.3E-01	1.9E-02	2.9E-02	1.0E-01	6.8E-01	2.8E-04	2.7E-01	7.5E-05
	Xylenes	2.0E-04	4.7E-06	2.0E-01	7.0E-01	2.4E-05	6.7E-08	--	--
					Cumulative Risk and Hazard =	**1E+01**			**1E-04**

Table E-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	8.3E-06	4.0E-04	2.1E-02	3.0E-06	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	6.7E-06	1.0E-03	6.7E-03	2.4E-06	--	--
	Chromium	7.0E+02	6.8E-04	1.5E+00	4.6E-04	2.4E-04	--	--
	Chromium, Hexavalent	3.5E+01	3.4E-05	3.0E-03	1.1E-02	1.2E-05	--	--
	Cobalt	1.0E+02	9.8E-05	2.0E-02	4.9E-03	3.5E-05	--	--
	Copper	2.0E+02	2.0E-04	4.0E-02	4.9E-03	7.0E-05	--	--
	Cyanide (Amenable)	1.0E+00	9.8E-07	2.0E-02	4.9E-05	3.5E-07	--	--
	Cyanide (Total)	1.7E+00	1.7E-06	2.0E-02	8.3E-05	5.9E-07	--	--
	Mercury	2.3E-01	2.3E-07	3.0E-04	7.5E-04	8.0E-08	--	--
	Molybdenum	1.0E+01	9.8E-06	5.0E-03	2.0E-03	3.5E-06	--	--
	Nickel	1.7E+02	1.7E-04	2.0E-02	8.3E-03	5.9E-05	--	--
	Selenium	3.0E+01	2.9E-05	5.0E-03	5.9E-03	1.0E-05	--	--
	Silver	2.3E+00	2.3E-06	5.0E-03	4.5E-04	8.0E-07	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	6.9E-04	3.0E-01	2.3E-03	2.5E-04	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	5.2E-05	3.0E-02	1.7E-03	1.9E-05	--	--
	Anthracene	1.0E-02	9.8E-09	3.0E-01	3.3E-08	3.5E-09	--	--
	Benzo(a)anthracene	2.0E-01	2.0E-07	--	--	7.0E-08	1.2E+00	8.4E-08
	Benzo(a)Pyrene	4.0E-01	3.9E-07	--	--	1.4E-07	1.2E+01	1.7E-06
	Benzo(b)Fluoranthene	1.3E+00	1.2E-06	--	--	4.4E-07	1.2E+00	5.3E-07
	Benzo(k)Fluoranthene	1.0E-01	9.8E-08	--	--	3.5E-08	1.2E+00	4.2E-08
	Benzo(g,h,i)Perylene	9.0E-01	8.8E-07	3.0E-02	2.9E-05	3.1E-07	--	--
	Chrysene	6.8E-01	6.7E-07	--	--	2.4E-07	1.2E-01	2.9E-08
	Dibenz(a,h)anthracene	8.0E-02	7.8E-08	--	--	2.8E-08	1.2E+01	3.4E-07
	Fluoranthene	2.0E-01	2.0E-07	4.0E-02	4.9E-06	7.0E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	5.9E-07	--	--	2.1E-07	1.2E+00	2.5E-07
	Phenanthrene	9.8E+00	9.6E-06	3.0E-01	3.2E-05	3.4E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	2.9E-08	7.0E-05	4.2E-04	1.0E-08	7.0E-02	7.3E-10
	Aroclor 1242	1.6E-01	1.6E-07	2.0E-05	7.8E-03	5.6E-08	5.0E+00	2.8E-07
	Aroclor 1248	2.9E+02	2.8E-04	2.0E-05	1.4E+01	1.0E-04	5.0E+00	5.1E-04
	Aroclor 1254	1.7E+00	1.7E-06	2.0E-05	8.3E-02	5.9E-07	5.0E+00	3.0E-06
	Aroclor 1260	1.5E+00	1.5E-06	2.0E-05	7.3E-02	5.2E-07	5.0E+00	2.6E-06
	Aroclor 1262	3.3E-01	3.2E-07	2.0E-05	1.6E-02	1.2E-07	5.0E+00	5.8E-07
	Perchlorate							
	Perchlorate	3.6E+00	3.5E-06	7.0E-04	5.0E-03	1.3E-06	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	8.8E-08	--	--	3.1E-08	2.7E-02	8.5E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table E-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	8.8E-08	3.0E-01	2.9E-07	3.1E-08	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.6E-03	4.0E-02	4.1E-02	5.9E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	2.5E-02	1.0E-01	2.5E-01	8.8E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	2.2E-02	2.0E+00	1.1E-02	7.9E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.6E-03	--	--	5.9E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	2.5E-02	3.0E-02	8.2E-01	8.8E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	2.2E-02	3.0E-02	7.4E-01	7.9E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	5.0E-08	2.8E-01	1.8E-07	1.8E-08	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	2.9E-09	1.0E-01	2.9E-08	1.0E-09	5.7E-03	6.0E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	3.9E-09	3.0E-02	1.3E-07	1.4E-09	9.1E-02	1.3E-10
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.6E-05	5.0E-02	3.1E-04	5.6E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	6.7E-07	5.0E-02	1.3E-05	2.4E-07	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	2.4E-08	3.0E-02	8.2E-07	8.7E-09	5.4E-03	4.7E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	2.0E-06	6.0E-02	3.3E-05	7.0E-07	--	--
	Acetone	6.2E-02	6.1E-08	9.0E-01	6.7E-08	2.2E-08	--	--
	Benzene	2.0E-02	2.0E-08	4.0E-03	4.9E-06	7.0E-09	1.0E-01	7.0E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	8.5E-09	1.0E-01	8.5E-08	3.0E-09	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	3.9E-09	2.0E-02	2.0E-07	1.4E-09	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	3.9E-09	1.0E-02	3.9E-07	1.4E-09	3.1E-02	4.3E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	9.4E-07	1.0E-02	9.4E-05	3.4E-07	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	9.8E-10	--	--	3.5E-10	--	--
	Ethylbenzene	2.3E+00	2.3E-06	1.0E-01	2.3E-05	8.0E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	5.6E-06	4.0E-02	1.4E-04	2.0E-06	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.8E-08	3.0E-04	5.9E-05	6.3E-09	7.8E-02	4.9E-10

Table E-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	1.7E-06	1.0E-01	1.7E-05	5.9E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	9.2E-09	6.0E-02	1.5E-07	3.3E-09	1.4E-02	4.6E-11
	Naphthalene	1.8E+01	1.8E-05	2.0E-02	8.8E-04	6.3E-06	1.2E-01	7.5E-07
	n-Butylbenzene	5.5E+00	5.4E-06	4.0E-02	1.3E-04	1.9E-06	--	--
	n-Propylbenzene	3.7E+00	3.6E-06	4.0E-02	9.1E-05	1.3E-06	--	--
	p-Isopropyltoluene	5.8E+00	5.7E-06	1.0E-01	5.7E-05	2.0E-06	--	--
	Pyrene	3.5E-01	3.4E-07	3.0E-02	1.1E-05	1.2E-07	--	--
	sec-Butylbenzene	2.3E+00	2.3E-06	4.0E-02	5.6E-05	8.0E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	9.8E-08	3.0E-01	3.3E-07	3.5E-08	--	--
	tert-Butylbenzene	4.0E-03	3.9E-09	4.0E-02	9.8E-08	1.4E-09	--	--
	Tetrachloroethene	2.2E+02	2.2E-04	1.0E-02	2.2E-02	7.7E-05	5.4E-01	4.2E-05
	Toluene	9.9E-03	9.7E-09	2.0E-01	4.8E-08	3.5E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	6.6E-07	2.0E-02	3.3E-05	2.3E-07	--	--
	Trichloroethene	1.0E+01	9.8E-06	3.0E-04	3.3E-02	3.5E-06	1.3E-02	4.5E-08
	Vinyl Chloride	5.4E-02	5.3E-08	3.0E-03	1.8E-05	1.9E-08	2.7E-01	5.1E-09
	Xylenes	2.4E+00	2.3E-06	2.0E-01	1.2E-05	8.4E-07	--	--
	Cumulative Risk and Hazard =				**1E+01**			**6E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**3E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**2E+00**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	9.5E-07	4.0E-04	2.4E-03	3.4E-07	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	7.6E-08	1.0E-03	7.6E-05	2.7E-08	--	--
	Chromium	7.0E+02	7.8E-05	1.5E+00	5.2E-05	2.8E-05	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	1.1E-05	2.0E-02	5.6E-04	4.0E-06	--	--
	Copper	2.0E+02	2.2E-05	4.0E-02	5.6E-04	8.0E-06	--	--
	Cyanide (Amenable)	1.0E+00	1.1E-06	2.0E-02	5.6E-05	4.0E-07	--	--
	Cyanide (Total)	1.7E+00	1.9E-06	2.0E-02	9.5E-05	6.8E-07	--	--
	Mercury	2.3E-01	2.6E-08	3.0E-04	8.6E-05	9.2E-09	--	--
	Molybdenum	1.0E+01	1.1E-06	5.0E-03	2.2E-04	4.0E-07	--	--
	Nickel	1.7E+02	1.9E-05	2.0E-02	9.5E-04	6.8E-06	--	--
	Selenium	3.0E+01	3.3E-06	5.0E-03	6.7E-04	1.2E-06	--	--
	Silver	2.3E+00	2.6E-07	5.0E-03	5.1E-05	9.2E-08	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	7.9E-05	3.0E-01	2.6E-04	2.8E-05	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	8.9E-05	3.0E-02	3.0E-03	3.2E-05	--	--
	Anthracene	1.0E-02	1.7E-08	3.0E-01	5.6E-08	6.0E-09	--	--
	Benzo(a)anthracene	2.0E-01	3.3E-07	--	--	1.2E-07	1.2E+00	1.4E-07
	Benzo(a)Pyrene	4.0E-01	6.7E-07	--	--	2.4E-07	1.2E+01	2.9E-06
	Benzo(b)Fluoranthene	1.3E+00	2.1E-06	--	--	7.5E-07	1.2E+00	9.0E-07
	Benzo(k)Fluoranthene	1.0E-01	1.7E-07	--	--	6.0E-08	1.2E+00	7.2E-08
	Benzo(g,h,i)Perylene	9.0E-01	1.5E-06	3.0E-02	5.0E-05	5.4E-07	--	--

Table E-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	1.1E-06	--	--	4.1E-07	1.2E-01	4.9E-08
	Dibenz(a,h)anthracene	8.0E-02	1.3E-07	--	--	4.8E-08	1.2E+01	5.7E-07
	Fluoranthene	2.0E-01	3.3E-07	4.0E-02	8.4E-06	1.2E-07	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	1.0E-06	--	--	3.6E-07	1.2E+00	4.3E-07
	Phenanthrene	9.8E+00	1.6E-05	3.0E-01	5.5E-05	5.9E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	5.0E-08	7.0E-05	7.2E-04	1.8E-08	7.0E-02	1.3E-09
	Aroclor 1242	1.6E-01	2.7E-07	2.0E-05	1.3E-02	9.6E-08	5.0E+00	4.8E-07
	Aroclor 1248	2.9E+02	4.9E-04	2.0E-05	2.4E+01	1.7E-04	5.0E+00	8.7E-04
	Aroclor 1254	1.7E+00	2.8E-06	2.0E-05	1.4E-01	1.0E-06	5.0E+00	5.1E-06
	Aroclor 1260	1.5E+00	2.5E-06	2.0E-05	1.3E-01	9.0E-07	5.0E+00	4.5E-06
	Aroclor 1262	3.3E-01	5.5E-07	2.0E-05	2.8E-02	2.0E-07	5.0E+00	9.9E-07
	Perchlorate							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	1.0E-07	--	--	3.6E-08	2.7E-02	9.7E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	1.0E-07	3.0E-01	3.3E-07	3.6E-08	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	2.8E-03	4.0E-02	7.0E-02	1.0E-03	--	--
	TPH - aliphatic; C9-C18	2.5E+04	4.2E-02	1.0E-01	4.2E-01	1.5E-02	--	--
	TPH - aliphatic; C≥19	2.3E+04	3.8E-02	2.0E+00	1.9E-02	1.4E-02	--	--
	TPH - aromatic; C5-C8	1.7E+03	2.8E-03	--	--	1.0E-03	--	--
	TPH - aromatic; C9-C18	2.5E+04	4.2E-02	3.0E-02	1.4E+00	1.5E-02	--	--
	TPH - aromatic; C≥19	2.3E+04	3.8E-02	3.0E-02	1.3E+00	1.4E-02	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	5.7E-08	2.8E-01	2.0E-07	2.0E-08	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	3.3E-09	1.0E-01	3.3E-08	1.2E-09	5.7E-03	6.8E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	4.5E-09	3.0E-02	1.5E-07	1.6E-09	9.1E-02	1.5E-10
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.8E-05	5.0E-02	3.6E-04	6.4E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	7.6E-07	5.0E-02	1.5E-05	2.7E-07	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	2.8E-08	3.0E-02	9.3E-07	1.0E-08	5.4E-03	5.4E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table E-10
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	3.3E-06	6.0E-02	5.6E-05	1.2E-06	--	--
	Acetone	6.2E-02	6.9E-08	9.0E-01	7.7E-08	2.5E-08	--	--
	Benzene	2.0E-02	2.2E-08	4.0E-03	5.6E-06	8.0E-09	1.0E-01	8.0E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	9.7E-09	1.0E-01	9.7E-08	3.5E-09	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	4.5E-09	2.0E-02	2.2E-07	1.6E-09	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	4.5E-09	1.0E-02	4.5E-07	1.6E-09	3.1E-02	4.9E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.1E-06	1.0E-02	1.1E-04	3.8E-07	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.1E-09	--	--	4.0E-10	--	--
	Ethylbenzene	2.3E+00	2.6E-06	1.0E-01	2.6E-05	9.2E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	9.5E-06	4.0E-02	2.4E-04	3.4E-06	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	2.0E-08	3.0E-04	6.7E-05	7.2E-09	7.8E-02	5.6E-10
	Isopropylbenzene	1.7E+00	1.9E-06	1.0E-01	1.9E-05	6.8E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	1.0E-08	6.0E-02	1.7E-07	3.7E-09	1.4E-02	5.2E-11
	Naphthalene	1.8E+01	3.0E-05	2.0E-02	1.5E-03	1.1E-05	1.2E-01	1.3E-06
	n-Butylbenzene	5.5E+00	6.1E-06	4.0E-02	1.5E-04	2.2E-06	--	--
	n-Propylbenzene	3.7E+00	4.1E-06	4.0E-02	1.0E-04	1.5E-06	--	--
	p-Isopropyltoluene	5.8E+00	6.5E-06	1.0E-01	6.5E-05	2.3E-06	--	--
	Pyrene	3.5E-01	3.9E-07	3.0E-02	1.3E-05	1.4E-07	--	--
	sec-Butylbenzene	2.3E+00	2.6E-06	4.0E-02	6.4E-05	9.2E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	1.1E-07	3.0E-01	3.7E-07	4.0E-08	--	--
	tert-Butylbenzene	4.0E-03	4.5E-09	4.0E-02	1.1E-07	1.6E-09	--	--
	Tetrachloroethene	2.2E+02	2.5E-04	1.0E-02	2.5E-02	8.8E-05	5.4E-01	4.7E-05
	Toluene	9.9E-03	1.1E-08	2.0E-01	5.5E-08	3.9E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	7.5E-07	2.0E-02	3.7E-05	2.7E-07	--	--
	Trichloroethene	1.0E+01	1.1E-05	3.0E-04	3.7E-02	4.0E-06	1.3E-02	5.2E-08
	Vinyl Chloride	5.4E-02	6.0E-08	3.0E-03	2.0E-05	2.2E-08	2.7E-01	5.8E-09
	Xylenes	2.4E+00	2.7E-06	2.0E-01	1.3E-05	9.6E-07	--	--
	Cumulative Risk and Hazard =				**2E+01**			**9E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**5E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**3E+00**			**--**

Table E-11
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	4.1E-09	5.7E-10	--	--	--	2.0E-10	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	3.3E-09	4.5E-10	5.7E-06	2.0E-05	7.9E-05	1.6E-10	1.5E+01	2.4E-09
	Chromium	7.0E+02	3.4E-07	4.7E-08	--	--	--	1.7E-08	--	--
	Chromium, Hexavalent	3.5E+01	1.7E-08	2.3E-09	5.7E-05	2.0E-04	4.1E-05	8.3E-10	5.1E+02	4.2E-07
	Cobalt	1.0E+02	4.9E-08	6.6E-09	5.7E-06	2.0E-05	1.2E-03	2.4E-09	--	--
	Copper	2.0E+02	9.7E-08	1.3E-08	--	--	--	4.7E-09	--	--
	Cyanide (Amenable)	1.0E+00	4.9E-10	6.6E-11	--	--	--	2.4E-11	--	--
	Cyanide (Total)	1.7E+00	8.2E-10	1.1E-10	--	--	--	4.0E-11	--	--
	Mercury	2.3E-01	1.1E-10	1.5E-11	2.6E-05	9.0E-05	5.9E-07	5.5E-12	--	--
	Molybdenum	1.0E+01	4.9E-09	6.6E-10	--	--	--	2.4E-10	--	--
	Nickel	1.7E+02	8.2E-08	1.1E-08	1.4E-05	5.0E-05	7.9E-04	4.0E-09	9.1E-01	3.7E-09
	Selenium	3.0E+01	1.5E-08	2.0E-09	5.7E-03	2.0E-02	3.5E-07	7.1E-10	--	--
	Silver	2.3E+00	1.1E-09	1.5E-10	--	--	--	5.5E-11	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	3.4E-07	4.7E-08	--	--	--	1.7E-08	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	2.6E-08	3.5E-09	3.0E-02	1.1E-01	1.2E-07	1.3E-09	--	--
	Anthracene	1.0E-02	4.9E-12	6.6E-13	3.0E-01	1.1E+00	2.2E-12	2.4E-13	--	--
	Benzo(a)anthracene	2.0E-01	9.7E-11	1.3E-11	--	--	--	4.7E-12	3.9E-01	1.9E-12
	Benzo(a)Pyrene	4.0E-01	1.9E-10	2.7E-11	--	--	--	9.5E-12	3.9E+00	3.7E-11
	Benzo(b)Fluoranthene	1.3E+00	6.1E-10	8.4E-11	--	--	--	3.0E-11	3.9E-01	1.2E-11
	Benzo(k)Fluoranthene	1.0E-01	4.9E-11	6.6E-12	--	--	--	2.4E-12	3.9E-01	9.3E-13
	Benzo(g,h,i)Perylene	9.0E-01	4.4E-10	6.0E-11	3.0E-02	1.1E-01	2.0E-09	2.1E-11	--	--
	Chrysene	6.8E-01	3.3E-10	4.5E-11	--	--	--	1.6E-11	3.9E-02	6.3E-13
	Dibenz(a,h)anthracene	8.0E-02	3.9E-11	5.3E-12	--	--	--	1.9E-12	3.9E+00	7.4E-12
	Fluoranthene	2.0E-01	9.7E-11	1.3E-11	4.0E-02	1.4E-01	3.3E-10	4.7E-12	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	2.9E-10	4.0E-11	--	--	--	1.4E-11	3.9E-01	5.6E-12
	Phenanthrene	9.8E+00	4.8E-09	6.5E-10	3.0E-01	1.1E+00	2.2E-09	2.3E-10	--	--
	PCBs									
	Aroclor 1016	3.0E-02	1.5E-11	2.0E-12	7.0E-05	2.5E-04	2.8E-08	7.1E-13	7.0E-02	5.0E-14
	Aroclor 1242	1.6E-01	7.8E-11	1.1E-11	2.0E-05	7.0E-05	5.3E-07	3.8E-12	2.0E+00	7.6E-12
	Aroclor 1248	2.9E+02	1.4E-07	1.9E-08	2.0E-05	7.0E-05	9.6E-04	6.9E-09	2.0E+00	1.4E-08
	Aroclor 1254	1.7E+00	8.2E-10	1.1E-10	2.0E-05	7.0E-05	5.7E-06	4.0E-11	2.0E+00	8.1E-11
	Aroclor 1260	1.5E+00	7.3E-10	1.0E-10	2.0E-05	7.0E-05	5.0E-06	3.6E-11	2.0E+00	7.1E-11
	Aroclor 1262	3.3E-01	1.6E-10	2.2E-11	2.0E-05	7.0E-05	1.1E-06	7.8E-12	2.0E+00	1.6E-11
	Perchlorate									
	Perchlorate	3.6E+00	1.7E-09	2.4E-10	--	--	--	8.5E-11	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	4.4E-11	6.0E-12	8.6E-01	3.0E+00	7.0E-12	2.1E-12	2.7E-02	5.8E-14
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table E-11
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	4.4E-11	6.0E-12	5.7E-02	2.0E-01	1.0E-10	2.1E-12	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	8.2E-07	1.1E-07	6.0E-02	2.1E-01	1.9E-06	4.0E-08	--	--
	TPH - aliphatic; C9-C18	2.5E+04	1.2E-05	1.7E-06	3.0E-01	1.1E+00	5.6E-06	6.0E-07	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.1E-05	1.5E-06	3.0E-01	1.1E+00	5.0E-06	5.4E-07	--	--
	TPH - aromatic; C5-C8	1.7E+03	8.2E-07	1.1E-07	--	--	--	4.0E-08	--	--
	TPH - aromatic; C9-C18	2.5E+04	1.2E-05	1.7E-06	6.0E-03	2.1E-02	2.8E-04	6.0E-07	--	--
	TPH - aromatic; C≥19	2.3E+04	1.1E-05	1.5E-06	--	--	--	5.4E-07	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	8.5E-05	1.2E-05	2.9E-01	1.0E+00	4.1E-05	4.1E-06	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	4.5E-06	6.2E-07	1.4E-01	5.0E-01	4.3E-06	2.2E-07	5.7E-03	1.3E-09
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.9E-12	2.7E-13	5.7E-03	2.0E-02	4.7E-11	9.5E-14	5.5E-02	5.2E-15
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	3.5E-03	4.8E-04	1.7E-03	6.0E-03	2.8E-01	1.7E-04	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.6E-04	4.9E-05	1.7E-03	6.0E-03	2.9E-02	1.7E-05	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	8.2E-06	1.1E-06	2.3E-01	8.0E-01	4.9E-06	4.0E-07	4.0E-02	1.6E-08
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	4.7E-05	6.4E-06	6.0E-02	2.1E-01	1.1E-04	2.3E-06	--	--
	Acetone	6.2E-02	1.8E-05	2.4E-06	9.0E-01	3.2E+00	2.7E-06	8.7E-07	--	--
	Benzene	2.0E-02	2.8E-05	3.8E-06	1.7E-02	6.0E-02	2.2E-04	1.4E-06	1.0E-01	1.4E-07
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.3E-05	3.1E-06	2.3E-01	8.0E-01	1.4E-05	1.1E-06	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.6E-06	3.6E-07	2.9E-01	1.0E+00	1.3E-06	1.3E-07	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	5.7E-06	7.8E-07	8.6E-02	3.0E-01	9.1E-06	2.8E-07	1.9E-02	5.3E-09
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.2E-03	1.7E-04	1.0E-02	3.5E-02	1.7E-02	6.1E-05	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.0E-06	1.4E-07	1.1E-01	3.9E-01	1.3E-06	5.1E-08	--	--
	Ethylbenzene	2.3E+00	1.8E-03	2.4E-04	5.7E-01	2.0E+00	4.2E-04	8.6E-05	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	6.8E-05	9.3E-06	4.0E-02	1.4E-01	2.3E-04	3.3E-06	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	8.6E-06	1.2E-06	3.0E-04	1.1E-03	3.9E-03	4.2E-07	7.8E-02	3.3E-08

