Privileged and Confidential

Phase II Environmental Site Assessment
Fred C. Nelles Youth Correctional Facility
Whittier, California

DRAFT

Prepared for:

BROOKFIELD HOMES

3090 Bristol Street, Suite 200
Costa Mesa, California 92626

Prepared by:

CH2MHILL

6 Hutton Centre Drive
Suite 700
Santa Ana, California 92707

August 2010

Contents

Executive Summary **ES-1**
Acronyms and Abbreviations ..... **iii**

1.0 Introduction **1-1**
1.1 Project Background 1-1
1.2 Objectives and Scope of Work 1-1

2.0 Previous Investigations **2-1**

3.0 Site Description **3-1**
3.1 Location 3-1
3.2 Site and Vicinity Characteristics 3-1
3.3 Hydrology 3-1
3.4 Geology 3-1
3.5 Hydrogeology 3-1

4.0 Field Activities **4-1**
4.1 Mobilization 4-1
4.2 Soil Sampling 4-1
4.3 Soil Gas Sampling 4-2
4.4 Groundwater Sampling 4-2
4.5 Equipment Decontamination 4-2
4.6 Management of Investigation Derived Waste 4-3

5.0 Investigation Results **5-1**
5.1 Screening Criteria 5-1
5.2 Data Validation 5-2
5.3 Investigation Results 5-2

6.0 Findings and Conclusions **6-1**
6.1 Shallow Soil Sampling Investigation Results 6-1
6.2 Soil Gas Sampling Investigation Results 6-1
6.3 Groundwater Sampling Investigation Results 6-1

7.0 Limitations **7-1**

8.0 Signature Page **8-1**

9.0 References **9-1**

Appendixes

A Laboratory Analytical Data Reports

Tables

5-1 Analytical Results for Soil Sampling

5-2 Analytical Results for Soil Gas Sampling (2005)

5-3 Analytical Results for Soil Gas Sampling (2010)

5-4 Analytical Results for Groundwater Sampling

Figures

3-1 Vicinity Map

4-1 Site Sample Location Map (2005)

4-2 Site Sample Location Map (2010)

Acronyms and Abbreviations

AOPC	area of potential concern
ASTM	American Society for Testing and Materials
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylenes
CDPH	California Department of Public Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHHSL	California Human Health Screening Level
CPT	cone penetrometer
DHS	Los Angeles County Department of Health Services
DTSC	California Department of Toxic Substances Control
EDR	electronic database report
EPA	United States Environmental Protection Agency
ESA	environmental site assessment
ESL	environmental screening level
LUST	leaking underground storage tanks
MCL	maximum contaminant levels
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
mg/kg	milligrams per kilogram
MTBE	methyl tert butyl ether
ND	non-detect
PCE	tetrachloroethene
PID	photoionization detector
RL	reporting limit
REC	recognized environmental condition

RSL	Regional Screening Level
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
Site	Fred C. Nelles Youth Correctional Facility
SVOC	semivolatile organic compound
TMB	1,2,4-trimethylbenzene
TPH	total petroleum hydrocarbon
TPH-D	total petroleum hydrocarbon-diesel
TPH-G	total petroleum hydrocarbon-gasoline
TRPH	total recoverable petroleum hydrocarbon
UST	underground storage tank
VOC	volatile organic compound

Executive Summary

Brookfield Homes Southland, Inc. (Brookfield Homes) retained CH2M HILL to conduct a Phase II Environmental Site Assessment (ESA) for the former Fred C. Nelles Youth Correctional Facility (Site). The 75-acre Site, located in Whittier, California, is comprised of 62 buildings. The State of California has owned this Site since 1910. In 2005, Brookfield Homes was proposing to redevelop the Site and retained CH2M HILL to perform a Phase I ESA to determine the potential environmental liabilities at the Site. As a result of the Phase I ESA, Brookfield Homes retained CH2M HILL to perform a Phase II investigation in July 2005; however, the investigation report (this document) was not completed in 2005 due to the project being suspended by Brookfield. The Phase II investigation report is now being completed using the investigation data obtained in July 2005 and supplemented with investigation data collected during July and August of 2010. An update to the April 2005 Phase I ESA was also completed by CH2M HILL in June 2010. No additional recognized environmental conditions (RECs) or areas of potential concern (AOPCs) that were not already identified in the April Phase I ESA were observed.