Table E-11
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	1.9E-03	2.6E-04	1.1E-01	3.9E-01	2.4E-03	9.3E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	1.4E-05	1.9E-06	1.1E-01	4.0E-01	1.6E-05	6.7E-07	3.5E-03	2.3E-09
	Naphthalene	1.8E+01	1.8E-03	2.4E-04	2.6E-03	9.0E-03	9.5E-02	8.7E-05	1.2E-01	1.0E-05
	n-Butylbenzene	5.5E+00	2.1E-03	2.8E-04	4.0E-02	1.4E-01	7.1E-03	1.0E-04	--	--
	n-Propylbenzene	3.7E+00	1.4E-03	1.9E-04	4.0E-02	1.4E-01	4.8E-03	6.8E-05	--	--
	p-Isopropyltoluene	5.8E+00	2.0E-03	2.7E-04	1.1E-01	3.9E-01	2.4E-03	9.6E-05	--	--
	Pyrene	3.5E-01	3.8E-07	5.2E-08	3.0E-02	1.1E-01	1.7E-06	1.9E-08	--	--
	sec-Butylbenzene	2.3E+00	1.2E-03	1.6E-04	4.0E-02	1.4E-01	4.0E-03	5.7E-05	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.0E-05	4.2E-06	3.0E-01	1.1E+00	1.4E-05	1.5E-06	--	--
	tert-Butylbenzene	4.0E-03	1.7E-06	2.3E-07	4.0E-02	1.4E-01	5.8E-06	8.2E-08	--	--
	Tetrachloroethene	1.0E+02	1.5E-01	2.0E-02	1.0E-02	3.5E-02	2.0E+00	7.2E-03	2.1E-02	1.5E-04
	Toluene	9.9E-03	1.0E-05	1.4E-06	8.6E-02	3.0E-01	1.6E-05	4.9E-07	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.0E-03	1.4E-04	2.0E-02	7.0E-02	7.2E-03	5.1E-05	--	--
	Trichloroethene	1.0E+01	1.2E-02	1.7E-03	1.7E-01	6.0E-01	9.7E-03	5.9E-04	7.0E-03	4.2E-06
	Vinyl Chloride	5.4E-02	1.5E-04	2.1E-05	2.9E-02	1.0E-01	7.3E-04	7.5E-06	2.7E-01	2.0E-06
	Xylenes	2.4E+00	1.6E-03	2.2E-04	2.0E-01	7.0E-01	1.1E-03	8.0E-05	--	--
						Cumulative Risk and Hazard =	**2E+00**			**2E-04**
						Cumulative HI for $TPH_{aliphatic}$ =	**1E-05**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**3E-04**			**--**

Table E-12
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**VOCs**								
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	1.6E-01	2.1E-02	2.9E-01	1.0E+00	7.5E-02	7.6E-03	--	--
	1,1,2-Trichloroethane	1.2E-02	1.7E-03	4.0E-03	1.4E-02	4.3E-01	6.1E-04	5.7E-02	3.5E-05
	1,1-Dichloroethane	1.2E+00	1.6E-01	1.4E-01	5.0E-01	1.1E+00	5.7E-02	5.7E-03	3.3E-04
	1,1-Dichloroethene	1.8E-02	2.5E-03	2.0E-02	7.0E-02	1.2E-01	8.8E-04	--	--
	1,1-Dichloropropene	--	--	5.7E-03	2.0E-02	--	--	5.5E-02	--
	1,2,4-Trichlorobenzene	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	1.7E-03	6.0E-03	--	--	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	1.5E-03	2.1E-04	1.4E-03	4.9E-03	1.5E-01	7.5E-05	7.2E-02	5.4E-06
	1,3,5-Trimethylbenzene	7.0E-04	9.6E-05	1.7E-03	6.0E-03	5.7E-02	3.4E-05	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	--	--	2.3E-01	8.0E-01	--	--	4.0E-02	--
	2-Butanone (MEK)	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	--	--	6.0E-02	2.1E-01	--	--	--	--
	Acetone	--	--	9.0E-01	3.2E+00	--	--	--	--
	Benzene	1.8E-02	2.5E-03	1.7E-02	6.0E-02	1.5E-01	9.0E-04	1.0E-01	9.0E-05
	Bromochloromethane	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	3.4E-04	4.6E-05	1.4E-03	5.0E-03	3.2E-02	1.7E-05	--	--
	Carbon Disulfide	--	--	2.3E-01	8.0E-01	--	--	--	--
	Carbon Tetrachloride	2.1E-02	2.8E-03	1.1E-02	4.0E-02	2.5E-01	1.0E-03	1.5E-01	1.5E-04
	Chlorobenzene	--	--	2.9E-01	1.0E+00	--	--	--	--
	Chloroethane	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	5.5E-04	7.5E-05	8.6E-02	3.0E-01	8.8E-04	2.7E-05	1.9E-02	5.1E-07
	Chloromethane	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	1.3E+00	1.7E-01	1.0E-02	3.5E-02	1.7E+01	6.2E-02	--	--
	Dibromochloromethane	8.2E-04	1.1E-04	2.0E-02	7.0E-02	5.6E-03	4.0E-05	9.4E-02	3.8E-06
	Dibromomethane	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	--	--	1.1E-01	3.9E-01	--	--	--	--
	Ethylbenzene	1.1E-03	1.5E-04	5.7E-01	2.0E+00	2.7E-04	5.5E-05	--	--
	Ethyl-Tert-Butyl Ether	5.0E-03	6.8E-04	8.6E-02	3.0E-01	7.9E-03	2.4E-04	--	--
	Fluorene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Freon-113	9.8E-03	1.3E-03	8.6E+00	3.0E+01	1.6E-04	4.8E-04	--	--
	Hexachlorobutadiene	--	--	3.0E-04	1.1E-03	--	--	7.8E-02	--
	Isopropylbenzene	3.0E-04	4.1E-05	1.1E-01	3.9E-01	3.7E-04	1.5E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	8.0E-04	1.1E-04	1.1E-01	4.0E-01	9.5E-04	3.9E-05	3.5E-03	1.4E-07
	Naphthalene	--	--	2.6E-03	9.0E-03	--	--	1.2E-01	--
	n-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	n-Propylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	p-Isopropyltoluene	--	--	1.1E-01	3.9E-01	--	--	--	--
	Pyrene	--	--	3.0E-02	1.1E-01	--	--	--	--

Table E-12
Estimation of Noncancer Hazard and Cancer Risk
Indoor Air Inhalation of Soil Gas Vapors: Commercial Worker
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Soil Gas-to-Indoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	sec-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Styrene	3.4E-04	4.7E-05	2.6E-01	9.0E-01	1.8E-04	1.7E-05	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.7E-02	2.3E-03	3.0E-01	1.1E+00	7.8E-03	8.4E-04	--	--
	tert-Butylbenzene	--	--	4.0E-02	1.4E-01	--	--	--	--
	Tetrachloroethene	1.5E+00	2.1E-01	1.0E-02	3.5E-02	2.1E+01	7.4E-02	2.1E-02	1.6E-03
	Toluene	8.1E-03	1.1E-03	8.6E-02	3.0E-01	1.3E-02	4.0E-04	--	--
	trans-1,2-Dichloroethene	1.1E-02	1.5E-03	2.0E-02	7.0E-02	7.5E-02	5.4E-04	--	--
	Trichloroethene	1.1E+00	1.5E-01	1.7E-01	6.0E-01	8.7E-01	5.4E-02	7.0E-03	3.7E-04
	Vinyl Chloride	7.5E-01	1.0E-01	2.9E-02	1.0E-01	3.6E+00	3.7E-02	2.7E-01	9.9E-03
	Xylenes	1.2E-02	1.6E-03	2.0E-01	7.0E-01	8.0E-03	5.7E-04	--	--
					Cumulative Risk and Hazard =	**4E+01**			**1E-02**

Table E-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	**Inorganics**							
	Antimony	8.5E+00	5.5E-06	4.0E-04	1.4E-02	2.0E-06	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	4.4E-06	1.0E-03	4.4E-03	1.6E-06	--	--
	Chromium	7.0E+02	4.5E-04	1.5E+00	3.0E-04	1.6E-04	--	--
	Chromium, Hexavalent	3.5E+01	2.3E-05	3.0E-03	7.5E-03	8.1E-06	--	--
	Cobalt	1.0E+02	6.5E-05	2.0E-02	3.2E-03	2.3E-05	--	--
	Copper	2.0E+02	1.3E-04	4.0E-02	3.2E-03	4.6E-05	--	--
	Cyanide (Amenable)	1.0E+00	6.5E-07	2.0E-02	3.2E-05	2.3E-07	--	--
	Cyanide (Total)	1.7E+00	1.1E-06	2.0E-02	5.5E-05	3.9E-07	--	--
	Mercury	2.3E-01	1.5E-07	3.0E-04	5.0E-04	5.3E-08	--	--
	Molybdenum	1.0E+01	6.5E-06	5.0E-03	1.3E-03	2.3E-06	--	--
	Nickel	1.7E+02	1.1E-04	2.0E-02	5.5E-03	3.9E-05	--	--
	Selenium	3.0E+01	1.9E-05	5.0E-03	3.9E-03	6.9E-06	--	--
	Silver	2.3E+00	1.5E-06	5.0E-03	3.0E-04	5.3E-07	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	4.6E-04	3.0E-01	1.5E-03	1.6E-04	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	3.4E-05	3.0E-02	1.1E-03	1.2E-05	--	--
	Anthracene	1.0E-02	6.5E-09	3.0E-01	2.2E-08	2.3E-09	--	--
	Benzo(a)anthracene	2.0E-01	1.3E-07	--	--	4.6E-08	1.2E+00	5.5E-08
	Benzo(a)Pyrene	4.0E-01	2.6E-07	--	--	9.2E-08	1.2E+01	1.1E-06
	Benzo(b)Fluoranthene	1.3E+00	8.1E-07	--	--	2.9E-07	1.2E+00	3.5E-07
	Benzo(k)Fluoranthene	1.0E-01	6.5E-08	--	--	2.3E-08	1.2E+00	2.8E-08
	Benzo(g,h,i)Perylene	9.0E-01	5.8E-07	3.0E-02	1.9E-05	2.1E-07	--	--
	Chrysene	6.8E-01	4.4E-07	--	--	1.6E-07	1.2E-01	1.9E-08
	Dibenz(a,h)anthracene	8.0E-02	5.2E-08	--	--	1.8E-08	1.2E+01	2.2E-07
	Fluoranthene	2.0E-01	1.3E-07	4.0E-02	3.2E-06	4.6E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	3.9E-07	--	--	1.4E-07	1.2E+00	1.7E-07
	Phenanthrene	9.8E+00	6.3E-06	3.0E-01	2.1E-05	2.3E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	1.9E-08	7.0E-05	2.8E-04	6.9E-09	7.0E-02	4.8E-10
	Aroclor 1242	1.6E-01	1.0E-07	2.0E-05	5.2E-03	3.7E-08	5.0E+00	1.8E-07
	Aroclor 1248	2.9E+02	1.9E-04	2.0E-05	9.4E+00	6.7E-05	5.0E+00	3.3E-04
	Aroclor 1254	1.7E+00	1.1E-06	2.0E-05	5.5E-02	3.9E-07	5.0E+00	2.0E-06
	Aroclor 1260	1.5E+00	9.7E-07	2.0E-05	4.8E-02	3.5E-07	5.0E+00	1.7E-06
	Aroclor 1262	3.3E-01	2.1E-07	2.0E-05	1.1E-02	7.6E-08	5.0E+00	3.8E-07
	Perchlorate							
	Perchlorate	3.6E+00	2.3E-06	7.0E-04	3.3E-03	8.3E-07	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	5.8E-08	--	--	2.1E-08	2.7E-02	5.6E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--

Table E-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	5.8E-08	3.0E-01	1.9E-07	2.1E-08	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	1.1E-03	4.0E-02	2.7E-02	3.9E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	1.6E-02	1.0E-01	1.6E-01	5.8E-03	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.5E-02	2.0E+00	7.3E-03	5.2E-03	--	--
	TPH - aromatic; C5-C8	1.7E+03	1.1E-03	--	--	3.9E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	1.6E-02	3.0E-02	5.4E-01	5.8E-03	--	--
	TPH - aromatic; C≥19	2.3E+04	1.5E-02	3.0E-02	4.9E-01	5.2E-03	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	3.3E-08	2.8E-01	1.2E-07	1.2E-08	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	1.9E-09	1.0E-01	1.9E-08	6.9E-10	5.7E-03	3.9E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	2.6E-09	3.0E-02	8.6E-08	9.2E-10	9.1E-02	8.4E-11
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.0E-05	5.0E-02	2.1E-04	3.7E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	4.4E-07	5.0E-02	8.8E-06	1.6E-07	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	1.6E-08	3.0E-02	5.4E-07	5.8E-09	5.4E-03	3.1E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--
	Acenaphthene	2.0E+00	1.3E-06	6.0E-02	2.2E-05	4.6E-07	--	--
	Acetone	6.2E-02	4.0E-08	9.0E-01	4.4E-08	1.4E-08	--	--
	Benzene	2.0E-02	1.3E-08	4.0E-03	3.2E-06	4.6E-09	1.0E-01	4.6E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	5.6E-09	1.0E-01	5.6E-08	2.0E-09	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.6E-09	2.0E-02	1.3E-07	9.2E-10	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	2.6E-09	1.0E-02	2.6E-07	9.2E-10	3.1E-02	2.9E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	6.2E-07	1.0E-02	6.2E-05	2.2E-07	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	6.5E-10	--	--	2.3E-10	--	--
	Ethylbenzene	2.3E+00	1.5E-06	1.0E-01	1.5E-05	5.3E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	3.7E-06	4.0E-02	9.2E-05	1.3E-06	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.2E-08	3.0E-04	3.9E-05	4.2E-09	7.8E-02	3.2E-10

Table E-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Ingestion	Isopropylbenzene	1.7E+00	1.1E-06	1.0E-01	1.1E-05	3.9E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	6.1E-09	6.0E-02	1.0E-07	2.2E-09	1.4E-02	3.0E-11
	Naphthalene	1.8E+01	1.2E-05	2.0E-02	5.8E-04	4.2E-06	1.2E-01	5.0E-07
	n-Butylbenzene	5.5E+00	3.6E-06	4.0E-02	8.9E-05	1.3E-06	--	--
	n-Propylbenzene	3.7E+00	2.4E-06	4.0E-02	6.0E-05	8.5E-07	--	--
	p-Isopropyltoluene	5.8E+00	3.7E-06	1.0E-01	3.7E-05	1.3E-06	--	--
	Pyrene	3.5E-01	2.3E-07	3.0E-02	7.5E-06	8.1E-08	--	--
	sec-Butylbenzene	2.3E+00	1.5E-06	4.0E-02	3.7E-05	5.3E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	6.5E-08	3.0E-01	2.2E-07	2.3E-08	--	--
	tert-Butylbenzene	4.0E-03	2.6E-09	4.0E-02	6.5E-08	9.2E-10	--	--
	Tetrachloroethene	2.2E+02	1.4E-04	1.0E-02	1.4E-02	5.1E-05	5.4E-01	2.7E-05
	Toluene	9.9E-03	6.4E-09	2.0E-01	3.2E-08	2.3E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	4.3E-07	2.0E-02	2.2E-05	1.5E-07	--	--
	Trichloroethene	1.0E+01	6.5E-06	3.0E-04	2.2E-02	2.3E-06	1.3E-02	3.0E-08
	Vinyl Chloride	5.4E-02	3.5E-08	3.0E-03	1.2E-05	1.2E-08	2.7E-01	3.4E-09
	Xylenes	2.4E+00	1.5E-06	2.0E-01	7.7E-06	5.5E-07	--	--
	Cumulative Risk and Hazard =				**1E+01**			**4E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**2E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**1E+00**			**--**
Dermal	**Inorganics**							
	Antimony	8.5E+00	7.6E-07	4.0E-04	1.9E-03	2.7E-07	--	--
	Arsenic	--	--	3.0E-04	--	--	9.5E+00	--
	Barium	--	--	7.0E-02	--	--	--	--
	Beryllium	--	--	2.0E-03	--	--	--	--
	Cadmium	6.8E+00	6.1E-08	1.0E-03	6.1E-05	2.2E-08	--	--
	Chromium	7.0E+02	6.2E-05	1.5E+00	4.2E-05	2.2E-05	--	--
	Chromium, Hexavalent	3.5E+01	0.0E+00	3.0E-03	0.0E+00	0.0E+00	--	--
	Cobalt	1.0E+02	8.9E-06	2.0E-02	4.5E-04	3.2E-06	--	--
	Copper	2.0E+02	1.8E-05	4.0E-02	4.5E-04	6.4E-06	--	--
	Cyanide (Amenable)	1.0E+00	8.9E-07	2.0E-02	4.5E-05	3.2E-07	--	--
	Cyanide (Total)	1.7E+00	1.5E-06	2.0E-02	7.6E-05	5.4E-07	--	--
	Mercury	2.3E-01	2.1E-08	3.0E-04	6.8E-05	7.3E-09	--	--
	Molybdenum	1.0E+01	8.9E-07	5.0E-03	1.8E-04	3.2E-07	--	--
	Nickel	1.7E+02	1.5E-05	2.0E-02	7.6E-04	5.4E-06	--	--
	Selenium	3.0E+01	2.7E-06	5.0E-03	5.4E-04	9.6E-07	--	--
	Silver	2.3E+00	2.1E-07	5.0E-03	4.1E-05	7.3E-08	--	--
	Thallium	--	--	6.6E-05	--	--	--	--
	Vanadium	--	--	1.0E-03	--	--	--	--
	Zinc	7.1E+02	6.3E-05	3.0E-01	2.1E-04	2.3E-05	--	--
	PAHs							
	2-Methylnaphthalene	5.3E+01	7.1E-05	3.0E-02	2.4E-03	2.5E-05	--	--
	Anthracene	1.0E-02	1.3E-08	3.0E-01	4.5E-08	4.8E-09	--	--
	Benzo(a)anthracene	2.0E-01	2.7E-07	--	--	9.6E-08	1.2E+00	1.1E-07
	Benzo(a)Pyrene	4.0E-01	5.4E-07	--	--	1.9E-07	1.2E+01	2.3E-06
	Benzo(b)Fluoranthene	1.3E+00	1.7E-06	--	--	6.0E-07	1.2E+00	7.2E-07
	Benzo(k)Fluoranthene	1.0E-01	1.3E-07	--	--	4.8E-08	1.2E+00	5.7E-08
	Benzo(g,h,i)Perylene	9.0E-01	1.2E-06	3.0E-02	4.0E-05	4.3E-07	--	--