Based on the Phase I ESA completed in April 2005, RECs (as defined by the Society for Testing and Materials [ASTM] E 1527-00 standard) were identified that warranted further investigation (CH2M HILL, 2005). At the request of Brookfield Homes, CH2M HILL conducted a Phase II investigation to further characterize specific RECs identified in the Phase I ESA that included the collection of soil samples, soil gas samples, and groundwater samples. These RECs, investigated as part of the Phase II investigation, include:

- Building 15, Gasoline Underground Storage Tanks (USTs) (Tanks 1 and 2)
- Building 15, Diesel UST (Tank 4G)
- Building 27, Boiler Room UST (Tank 3P)
- Building 15, Waste Oil Leaking Underground Storage Tank (LUST) (Tank 3G)
- Eastern Border (Adjacent Properties: Modine Manufacturing and Leggett & Platt)

The following sections provide a summary of the Phase II investigation results for the RECs.

Shallow Soil Sampling Investigation Results

In the Tank 1 and 2 area, volatile organic compounds (VOCs) were not detected in soil. In the Tank 4G area, detected VOCs did not exceed residential or industrial California Human Health Screening Levels (CHHSLs) and Regional Screening Levels (RSLs). In the Tank 3P area, detected VOCs did not exceed residential or industrial CHHSLs. However, the concentration of bromomethane (11 milligrams per kilogram [mg/kg]) exceeded the adjusted residential RSL of 7.3 mg/kg, but did not exceed the adjusted industrial RSL. Naphthalene (28 to 100 mg/kg) exceeded the adjusted residential RSL (3.6 mg/kg) and the industrial RSL (18 mg/kg). One soil sample contained total petroleum hydrocarbon-diesel (TPH-D) at a concentration of 40,000 mg/kg at SB-6, which is above the residential and industrial ESLs of 4,200 mg/kg for TPH-D.

Soil Gas Sampling Investigation Results

Several VOCs in soil gas exceeded the screening levels in each area investigated. The exceedances included benzene, ethylbenzene, tetrachloroethene (PCE) and 1,2,4-trimethylbenzene (TMB) in the Tank 1 and 2 area; ethylbenzene, TMB, and PCE in the Tank 3G area; benzene, ethylbenzene, PCE, and TMB in the Tank 4G area; ethylbenzene, PCE, TMB, and xylene in Tank 3P area; and PCE, bromodichloromethane, and chloroform in the Modine Manufacturing and Leggett and Platt areas.

Groundwater Sampling Investigation Results

Groundwater results for all sample locations were below the United States Environmental Protection Agency (EPA) maximum contamination levels (MCLs), California primary MCLs and residential tap water RSLs. No additional actions are recommended for groundwater in the areas investigated.

1.0 Introduction

1.1 Project Background

In April 2005, CH2M HILL conducted a Phase I ESA at the Site (CH2M HILL, 2005). The Phase I ESA identified several areas considered recognized environmental conditions (RECs) or areas of potential concerns (AOPCs). The following list summarizes the areas below:

- **AOPCs**
  - Building 15, Hydraulic Lift
  - Building 15, Drain Pit
  - Lead in Soil (34 Buildings)
  - Former Agricultural Areas
  - PCBs
  - Adjacent Property - Southern Pacific Railway Line
- **Historical RECs**
  - Tanks 1 and 2 (Gasoline USTs)
  - Tank 3G (Waste Oil Leaking Underground Storage Tank [LUST])
  - Tank 4G (Diesel UST)
  - Tank 3P (Diesel UST)
- **RECs**
  - Adjacent Property - Leggett & Platt
  - Adjacent Property - Modine Manufacturing Company (Modine)

At the direction of Brookfield Homes, the scope of the Phase II investigation was limited to only the Historical RECs and RECs listed above. A Phase II investigation of the AOPCs may be performed at a later date at the request of Brookfield Homes. This Phase II investigation includes subsurface soil, soil gas, and groundwater investigations at the five historical RECs on the property and two RECs at the adjacent properties listed above.

1.2 Objectives and Scope of Work

The primary objective of the Phase II investigation was to determine the extent of residual contamination at Tanks 1, 2, 3G, 3P, 4G; and the lateral extent of groundwater contamination from the adjacent properties of Leggett & Platt and Modine Manufacturing Company. To achieve this objective, CH2M HILL performed the following scope of work:

- Soil borings using direct-push technology at depths ranging from 10 to 60 feet below ground surface (bgs)
- Soil gas sampling using direct-push technology to depths of 5 and 15 feet bgs
- Groundwater sampling using a cone penetrometer (CPT) rig to depths of 75 feet bgs

- Laboratory analysis of soil samples for volatile organic carbons (VOCs), semi-volatile organic carbons (SVOCs), metals, total petroleum hydrocarbons-disle (TPH-D), total petroleum hydrocarbons-ggasoline (TPH-G)
- Laboratory analysis of soil gas samples for VOCs
- Laboratory analysis of groundwater samples for VOCs, SVOCs, metals, TPH-D, and TPH-G
- Preparation of a report summarizing the results of the Phase II investigation

2.0 Previous Investigations

This section summarizes the previous investigations conducted at the Site and adjacent properties.

Fred C. Nelles Property (Site):

- **Tanks 1 and 2**. These underground storage tanks (USTs) had a capacity of 2,000 gallons each and stored unleaded and regular gasoline, respectively. In January 1990, Geo-Tox conducted a leak detection investigation and a supplemental investigation in April 1991. Soil results indicated maximum total rrecoverable ppetroleum hydrocarbon (TRPH) concentrations of 2,100 milligrams per kilograms (mg/kg) at 10 feet below ground surface (bgs), 32 mg/kg bgs at 15 feet bgs, and non-detect (ND) at 20 feet bgs. The maximum depth of the investigation was 35 feet bgs. Groundwater was not encountered.

  During the supplemental investigation in April 1991, visual observations indicated no staining. Odors were not identified. Additionally, no evidence of leakage was observed from the USTs, piping, or dispenser island. According to the California Youth Authority Staff, these USTs were subsequently removed.

  Based on available information, the USTs were apparently closed by the Regional Water Quality Control Board (RWQCB) with Tanks 3G and 4G described below.

- **Tank 3G**. This 550-gallon diesel UST was located on the south side of Building 15. In April 1991, Calscience Engineering, Inc. removed the UST. During UST removal soil samples were collected at 2 and 4 feet below the UST invert. Two additional samples were collected at 2 and 4 feet below the dispenser. Soil samples were analyzed for TRPH and bbenzene, ttoluene, ethylbenzene, and xylenes (BTEX). Slight discoloration and odors were observed during excavation. Groundwater was not encountered during the tank removal or sample collection. Sample results indicated a maximum TRPH of 279 mg/kg at 2 feet bgs (ND at 4 feet bgs) and a maximum BTEX concentration of 25 micrograms per kilogram (µg/kg) at 2 feet bgs and 920 µg/kg at 4 feet bgs (Calscience, 1991).

  In March 1995, the Los Angeles Department of Public Works requested additional characterization to define the vertical extent of contamination from Tanks 3G and 4G (Tank 4G is described below). Based on this request, Leighton and Associates performed a Preliminary Environmental Site Assessment (ESA) in October 1995. The ESA included installation of six borings at depths ranging from 21 feet bgs to 61 feet bgs, with samples collected every 5 feet. Groundwater was not encountered during these borings. Results indicate that TRPH were only detected between 5 to 10 feet bgs. Based on the depth to groundwater being greater than 60 feet bgs, Leighton and Associates indicated a low potential for impacts to groundwater from the petroleum hydrocarbons associated with Tank 3G (Leighton and Associates, 1995).

  The UST received closure by the RWQCB on July 22, 1996.

- **Tank 4G**. This 550-gallon waste oil UST was located on the west side of Building 15. Upon removal in April 1991, it was discovered that the UST was leaking. This UST was identified in the Environmental Data Resources, Inc., (EDR) report as a LUST site. During UST removal, soil samples were collected at 2 and 4 feet below the UST invert. Soil samples were tested for TRPH and BTEX. Slight discoloration and odors were observed during excavation. Groundwater was not encountered during the tank removal or sample collection. Sample results indicated a maximum TRPH of 175 mg/kg at 4 feet bgs (ND at 2 feet bgs) and a maximum BTEX concentration of 20 µg/kg at 2 feet bgs (ND at 4 feet bgs) (Calscience, 1991). Information provided by the RWQCB indicated that the LUST impacted the soil only (RWQCB, 1998).

  The LUST received closure by the RWQCB on July 22, 1996.

- **Tank 3P.** The 30,000-gallon diesel UST (Tank 3P) that supplied the boilers is located on the east side of building 27 (Boiler Plant). This UST was also identified in reports as a "concrete diesel fuel bunker." This UST was reported to be a concrete cylinder 20 feet in diameter and 19 feet deep. In 1973, this UST was closed in place by filling with a cement slurry mix.