Table E-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Chrysene	6.8E-01	9.1E-07	--	--	3.3E-07	1.2E-01	3.9E-08
	Dibenz(a,h)anthracene	8.0E-02	1.1E-07	--	--	3.8E-08	1.2E+01	4.6E-07
	Fluoranthene	2.0E-01	2.7E-07	4.0E-02	6.7E-06	9.6E-08	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	8.0E-07	--	--	2.9E-07	1.2E+00	3.4E-07
	Phenanthrene	9.8E+00	1.3E-05	3.0E-01	4.4E-05	4.7E-06	--	--
	PCBs							
	Aroclor 1016	3.0E-02	4.0E-08	7.0E-05	5.7E-04	1.4E-08	7.0E-02	1.0E-09
	Aroclor 1242	1.6E-01	2.1E-07	2.0E-05	1.1E-02	7.6E-08	5.0E+00	3.8E-07
	Aroclor 1248	2.9E+02	3.9E-04	2.0E-05	1.9E+01	1.4E-04	5.0E+00	6.9E-04
	Aroclor 1254	1.7E+00	2.3E-06	2.0E-05	1.1E-01	8.1E-07	5.0E+00	4.1E-06
	Aroclor 1260	1.5E+00	2.0E-06	2.0E-05	1.0E-01	7.2E-07	5.0E+00	3.6E-06
	Aroclor 1262	3.3E-01	4.4E-07	2.0E-05	2.2E-02	1.6E-07	5.0E+00	7.9E-07
	Perchlorate							
	Perchlorate	3.6E+00	0.0E+00	7.0E-04	0.0E+00	0.0E+00	--	--
	SVOCs							
	1,4-Dioxane	9.0E-02	8.0E-08	--	--	2.9E-08	2.7E-02	7.7E-10
	4-Chloro-3-methylphenol	--	--	1.0E-01	--	--	--	--
	Aniline	--	--	7.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	4.0E+00	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	2.0E-02	--	--	3.0E-03	--
	Diethylphthalate	--	--	8.0E-01	--	--	--	--
	Diisopropyl Ether	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	1.0E+01	--	--	--	--
	Di-n-butylphthalate	--	--	1.0E-01	--	--	--	--
	Phenol	9.0E-02	8.0E-08	3.0E-01	2.7E-07	2.9E-08	--	--
	TPH							
	TPH - aliphatic; C5-C8	1.7E+03	2.3E-03	4.0E-02	5.6E-02	8.0E-04	--	--
	TPH - aliphatic; C9-C18	2.5E+04	3.4E-02	1.0E-01	3.4E-01	1.2E-02	--	--
	TPH - aliphatic; C≥19	2.3E+04	3.0E-02	2.0E+00	1.5E-02	1.1E-02	--	--
	TPH - aromatic; C5-C8	1.7E+03	2.3E-03	--	--	8.0E-04	--	--
	TPH - aromatic; C9-C18	2.5E+04	3.4E-02	3.0E-02	1.1E+00	1.2E-02	--	--
	TPH - aromatic; C≥19	2.3E+04	3.0E-02	3.0E-02	1.0E+00	1.1E-02	--	--
	VOCs							
	1,1,1,2-Tetrachloroethane	--	--	3.0E-02	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	4.6E-08	2.8E-01	1.6E-07	1.6E-08	--	--
	1,1,2-Trichloroethane	--	--	4.0E-03	--	--	7.2E-02	--
	1,1-Dichloroethane	3.0E-03	2.7E-09	1.0E-01	2.7E-08	9.6E-10	5.7E-03	5.4E-12
	1,1-Dichloroethene	--	--	5.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	3.6E-09	3.0E-02	1.2E-07	1.3E-09	9.1E-02	1.2E-10
	1,2,4-Trichlorobenzene	--	--	1.0E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	1.4E-05	5.0E-02	2.9E-04	5.1E-06	--	--
	1,2-Dibromo-3-chloropropane	--	--	5.7E-05	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	9.0E-02	--	--	--	--
	1,2-Dichloroethane	--	--	2.0E-02	--	--	4.7E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	6.1E-07	5.0E-02	1.2E-05	2.2E-07	--	--
	1,3-Dichlorobenzene	--	--	3.0E-02	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	2.2E-08	3.0E-02	7.4E-07	8.0E-09	5.4E-03	4.3E-11
	2-Butanone (MEK)	--	--	6.0E-01	--	--	--	--
	2-Chlorotoluene	--	--	2.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	8.0E-02	--	--	--	--

Table E-13
Estimation of Noncancer Hazard and Cancer Risk
Ingestion/Dermal Absorption of Soil: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Noncancer Intake (mg/kg-day)	Oral/Dermal Reference Dose (mg/kg-day)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Oral/Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Dermal	Acenaphthene	2.0E+00	2.7E-06	6.0E-02	4.5E-05	9.6E-07	--	--
	Acetone	6.2E-02	5.5E-08	9.0E-01	6.1E-08	2.0E-08	--	--
	Benzene	2.0E-02	1.8E-08	4.0E-03	4.5E-06	6.4E-09	1.0E-01	6.4E-10
	Bromochloromethane	--	--	2.0E-02	--	--	--	--
	Bromodichloromethane	--	--	2.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	1.4E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	7.8E-09	1.0E-01	7.8E-08	2.8E-09	--	--
	Carbon Tetrachloride	--	--	7.0E-04	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	3.6E-09	2.0E-02	1.8E-07	1.3E-09	--	--
	Chloroethane	--	--	4.0E-01	--	--	2.9E-03	--
	Chloroform	4.0E-03	3.6E-09	1.0E-02	3.6E-07	1.3E-09	3.1E-02	4.0E-11
	Chloromethane	--	--	2.6E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	8.6E-07	1.0E-02	8.6E-05	3.1E-07	--	--
	Dibromochloromethane	--	--	2.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	1.0E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	8.9E-10	--	--	3.2E-10	--	--
	Ethylbenzene	2.3E+00	2.1E-06	1.0E-01	2.1E-05	7.3E-07	--	--
	Ethyl-Tert-Butyl Ether	--	--	1.0E-03	--	--	--	--
	Fluorene	5.7E+00	7.6E-06	4.0E-02	1.9E-04	2.7E-06	--	--
	Freon-113	--	--	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	1.6E-08	3.0E-04	5.4E-05	5.7E-09	7.8E-02	4.5E-10
	Isopropylbenzene	1.7E+00	1.5E-06	1.0E-01	1.5E-05	5.4E-07	--	--
	Methyl tertbutyl ether (MTBE)	--	--	8.6E-01	--	--	1.8E-03	--
	Methylene Chloride	9.4E-03	8.4E-09	6.0E-02	1.4E-07	3.0E-09	1.4E-02	4.2E-11
	Naphthalene	1.8E+01	2.4E-05	2.0E-02	1.2E-03	8.6E-06	1.2E-01	1.0E-06
	n-Butylbenzene	5.5E+00	4.9E-06	4.0E-02	1.2E-04	1.8E-06	--	--
	n-Propylbenzene	3.7E+00	3.3E-06	4.0E-02	8.3E-05	1.2E-06	--	--
	p-Isopropyltoluene	5.8E+00	5.2E-06	1.0E-01	5.2E-05	1.8E-06	--	--
	Pyrene	3.5E-01	3.1E-07	3.0E-02	1.0E-05	1.1E-07	--	--
	sec-Butylbenzene	2.3E+00	2.1E-06	4.0E-02	5.1E-05	7.3E-07	--	--
	Styrene	--	--	2.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	4.0E-02	--	--	--	--
	tert-Butyl alcohol	1.0E-01	8.9E-08	3.0E-01	3.0E-07	3.2E-08	--	--
	tert-Butylbenzene	4.0E-03	3.6E-09	4.0E-02	8.9E-08	1.3E-09	--	--
	Tetrachloroethene	2.2E+02	2.0E-04	1.0E-02	2.0E-02	7.0E-05	5.4E-01	3.8E-05
	Toluene	9.9E-03	8.8E-09	2.0E-01	4.4E-08	3.2E-09	--	--
	trans-1,2-Dichloroethene	6.7E-01	6.0E-07	2.0E-02	3.0E-05	2.1E-07	--	--
	Trichloroethene	1.0E+01	8.9E-06	3.0E-04	3.0E-02	3.2E-06	1.3E-02	4.1E-08
	Vinyl Chloride	5.4E-02	4.8E-08	3.0E-03	1.6E-05	1.7E-08	2.7E-01	4.6E-09
	Xylenes	2.4E+00	2.1E-06	2.0E-01	1.1E-05	7.6E-07	--	--
	Cumulative Risk and Hazard =				**2E+01**			**7E-04**
	Cumulative HI for $TPH_{aliphatic}$ =				**4E-01**			**--**
	Cumulative HI for $TPH_{aromatic}$ =				**2E+00**			**--**

Table E-14
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	**Inorganics**									
	Antimony	8.5E+00	4.1E-09	1.6E-10	--	--	--	5.8E-11	--	--
	Arsenic	--	--	--	8.6E-06	3.0E-05	--	--	1.2E+01	--
	Barium	--	--	--	1.4E-04	5.0E-04	--	--	--	--
	Beryllium	--	--	--	2.0E-06	7.0E-06	--	--	8.4E+00	--
	Cadmium	6.8E+00	3.3E-09	1.3E-10	5.7E-06	2.0E-05	2.3E-05	4.6E-11	1.5E+01	6.9E-10
	Chromium	7.0E+02	3.4E-07	1.3E-08	--	--	--	4.7E-09	--	--
	Chromium, Hexavalent	3.5E+01	1.7E-08	6.6E-10	5.7E-05	2.0E-04	1.2E-05	2.4E-10	5.1E+02	1.2E-07
	Cobalt	1.0E+02	4.9E-08	1.9E-09	5.7E-06	2.0E-05	3.3E-04	6.8E-10	--	--
	Copper	2.0E+02	9.7E-08	3.8E-09	--	--	--	1.4E-09	--	--
	Cyanide (Amenable)	1.0E+00	4.9E-10	1.9E-11	--	--	--	6.8E-12	--	--
	Cyanide (Total)	1.7E+00	8.2E-10	3.2E-11	--	--	--	1.2E-11	--	--
	Mercury	2.3E-01	1.1E-10	4.4E-12	2.6E-05	9.0E-05	1.7E-07	1.6E-12	--	--
	Molybdenum	1.0E+01	4.9E-09	1.9E-10	--	--	--	6.8E-11	--	--
	Nickel	1.7E+02	8.2E-08	3.2E-09	1.4E-05	5.0E-05	2.3E-04	1.2E-09	9.1E-01	1.0E-09
	Selenium	3.0E+01	1.5E-08	5.7E-10	5.7E-03	2.0E-02	1.0E-07	2.0E-10	--	--
	Silver	2.3E+00	1.1E-09	4.4E-11	--	--	--	1.6E-11	--	--
	Thallium	--	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--	--
	Zinc	7.1E+02	3.4E-07	1.3E-08	--	--	--	4.8E-09	--	--
	PAHs									
	2-Methylnaphthalene	5.3E+01	2.6E-08	1.0E-09	3.0E-02	1.1E-01	3.4E-08	3.6E-10	--	--
	Anthracene	1.0E-02	4.9E-12	1.9E-13	3.0E-01	1.1E+00	6.3E-13	6.8E-14	--	--
	Benzo(a)anthracene	2.0E-01	9.7E-11	3.8E-12	--	--	--	1.4E-12	3.9E-01	5.3E-13
	Benzo(a)Pyrene	4.0E-01	1.9E-10	7.6E-12	--	--	--	2.7E-12	3.9E+00	1.1E-11
	Benzo(b)Fluoranthene	1.3E+00	6.1E-10	2.4E-11	--	--	--	8.5E-12	3.9E-01	3.3E-12
	Benzo(k)Fluoranthene	1.0E-01	4.9E-11	1.9E-12	--	--	--	6.8E-13	3.9E-01	2.6E-13
	Benzo(g,h,i)Perylene	9.0E-01	4.4E-10	1.7E-11	3.0E-02	1.1E-01	5.7E-10	6.1E-12	--	--
	Chrysene	6.8E-01	3.3E-10	1.3E-11	--	--	--	4.6E-12	3.9E-02	1.8E-13
	Dibenz(a,h)anthracene	8.0E-02	3.9E-11	1.5E-12	--	--	--	5.4E-13	3.9E+00	2.1E-12
	Fluoranthene	2.0E-01	9.7E-11	3.8E-12	4.0E-02	1.4E-01	9.5E-11	1.4E-12	--	--
	Indeno(1,2,3-cd)pyrene	6.0E-01	2.9E-10	1.1E-11	--	--	--	4.1E-12	3.9E-01	1.6E-12
	Phenanthrene	9.8E+00	4.8E-09	1.9E-10	3.0E-01	1.1E+00	6.2E-10	6.6E-11	--	--
	PCBs									
	Aroclor 1016	3.0E-02	1.5E-11	5.7E-13	7.0E-05	2.5E-04	8.1E-09	2.0E-13	7.0E-02	1.4E-14
	Aroclor 1242	1.6E-01	7.8E-11	3.0E-12	2.0E-05	7.0E-05	1.5E-07	1.1E-12	2.0E+00	2.2E-12
	Aroclor 1248	2.9E+02	1.4E-07	5.5E-09	2.0E-05	7.0E-05	2.8E-04	2.0E-09	2.0E+00	3.9E-09
	Aroclor 1254	1.7E+00	8.2E-10	3.2E-11	2.0E-05	7.0E-05	1.6E-06	1.2E-11	2.0E+00	2.3E-11
	Aroclor 1260	1.5E+00	7.3E-10	2.8E-11	2.0E-05	7.0E-05	1.4E-06	1.0E-11	2.0E+00	2.0E-11
	Aroclor 1262	3.3E-01	1.6E-10	6.3E-12	2.0E-05	7.0E-05	3.1E-07	2.2E-12	2.0E+00	4.5E-12
	Perchlorate									
	Perchlorate	3.6E+00	1.7E-09	6.8E-11	--	--	--	2.4E-11	--	--
	SVOCs									
	1,4-Dioxane	9.0E-02	4.4E-11	1.7E-12	8.6E-01	3.0E+00	2.0E-12	6.1E-13	2.7E-02	1.6E-14
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
	Aniline	--	--	--	2.9E-04	1.0E-03	--	--	5.7E-03	--
	Benzoic Acid	--	--	--	4.0E+00	1.4E+01	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	2.0E-02	7.0E-02	--	--	8.4E-03	--
	Diethylphthalate	--	--	--	8.0E-01	2.8E+00	--	--	--	--

Table E-14
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Diisopropyl Ether	--	--	--	1.1E-01	3.9E-01	--	--	--	--
	Dimethyl Phthalate	--	--	--	1.0E+01	3.5E+01	--	--	--	--
	Di-n-butylphthalate	--	--	--	1.0E-01	3.5E-01	--	--	--	--
	Phenol	9.0E-02	4.4E-11	1.7E-12	5.7E-02	2.0E-01	3.0E-11	6.1E-13	--	--
	TPH									
	TPH - aliphatic; C5-C8	1.7E+03	8.2E-07	3.2E-08	6.0E-02	2.1E-01	5.3E-07	1.1E-08	--	--
	TPH - aliphatic; C9-C18	2.5E+04	1.2E-05	4.8E-07	3.0E-01	1.1E+00	1.6E-06	1.7E-07	--	--
	TPH - aliphatic; C≥19	2.3E+04	1.1E-05	4.3E-07	3.0E-01	1.1E+00	1.4E-06	1.5E-07	--	--
	TPH - aromatic; C5-C8	1.7E+03	8.2E-07	3.2E-08	--	--	--	1.1E-08	--	--
	TPH - aromatic; C9-C18	2.5E+04	1.2E-05	4.8E-07	6.0E-03	2.1E-02	7.9E-05	1.7E-07	--	--
	TPH - aromatic; C≥19	2.3E+04	1.1E-05	4.3E-07	--	--	--	1.5E-07	--	--
	VOCs									
	1,1,1,2-Tetrachloroethane	--	--	--	3.0E-02	1.1E-01	--	--	2.6E-02	--
	1,1,1-Trichloroethane	5.1E-02	8.5E-05	3.3E-06	2.9E-01	1.0E+00	1.2E-05	1.2E-06	--	--
	1,1,2-Trichloroethane	--	--	--	4.0E-03	1.4E-02	--	--	5.7E-02	--
	1,1-Dichloroethane	3.0E-03	4.5E-06	1.8E-07	1.4E-01	5.0E-01	1.2E-06	6.3E-08	5.7E-03	3.6E-10
	1,1-Dichloroethene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	1,1-Dichloropropene	4.0E-03	1.9E-12	7.6E-14	5.7E-03	2.0E-02	1.3E-11	2.7E-14	5.5E-02	1.5E-15
	1,2,4-Trichlorobenzene	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	1,2,4-Trimethylbenzene	1.6E+01	3.5E-03	1.4E-04	1.7E-03	6.0E-03	8.0E-02	4.9E-05	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	5.7E-05	2.0E-04	--	--	7.0E+00	--
	1,2-Dichlorobenzene	--	--	--	5.7E-02	2.0E-01	--	--	--	--
	1,2-Dichloroethane	--	--	--	1.4E-03	4.9E-03	--	--	7.2E-02	--
	1,3,5-Trimethylbenzene	6.8E-01	3.6E-04	1.4E-05	1.7E-03	6.0E-03	8.2E-03	5.0E-06	--	--
	1,3-Dichlorobenzene	--	--	--	3.0E-02	1.1E-01	--	--	--	--
	1,4-Dichlorobenzene	2.5E-02	8.2E-06	3.2E-07	2.3E-01	8.0E-01	1.4E-06	1.1E-07	4.0E-02	4.6E-09
	2-Butanone (MEK)	--	--	--	1.4E+00	4.9E+00	--	--	--	--
	2-Chlorotoluene	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	8.6E-01	3.0E+00	--	--	--	--
	Acenaphthene	2.0E+00	4.7E-05	1.8E-06	6.0E-02	2.1E-01	3.1E-05	6.6E-07	--	--
	Acetone	6.2E-02	1.8E-05	7.0E-07	9.0E-01	3.2E+00	7.8E-07	2.5E-07	--	--
	Benzene	2.0E-02	2.8E-05	1.1E-06	1.7E-02	6.0E-02	6.4E-05	3.9E-07	1.0E-01	3.9E-08
	Bromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	--	--
	Bromodichloromethane	--	--	--	2.0E-02	7.0E-02	--	--	1.3E-01	--
	Bromomethane	--	--	--	1.4E-03	5.0E-03	--	--	--	--
	Carbon Disulfide	8.7E-03	2.3E-05	9.0E-07	2.3E-01	8.0E-01	3.9E-06	3.2E-07	--	--
	Carbon Tetrachloride	--	--	--	1.1E-02	4.0E-02	--	--	1.5E-01	--
	Chlorobenzene	4.0E-03	2.6E-06	1.0E-07	2.9E-01	1.0E+00	3.6E-07	3.7E-08	--	--
	Chloroethane	--	--	--	8.6E+00	3.0E+01	--	--	2.9E-03	--
	Chloroform	4.0E-03	5.7E-06	2.2E-07	8.6E-02	3.0E-01	2.6E-06	8.0E-08	1.9E-02	1.5E-09
	Chloromethane	--	--	--	2.6E-02	9.0E-02	--	--	--	--
	cis-1,2-Dichloroethene	9.6E-01	1.2E-03	4.8E-05	1.0E-02	3.5E-02	4.8E-03	1.7E-05	--	--
	Dibromochloromethane	--	--	--	2.0E-02	7.0E-02	--	--	9.4E-02	--
	Dibromomethane	--	--	--	1.0E-02	3.5E-02	--	--	--	--
	Diisopropyl ether	1.0E-03	1.0E-06	4.1E-08	1.1E-01	3.9E-01	3.7E-07	1.4E-08	--	--
	Ethylbenzene	2.3E+00	1.8E-03	6.9E-05	5.7E-01	2.0E+00	1.2E-04	2.5E-05	--	--
	Ethyl-Tert-Butyl Ether	--	--	--	8.6E-02	3.0E-01	--	--	--	--
	Fluorene	5.7E+00	6.8E-05	2.6E-06	4.0E-02	1.4E-01	6.6E-05	9.5E-07	--	--
	Freon-113	--	--	--	8.6E+00	3.0E+01	--	--	--	--
	Hexachlorobutadiene	1.8E-02	8.6E-06	3.4E-07	3.0E-04	1.1E-03	1.1E-03	1.2E-07	7.8E-02	9.3E-09

Table E-14
Estimation of Noncancer Hazard and Cancer Risk
Inhalation of Outdoor Soil Vapors/Particulates: Landscaper
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Route	Chemical of Potential Concern	Maximum Soil EPC (mg/kg)	Outdoor Air EPC (mg/m^3)	Noncancer Intake (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Reference Concentration (mg/m^3)	**Hazard Quotient**	Cancer Intake (mg/kg-day)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	**Cancer Risk**
Inhalation	Isopropylbenzene	1.7E+00	1.9E-03	7.4E-05	1.1E-01	3.9E-01	6.7E-04	2.6E-05	--	--
	Methyl tertbutyl ether (MTBE)	--	--	--	2.3E+00	8.0E+00	--	--	9.1E-04	--
	Methylene Chloride	9.4E-03	1.4E-05	5.3E-07	1.1E-01	4.0E-01	4.7E-06	1.9E-07	3.5E-03	6.7E-10
	Naphthalene	1.8E+01	1.8E-03	7.0E-05	2.6E-03	9.0E-03	2.7E-02	2.5E-05	1.2E-01	3.0E-06
	n-Butylbenzene	5.5E+00	2.1E-03	8.1E-05	4.0E-02	1.4E-01	2.0E-03	2.9E-05	--	--
	n-Propylbenzene	3.7E+00	1.4E-03	5.4E-05	4.0E-02	1.4E-01	1.4E-03	1.9E-05	--	--
	p-Isopropyltoluene	5.8E+00	2.0E-03	7.7E-05	1.1E-01	3.9E-01	7.0E-04	2.7E-05	--	--
	Pyrene	3.5E-01	3.8E-07	1.5E-08	3.0E-02	1.1E-01	5.0E-07	5.3E-09	--	--
	sec-Butylbenzene	2.3E+00	1.2E-03	4.6E-05	4.0E-02	1.4E-01	1.1E-03	1.6E-05	--	--
	Styrene	--	--	--	2.6E-01	9.0E-01	--	--	--	--
	tert-Amyl methyl ether	--	--	--	4.0E-02	1.4E-01	--	--	--	--
	tert-Butyl alcohol	1.0E-01	3.0E-05	1.2E-06	3.0E-01	1.1E+00	4.0E-06	4.3E-07	--	--
	tert-Butylbenzene	4.0E-03	1.7E-06	6.6E-08	4.0E-02	1.4E-01	1.6E-06	2.4E-08	--	--
	Tetrachloroethene	1.0E+02	1.5E-01	5.8E-03	1.0E-02	3.5E-02	5.8E-01	2.1E-03	2.1E-02	4.3E-05
	Toluene	9.9E-03	1.0E-05	3.9E-07	8.6E-02	3.0E-01	4.6E-06	1.4E-07	--	--
	trans-1,2-Dichloroethene	6.7E-01	1.0E-03	4.1E-05	2.0E-02	7.0E-02	2.0E-03	1.5E-05	--	--
	Trichloroethene	1.0E+01	1.2E-02	4.7E-04	1.7E-01	6.0E-01	2.8E-03	1.7E-04	7.0E-03	1.2E-06
	Vinyl Chloride	5.4E-02	1.5E-04	6.0E-06	2.9E-02	1.0E-01	2.1E-04	2.1E-06	2.7E-01	5.8E-07
	Xylenes	2.4E+00	1.6E-03	6.4E-05	2.0E-01	7.0E-01	3.2E-04	2.3E-05	--	--
						Cumulative Risk and Hazard =	**7E-01**			**5E-05**
						Cumulative HI for $TPH_{aliphatic}$ =	**4E-06**			**--**
						Cumulative HI for $TPH_{aromatic}$ =	**8E-05**			**--**