  Investigations of Tank 3P included soil and groundwater assessments by Ninyo and Moore in 2001 (Ninyo & Moore, 2001) and by Essentia in 2003 (Essentia, 2003a, 2003b, 2003c, 2003d, 2003e). The 2001 subsurface assessment summarized previous investigations performed by the Mark Group in 1998. Results from the 1998 investigation indicated that maximum soil concentrations for TPH-D were 24,700 mg/kg at 65 feet bgs. Oily globules were reported in the groundwater at Boring B-2. Boring B-3 indicated maximum concentrations of TPH-D at 21,400 mg/kg at 55 bgs. Grab groundwater samples indicated maximum concentrations of TPH-D in groundwater were reported at 32 mg/L.

  The subsequent investigation, as part of a 2003 quarterly groundwater sampling assessment, concluded that TPH-D in soil appears to be delineated vertically and horizontally to the south, southeast, and east of the Tank 3P, but is not delineated to the north and west due to presence of buildings (Essentia, 2003a).

  Quarterly groundwater monitoring events performed in February, June, August, and December of 2003 indicated that TPH-D, TPH-G, BTEX, oxygenates, 1,2-dichloroethane, and ethylene dibromide were not detected, with the exception of one detection of methyl tert butyl ether (MTBE) (27 µg/L at MW-2) during the first quarter of groundwater sampling. MTBE was not detected in any of the subsequent quarterly groundwater sampling events. Toluene was detected at 2.3 µg/L during the third quarter sampling event.

  Tank 3P was closed by RWQCB on March 10, 2004.

Adjacent Properties:

Based on the Phase I ESA performed at the Site (CH2M HILL, 2005), two properties bordering the Site on the east were identified as environmentally significant because of documented groundwater contamination. The EDR report identified the Leggett & Platt property as having an onsite LUST undergoing post-remediation monitoring. The EDR report also identified the Modine property as having documented groundwater

contamination associated with manufacturing of automobile radiators. Further information on the previous investigations performed at the Modine Manufacturing Company was obtained from the Los Angeles County Department of Health Services as described below.

- **Modine Manufacturing Company**. The Modine property is located at 12252 E. Whittier Boulevard and east of the Site, and on the east side of the former Southern Pacific Railway right-of-way (ROW). The 6.4-acre plant operated from 1950 to 1987 manufacturing automobile radiators. The fabrication process at Modine involved the cutting of metals, frame soldering, and paint stripping. The processes also included dipping the radiators in fluxes, caustic cleaners, and brighteners.

  The plant was decommissioned between 1987 and 1990. The Modine property has been developed into an industrial complex. Prior to Modine owning the property in 1949, the Modine property was owned by Reardon Tanks for manufacturing of boiler tanks. Prior to Reardon Tanks owning the property, it was used for agricultural purposes.

  As part of the closure process for the Modine property, soil and groundwater investigations were initiated at the site beginning in 1989. In May 1991, the Los Angeles County Department of Health Services (DHS) indicated the soil cleanup was completed (Earth Tech, 1989a, 1989b).

  Based on the groundwater contamination at the Modine property, the lead agency was transferred from DHS to the RWQCB. Since the initial groundwater monitoring that occurred, PCE and TCE have been detected in the groundwater. During 1992, investigations included quarterly groundwater monitoring, installation of an offsite downgradient monitoring well (located in the Southern Pacific Railway ROW), and the installation of vapor extraction wells.

  Information provided in the *Quarterly Groundwater Monitoring Reports* (BBL, 1992 through 1995), and the *Remedial Action Plan Groundwater Treatment System, Former Modine Manufacturing Facility* (BBL, 1993), indicated that the maximum concentration of PCE was 200 micrograms per liter (µg/L), and the maximum concentration of TCE was 100 µg/L. The concentrations exceed the California maximum contaminant levels (MCLs) of 5 µg/L for PCE and TCE).

  Results from the soil and groundwater investigations indicated that the TCE identified in the groundwater is not from Modine, but rather from an "off-site" source upgradient (northeast) of the Modine property. The RWQCB agreed with this conclusion.

  The *October 1995 Quarterly Groundwater Report* suggested that the PCE concentrations are decreasing and that TCE continues to migrate onto the former Modine property from an upgradient source. However, the bulk of the PCE-impacted groundwater has been remediated. Concentrations on the downgradient side of the plume declined to below the MCL. The Modine property discontinued the groundwater treatment based on these conditions (BBL, 1995).

- **Leggett & Platt, Inc.** The EDR report identified a gasoline LUST at the Leggett & Platt property that impacted the groundwater. According to the EDR report, the LUST is undergoing post-remedial action monitoring. No additional information on the Leggett & Platt property was available from the California Department of Toxic Substances Control (DTSC) or RWQCB.