Table E-15
Summary of Cancer Risks and Noncancer Hazards
Offsite Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-	**VOCs**								
to-Indoor Air	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	--	--	--	--
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	--	1.8E-09	--	1.8E-09	--	6.1E-06	--	6.1E-06
	1,1-Dichloroethene	--	--	--	--	--	5.1E-03	--	5.1E-03
	1,1-Dichloropropene	--	--	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	--	3.4E-04	--	3.4E-04
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	7.4E-06	--	7.4E-06
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	--	1.0E-07	--	1.0E-07	--	3.1E-05	--	3.1E-05
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	3.0E-07	--	3.0E-07
	Acenaphthene	--	--	--	--	--	1.0E-05	--	1.0E-05
	Acetone	--	--	--	--	--	2.3E-07	--	2.3E-07
	Benzene	--	3.0E-06	--	3.0E-06	--	4.9E-03	--	4.9E-03
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	--	5.4E-05	--	5.4E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	2.3E-05	--	2.3E-05
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	--	--	--	--	--	--	--	--
	Chloromethane	--	--	--	--	--	4.2E-05	--	4.2E-05
	cis-1,2-Dichloroethene	--	--	--	--	--	1.9E+00	--	1.9E+00
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	2.2E-06	--	2.2E-06
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	--	--	--	--
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	--	--	--	--	--	--	--
	Isopropylbenzene	--	--	--	--	--	2.6E-03	--	2.6E-03
	Methyl tertbutyl ether (MTBE)	--	1.2E-09	--	1.2E-09	--	1.6E-06	--	1.6E-06
	Methylene Chloride	--	--	--	--	--	--	--	--
	Naphthalene	--	6.7E-07	--	6.7E-07	--	6.1E-03	--	6.1E-03
	n-Butylbenzene	--	--	--	--	--	2.1E-05	--	2.1E-05
	n-Propylbenzene	--	--	--	--	--	3.6E-05	--	3.6E-05
	p-Isopropyltoluene	--	--	--	--	--	1.2E-04	--	1.2E-04
	Pyrene	--	--	--	--	--	3.7E-07	--	3.7E-07

Table E-15
Summary of Cancer Risks and Noncancer Hazards
Offsite Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-	sec-Butylbenzene	--	--	--	--	--	--	--	--
to-Indoor Air	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	8.1E-06	--	8.1E-06
	tert-Butyl alcohol	--	--	--	--	--	8.3E-06	--	8.3E-06
	tert-Butylbenzene	--	--	--	--	--	--	--	--
	Tetrachloroethene	--	1.3E-03	--	1.3E-03	--	1.8E+01	--	1.8E+01
	Toluene	--	--	--	--	--	7.6E-05	--	7.6E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	1.1E-02	--	1.1E-02
	Trichloroethene	--	6.7E-05	--	6.7E-05	--	1.6E-01	--	1.6E-01
	Vinyl Chloride	--	2.6E-02	--	2.6E-02	--	9.5E+00	--	9.5E+00
	Xylenes	--	--	--	--	--	1.4E-05	--	1.4E-05
	Cumulative Risk and Hazard =	--	**3E-02**	**--**	**3E-02**	**--**	**3E+01**	**--**	**3E+01**

Note: " -- " not applicable or not available

Table E-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	6.9E-02	--	9.5E-03	7.8E-02
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	7.1E-08	--	7.1E-08	2.2E-02	5.8E-02	3.0E-04	8.0E-02
	Chromium	--	--	--	--	1.5E-03	--	2.1E-04	1.7E-03
	Chromium, Hexavalent	--	1.2E-05	--	1.2E-05	3.8E-02	3.0E-02	0.0E+00	6.8E-02
	Cobalt	--	--	--	--	1.6E-02	8.6E-01	2.2E-03	8.8E-01
	Copper	--	--	--	--	1.6E-02	--	2.2E-03	1.8E-02
	Cyanide (Amenable)	--	--	--	--	1.6E-04	--	2.2E-04	3.8E-04
	Cyanide (Total)	--	--	--	--	2.7E-04	--	3.8E-04	6.5E-04
	Mercury	--	--	--	--	2.5E-03	4.4E-04	3.4E-04	3.3E-03
	Molybdenum	--	--	--	--	6.5E-03	--	8.9E-04	7.4E-03
	Nickel	--	1.1E-07	--	1.1E-07	2.7E-02	5.8E-01	3.8E-03	6.1E-01
	Selenium	--	--	--	--	1.9E-02	2.6E-04	2.7E-03	2.2E-02
	Silver	--	--	--	--	1.5E-03	--	2.1E-04	1.7E-03
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	7.6E-03	--	1.1E-03	8.7E-03
	PAHs								
	2-Methylnaphthalene	--	--	--	--	5.7E-03	8.6E-05	1.2E-02	1.8E-02
	Anthracene	--	--	--	--	1.1E-07	1.6E-09	2.2E-07	3.3E-07
	Benzo(a)anthracene	1.1E-08	5.5E-11	2.3E-08	3.4E-08	--	--	--	--
	Benzo(a)Pyrene	2.2E-07	1.1E-09	4.6E-07	6.8E-07	--	--	--	--
	Benzo(b)Fluoranthene	7.0E-08	3.4E-10	1.4E-07	2.1E-07	--	--	--	--
	Benzo(k)Fluoranthene	5.5E-09	2.7E-11	1.1E-08	1.7E-08	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	9.7E-05	1.5E-06	2.0E-04	3.0E-04
	Chrysene	3.8E-09	1.9E-11	7.8E-09	1.2E-08	--	--	--	--
	Dibenz(a,h)anthracene	4.4E-08	2.2E-10	9.2E-08	1.4E-07	--	--	--	--
	Fluoranthene	--	--	--	--	1.6E-05	2.4E-07	3.3E-05	5.0E-05
	Indeno(1,2,3-cd)pyrene	3.3E-08	1.6E-10	6.9E-08	1.0E-07	--	--	--	--
	Phenanthrene	--	--	--	--	1.1E-04	1.6E-06	2.2E-04	3.3E-04
	PCBs								
	Aroclor 1016	9.7E-11	1.5E-12	2.0E-10	3.0E-10	1.4E-03	2.1E-05	2.9E-03	4.3E-03
	Aroclor 1242	3.7E-08	2.2E-10	7.6E-08	1.1E-07	2.6E-02	3.9E-04	5.4E-02	8.0E-02
	Aroclor 1248	6.7E-05	4.1E-07	1.4E-04	2.1E-04	4.7E+01	7.1E-01	9.7E+01	1.4E+02
	Aroclor 1254	3.9E-07	2.4E-09	8.1E-07	1.2E-06	2.7E-01	4.2E-03	5.7E-01	8.5E-01
	Aroclor 1260	3.5E-07	2.1E-09	7.2E-07	1.1E-06	2.4E-01	3.7E-03	5.0E-01	7.5E-01
	Aroclor 1262	7.6E-08	4.6E-10	1.6E-07	2.3E-07	5.3E-02	8.1E-04	1.1E-01	1.6E-01
	Perchlorate								
	Perchlorate	--	--	--	--	1.7E-02	--	0.0E+00	1.7E-02
	SVOCs								
	1,4-Dioxane	1.1E-10	1.7E-12	1.5E-10	2.7E-10	--	5.1E-09	--	5.1E-09
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table E-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	9.7E-07	7.7E-08	1.3E-06	2.4E-06
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	1.4E-01	1.4E-03	2.8E-01	4.2E-01
	TPH - aliphatic; C9-C18	--	--	--	--	8.1E-01	4.1E-03	1.7E+00	2.5E+00
	TPH - aliphatic; C≥19	--	--	--	--	3.7E-02	3.7E-03	7.6E-02	1.2E-01
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	2.7E+00	2.0E-01	5.6E+00	8.5E+00
	TPH - aromatic; C≥19	--	--	--	--	2.4E+00	--	5.1E+00	7.5E+00
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	5.9E-07	2.7E-04	8.1E-07	2.7E-04
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	7.9E-13	3.3E-10	1.1E-12	3.3E-10	9.7E-08	2.8E-05	1.3E-07	2.8E-05
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	1.7E-11	1.5E-13	2.3E-11	4.0E-11	4.3E-07	3.4E-08	5.9E-07	1.1E-06
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	1.0E-03	1.8E+00	1.4E-03	1.8E+00
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	4.4E-05	1.9E-01	6.1E-05	1.9E-01
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	6.2E-12	4.2E-09	8.6E-12	4.2E-09	2.7E-06	3.2E-05	3.7E-06	3.9E-05
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	1.1E-04	7.0E-04	2.2E-04	1.0E-03
	Acetone	--	--	--	--	2.2E-07	1.8E-05	3.1E-07	1.8E-05
	Benzene	9.2E-11	3.6E-08	1.3E-10	3.6E-08	1.6E-05	1.5E-03	2.2E-05	1.5E-03
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	2.8E-07	9.0E-05	3.9E-07	9.1E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	6.5E-07	8.3E-06	8.9E-07	9.9E-06
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	5.7E-12	1.4E-09	7.9E-12	1.4E-09	1.3E-06	6.0E-05	1.8E-06	6.3E-05
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	3.1E-04	1.1E-01	4.3E-04	1.1E-01
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	8.5E-06	--	8.5E-06
	Ethylbenzene	--	--	--	--	7.4E-05	2.8E-03	1.0E-04	3.0E-03
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	4.6E-04	1.5E-03	9.5E-04	2.9E-03
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	6.5E-11	8.6E-09	8.9E-11	8.7E-09	1.9E-04	2.6E-02	2.7E-04	2.6E-02

Table E-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	5.5E-05	1.5E-02	7.6E-05	1.6E-02
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	6.1E-12	6.1E-10	8.4E-12	6.3E-10	5.1E-07	1.1E-04	7.0E-07	1.1E-04
Outdoor Inhalation	Naphthalene	1.0E-07	2.7E-06	2.1E-07	3.0E-06	2.9E-03	6.2E-01	6.0E-03	6.3E-01
	n-Butylbenzene	--	--	--	--	4.4E-04	4.6E-02	6.1E-04	4.7E-02
	n-Propylbenzene	--	--	--	--	3.0E-04	3.1E-02	4.1E-04	3.2E-02
	p-Isopropyltoluene	--	--	--	--	1.9E-04	1.6E-02	2.6E-04	1.6E-02
	Pyrene	--	--	--	--	3.8E-05	1.1E-05	5.2E-05	1.0E-04
	sec-Butylbenzene	--	--	--	--	1.9E-04	2.6E-02	2.6E-04	2.7E-02
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	1.1E-06	9.1E-05	1.5E-06	9.4E-05
	tert-Butylbenzene	--	--	--	--	3.2E-07	3.8E-05	4.5E-07	3.9E-05
	Tetrachloroethene	5.5E-06	4.0E-05	7.6E-06	5.3E-05	7.1E-02	1.3E+01	9.8E-02	1.3E+01
	Toluene	--	--	--	--	1.6E-07	1.1E-04	2.2E-07	1.1E-04
	trans-1,2-Dichloroethene	--	--	--	--	1.1E-04	4.7E-02	1.5E-04	4.7E-02
	Trichloroethene	6.0E-09	1.1E-06	8.3E-09	1.1E-06	1.1E-01	6.4E-02	1.5E-01	3.2E-01
	Vinyl Chloride	6.7E-10	5.3E-07	9.3E-10	5.3E-07	5.8E-05	4.8E-03	8.0E-05	4.9E-03
	Xylenes	--	--	--	--	3.9E-05	7.4E-03	5.4E-05	7.4E-03
	Cumulative Risk and Hazard =	**7E-05**	**6E-05**	**1E-04**	**3E-04**	**5E+01**	**2E+01**	**1E+02**	**2E+02**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**1E+00**	**9E-03**	**2E+00**	**3E+00**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**5E+00**	**2E-01**	**1E+01**	**2E+01**
Groundwater:	**Inorganics**								
Dermal Contact	Antimony	--	--	--	--	--	--	8.4E-01	8.4E-01
	Arsenic	--	--	1.1E-07	1.1E-07	--	--	2.6E-03	2.6E-03
	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	5.6E-04	5.6E-04
	Cadmium	--	--	--	--	--	--	2.2E-03	2.2E-03
	Chromium	--	--	--	--	--	--	4.9E-02	4.9E-02
	Chromium, Hexavalent	--	--	--	--	--	--	5.1E+01	5.1E+01
	Cobalt	--	--	--	--	--	--	9.5E-05	9.5E-05
	Copper	--	--	--	--	--	--	1.5E-05	1.5E-05
	Cyanide (Amenable)	--	--	--	--	--	--	--	--
	Cyanide (Total)	--	--	--	--	--	--	5.6E-05	5.6E-05
	Mercury	--	--	--	--	--	--	--	--
	Molybdenum	--	--	--	--	--	--	6.5E-03	6.5E-03
	Nickel	--	--	--	--	--	--	5.0E-04	5.0E-04
	Selenium	--	--	--	--	--	--	2.7E-02	2.7E-02
	Silver	--	--	--	--	--	--	--	--
	Thallium	--	--	--	--	--	--	3.4E-03	3.4E-03
	Vanadium	--	--	--	--	--	--	1.5E-02	1.5E-02
	Zinc	--	--	--	--	--	--	2.2E-05	2.2E-05
	PAHs								
	2-Methylnaphthalene	--	--	--	--	--	--	1.8E-02	1.8E-02
	Anthracene	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	--	--	9.1E-07	9.1E-07	--	--	--	--
	Benzo(a)Pyrene	--	--	--	--	--	--	--	--
	Benzo(b)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(k)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	--	--	9.2E-03	9.2E-03

Table E-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Chrysene	--	--	1.1E-07	1.1E-07	--	--	--	--
Dermal Contact	Dibenz(a,h)anthracene	--	--	3.3E-05	3.3E-05	--	--	--	--
	Fluoranthene	--	--	--	--	--	--	5.4E-03	5.4E-03
	Indeno(1,2,3-cd)pyrene	--	--	2.5E-06	2.5E-06	--	--	--	--
	Phenanthrene	--	--	--	--	--	--	2.5E-04	2.5E-04
	PCBs								
	Aroclor 1016	--	--	2.2E-07	2.2E-07	--	--	3.1E+00	3.1E+00
	Aroclor 1242	--	--	--	--	--	--	--	--
	Aroclor 1248	--	--	--	--	--	--	--	--
	Aroclor 1254	--	--	--	--	--	--	--	--
	Aroclor 1260	--	--	--	--	--	--	--	--
	Aroclor 1262	--	--	--	--	--	--	--	--
	Perchlorate								
	Perchlorate	--	--	--	--	--	--	--	--
	SVOCs								
	1,4-Dioxane	--	--	5.7E-08	5.7E-08	--	--	--	--
	4-Chloro-3-methylphenol	--	--	--	--	--	--	4.0E-04	4.0E-04
	Aniline	--	--	5.0E-11	5.0E-11	--	--	8.8E-05	8.8E-05
	Benzoic Acid	--	--	--	--	--	--	8.5E-07	8.5E-07
	Bis(2-ethylhexyl)Phthalate	--	--	1.6E-07	1.6E-07	--	--	1.9E-01	1.9E-01
	Diethylphthalate	--	--	--	--	--	--	3.2E-06	3.2E-06
	Diisopropyl Ether	--	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	--	--	--	--	5.5E-08	5.5E-08
	Di-n-butylphthalate	--	--	--	--	--	--	2.8E-04	2.8E-04
	Phenol	--	--	--	--	--	--	2.2E-06	2.2E-06
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	--	--	6.5E+00	6.5E+00
	TPH - aliphatic; C9-C18	--	--	--	--	--	--	1.4E-01	1.4E-01
	TPH - aliphatic; C≥19	--	--	--	--	--	--	3.4E-03	3.4E-03
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	--	--	4.6E-01	4.6E-01
	TPH - aromatic; C≥19	--	--	--	--	--	--	2.2E-01	2.2E-01
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	2.0E-09	2.0E-09	--	--	1.8E-04	1.8E-04
	1,1,1-Trichloroethane	--	--	--	--	--	--	3.6E-04	3.6E-04
	1,1,2-Trichloroethane	--	--	1.1E-08	1.1E-08	--	--	2.7E-03	2.7E-03
	1,1-Dichloroethane	--	--	1.0E-08	1.0E-08	--	--	1.2E-03	1.2E-03
	1,1-Dichloroethene	--	--	--	--	--	--	1.9E-02	1.9E-02
	1,1-Dichloropropene	--	--	5.2E-10	5.2E-10	--	--	1.3E-05	1.3E-05
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	1.0E-03	1.0E-03
	1,2,4-Trimethylbenzene	--	--	--	--	--	--	3.8E-03	3.8E-03
	1,2-Dibromo-3-chloropropane	--	--	1.3E-07	1.3E-07	--	--	2.4E-02	2.4E-02
	1,2-Dichlorobenzene	--	--	--	--	--	--	8.4E-04	8.4E-04
	1,2-Dichloroethane	--	--	8.6E-09	8.6E-09	--	--	6.4E-04	6.4E-04
	1,3,5-Trimethylbenzene	--	--	--	--	--	--	3.2E-03	3.2E-03
	1,3-Dichlorobenzene	--	--	--	--	--	--	2.0E-03	2.0E-03
	1,4-Dichlorobenzene	--	--	1.9E-08	1.9E-08	--	--	8.4E-03	8.4E-03
	2-Butanone (MEK)	--	--	--	--	--	--	6.8E-05	6.8E-05
	2-Chlorotoluene	--	--	--	--	--	--	1.8E-04	1.8E-04
	4-Methyl-2-pentanone	--	--	--	--	--	--	3.7E-06	3.7E-06

Table E-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Acenaphthene	--	--	--	--	--	--	7.2E-01	7.2E-01
Dermal Contact	Acetone	--	--	--	--	--	--	3.8E-06	3.8E-06
	Benzene	--	--	3.3E-07	3.3E-07	--	--	5.7E-02	5.7E-02
	Bromochloromethane	--	--	--	--	--	--	3.3E-05	3.3E-05
	Bromodichloromethane	--	--	4.6E-09	4.6E-09	--	--	1.2E-04	1.2E-04
	Bromomethane	--	--	--	--	--	--	2.4E-04	2.4E-04
	Carbon Disulfide	--	--	--	--	--	--	8.7E-05	8.7E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	--	2.1E-03	2.1E-03
	Chloroethane	--	--	1.0E-11	1.0E-11	--	--	6.3E-07	6.3E-07
	Chloroform	--	--	1.4E-08	1.4E-08	--	--	3.1E-03	3.1E-03
	Chloromethane	--	--	--	--	--	--	1.6E-05	1.6E-05
	cis-1,2-Dichloroethene	--	--	--	--	--	--	9.4E+00	9.4E+00
	Dibromochloromethane	--	--	6.0E-10	6.0E-10	--	--	2.2E-05	2.2E-05
	Dibromomethane	--	--	--	--	--	--	1.1E-05	1.1E-05
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	--	1.2E-03	1.2E-03
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	9.2E-04	9.2E-04
	Fluorene	--	--	--	--	--	--	1.5E-03	1.5E-03
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	--	1.2E-08	1.2E-08	--	--	3.7E-02	3.7E-02
	Isopropylbenzene	--	--	--	--	--	--	1.3E-02	1.3E-02
	Methyl tertbutyl ether (MTBE)	--	--	1.1E-10	1.1E-10	--	--	4.9E-06	4.9E-06
	Methylene Chloride	--	--	1.0E-09	1.0E-09	--	--	8.6E-05	8.6E-05
	Naphthalene	--	--	4.1E-06	4.1E-06	--	--	1.2E-01	1.2E-01
	n-Butylbenzene	--	--	--	--	--	--	1.2E-01	1.2E-01
	n-Propylbenzene	--	--	--	--	--	--	1.2E-01	1.2E-01
	p-Isopropyltoluene	--	--	--	--	--	--	1.1E-03	1.1E-03
	Pyrene	--	--	--	--	--	--	3.9E-04	3.9E-04
	sec-Butylbenzene	--	--	--	--	--	--	3.4E-02	3.4E-02
	Styrene	--	--	--	--	--	--	2.8E-05	2.8E-05
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	--	3.4E-05	3.4E-05
	tert-Butylbenzene	--	--	--	--	--	--	1.7E-03	1.7E-03
	Tetrachloroethene	--	--	1.3E-02	1.3E-02	--	--	1.7E+02	1.7E+02
	Toluene	--	--	--	--	--	--	1.5E-04	1.5E-04
	trans-1,2-Dichloroethene	--	--	--	--	--	--	4.2E-02	4.2E-02
	Trichloroethene	--	--	7.9E-06	7.9E-06	--	--	1.4E+02	1.4E+02
	Vinyl Chloride	--	--	7.4E-05	7.4E-05	--	--	6.4E+00	6.4E+00
	Xylenes	--	--	--	--	--	--	3.1E-04	3.1E-04
	Cumulative Risk and Hazard =	**--**	**--**	**1E-02**	**1E-02**	**--**	**--**	**4E+02**	**4E+02**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**7E+00**	**7E+00**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**7E-01**	**7E-01**
Groundwater-to-	**VOCs**								
Outdoor Air	1,1,1,2-Tetrachloroethane	--	2.0E-09	--	2.0E-09	--	1.8E-04	--	1.8E-04
	1,1,1-Trichloroethane	--	--	--	--	--	7.0E-04	--	7.0E-04
	1,1,2-Trichloroethane	--	3.2E-08	--	3.2E-08	--	9.9E-03	--	9.9E-03
	1,1-Dichloroethane	--	5.0E-08	--	5.0E-08	--	4.3E-03	--	4.3E-03
	1,1-Dichloroethene	--	--	--	--	--	1.4E-01	--	1.4E-01
	1,1-Dichloropropene	--	2.2E-09	--	2.2E-09	--	5.0E-04	--	5.0E-04
	1,2,4-Trichlorobenzene	--	--	--	--	--	2.5E-04	--	2.5E-04

Table E-16
Summary of Cancer Risks and Noncancer Hazards
Construction Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-to-	1,2,4-Trimethylbenzene	--	--	--	--	--	3.8E-02	--	3.8E-02
Outdoor Air	1,2-Dibromo-3-chloropropane	--	1.5E-07	--	1.5E-07	--	2.6E-02	--	2.6E-02
	1,2-Dichlorobenzene	--	--	--	--	--	7.0E-04	--	7.0E-04
	1,2-Dichloroethane	--	1.0E-07	--	1.0E-07	--	7.0E-02	--	7.0E-02
	1,3,5-Trimethylbenzene	--	--	--	--	--	4.4E-02	--	4.4E-02
	1,3-Dichlorobenzene	--	--	--	--	--	7.7E-04	--	7.7E-04
	1,4-Dichlorobenzene	--	7.6E-08	--	7.6E-08	--	5.8E-04	--	5.8E-04
	2-Butanone (MEK)	--	--	--	--	--	4.1E-04	--	4.1E-04
	2-Chlorotoluene	--	--	--	--	--	8.6E-05	--	8.6E-05
	4-Methyl-2-pentanone	--	--	--	--	--	3.1E-06	--	3.1E-06
	Acenaphthene	--	--	--	--	--	1.3E-01	--	1.3E-01
	Acetone	--	--	--	--	--	1.4E-04	--	1.4E-04
	Benzene	--	9.1E-07	--	9.1E-07	--	3.7E-02	--	3.7E-02
	Bromochloromethane	--	--	--	--	--	3.3E-04	--	3.3E-04
	Bromodichloromethane	--	1.9E-08	--	1.9E-08	--	5.1E-04	--	5.1E-04
	Bromomethane	--	--	--	--	--	2.9E-03	--	2.9E-03
	Carbon Disulfide	--	--	--	--	--	9.3E-05	--	9.3E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	1.6E-04	--	1.6E-04
	Chloroethane	--	7.9E-11	--	7.9E-11	--	2.2E-07	--	2.2E-07
	Chloroform	--	3.4E-08	--	3.4E-08	--	1.5E-03	--	1.5E-03
	Chloromethane	--	--	--	--	--	2.6E-04	--	2.6E-04
	cis-1,2-Dichloroethene	--	--	--	--	--	2.9E+01	--	2.9E+01
	Dibromochloromethane	--	2.3E-09	--	2.3E-09	--	8.6E-05	--	8.6E-05
	Dibromomethane	--	--	--	--	--	8.5E-05	--	8.5E-05
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	1.4E-04	--	1.4E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	4.7E-05	--	4.7E-05
	Fluorene	--	--	--	--	--	1.6E-04	--	1.6E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	1.4E-09	--	1.4E-09	--	4.3E-03	--	4.3E-03
	Isopropylbenzene	--	--	--	--	--	3.8E-03	--	3.8E-03
	Methyl tertbutyl ether (MTBE)	--	8.6E-10	--	8.6E-10	--	2.9E-05	--	2.9E-05
	Methylene Chloride	--	2.7E-09	--	2.7E-09	--	4.8E-04	--	4.8E-04
	Naphthalene	--	2.2E-06	--	2.2E-06	--	4.9E-01	--	4.9E-01
	n-Butylbenzene	--	--	--	--	--	1.6E-02	--	1.6E-02
	n-Propylbenzene	--	--	--	--	--	3.8E-02	--	3.8E-02
	p-Isopropyltoluene	--	--	--	--	--	1.6E-04	--	1.6E-04
	Pyrene	--	--	--	--	--	4.7E-06	--	4.7E-06
	sec-Butylbenzene	--	--	--	--	--	6.0E-03	--	6.0E-03
	Styrene	--	--	--	--	--	1.9E-05	--	1.9E-05
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	4.5E-04	--	4.5E-04
	tert-Butylbenzene	--	--	--	--	--	2.7E-04	--	2.7E-04
	Tetrachloroethene	--	2.4E-04	--	2.4E-04	--	8.0E+01	--	8.0E+01
	Toluene	--	--	--	--	--	4.2E-04	--	4.2E-04
	trans-1,2-Dichloroethene	--	--	--	--	--	1.3E-01	--	1.3E-01
	Trichloroethene	--	9.4E-06	--	9.4E-06	--	5.5E-01	--	5.5E-01
	Vinyl Chloride	--	6.3E-04	--	6.3E-04	--	5.7E+00	--	5.7E+00
	Xylenes	--	--	--	--	--	2.0E-04	--	2.0E-04
	Cumulative Risk and Hazard =	--	**9E-04**	**--**	**9E-04**	**--**	**1E+02**	**--**	**1E+02**

Note: " -- " not applicable or not available

Table E-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	8.2E-03	--	1.1E-03	9.4E-03
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	9.1E-11	--	9.1E-11	2.6E-03	7.4E-05	3.6E-05	2.7E-03
	Chromium	--	--	--	--	1.8E-04	--	2.5E-05	2.1E-04
	Chromium, Hexavalent	--	1.6E-08	--	1.6E-08	4.5E-03	3.8E-05	0.0E+00	4.6E-03
	Cobalt	--	--	--	--	1.9E-03	1.1E-03	2.7E-04	3.3E-03
	Copper	--	--	--	--	1.9E-03	--	2.7E-04	2.2E-03
	Cyanide (Amenable)	--	--	--	--	1.9E-05	--	2.7E-05	4.6E-05
	Cyanide (Total)	--	--	--	--	3.3E-05	--	4.6E-05	7.8E-05
	Mercury	--	--	--	--	3.0E-04	5.6E-07	4.1E-05	3.4E-04
	Molybdenum	--	--	--	--	7.7E-04	--	1.1E-04	8.8E-04
	Nickel	--	1.4E-10	--	1.4E-10	3.3E-03	7.4E-04	4.6E-04	4.5E-03
	Selenium	--	--	--	--	2.3E-03	3.3E-07	3.2E-04	2.6E-03
	Silver	--	--	--	--	1.8E-04	--	2.5E-05	2.0E-04
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	9.2E-04	--	1.3E-04	1.0E-03
	PAHs								
	2-Methylnaphthalene	--	--	--	--	6.8E-04	1.1E-07	1.4E-03	2.1E-03
	Anthracene	--	--	--	--	1.3E-08	2.1E-12	2.7E-08	4.0E-08
	Benzo(a)anthracene	1.3E-09	6.9E-14	2.8E-09	4.1E-09	--	--	--	--
	Benzo(a)Pyrene	2.7E-08	1.4E-12	5.5E-08	8.2E-08	--	--	--	--
	Benzo(b)Fluoranthene	8.4E-09	4.4E-13	1.7E-08	2.6E-08	--	--	--	--
	Benzo(k)Fluoranthene	6.6E-10	3.5E-14	1.4E-09	2.0E-09	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	1.2E-05	1.9E-09	2.4E-05	3.6E-05
	Chrysene	4.5E-10	2.4E-14	9.4E-10	1.4E-09	--	--	--	--
	Dibenz(a,h)anthracene	5.3E-09	2.8E-13	1.1E-08	1.6E-08	--	--	--	--
	Fluoranthene	--	--	--	--	1.9E-06	3.1E-10	4.0E-06	6.0E-06
	Indeno(1,2,3-cd)pyrene	4.0E-09	2.1E-13	8.3E-09	1.2E-08	--	--	--	--
	Phenanthrene	--	--	--	--	1.3E-05	2.0E-09	2.6E-05	3.9E-05
	PCBs								
	Aroclor 1016	1.2E-11	1.9E-15	2.4E-11	3.6E-11	1.7E-04	2.7E-08	3.4E-04	5.1E-04
	Aroclor 1242	4.4E-09	2.8E-13	9.2E-09	1.4E-08	3.1E-03	5.0E-07	6.4E-03	9.5E-03
	Aroclor 1248	8.0E-06	5.2E-10	1.7E-05	2.5E-05	5.6E+00	9.0E-04	1.2E+01	1.7E+01
	Aroclor 1254	4.7E-08	3.0E-12	9.8E-08	1.4E-07	3.3E-02	5.3E-06	6.8E-02	1.0E-01
	Aroclor 1260	4.2E-08	2.7E-12	8.6E-08	1.3E-07	2.9E-02	4.7E-06	6.0E-02	8.9E-02
	Aroclor 1262	9.1E-09	5.9E-13	1.9E-08	2.8E-08	6.4E-03	1.0E-06	1.3E-02	2.0E-02
	Perchlorate								
	Perchlorate	--	--	--	--	2.0E-03	--	0.0E+00	2.0E-03
	SVOCs								
	1,4-Dioxane	1.3E-11	2.2E-15	1.9E-11	3.2E-11	--	6.5E-12	--	6.5E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table E-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	1.2E-07	9.8E-11	1.6E-07	2.8E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	1.6E-02	1.7E-06	3.4E-02	5.0E-02
	TPH - aliphatic; C9-C18	--	--	--	--	9.7E-02	5.2E-06	2.0E-01	3.0E-01
	TPH - aliphatic; C≥19	--	--	--	--	4.4E-03	4.7E-06	9.1E-03	1.4E-02
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	3.2E-01	2.6E-04	6.7E-01	1.0E+00
	TPH - aromatic; C≥19	--	--	--	--	2.9E-01	--	6.1E-01	9.0E-01
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	7.1E-08	1.0E-05	9.8E-08	1.1E-05
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	9.5E-14	1.3E-11	1.3E-13	1.3E-11	1.2E-08	1.1E-06	1.6E-08	1.1E-06
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	2.0E-12	2.0E-16	2.8E-12	4.8E-12	5.2E-08	4.4E-11	7.1E-08	1.2E-07
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	1.2E-04	7.2E-02	1.7E-04	7.2E-02
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	5.3E-06	7.4E-03	7.3E-06	7.4E-03
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	7.5E-13	1.6E-10	1.0E-12	1.7E-10	3.2E-07	1.3E-06	4.5E-07	2.0E-06
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	1.3E-05	2.8E-05	2.7E-05	6.7E-05
	Acetone	--	--	--	--	2.7E-08	7.0E-07	3.7E-08	7.6E-07
	Benzene	1.1E-11	1.4E-09	1.5E-11	1.4E-09	1.9E-06	5.7E-05	2.7E-06	6.2E-05
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	3.4E-08	3.5E-06	4.7E-08	3.6E-06
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	7.7E-08	3.3E-07	1.1E-07	5.1E-07
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	6.9E-13	5.5E-11	9.5E-13	5.6E-11	1.5E-07	2.3E-06	2.1E-07	2.7E-06
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	3.7E-05	4.4E-03	5.1E-05	4.4E-03
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	3.3E-07	--	3.3E-07
	Ethylbenzene	--	--	--	--	8.9E-06	1.1E-04	1.2E-05	1.3E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	5.5E-05	6.0E-05	1.1E-04	2.3E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	7.8E-12	3.4E-10	1.1E-11	3.5E-10	2.3E-05	1.0E-03	3.2E-05	1.1E-03

Table E-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	6.6E-06	6.1E-04	9.1E-06	6.2E-04
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	7.3E-13	2.4E-11	1.0E-12	2.6E-11	6.1E-08	4.2E-06	8.4E-08	4.3E-06
Outdoor Inhalation	Naphthalene	1.2E-08	1.1E-07	2.5E-08	1.4E-07	3.5E-04	2.4E-02	7.2E-04	2.5E-02
	n-Butylbenzene	--	--	--	--	5.3E-05	1.8E-03	7.4E-05	1.9E-03
	n-Propylbenzene	--	--	--	--	3.6E-05	1.2E-03	5.0E-05	1.3E-03
	p-Isopropyltoluene	--	--	--	--	2.2E-05	6.3E-04	3.1E-05	6.8E-04
	Pyrene	--	--	--	--	4.5E-06	4.5E-07	6.2E-06	1.1E-05
	sec-Butylbenzene	--	--	--	--	2.2E-05	1.0E-03	3.1E-05	1.1E-03
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	1.3E-07	3.6E-06	1.8E-07	3.9E-06
	tert-Butylbenzene	--	--	--	--	3.9E-08	1.5E-06	5.4E-08	1.6E-06
	Tetrachloroethene	6.6E-07	1.6E-06	9.1E-07	3.1E-06	8.5E-03	5.2E-01	1.2E-02	5.4E-01
	Toluene	--	--	--	--	1.9E-08	4.1E-06	2.7E-08	4.2E-06
	trans-1,2-Dichloroethene	--	--	--	--	1.3E-05	1.8E-03	1.8E-05	1.9E-03
	Trichloroethene	7.2E-10	4.3E-08	9.9E-10	4.4E-08	1.3E-02	2.5E-03	1.8E-02	3.3E-02
	Vinyl Chloride	8.1E-11	2.1E-08	1.1E-10	2.1E-08	7.0E-06	1.9E-04	9.6E-06	2.0E-04
	Xylenes	--	--	--	--	4.6E-06	2.9E-04	6.4E-06	3.0E-04
	Cumulative Risk and Hazard =	**9E-06**	**2E-06**	**2E-05**	**3E-05**	**6E+00**	**6E-01**	**1E+01**	**2E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**1E-01**	**1E-05**	**2E-01**	**4E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**6E-01**	**3E-04**	**1E+00**	**2E+00**
Groundwater:	**Inorganics**								
Dermal Contact	Antimony	--	--	--	--	--	--	1.0E-01	1.0E-01
	Arsenic	--	--	1.3E-08	1.3E-08	--	--	3.2E-04	3.2E-04
	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	6.7E-05	6.7E-05
	Cadmium	--	--	--	--	--	--	2.7E-04	2.7E-04
	Chromium	--	--	--	--	--	--	5.9E-03	5.9E-03
	Chromium, Hexavalent	--	--	--	--	--	--	6.1E+00	6.1E+00
	Cobalt	--	--	--	--	--	--	1.1E-05	1.1E-05
	Copper	--	--	--	--	--	--	1.8E-06	1.8E-06
	Cyanide (Amenable)	--	--	--	--	--	--	--	--
	Cyanide (Total)	--	--	--	--	--	--	6.7E-06	6.7E-06
	Mercury	--	--	--	--	--	--	--	--
	Molybdenum	--	--	--	--	--	--	7.8E-04	7.8E-04
	Nickel	--	--	--	--	--	--	6.0E-05	6.0E-05
	Selenium	--	--	--	--	--	--	3.2E-03	3.2E-03
	Silver	--	--	--	--	--	--	--	--
	Thallium	--	--	--	--	--	--	4.1E-04	4.1E-04
	Vanadium	--	--	--	--	--	--	1.7E-03	1.7E-03
	Zinc	--	--	--	--	--	--	2.7E-06	2.7E-06
	PAHs								
	2-Methylnaphthalene	--	--	--	--	--	--	2.1E-03	2.1E-03
	Anthracene	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	--	--	1.1E-07	1.1E-07	--	--	--	--
	Benzo(a)Pyrene	--	--	--	--	--	--	--	--
	Benzo(b)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(k)Fluoranthene	--	--	--	--	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	--	--	1.1E-03	1.1E-03

Table E-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Chrysene	--	--	1.3E-08	1.3E-08	--	--	--	--
Dermal Contact	Dibenz(a,h)anthracene	--	--	3.9E-06	3.9E-06	--	--	--	--
	Fluoranthene	--	--	--	--	--	--	6.5E-04	6.5E-04
	Indeno(1,2,3-cd)pyrene	--	--	3.0E-07	3.0E-07	--	--	--	--
	Phenanthrene	--	--	--	--	--	--	3.0E-05	3.0E-05
	PCBs								
	Aroclor 1016	--	--	2.6E-08	2.6E-08	--	--	3.7E-01	3.7E-01
	Aroclor 1242	--	--	--	--	--	--	--	--
	Aroclor 1248	--	--	--	--	--	--	--	--
	Aroclor 1254	--	--	--	--	--	--	--	--
	Aroclor 1260	--	--	--	--	--	--	--	--
	Aroclor 1262	--	--	--	--	--	--	--	--
	Perchlorate								
	Perchlorate	--	--	--	--	--	--	--	--
	SVOCs								
	1,4-Dioxane	--	--	6.8E-09	6.8E-09	--	--	--	--
	4-Chloro-3-methylphenol	--	--	--	--	--	--	4.8E-05	4.8E-05
	Aniline	--	--	6.0E-12	6.0E-12	--	--	1.1E-05	1.1E-05
	Benzoic Acid	--	--	--	--	--	--	1.0E-07	1.0E-07
	Bis(2-ethylhexyl)Phthalate	--	--	1.9E-08	1.9E-08	--	--	2.2E-02	2.2E-02
	Diethylphthalate	--	--	--	--	--	--	3.8E-07	3.8E-07
	Diisopropyl Ether	--	--	--	--	--	--	--	--
	Dimethyl Phthalate	--	--	--	--	--	--	6.6E-09	6.6E-09
	Di-n-butylphthalate	--	--	--	--	--	--	3.3E-05	3.3E-05
	Phenol	--	--	--	--	--	--	2.6E-07	2.6E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	--	--	7.8E-01	7.8E-01
	TPH - aliphatic; C9-C18	--	--	--	--	--	--	1.7E-02	1.7E-02
	TPH - aliphatic; C≥19	--	--	--	--	--	--	4.0E-04	4.0E-04
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	--	--	5.5E-02	5.5E-02
	TPH - aromatic; C≥19	--	--	--	--	--	--	2.7E-02	2.7E-02
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	2.4E-10	2.4E-10	--	--	2.1E-05	2.1E-05
	1,1,1-Trichloroethane	--	--	--	--	--	--	4.3E-05	4.3E-05
	1,1,2-Trichloroethane	--	--	1.3E-09	1.3E-09	--	--	3.2E-04	3.2E-04
	1,1-Dichloroethane	--	--	1.2E-09	1.2E-09	--	--	1.5E-04	1.5E-04
	1,1-Dichloroethene	--	--	--	--	--	--	2.3E-03	2.3E-03
	1,1-Dichloropropene	--	--	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	1.2E-04	1.2E-04
	1,2,4-Trimethylbenzene	--	--	--	--	--	--	4.5E-04	4.5E-04
	1,2-Dibromo-3-chloropropane	--	--	1.6E-08	1.6E-08	--	--	2.8E-03	2.8E-03
	1,2-Dichlorobenzene	--	--	--	--	--	--	1.0E-04	1.0E-04
	1,2-Dichloroethane	--	--	1.0E-09	1.0E-09	--	--	7.7E-05	7.7E-05
	1,3,5-Trimethylbenzene	--	--	--	--	--	--	3.8E-04	3.8E-04
	1,3-Dichlorobenzene	--	--	--	--	--	--	2.4E-04	2.4E-04
	1,4-Dichlorobenzene	--	--	2.3E-09	2.3E-09	--	--	1.0E-03	1.0E-03
	2-Butanone (MEK)	--	--	--	--	--	--	8.2E-06	8.2E-06
	2-Chlorotoluene	--	--	--	--	--	--	2.1E-05	2.1E-05
	4-Methyl-2-pentanone	--	--	--	--	--	--	4.4E-07	4.4E-07

Table E-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater:	Acenaphthene	--	--	--	--	--	--	8.6E-02	8.6E-02
Dermal Contact	Acetone	--	--	--	--	--	--	4.6E-07	4.6E-07
	Benzene	--	--	3.9E-08	3.9E-08	--	--	6.9E-03	6.9E-03
	Bromochloromethane	--	--	--	--	--	--	4.0E-06	4.0E-06
	Bromodichloromethane	--	--	5.5E-10	5.5E-10	--	--	1.5E-05	1.5E-05
	Bromomethane	--	--	--	--	--	--	2.9E-05	2.9E-05
	Carbon Disulfide	--	--	--	--	--	--	1.0E-05	1.0E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	--	2.5E-04	2.5E-04
	Chloroethane	--	--	1.2E-12	1.2E-12	--	--	7.5E-08	7.5E-08
	Chloroform	--	--	1.6E-09	1.6E-09	--	--	3.7E-04	3.7E-04
	Chloromethane	--	--	--	--	--	--	1.9E-06	1.9E-06
	cis-1,2-Dichloroethene	--	--	--	--	--	--	1.1E+00	1.1E+00
	Dibromochloromethane	--	--	7.2E-11	7.2E-11	--	--	2.7E-06	2.7E-06
	Dibromomethane	--	--	--	--	--	--	1.3E-06	1.3E-06
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	--	1.4E-04	1.4E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	1.1E-04	1.1E-04
	Fluorene	--	--	--	--	--	--	1.8E-04	1.8E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	--	--	--	--	--	--	--
	Isopropylbenzene	--	--	--	--	--	--	1.5E-03	1.5E-03
	Methyl tertbutyl ether (MTBE)	--	--	1.3E-11	1.3E-11	--	--	5.9E-07	5.9E-07
	Methylene Chloride	--	--	1.2E-10	1.2E-10	--	--	1.0E-05	1.0E-05
	Naphthalene	--	--	5.0E-07	5.0E-07	--	--	1.4E-02	1.4E-02
	n-Butylbenzene	--	--	--	--	--	--	1.4E-02	1.4E-02
	n-Propylbenzene	--	--	--	--	--	--	1.5E-02	1.5E-02
	p-Isopropyltoluene	--	--	--	--	--	--	1.3E-04	1.3E-04
	Pyrene	--	--	--	--	--	--	4.6E-05	4.6E-05
	sec-Butylbenzene	--	--	--	--	--	--	4.0E-03	4.0E-03
	Styrene	--	--	--	--	--	--	3.3E-06	3.3E-06
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	--	--	--
	tert-Butylbenzene	--	--	--	--	--	--	2.1E-04	2.1E-04
	Tetrachloroethene	--	--	1.5E-03	1.5E-03	--	--	2.0E+01	2.0E+01
	Toluene	--	--	--	--	--	--	1.8E-05	1.8E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	--	5.0E-03	5.0E-03
	Trichloroethene	--	--	9.5E-07	9.5E-07	--	--	1.7E+01	1.7E+01
	Vinyl Chloride	--	--	8.9E-06	8.9E-06	--	--	7.7E-01	7.7E-01
	Xylenes	--	--	--	--	--	--	3.7E-05	3.7E-05
	Cumulative Risk and Hazard =	**--**	**--**	**2E-03**	**2E-03**	**--**	**--**	**5E+01**	**5E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**8E-01**	**8E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**--**	**--**	**8E-02**	**8E-02**
Groundwater-to-	**VOCs**								
Outdoor Air	1,1,1,2-Tetrachloroethane	--	2.5E-10	--	2.5E-10	--	2.2E-05	--	2.2E-05
	1,1,1-Trichloroethane	--	--	--	--	--	8.4E-05	--	8.4E-05
	1,1,2-Trichloroethane	--	3.9E-09	--	3.9E-09	--	1.2E-03	--	1.2E-03
	1,1-Dichloroethane	--	6.0E-09	--	6.0E-09	--	5.2E-04	--	5.2E-04
	1,1-Dichloroethene	--	--	--	--	--	1.7E-02	--	1.7E-02
	1,1-Dichloropropene	--	2.7E-10	--	2.7E-10	--	5.9E-05	--	5.9E-05
	1,2,4-Trichlorobenzene	--	--	--	--	--	3.0E-05	--	3.0E-05

Table E-17
Summary of Cancer Risks and Noncancer Hazards
Trench Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater-to-Outdoor Air	1,2,4-Trimethylbenzene	--	--	--	--	--	4.6E-03	--	4.6E-03
	1,2-Dibromo-3-chloropropane	--	1.8E-08	--	1.8E-08	--	3.2E-03	--	3.2E-03
	1,2-Dichlorobenzene	--	--	--	--	--	8.4E-05	--	8.4E-05
	1,2-Dichloroethane	--	1.2E-08	--	1.2E-08	--	8.4E-03	--	8.4E-03
	1,3,5-Trimethylbenzene	--	--	--	--	--	5.3E-03	--	5.3E-03
	1,3-Dichlorobenzene	--	--	--	--	--	9.3E-05	--	9.3E-05
	1,4-Dichlorobenzene	--	9.1E-09	--	9.1E-09	--	7.0E-05	--	7.0E-05
	2-Butanone (MEK)	--	--	--	--	--	4.9E-05	--	4.9E-05
	2-Chlorotoluene	--	--	--	--	--	1.0E-05	--	1.0E-05
	4-Methyl-2-pentanone	--	--	--	--	--	3.7E-07	--	3.7E-07
	Acenaphthene	--	--	--	--	--	1.6E-02	--	1.6E-02
	Acetone	--	--	--	--	--	1.7E-05	--	1.7E-05
	Benzene	--	1.1E-07	--	1.1E-07	--	4.5E-03	--	4.5E-03
	Bromochloromethane	--	--	--	--	--	3.9E-05	--	3.9E-05
	Bromodichloromethane	--	2.3E-09	--	2.3E-09	--	6.1E-05	--	6.1E-05
	Bromomethane	--	--	--	--	--	3.5E-04	--	3.5E-04
	Carbon Disulfide	--	--	--	--	--	1.1E-05	--	1.1E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	--	1.9E-05	--	1.9E-05
	Chloroethane	--	9.5E-12	--	9.5E-12	--	2.7E-08	--	2.7E-08
	Chloroform	--	4.1E-09	--	4.1E-09	--	1.8E-04	--	1.8E-04
	Chloromethane	--	--	--	--	--	3.1E-05	--	3.1E-05
	cis-1,2-Dichloroethene	--	--	--	--	--	3.5E+00	--	3.5E+00
	Dibromochloromethane	--	2.8E-10	--	2.8E-10	--	1.0E-05	--	1.0E-05
	Dibromomethane	--	--	--	--	--	1.0E-05	--	1.0E-05
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	1.7E-05	--	1.7E-05
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	5.6E-06	--	5.6E-06
	Fluorene	--	--	--	--	--	1.9E-05	--	1.9E-05
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	--	1.7E-10	--	1.7E-10	--	5.1E-04	--	5.1E-04
	Isopropylbenzene	--	--	--	--	--	4.6E-04	--	4.6E-04
	Methyl tertbutyl ether (MTBE)	--	1.0E-10	--	1.0E-10	--	3.5E-06	--	3.5E-06
	Methylene Chloride	--	3.3E-10	--	3.3E-10	--	5.7E-05	--	5.7E-05
	Naphthalene	--	2.6E-07	--	2.6E-07	--	5.9E-02	--	5.9E-02
	n-Butylbenzene	--	--	--	--	--	1.9E-03	--	1.9E-03
	n-Propylbenzene	--	--	--	--	--	4.5E-03	--	4.5E-03
	p-Isopropyltoluene	--	--	--	--	--	1.9E-05	--	1.9E-05
	Pyrene	--	--	--	--	--	5.7E-07	--	5.7E-07
	sec-Butylbenzene	--	--	--	--	--	7.2E-04	--	7.2E-04
	Styrene	--	--	--	--	--	2.3E-06	--	2.3E-06
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	5.4E-05	--	5.4E-05
	tert-Butylbenzene	--	--	--	--	--	3.2E-05	--	3.2E-05
	Tetrachloroethene	--	2.9E-05	--	2.9E-05	--	9.6E+00	--	9.6E+00
	Toluene	--	--	--	--	--	5.0E-05	--	5.0E-05
	trans-1,2-Dichloroethene	--	--	--	--	--	1.6E-02	--	1.6E-02
	Trichloroethene	--	1.1E-06	--	1.1E-06	--	6.6E-02	--	6.6E-02
	Vinyl Chloride	--	7.5E-05	--	7.5E-05	--	6.8E-01	--	6.8E-01
	Xylenes	--	--	--	--	--	2.4E-05	--	2.4E-05
	Cumulative Risk and Hazard =	--	**1E-04**	**--**	**1E-04**	**--**	**1E+01**	**--**	**1E+01**

Note: " -- " not applicable or not available

Table E-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	2.1E-02	--	2.4E-03	2.3E-02
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	2.4E-09	--	2.4E-09	6.7E-03	7.9E-05	7.6E-05	6.8E-03
	Chromium	--	--	--	--	4.6E-04	--	5.2E-05	5.1E-04
	Chromium, Hexavalent	--	4.2E-07	--	4.2E-07	1.1E-02	4.1E-05	0.0E+00	1.1E-02
	Cobalt	--	--	--	--	4.9E-03	1.2E-03	5.6E-04	6.6E-03
	Copper	--	--	--	--	4.9E-03	--	5.6E-04	5.5E-03
	Cyanide (Amenable)	--	--	--	--	4.9E-05	--	5.6E-05	1.0E-04
	Cyanide (Total)	--	--	--	--	8.3E-05	--	9.5E-05	1.8E-04
	Mercury	--	--	--	--	7.5E-04	5.9E-07	8.6E-05	8.4E-04
	Molybdenum	--	--	--	--	2.0E-03	--	2.2E-04	2.2E-03
	Nickel	--	3.7E-09	--	3.7E-09	8.3E-03	7.9E-04	9.5E-04	1.0E-02
	Selenium	--	--	--	--	5.9E-03	3.5E-07	6.7E-04	6.5E-03
	Silver	--	--	--	--	4.5E-04	--	5.1E-05	5.0E-04
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	2.3E-03	--	2.6E-04	2.6E-03
	PAHs								
	2-Methylnaphthalene	--	--	--	--	1.7E-03	1.2E-07	3.0E-03	4.7E-03
	Anthracene	--	--	--	--	3.3E-08	2.2E-12	5.6E-08	8.8E-08
	Benzo(a)anthracene	8.4E-08	1.9E-12	1.4E-07	2.3E-07	--	--	--	--
	Benzo(a)Pyrene	1.7E-06	3.7E-11	2.9E-06	4.5E-06	--	--	--	--
	Benzo(b)Fluoranthene	5.3E-07	1.2E-11	9.0E-07	1.4E-06	--	--	--	--
	Benzo(k)Fluoranthene	4.2E-08	9.3E-13	7.2E-08	1.1E-07	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	2.9E-05	2.0E-09	5.0E-05	8.0E-05
	Chrysene	2.9E-08	6.3E-13	4.9E-08	7.8E-08	--	--	--	--
	Dibenz(a,h)anthracene	3.4E-07	7.4E-12	5.7E-07	9.1E-07	--	--	--	--
	Fluoranthene	--	--	--	--	4.9E-06	3.3E-10	8.4E-06	1.3E-05
	Indeno(1,2,3-cd)pyrene	2.5E-07	5.6E-12	4.3E-07	6.8E-07	--	--	--	--
	Phenanthrene	--	--	--	--	3.2E-05	2.2E-09	5.5E-05	8.7E-05
	PCBs								
	Aroclor 1016	7.3E-10	5.0E-14	1.3E-09	2.0E-09	4.2E-04	2.8E-08	7.2E-04	1.1E-03
	Aroclor 1242	2.8E-07	7.6E-12	4.8E-07	7.6E-07	7.8E-03	5.3E-07	1.3E-02	2.1E-02
	Aroclor 1248	5.1E-04	1.4E-08	8.7E-04	1.4E-03	1.4E+01	9.6E-04	2.4E+01	3.8E+01
	Aroclor 1254	3.0E-06	8.1E-11	5.1E-06	8.0E-06	8.3E-02	5.7E-06	1.4E-01	2.3E-01
	Aroclor 1260	2.6E-06	7.1E-11	4.5E-06	7.1E-06	7.3E-02	5.0E-06	1.3E-01	2.0E-01
	Aroclor 1262	5.8E-07	1.6E-11	9.9E-07	1.6E-06	1.6E-02	1.1E-06	2.8E-02	4.4E-02
	Perchlorate								
	Perchlorate	--	--	--	--	5.0E-03	--	0.0E+00	5.0E-03
	SVOCs								
	1,4-Dioxane	8.5E-10	5.8E-14	9.7E-10	1.8E-09	--	7.0E-12	--	7.0E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table E-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	2.9E-07	1.0E-10	3.3E-07	6.3E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	4.1E-02	1.9E-06	7.0E-02	1.1E-01
	TPH - aliphatic; C9-C18	--	--	--	--	2.5E-01	5.6E-06	4.2E-01	6.7E-01
	TPH - aliphatic; C≥19	--	--	--	--	1.1E-02	5.0E-06	1.9E-02	3.0E-02
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	8.2E-01	2.8E-04	1.4E+00	2.2E+00
	TPH - aromatic; C≥19	--	--	--	--	7.4E-01	--	1.3E+00	2.0E+00
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	1.8E-07	4.1E-05	2.0E-07	4.1E-05
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	6.0E-12	1.3E-09	6.8E-12	1.3E-09	2.9E-08	4.3E-06	3.3E-08	4.4E-06
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	1.3E-10	5.2E-15	1.5E-10	2.7E-10	1.3E-07	4.7E-11	1.5E-07	2.8E-07
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	3.1E-04	2.8E-01	3.6E-04	2.8E-01
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	1.3E-05	2.9E-02	1.5E-05	2.9E-02
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	4.7E-11	1.6E-08	5.4E-11	1.6E-08	8.2E-07	4.9E-06	9.3E-07	6.7E-06
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	3.3E-05	1.1E-04	5.6E-05	2.0E-04
	Acetone	--	--	--	--	6.7E-08	2.7E-06	7.7E-08	2.9E-06
	Benzene	7.0E-10	1.4E-07	8.0E-10	1.4E-07	4.9E-06	2.2E-04	5.6E-06	2.3E-04
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	8.5E-08	1.4E-05	9.7E-08	1.4E-05
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	2.0E-07	1.3E-06	2.2E-07	1.7E-06
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	4.3E-11	5.3E-09	4.9E-11	5.4E-09	3.9E-07	9.1E-06	4.5E-07	1.0E-05
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	9.4E-05	1.7E-02	1.1E-04	1.7E-02
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	1.3E-06	--	1.3E-06
	Ethylbenzene	--	--	--	--	2.3E-05	4.2E-04	2.6E-05	4.7E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	1.4E-04	2.3E-04	2.4E-04	6.1E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	4.9E-10	3.3E-08	5.6E-10	3.4E-08	5.9E-05	3.9E-03	6.7E-05	4.0E-03

Table E-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	1.7E-05	2.4E-03	1.9E-05	2.4E-03
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	4.6E-11	2.3E-09	5.2E-11	2.4E-09	1.5E-07	1.6E-05	1.7E-07	1.7E-05
Outdoor Inhalation	Naphthalene	7.5E-07	1.0E-05	1.3E-06	1.2E-05	8.8E-04	9.5E-02	1.5E-03	9.7E-02
	n-Butylbenzene	--	--	--	--	1.3E-04	7.1E-03	1.5E-04	7.4E-03
	n-Propylbenzene	--	--	--	--	9.1E-05	4.8E-03	1.0E-04	4.9E-03
	p-Isopropyltoluene	--	--	--	--	5.7E-05	2.4E-03	6.5E-05	2.6E-03
	Pyrene	--	--	--	--	1.1E-05	1.7E-06	1.3E-05	2.6E-05
	sec-Butylbenzene	--	--	--	--	5.6E-05	4.0E-03	6.4E-05	4.1E-03
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	3.3E-07	1.4E-05	3.7E-07	1.5E-05
	tert-Butylbenzene	--	--	--	--	9.8E-08	5.8E-06	1.1E-07	6.0E-06
	Tetrachloroethene	4.2E-05	1.5E-04	4.7E-05	2.4E-04	2.2E-02	2.0E+00	2.5E-02	2.1E+00
	Toluene	--	--	--	--	4.8E-08	1.6E-05	5.5E-08	1.6E-05
	trans-1,2-Dichloroethene	--	--	--	--	3.3E-05	7.2E-03	3.7E-05	7.2E-03
	Trichloroethene	4.5E-08	4.2E-06	5.2E-08	4.2E-06	3.3E-02	9.7E-03	3.7E-02	7.9E-02
	Vinyl Chloride	5.1E-09	2.0E-06	5.8E-09	2.0E-06	1.8E-05	7.3E-04	2.0E-05	7.7E-04
	Xylenes	--	--	--	--	1.2E-05	1.1E-03	1.3E-05	1.1E-03
	Cumulative Risk and Hazard =	**6E-04**	**2E-04**	**9E-04**	**2E-03**	**1E+01**	**2E+00**	**2E+01**	**4E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**3E-01**	**1E-05**	**5E-01**	**8E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**2E+00**	**3E-04**	**3E+00**	**4E+00**
Soil Gas-to-	**VOCs**								
Indoor Air	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	--	7.5E-02	--	7.5E-02
	1,1,2-Trichloroethane	--	3.5E-05	--	3.5E-05	--	4.3E-01	--	4.3E-01
	1,1-Dichloroethane	--	3.3E-04	--	3.3E-04	--	1.1E+00	--	1.1E+00
	1,1-Dichloroethene	--	--	--	--	--	1.2E-01	--	1.2E-01
	1,1-Dichloropropene	--	--	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	5.4E-06	--	5.4E-06	--	1.5E-01	--	1.5E-01
	1,3,5-Trimethylbenzene	--	--	--	--	--	5.7E-02	--	5.7E-02
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	--	--	--	--	--	--	--	--
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	--	--	--	--
	Acetone	--	--	--	--	--	--	--	--
	Benzene	--	9.0E-05	--	9.0E-05	--	1.5E-01	--	1.5E-01
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	3.2E-02	--	3.2E-02
	Carbon Disulfide	--	--	--	--	--	--	--	--
	Carbon Tetrachloride	--	1.5E-04	--	1.5E-04	--	2.5E-01	--	2.5E-01
	Chlorobenzene	--	--	--	--	--	--	--	--
	Chloroethane	--	--	--	--	--	--	--	--

Table E-18
Summary of Cancer Risks and Noncancer Hazards
Industrial/Commercial Worker Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil Gas-to-	Chloroform	--	5.1E-07	--	5.1E-07	--	8.8E-04	--	8.8E-04
Indoor Air	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	--	1.7E+01	--	1.7E+01
	Dibromochloromethane	--	3.8E-06	--	3.8E-06	--	5.6E-03	--	5.6E-03
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	--	--	--
	Ethylbenzene	--	--	--	--	--	2.7E-04	--	2.7E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	7.9E-03	--	7.9E-03
	Fluorene	--	--	--	--	--	--	--	--
	Freon-113	--	--	--	--	--	1.6E-04	--	1.6E-04
	Hexachlorobutadiene	--	--	--	--	--	--	--	--
	Isopropylbenzene	--	--	--	--	--	3.7E-04	--	3.7E-04
	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
	Methylene Chloride	--	1.4E-07	--	1.4E-07	--	9.5E-04	--	9.5E-04
	Naphthalene	--	--	--	--	--	--	--	--
	n-Butylbenzene	--	--	--	--	--	--	--	--
	n-Propylbenzene	--	--	--	--	--	--	--	--
	p-Isopropyltoluene	--	--	--	--	--	--	--	--
	Pyrene	--	--	--	--	--	--	--	--
	sec-Butylbenzene	--	--	--	--	--	--	--	--
	Styrene	--	--	--	--	--	1.8E-04	--	1.8E-04
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	--	7.8E-03	--	7.8E-03
	tert-Butylbenzene	--	--	--	--	--	--	--	--
	Tetrachloroethene	--	1.6E-03	--	1.6E-03	--	2.1E+01	--	2.1E+01
	Toluene	--	--	--	--	--	1.3E-02	--	1.3E-02
	trans-1,2-Dichloroethene	--	--	--	--	--	7.5E-02	--	7.5E-02
	Trichloroethene	--	3.7E-04	--	3.7E-04	--	8.7E-01	--	8.7E-01
	Vinyl Chloride	--	9.9E-03	--	9.9E-03	--	3.6E+00	--	3.6E+00
	Xylenes	--	--	--	--	--	8.0E-03	--	8.0E-03
	Cumulative Risk and Hazard =	**--**	**1E-02**	**--**	**1E-02**	**--**	**4E+01**	**--**	**4E+01**

Note: " -- " not applicable or not available

Table E-19
Summary of Cancer Risks and Noncancer Hazards
Landscaper Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	**Inorganics**								
Incidental ingestion	Antimony	--	--	--	--	1.4E-02	--	1.9E-03	1.6E-02
Dermal contact	Arsenic	--	--	--	--	--	--	--	--
Outdoor Inhalation	Barium	--	--	--	--	--	--	--	--
	Beryllium	--	--	--	--	--	--	--	--
	Cadmium	--	6.9E-10	--	6.9E-10	4.4E-03	2.3E-05	6.1E-05	4.5E-03
	Chromium	--	--	--	--	3.0E-04	--	4.2E-05	3.4E-04
	Chromium, Hexavalent	--	1.2E-07	--	1.2E-07	7.5E-03	1.2E-05	0.0E+00	7.5E-03
	Cobalt	--	--	--	--	3.2E-03	3.3E-04	4.5E-04	4.0E-03
	Copper	--	--	--	--	3.2E-03	--	4.5E-04	3.7E-03
	Cyanide (Amenable)	--	--	--	--	3.2E-05	--	4.5E-05	7.7E-05
	Cyanide (Total)	--	--	--	--	5.5E-05	--	7.6E-05	1.3E-04
	Mercury	--	--	--	--	5.0E-04	1.7E-07	6.8E-05	5.6E-04
	Molybdenum	--	--	--	--	1.3E-03	--	1.8E-04	1.5E-03
	Nickel	--	1.0E-09	--	1.0E-09	5.5E-03	2.3E-04	7.6E-04	6.5E-03
	Selenium	--	--	--	--	3.9E-03	1.0E-07	5.4E-04	4.4E-03
	Silver	--	--	--	--	3.0E-04	--	4.1E-05	3.4E-04
	Thallium	--	--	--	--	--	--	--	--
	Vanadium	--	--	--	--	--	--	--	--
	Zinc	--	--	--	--	1.5E-03	--	2.1E-04	1.7E-03
	PAHs								
	2-Methylnaphthalene	--	--	--	--	1.1E-03	3.4E-08	2.4E-03	3.5E-03
	Anthracene	--	--	--	--	2.2E-08	6.3E-13	4.5E-08	6.6E-08
	Benzo(a)anthracene	5.5E-08	5.3E-13	1.1E-07	1.7E-07	--	--	--	--
	Benzo(a)Pyrene	1.1E-06	1.1E-11	2.3E-06	3.4E-06	--	--	--	--
	Benzo(b)Fluoranthene	3.5E-07	3.3E-12	7.2E-07	1.1E-06	--	--	--	--
	Benzo(k)Fluoranthene	2.8E-08	2.6E-13	5.7E-08	8.5E-08	--	--	--	--
	Benzo(g,h,i)Perylene	--	--	--	--	1.9E-05	5.7E-10	4.0E-05	6.0E-05
	Chrysene	1.9E-08	1.8E-13	3.9E-08	5.8E-08	--	--	--	--
	Dibenz(a,h)anthracene	2.2E-07	2.1E-12	4.6E-07	6.8E-07	--	--	--	--
	Fluoranthene	--	--	--	--	3.2E-06	9.5E-11	6.7E-06	9.9E-06
	Indeno(1,2,3-cd)pyrene	1.7E-07	1.6E-12	3.4E-07	5.1E-07	--	--	--	--
	Phenanthrene	--	--	--	--	2.1E-05	6.2E-10	4.4E-05	6.5E-05
	PCBs								
	Aroclor 1016	4.8E-10	1.4E-14	1.0E-09	1.5E-09	2.8E-04	8.1E-09	5.7E-04	8.5E-04
	Aroclor 1242	1.8E-07	2.2E-12	3.8E-07	5.7E-07	5.2E-03	1.5E-07	1.1E-02	1.6E-02
	Aroclor 1248	3.3E-04	3.9E-09	6.9E-04	1.0E-03	9.4E+00	2.8E-04	1.9E+01	2.9E+01
	Aroclor 1254	2.0E-06	2.3E-11	4.1E-06	6.0E-06	5.5E-02	1.6E-06	1.1E-01	1.7E-01
	Aroclor 1260	1.7E-06	2.0E-11	3.6E-06	5.3E-06	4.8E-02	1.4E-06	1.0E-01	1.5E-01
	Aroclor 1262	3.8E-07	4.5E-12	7.9E-07	1.2E-06	1.1E-02	3.1E-07	2.2E-02	3.3E-02
	Perchlorate								
	Perchlorate	--	--	--	--	3.3E-03	--	0.0E+00	3.3E-03
	SVOCs								
	1,4-Dioxane	5.6E-10	1.6E-14	7.7E-10	1.3E-09	--	2.0E-12	--	2.0E-12
	4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--
	Aniline	--	--	--	--	--	--	--	--
	Benzoic Acid	--	--	--	--	--	--	--	--
	Bis(2-ethylhexyl)Phthalate	--	--	--	--	--	--	--	--
	Diethylphthalate	--	--	--	--	--	--	--	--

Table E-19
Summary of Cancer Risks and Noncancer Hazards
Landscaper Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Diisopropyl Ether	--	--	--	--	--	--	--	--
Incidental ingestion	Dimethyl Phthalate	--	--	--	--	--	--	--	--
Dermal contact	Di-n-butylphthalate	--	--	--	--	--	--	--	--
Outdoor Inhalation	Phenol	--	--	--	--	1.9E-07	3.0E-11	2.7E-07	4.6E-07
	TPH								
	TPH - aliphatic; C5-C8	--	--	--	--	2.7E-02	5.3E-07	5.6E-02	8.3E-02
	TPH - aliphatic; C9-C18	--	--	--	--	1.6E-01	1.6E-06	3.4E-01	5.0E-01
	TPH - aliphatic; C≥19	--	--	--	--	7.3E-03	1.4E-06	1.5E-02	2.3E-02
	TPH - aromatic; C5-C8	--	--	--	--	--	--	--	--
	TPH - aromatic; C9-C18	--	--	--	--	5.4E-01	7.9E-05	1.1E+00	1.7E+00
	TPH - aromatic; C≥19	--	--	--	--	4.9E-01	--	1.0E+00	1.5E+00
	VOCs								
	1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	--	--	--	--	1.2E-07	1.2E-05	1.6E-07	1.2E-05
	1,1,2-Trichloroethane	--	--	--	--	--	--	--	--
	1,1-Dichloroethane	3.9E-12	3.6E-10	5.4E-12	3.7E-10	1.9E-08	1.2E-06	2.7E-08	1.3E-06
	1,1-Dichloroethene	--	--	--	--	--	--	--	--
	1,1-Dichloropropene	8.4E-11	1.5E-15	1.2E-10	2.0E-10	8.6E-08	1.3E-11	1.2E-07	2.1E-07
	1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	--	--	--	--	2.1E-04	8.0E-02	2.9E-04	8.1E-02
	1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--
	1,2-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,2-Dichloroethane	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	--	--	--	--	8.8E-06	8.2E-03	1.2E-05	8.2E-03
	1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
	1,4-Dichlorobenzene	3.1E-11	4.6E-09	4.3E-11	4.7E-09	5.4E-07	1.4E-06	7.4E-07	2.7E-06
	2-Butanone (MEK)	--	--	--	--	--	--	--	--
	2-Chlorotoluene	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone	--	--	--	--	--	--	--	--
	Acenaphthene	--	--	--	--	2.2E-05	3.1E-05	4.5E-05	9.7E-05
	Acetone	--	--	--	--	4.4E-08	7.8E-07	6.1E-08	8.8E-07
	Benzene	4.6E-10	3.9E-08	6.4E-10	4.0E-08	3.2E-06	6.4E-05	4.5E-06	7.1E-05
	Bromochloromethane	--	--	--	--	--	--	--	--
	Bromodichloromethane	--	--	--	--	--	--	--	--
	Bromomethane	--	--	--	--	--	--	--	--
	Carbon Disulfide	--	--	--	--	5.6E-08	3.9E-06	7.8E-08	4.1E-06
	Carbon Tetrachloride	--	--	--	--	--	--	--	--
	Chlorobenzene	--	--	--	--	1.3E-07	3.6E-07	1.8E-07	6.7E-07
	Chloroethane	--	--	--	--	--	--	--	--
	Chloroform	2.9E-11	1.5E-09	4.0E-11	1.6E-09	2.6E-07	2.6E-06	3.6E-07	3.2E-06
	Chloromethane	--	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	--	--	--	--	6.2E-05	4.8E-03	8.6E-05	5.0E-03
	Dibromochloromethane	--	--	--	--	--	--	--	--
	Dibromomethane	--	--	--	--	--	--	--	--
	Diisopropyl ether	--	--	--	--	--	3.7E-07	--	3.7E-07
	Ethylbenzene	--	--	--	--	1.5E-05	1.2E-04	2.1E-05	1.6E-04
	Ethyl-Tert-Butyl Ether	--	--	--	--	--	--	--	--
	Fluorene	--	--	--	--	9.2E-05	6.6E-05	1.9E-04	3.5E-04
	Freon-113	--	--	--	--	--	--	--	--
	Hexachlorobutadiene	3.2E-10	9.3E-09	4.5E-10	1.0E-08	3.9E-05	1.1E-03	5.4E-05	1.2E-03

Table E-19
Summary of Cancer Risks and Noncancer Hazards
Landscaper Exposure Scenario
Site Wide Risk Assessment: DEFAULT
2701 North Harbor Drive

Exposure Pathway	Chemical	Cancer Risk				Noncancer Hazard Quotient			
		Ingestion	Inhalation	Dermal	Exposure Routes Total	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil:	Isopropylbenzene	--	--	--	--	1.1E-05	6.7E-04	1.5E-05	7.0E-04
Incidental ingestion	Methyl tertbutyl ether (MTBE)	--	--	--	--	--	--	--	--
Dermal contact	Methylene Chloride	3.0E-11	6.7E-10	4.2E-11	7.4E-10	1.0E-07	4.7E-06	1.4E-07	4.9E-06
Outdoor Inhalation	Naphthalene	5.0E-07	3.0E-06	1.0E-06	4.5E-06	5.8E-04	2.7E-02	1.2E-03	2.9E-02
	n-Butylbenzene	--	--	--	--	8.9E-05	2.0E-03	1.2E-04	2.2E-03
	n-Propylbenzene	--	--	--	--	6.0E-05	1.4E-03	8.3E-05	1.5E-03
	p-Isopropyltoluene	--	--	--	--	3.7E-05	7.0E-04	5.2E-05	7.9E-04
	Pyrene	--	--	--	--	7.5E-06	5.0E-07	1.0E-05	1.8E-05
	sec-Butylbenzene	--	--	--	--	3.7E-05	1.1E-03	5.1E-05	1.2E-03
	Styrene	--	--	--	--	--	--	--	--
	tert-Amyl methyl ether	--	--	--	--	--	--	--	--
	tert-Butyl alcohol	--	--	--	--	2.2E-07	4.0E-06	3.0E-07	4.5E-06
	tert-Butylbenzene	--	--	--	--	6.5E-08	1.6E-06	8.9E-08	1.8E-06
	Tetrachloroethene	2.7E-05	4.3E-05	3.8E-05	1.1E-04	1.4E-02	5.8E-01	2.0E-02	6.1E-01
	Toluene	--	--	--	--	3.2E-08	4.6E-06	4.4E-08	4.7E-06
	trans-1,2-Dichloroethene	--	--	--	--	2.2E-05	2.0E-03	3.0E-05	2.1E-03
	Trichloroethene	3.0E-08	1.2E-06	4.1E-08	1.3E-06	2.2E-02	2.8E-03	3.0E-02	5.4E-02
	Vinyl Chloride	3.4E-09	5.8E-07	4.6E-09	5.8E-07	1.2E-05	2.1E-04	1.6E-05	2.4E-04
	Xylenes	--	--	--	--	7.7E-06	3.2E-04	1.1E-05	3.4E-04
	Cumulative Risk and Hazard =	**4E-04**	**5E-05**	**7E-04**	**1E-03**	**1E+01**	**7E-01**	**2E+01**	**3E+01**
	Cumulative HI for $TPH_{aliphatic}$ =	**--**	**--**	**--**	**--**	**2E-01**	**4E-06**	**4E-01**	**6E-01**
	Cumulative HI for $TPH_{aromatic}$ =	**--**	**--**	**--**	**--**	**1E+00**	**8E-05**	**2E+00**	**3E+00**

Note: " -- " not applicable or not available

APPENDIX F

Johnson and Ettinger Vapor Risk Model

Appendix F
Soil Gas-to-Indoor Air Pathway
Industrial/Commercial Worker Scenario
2701 North Harbor Drive

DTSC / HERD
Version 2.0-mod1; 07/03

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
71556	300000			1,1,1-Trichloroethane
79005	24000			1,1,2-Trichloroethane
75343	2300000			1,1-Dichloroethane
75354	33000			1,1-Dichloroethene
107062	2700			1,2-Dichloroethane
108678	1500			1,3,5-Trimethylbenzene
71432	34000			Benzene
74839	670			Bromomethane
56235	40000			Carbon tetrachloride
67663	960			Chloroform
156592	2500000			cis-1,2-Dichloroethene
124481	3300			Chlorodibromomethane
100414	2200			Ethylbenzene
637923	10000			ETBE
76131	19000			1,1,2-Trichloro-1,2,2-trifluoroethane
98828	620			Isopropylbenzene
1634044	1400			MTBE
100425	680			Styrene
75650	32000			Tert-butyl alcohol
127184	3000000			Tetrachloroethene
108883	15000			Toluene
156605	22000			trans-1,2-Dichloroethene
79016	2100000			Trichloroethene
75014	1300000			Vinyl chloride
106423	21000			p-Xylene
95476	1600			o-Xylene

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (^oC)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of Ls (cell F24)					
15	91.5	18	91.5			LS		
	3' bgs							

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)
LS	1.62	0.390	0.076					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP (g/cm-s^2)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	4819	4819	366	0.1	1	116
		158'	158'	12'			

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	25	25	250

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
7.8E-02	8.8E-06	1.7E-02	25	7,136	347.24	545.00	133.40	0.0E+00	1.0E+00	1,1,1-Trichloroethane
7.8E-02	8.8E-06	9.1E-04	25	8,322	386.15	602.00	133.41	1.6E-05	1.4E-02	1,1,2-Trichloroethane
7.4E-02	1.1E-05	5.6E-03	25	6,895	330.55	523.00	98.96	1.6E-06	5.0E-01	1,1-Dichloroethane
9.0E-02	1.0E-05	2.6E-02	25	6,247	304.75	576.05	96.94	0.0E+00	7.0E-02	1,1-Dichloroethene
1.0E-01	9.9E-06	9.8E-04	25	7,643	356.65	561.00	98.96	2.1E-05	4.0E-01	1,2-Dichloroethane
6.0E-02	8.7E-06	5.9E-03	25	9,321	437.89	637.25	120.20	0.0E+00	6.0E-03	1,3,5-Trimethylbenzene
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	78.11	2.9E-05	6.0E-02	Benzene
7.3E-02	1.2E-05	6.2E-03	25	5,714	276.71	467.00	94.94	0.0E+00	5.0E-03	Bromomethane
7.8E-02	8.8E-06	3.0E-02	25	7,127	349.90	556.60	153.82	4.2E-05	4.0E-02	Carbon tetrachloride
1.0E-01	1.0E-05	3.7E-03	25	6,988	334.32	536.40	119.38	5.3E-06	3.0E-01	Chloroform
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	96.94	0.0E+00	3.5E-02	cis-1,2-Dichloroethene
2.0E-02	1.1E-05	7.8E-04	25	5,900	416.14	678.20	208.28	2.7E-05	7.0E-02	Chlorodibromomethane
7.5E-02	7.8E-06	7.9E-03	25	8,501	409.34	617.20	106.17	1.1E-06	2.0E+00	Ethylbenzene
6.9E-02	7.3E-06	2.4E-03	25	6,678	328.30	497.10	102.18	0.0E+00	3.0E-01	ETBE
7.8E-02	8.2E-06	4.8E-01	25	6,463	320.70	487.30	187.38	0.0E+00	3.0E+01	1,1,2-Trichloro-1,2,2-trifluoroethane
6.5E-02	7.1E-06	1.2E+00	25	10,335	425.56	631.10	120.19	0.0E+00	4.0E-01	Isopropylbenzene
1.0E-01	1.1E-05	6.2E-04	25	6,678	328.30	497.10	88.15	2.6E-07	8.0E+00	MTBE
7.1E-02	8.0E-06	2.7E-03	25	8,737	418.31	636.00	104.15	0.0E+00	9.0E-01	Styrene
8.5E-02	9.1E-06	6.7E-05	25	0	356.00	0.01	74.12	0.0E+00	3.0E-01	Tert-butyl alcohol
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02	Tetrachloroethene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	92.14	0.0E+00	3.0E-01	Toluene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	96.94	0.0E+00	7.0E-02	trans-1,2-Dichloroethene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.36	544.20	131.39	2.0E-06	6.0E-01	Trichloroethene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	62.50	7.8E-05	1.0E-01	Vinyl chloride
7.7E-02	8.4E-06	7.6E-03	25	8,525	411.52	616.20	106.17	0.0E+00	7.0E-01	p-Xylene
8.7E-02	1.0E-05	5.2E-03	25	8,661	417.60	630.30	106.17	0.0E+00	7.0E-01	o-Xylene

Appendix F
Soil Gas-to-Indoor Air Pathway
Industrial/Commercial Worker Scenario
2701 North Harbor Drive

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A 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)	
7.9E+08	76.5	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	19,276	3.0E+05	2.4E+06	1,1,1-Trichloroethane
										2.4E+04		1,1,2-Trichloroethane
										2.3E+06		1,1-Dichloroethane
										3.3E+04		1,1-Dichloroethene
										2.7E+03		1,2-Dichloroethane
										1.5E+03		1,3,5-Trimethylbenzene
										3.4E+04		Benzene
										6.7E+02		Bromomethane
										4.0E+04		Carbon tetrachloride
										9.6E+02		Chloroform
										2.5E+06		cis-1,2-Dichloroethene
										3.3E+03		Chlorodibromomethane
										2.2E+03		Ethylbenzene
										1.0E+04		ETBE
										1.9E+04		1,1,2-Trichloro-1,2,2-trifluoroethane
										6.2E+02		Isopropylbenzene
										1.4E+03		MTBE
										6.8E+02		Styrene
										3.2E+04		Tert-butyl alcohol
										3.0E+06		Tetrachloroethene
										1.5E+04		Toluene
										2.2E+04		trans-1,2-Dichloroethene
										2.1E+06		Trichloroethene
										1.3E+06		Vinyl chloride
										2.1E+04		p-Xylene
										1.6E+03		o-Xylene

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
2.4E+07	5.0E-03	15	7,798	1.3E-02	5.2E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	1,1,1-Trichloroethane
2.4E+07	5.0E-03	15	9,485	6.2E-04	2.6E-02	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	1,1,2-Trichloroethane
2.4E+07	5.0E-03	15	7,362	4.2E-03	1.7E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	1,1-Dichloroethane
2.4E+07	5.0E-03	15	6,339	2.0E-02	8.4E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	1,1-Dichloroethene
2.4E+07	5.0E-03	15	8,435	6.9E-04	2.9E-02	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	76.5	1,2-Dichloroethane
2.4E+07	5.0E-03	15	11,574	3.7E-03	1.5E-01	1.8E-04	8.4E-03	0.0E+00	0.0E+00	8.4E-03	76.5	1,3,5-Trimethylbenzene
2.4E+07	5.0E-03	15	8,040	4.0E-03	1.7E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Benzene
2.4E+07	5.0E-03	15	5,570	5.0E-03	2.1E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Bromomethane
2.4E+07	5.0E-03	15	7,778	2.2E-02	9.3E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	Carbon tetrachloride
2.4E+07	5.0E-03	15	7,471	2.7E-03	1.1E-01	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	76.5	Chloroform
2.4E+07	5.0E-03	15	7,653	3.0E-03	1.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	cis-1,2-Dichloroethene
2.4E+07	5.0E-03	15	6,731	5.9E-04	2.5E-02	1.8E-04	2.7E-03	0.0E+00	0.0E+00	2.7E-03	76.5	Chlorodibromomethane
2.4E+07	5.0E-03	15	10,063	5.2E-03	2.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Ethylbenzene
2.4E+07	5.0E-03	15	7,192	1.8E-03	7.6E-02	1.8E-04	9.7E-03	0.0E+00	0.0E+00	9.7E-03	76.5	ETBE
2.4E+07	5.0E-03	15	6,866	3.6E-01	1.5E+01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	1,1,2-Trichloro-1,2,2-trifluoroethane
2.4E+07	5.0E-03	15	12,532	7.0E-01	2.9E+01	1.8E-04	9.0E-03	0.0E+00	0.0E+00	9.0E-03	76.5	Isopropylbenzene

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)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
2.4E+07	5.0E-03	15	7,192	4.7E-04	1.9E-02	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	76.5	MTBE
2.4E+07	5.0E-03	15	10,362	1.8E-03	7.5E-02	1.8E-04	9.9E-03	0.0E+00	0.0E+00	9.9E-03	76.5	Styrene
2.4E+07	5.0E-03	15	0	6.7E-05	2.8E-03	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Tert-butyl alcohol
2.4E+07	5.0E-03	15	9,472	1.2E-02	5.2E-01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	76.5	Tetrachloroethene
2.4E+07	5.0E-03	15	9,067	4.6E-03	1.9E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	Toluene
2.4E+07	5.0E-03	15	7,051	7.0E-03	2.9E-01	1.8E-04	9.8E-03	0.0E+00	0.0E+00	9.8E-03	76.5	trans-1,2-Dichloroethene
2.4E+07	5.0E-03	15	8,458	7.3E-03	3.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	Trichloroethene
2.4E+07	5.0E-03	15	4,910	2.2E-02	9.2E-01	1.8E-04	1.5E-02	0.0E+00	0.0E+00	1.5E-02	76.5	Vinyl chloride
2.4E+07	5.0E-03	15	10,155	5.1E-03	2.1E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	76.5	p-Xylene
2.4E+07	5.0E-03	15	10,314	3.4E-03	1.4E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	76.5	o-Xylene

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., $C_{building}$ ($\mu g/m^3$)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
15	3.0E+05	6.10	1.9E+03	1.1E-02	1.2E+05	4.0E+06	5.2E-04	1.6E+02	**1.6E-01**	NA	1.0E+00	1,1,1-Trichloroethane
15	2.4E+04	6.10	1.9E+03	1.1E-02	1.2E+05	4.0E+06	5.2E-04	1.2E+01	**1.2E-02**	1.6E-05	1.4E-02	1,1,2-Trichloroethane
15	2.3E+06	6.10	1.9E+03	1.0E-02	1.2E+05	8.7E+06	5.1E-04	1.2E+03	**1.2E+00**	1.6E-06	5.0E-01	1,1-Dichloroethane
15	3.3E+04	6.10	1.9E+03	1.2E-02	1.2E+05	5.2E+05	5.5E-04	1.8E+01	**1.8E-02**	NA	7.0E-02	1,1-Dichloroethene
15	2.7E+03	6.10	1.9E+03	1.4E-02	1.2E+05	8.9E+04	5.7E-04	1.5E+00	**1.5E-03**	2.1E-05	4.0E-01	1,2-Dichloroethane
15	1.5E+03	6.10	1.9E+03	8.4E-03	1.2E+05	3.6E+08	4.7E-04	7.0E-01	**7.0E-04**	NA	6.0E-03	1,3,5-Trimethylbenzene
15	3.4E+04	6.10	1.9E+03	1.2E-02	1.2E+05	7.1E+05	5.4E-04	1.8E+01	**1.8E-02**	2.9E-05	6.0E-02	Benzene
15	6.7E+02	6.10	1.9E+03	1.0E-02	1.2E+05	1.2E+07	5.1E-04	3.4E-01	**3.4E-04**	NA	5.0E-03	Bromomethane
15	4.0E+04	6.10	1.9E+03	1.1E-02	1.2E+05	4.0E+06	5.2E-04	2.1E+01	**2.1E-02**	4.2E-05	4.0E-02	Carbon tetrachloride
15	9.6E+02	6.10	1.9E+03	1.4E-02	1.2E+05	8.9E+04	5.7E-04	5.5E-01	**5.5E-04**	5.3E-06	3.0E-01	Chloroform
15	2.5E+06	6.10	1.9E+03	1.0E-02	1.2E+05	9.9E+06	5.1E-04	1.3E+03	**1.3E+00**	NA	3.5E-02	cis-1,2-Dichloroethene
15	3.3E+03	6.10	1.9E+03	2.7E-03	1.2E+05	1.8E+26	2.5E-04	8.2E-01	**8.2E-04**	2.7E-05	7.0E-02	Chlorodibromomethane
15	2.2E+03	6.10	1.9E+03	1.0E-02	1.2E+05	7.3E+06	5.1E-04	1.1E+00	**1.1E-03**	1.1E-06	2.0E+00	Ethylbenzene
15	1.0E+04	6.10	1.9E+03	9.7E-03	1.2E+05	2.6E+07	5.0E-04	5.0E+00	**5.0E-03**	NA	3.0E-01	ETBE
15	1.9E+04	6.10	1.9E+03	1.1E-02	1.2E+05	4.0E+06	5.2E-04	9.8E+00	**9.8E-03**	NA	3.0E+01	1,1,2-Trichloro-1,2,2-trifluoroethane
15	6.2E+02	6.10	1.9E+03	9.0E-03	1.2E+05	8.3E+07	4.8E-04	3.0E-01	**3.0E-04**	NA	4.0E-01	Isopropylbenzene
15	1.4E+03	6.10	1.9E+03	1.4E-02	1.2E+05	1.1E+05	5.7E-04	8.0E-01	**8.0E-04**	2.6E-07	8.0E+00	MTBE
15	6.8E+02	6.10	1.9E+03	9.9E-03	1.2E+05	1.8E+07	5.0E-04	3.4E-01	**3.4E-04**	NA	9.0E-01	Styrene
15	3.2E+04	6.10	1.9E+03	1.2E-02	1.2E+05	1.1E+06	5.3E-04	1.7E+01	**1.7E-02**	NA	3.0E-01	Tert-butyl alcohol
15	3.0E+06	6.10	1.9E+03	1.0E-02	1.2E+05	1.4E+07	5.0E-04	1.5E+03	**1.5E+00**	5.9E-06	3.5E-02	Tetrachloroethene
15	1.5E+04	6.10	1.9E+03	1.2E-02	1.2E+05	8.3E+05	5.4E-04	8.1E+00	**8.1E-03**	NA	3.0E-01	Toluene
15	2.2E+04	6.10	1.9E+03	9.8E-03	1.2E+05	1.9E+07	5.0E-04	1.1E+01	**1.1E-02**	NA	7.0E-02	trans-1,2-Dichloroethene
15	2.1E+06	6.10	1.9E+03	1.1E-02	1.2E+05	3.3E+06	5.2E-04	1.1E+03	**1.1E+00**	2.0E-06	6.0E-01	Trichloroethene
15	1.3E+06	6.10	1.9E+03	1.5E-02	1.2E+05	7.2E+04	5.7E-04	7.5E+02	**7.5E-01**	7.8E-05	1.0E-01	Vinyl chloride
15	2.1E+04	6.10	1.9E+03	1.1E-02	1.2E+05	4.9E+06	5.2E-04	1.1E+01	**1.1E-02**	NA	7.0E-01	p-Xylene
15	1.6E+03	6.10	1.9E+03	1.2E-02	1.2E+05	8.3E+05	5.4E-04	8.6E-01	**8.6E-04**	NA	7.0E-01	o-Xylene

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

DTSC / HERD
Version 3.0-mod1; 07/03

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_w (µg/L)		Chemical
83329	13		Acenaphthene
91203	130		Naphthalene
129000	2.9		Pyrene
75343	0.57		1,1-Dichloroethane
75354	12		1,1-Dichloroethene
95636	0.5		1,2,4-Trimethylbenzene
95501	0.97		1,2-Dichlorobenzene
106467	13		1,4-Dichlorobenzene
108101	3.9		4-Methyl-2-pentanone
67641	4.7		Acetone
71432	49		Benzene
75150	1.1		Carbon disulfide
108907	7.3		Chlorobenzene
74873	0.26		Chloromethane
156592	17000		cis-1,2-Dichloroethene
100414	0.67		Ethylbenzene
98828	1.3		Isopropylbenzene
1634044	13		Methyl tertbutyl ether (MTBE)
104518	0.36		n-Butylbenzene
103651	0.72		n-Propylbenzene
99876	0.064		p-Isopropyltoluene
994058	0.4		tert-amyl-methyl ether (TAME)
75650	41		tert-butyl alcohol
127184	41000		Tetrachloroethene
108883	3.4		Toluene
156605	89		trans-1,2-Dichloroethene
79016	9600		Trichloroethene
75014	25000		Vinyl chloride
106423	1.5		Xylenes

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER		ENTER
Average soil/ groundwater temperature, T_S (°C)	Depth below grade to bottom of enclosed space floor, L_F (cm)	Depth below grade to water table, L_{WT} (cm)	Thickness of soil stratum A, h_A (cm)	Thickness of soil stratum B, (Enter value or 0) h_B (cm)	Thickness of soil stratum C, (Enter value or 0) h_C (cm)	Soil stratum directly above water table, (Enter A, B, or C)	SCS soil type directly above water table	Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of L_{WT} (cell G28)							
18	15	244	244			A	LS	LS		

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Stratum A SCS soil type	Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	Stratum A soil total porosity, n^A (unitless)	Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	Stratum B SCS soil type	Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	Stratum B soil total porosity, n^B (unitless)	Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	Stratum C SCS soil type	Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	Stratum C soil total porosity, n^C (unitless)	Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
Lookup Soil Parameters				Lookup Soil Parameters				Lookup Soil Parameters			
LS	1.62	0.390	0.076								

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Enclosed space floor thickness, L_{crack} (cm)	Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	Enclosed space floor length, L_B (cm)	Enclosed space floor width, W_B (cm)	Enclosed space height, H_B (cm)	Floor-wall seam crack width, w (cm)	Indoor air exchange rate, ER (1/h)	Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	4819	4819	366	0.1	1	116
		158'	158'	12'			

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, AT_C (yrs)	Averaging time for noncarcinogens, AT_{NC} (yrs)	Exposure duration, ED (yrs)	Exposure frequency, EF (days/yr)	Target risk for carcinogens, TR (unitless)	Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1
				Used to calculate risk-based groundwater concentration.	

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
4.2E-02	7.7E-06	1.5E-04	25	12,155	550.54	803.15	7.1E+03	3.6E+00	0.0E+00	2.1E-01	Acenaphthene
5.9E-02	7.5E-06	4.8E-04	25	10,373	491.14	748.40	2.0E+03	3.1E+01	0.0E+00	9.0E-03	Naphthalene
2.7E-02	7.2E-06	1.1E-05	25	14,370	667.95	936.00	1.1E+05	1.4E+00	0.0E+00	1.1E-01	Pyrene
7.4E-02	1.1E-05	5.6E-03	25	6,895	330.55	523.00	3.2E+01	5.1E+03	1.6E-06	5.0E-01	1,1-Dichloroethane
9.0E-02	1.0E-05	2.6E-02	25	6,247	304.75	576.05	5.9E+01	2.3E+03	0.0E+00	7.0E-02	1,1-Dichloroethene
6.1E-02	7.9E-06	6.1E-03	25	9,369	442.30	649.17	1.4E+03	5.7E+01	0.0E+00	6.0E-03	1,2,4-Trimethylbenzene
6.9E-02	7.9E-06	1.9E-03	25	9,700	453.57	705.00	6.2E+02	1.6E+02	0.0E+00	2.0E-01	1,2-Dichlorobenzene
6.9E-02	7.9E-06	2.4E-03	25	9,271	447.21	684.75	6.2E+02	7.9E+01	1.1E-05	8.0E-01	1,4-Dichlorobenzene
7.5E-02	7.8E-06	1.4E-04	25	8,243	389.50	571.00	9.1E+00	1.9E+04	0.0E+00	3.0E+00	4-Methyl-2-pentanone
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	5.8E-01	1.0E+06	0.0E+00	3.2E+00	Acetone
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	5.9E+01	1.8E+03	2.9E-05	6.0E-02	Benzene
1.0E-01	1.0E-05	3.0E-02	25	6,391	319.00	552.00	4.6E+01	1.2E+03	0.0E+00	8.0E-01	Carbon disulfide
7.3E-02	8.7E-06	3.7E-03	25	8,410	404.87	632.40	2.2E+02	4.7E+02	0.0E+00	1.0E+00	Chlorobenzene
1.3E-01	6.5E-06	8.8E-03	25	5,115	249.00	416.25	2.1E+00	5.3E+03	1.8E-06	9.0E-02	Chloromethane
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	3.6E+01	3.5E+03	0.0E+00	3.5E-02	cis-1,2-Dichloroethene
7.5E-02	7.8E-06	7.9E-03	25	8,501	409.34	617.20	3.6E+02	1.7E+02	1.1E-06	2.0E+00	Ethylbenzene
6.5E-02	7.1E-06	1.2E+00	25	10,335	425.56	631.10	4.9E+02	6.1E+01	0.0E+00	4.0E-01	Isopropylbenzene
1.0E-01	1.1E-05	6.2E-04	25	6,678	328.30	497.10	7.3E+00	5.1E+04	2.6E-07	8.0E+00	Methyl tertbutyl ether (MTBE)
5.7E-02	8.1E-06	1.3E-02	25	9,290	456.46	660.50	1.1E+03	2.0E+00	0.0E+00	1.4E-01	n-Butylbenzene
6.0E-02	7.8E-06	1.1E-02	25	9,123	432.20	630.00	5.6E+02	6.0E+01	0.0E+00	1.4E-01	n-Propylbenzene
6.5E-02	7.1E-06	1.2E+00	25	10,335	450.15	631.10	4.9E+02	6.1E+01	0.0E+00	4.0E-01	p-Isopropyltoluene
7.0E-02	7.4E-06	3.2E-03	25	6,678	358.00	497.10	4.2E+01	4.3E+03	0.0E+00	1.4E-01	tert-amyl-methyl ether (TAME)
8.5E-02	9.1E-06	6.7E-05	25	0	356.00	0.01	4.2E+00	2.4E+05	0.0E+00	3.0E-01	tert-butyl alcohol
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	1.6E+02	2.0E+02	5.9E-06	3.5E-02	Tetrachloroethene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	1.8E+02	5.3E+02	0.0E+00	3.0E-01	Toluene
7.1E-02	1.2E-05	9.4E-03	25	6,717	320.85	516.50	5.3E+01	6.3E+03	0.0E+00	7.0E-02	trans-1,2-Dichloroethene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.36	544.20	1.7E+02	1.5E+03	2.0E-06	6.0E-01	Trichloroethene
1.1E-01	1.2E-05	2.7E-02	25	5,250	259.25	432.00	1.9E+01	8.8E+03	7.8E-05	1.0E-01	Vinyl chloride
7.7E-02	8.4E-06	7.6E-03	25	8,525	411.52	616.20	3.9E+02	1.9E+02	0.0E+00	7.0E-01	Xylenes

Appendix F
Offsite Groundwater-to-Indoor Air Pathway
Offsite Industrial/Comemrcial Worker
2701 North Harbor Drive

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
7.9E+08	229	0.314	ERROR	ERROR	0.079	1.6E-08	0.957	1.6E-08	18.75	0.39	0.087	0.303	19,276

Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
2.4E+06	2.4E+07	5.0E-03	15	16,025	8.1E-05	3.4E-03	1.8E-04	5.8E-03	0.0E+00	0.0E+00	3.6E-04	2.6E-03	229
				12,830	2.9E-04	1.2E-02		8.2E-03	0.0E+00	0.0E+00	1.9E-04	1.9E-03	
				20,595	4.8E-06	2.0E-04		3.8E-03	0.0E+00	0.0E+00	4.5E-03	3.9E-03	
				7,362	4.2E-03	1.7E-01		1.0E-02	0.0E+00	0.0E+00	1.5E-04	1.6E-03	
				6,339	2.0E-02	8.4E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.9E-03	
				11,592	3.8E-03	1.6E-01		8.4E-03	0.0E+00	0.0E+00	1.3E-04	1.3E-03	
				11,607	1.2E-03	5.0E-02		9.6E-03	0.0E+00	0.0E+00	1.6E-04	1.6E-03	
				11,160	1.5E-03	6.4E-02		9.6E-03	0.0E+00	0.0E+00	1.5E-04	1.6E-03	
				9,754	9.3E-05	3.9E-03		1.0E-02	0.0E+00	0.0E+00	3.9E-04	3.4E-03	
				7,460	2.9E-05	1.2E-03		1.7E-02	0.0E+00	0.0E+00	1.4E-03	9.0E-03	
				8,040	4.0E-03	1.7E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.9E-03	
				6,620	2.3E-02	9.7E-01		1.4E-02	0.0E+00	0.0E+00	2.1E-04	2.2E-03	
				9,722	2.5E-03	1.0E-01		1.0E-02	0.0E+00	0.0E+00	1.5E-04	1.6E-03	
				4,652	7.3E-03	3.0E-01		1.7E-02	0.0E+00	0.0E+00	2.5E-04	2.6E-03	
				7,653	3.0E-03	1.2E-01		1.0E-02	0.0E+00	0.0E+00	1.6E-04	1.6E-03	
				10,063	5.2E-03	2.2E-01		1.0E-02	0.0E+00	0.0E+00	1.5E-04	1.6E-03	
				12,532	7.0E-01	2.9E+01		9.0E-03	0.0E+00	0.0E+00	1.3E-04	1.3E-03	
				7,192	4.7E-04	1.9E-02		1.4E-02	0.0E+00	0.0E+00	2.7E-04	2.7E-03	
				11,747	8.1E-03	3.4E-01		7.9E-03	0.0E+00	0.0E+00	1.1E-04	1.2E-03	
				11,264	6.7E-03	2.8E-01		8.3E-03	0.0E+00	0.0E+00	1.2E-04	1.3E-03	
				13,385	6.7E-01	2.8E+01		9.0E-03	0.0E+00	0.0E+00	1.3E-04	1.3E-03	
				7,843	2.3E-03	9.7E-02		9.7E-03	0.0E+00	0.0E+00	1.5E-04	1.5E-03	
				0	6.7E-05	2.8E-03		1.2E-02	0.0E+00	0.0E+00	5.6E-04	4.5E-03	
				9,472	1.2E-02	5.2E-01		1.0E-02	0.0E+00	0.0E+00	1.4E-04	1.5E-03	
				9,067	4.6E-03	1.9E-01		1.2E-02	0.0E+00	0.0E+00	1.8E-04	1.9E-03	
				7,051	7.0E-03	2.9E-01		9.8E-03	0.0E+00	0.0E+00	1.4E-04	1.5E-03	
				8,458	7.3E-03	3.1E-01		1.1E-02	0.0E+00	0.0E+00	1.6E-04	1.7E-03	
				4,910	2.2E-02	9.2E-01		1.5E-02	0.0E+00	0.0E+00	2.1E-04	2.2E-03	
				10,155	5.1E-03	2.1E-01		1.1E-02	0.0E+00	0.0E+00	1.6E-04	1.6E-03	

Appendix F
Offsite Groundwater-to-Indoor Air Pathway
Offsite Industrial/Comemrcial Worker
2701 North Harbor Drive

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., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	**Infinite source bldg. conc., $C_{building}$ (mg/m^3)**	
15	4.4E+01	6.10	1.9E+03	5.8E-03	1.2E+05	1.7E+12	1.0E-04	4.4E-03	NA	2.1E-01	**4.4E-06**	Acenaphthene
	1.6E+03			8.2E-03		5.3E+08	7.4E-05	1.1E-01	NA	9.0E-03	**1.1E-04**	Naphthalene
	5.8E-01			3.8E-03		5.1E+18	1.4E-04	8.1E-05	NA	1.1E-01	**8.1E-08**	Pyrene
	9.9E+01			1.0E-02		8.7E+06	6.4E-05	6.4E-03	1.6E-06	5.0E-01	**6.4E-06**	1,1-Dichloroethane
	1.0E+04			1.2E-02		5.2E+05	7.4E-05	7.5E-01	NA	7.0E-02	**7.5E-04**	1,1-Dichloroethene
	8.0E+01			8.4E-03		3.1E+08	5.3E-05	4.3E-03	NA	6.0E-03	**4.3E-06**	1,2,4-Trimethylbenzene
	4.8E+01			9.6E-03		2.9E+07	6.4E-05	3.1E-03	NA	2.0E-01	**3.1E-06**	1,2-Dichlorobenzene
	8.3E+02			9.6E-03		2.9E+07	6.3E-05	5.2E-02	1.1E-05	8.0E-01	**5.2E-05**	1,4-Dichlorobenzene
	1.5E+01			1.0E-02		7.3E+06	1.2E-04	1.9E-03	NA	3.0E+00	**1.9E-06**	4-Methyl-2-pentanone
	5.6E+00			1.7E-02		1.4E+04	2.6E-04	1.5E-03	NA	3.2E+00	**1.5E-06**	Acetone
	8.2E+03			1.2E-02		7.1E+05	7.5E-05	6.1E-01	2.9E-05	6.0E-02	**6.1E-04**	Benzene
	1.1E+03			1.4E-02		8.9E+04	8.4E-05	9.0E-02	NA	8.0E-01	**9.0E-05**	Carbon disulfide
	7.6E+02			1.0E-02		1.1E+07	6.4E-05	4.9E-02	NA	1.0E+00	**4.9E-05**	Chlorobenzene
	7.9E+01			1.7E-02		1.2E+04	1.0E-04	8.0E-03	1.8E-06	9.0E-02	**8.0E-06**	Chloromethane
	2.1E+06			1.0E-02		9.9E+06	6.5E-05	1.4E+02	NA	3.5E-02	**1.4E-01**	cis-1,2-Dichloroethene
	1.5E+02			1.0E-02		7.3E+06	6.4E-05	9.4E-03	1.1E-06	2.0E+00	**9.4E-06**	Ethylbenzene
	3.8E+04			9.0E-03		8.3E+07	5.5E-05	2.1E+00	NA	4.0E-01	**2.1E-03**	Isopropylbenzene
	2.5E+02			1.4E-02		1.1E+05	1.0E-04	2.6E-02	2.6E-07	8.0E+00	**2.6E-05**	Methyl tertbutyl ether (MTBE)
	1.2E+02			7.9E-03		1.1E+09	4.9E-05	6.1E-03	NA	1.4E-01	**6.1E-06**	n-Butylbenzene
	2.0E+02			8.3E-03		3.7E+08	5.2E-05	1.1E-02	NA	1.4E-01	**1.1E-05**	n-Propylbenzene
	1.8E+03			9.0E-03		8.3E+07	5.5E-05	9.8E-02	NA	4.0E-01	**9.8E-05**	p-Isopropyltoluene
	3.9E+01			9.7E-03		2.3E+07	6.2E-05	2.4E-03	NA	1.4E-01	**2.4E-06**	tert-amyl-methyl ether (TAME)
	1.2E+02			1.2E-02		1.1E+06	1.6E-04	1.8E-02	NA	3.0E-01	**1.8E-05**	tert-butyl alcohol
	2.1E+07			1.0E-02		1.4E+07	6.1E-05	1.3E+03	5.9E-06	3.5E-02	**1.3E+00**	Tetrachloroethene
	6.5E+02			1.2E-02		8.3E+05	7.3E-05	4.8E-02	NA	3.0E-01	**4.8E-05**	Toluene
	2.6E+04			9.8E-03		1.9E+07	6.1E-05	1.6E+00	NA	7.0E-02	**1.6E-03**	trans-1,2-Dichloroethene
	2.9E+06			1.1E-02		3.3E+06	6.7E-05	2.0E+02	2.0E-06	6.0E-01	**2.0E-01**	Trichloroethene
	2.3E+07			1.5E-02		7.2E+04	8.6E-05	2.0E+03	7.8E-05	1.0E-01	**2.0E+00**	Vinyl chloride
	3.2E+02			1.1E-02		4.9E+06	6.6E-05	2.1E-02	NA	7.0E-01	**2.1E-05**	Xylenes