3.0 Site Description

3.1 Location

The Site is located south of the intersection of Whittier Boulevard and Sorensen Avenue in Whittier, California (see Figure 3-1). Sixty-two (62) buildings are located on the 75-acre Site, which is surrounded by security fencing. Land uses surrounding the Site include residential, commercial, and industrial.

3.2 Site and Vicinity Characteristics

The buildings at the Site are currently unoccupied. The buildings at the Site provided living quarters, dining room, church, library, infirmary, gymnasium, swimming pool, auditorium, and schooling facilities. Other structures at the Site included administration buildings, visiting hall, staff housing, security buildings, maintenance garage, carpenter and paint shop, boiler plant, emergency generator, and warehouse. Heating at the Site was provided by a boiler plant via a network of underground pipes. A security fence and perimeter road surrounds the Site.

3.3 Hydrology

The Site is located within the Los Angeles Coastal Plain on the La Habra Peidmont Slope at the base of the Puente Hills. Surface waters near the Site include the southward flowing San Gabriel River located approximately 1.5 miles west of the Site.

3.4 Geology

Geological information for the Site was obtained from a soil investigation performed by Western Laboratories in January 1988. The investigation was necessitated by structural damage that occurred to several buildings as a result of the 5.9 magnitude Whittier Narrows earthquake that occurred in October 1987. Exploratory test borings were advanced around Building 1 (Personnel Residence) to characterize the subsurface conditions. Building 1 was located on the northern portion of the Site near the corner of Sorensen Avenue and Whittier Boulevard (Western Laboratories, 1988). This historic building, constructed in 1915, has since been demolished.

The 1988 investigation identified fill soils that were approximately 2.0 to 6.5 feet bgs. The fill soil was classified as sand, fine to medium, and slightly clayey. Beneath the fill soil, alluvial soils were encountered to depths of 25 feet bgs (maximum depth of soil borings). The alluvial soil was classified as sandy clay (Western Laboratories, 1988).

Additional information was obtained from a geotechnical investigation performed in January 2005, by Lawson and Associates, Geotechnical Consulting, Inc. The limited subsurface evaluation consisted of 12 test pits excavated with a backhoe to depths of 11 feet

bgs; seven cone penetrometer Test (CPT) soundings; and 14 hollow-stem auger borings to depths of approximately 30 to 50 feet bgs. Results indicated that the Site is underlain by relatively young (Holocene-age) alluvial sediments consisting predominantly clay with minor amounts of silt and clay (Lawson and Associates, Geotechnical Consulting, Inc., 2005).

3.5 Hydrogeology

Historic high groundwater levels near the Site have been reported at depths of approximately 30 to 50 feet bgs (shallowest along the southwestern portion of the Site). However, groundwater was not encountered during the 1988 and 2005 investigations.

Results from a groundwater investigation conducted at the Modine property, adjacent to the Site on the east, determined that groundwater was present at depths from 77 to 80 feet bgs based on monitoring well observations. Additionally, groundwater beneath the Modine property was observed to flow to the south-southwest (Earth Tech, 1989a, 1989b). It is likely that the groundwater flow direction at the Site closely resembles the hydrogeology at the Modine property.

4.0 Field Activities

This section describes the field activities conducted at the Site. CH2M HILL conducted the field activities in accordance with a project-specific health and safety plan and sampling work plan dated July 2005 and revised work plans and health and safety plans dated July 2010.

4.1 Mobilization

Mobilization activities included moving field crews, subcontractors, and associated equipment and supplies to the Site. Drilling permits were obtained from the Los Angeles Department of Environmental Health for all soil borings to be advanced for the collection of groundwater samples. Before start of field activities each day, a site health and safety briefing was conducted with all field personnel.

An underground utility survey was conducted in preparation for drilling at the soil, soil gas, and groundwater sampling locations. Since Underground Service Alert (USA) generally marks underground utilities only on public property and ROWs, a licensed geophysical company was subcontracted to identify the presence or absence of subsurface utilities and structures in the proposed work areas. This survey was performed using instruments such as ground-penetrating radar, magnetic gradiometer, line tracer, and electromagnetic induction equipment. In addition to performing the utility survey, the borings were hand augered to a depth of 5 feet bgs prior to advancement of drilling equipment.

4.2 Soil Sampling

Soil samples were collected to assess the presence of subsurface impacts from TPH, VOCs, and metals. Soil borings were advanced with a direct-push drilling rig that drove a sampler through undisturbed soil to the desired sampling depth. Continuous soil cores were collected in clear, unused, acetate liners placed in the sampler. Once the desired borehole depth was reached, the acetate liner was retrieved from the sampler. The soil core was visually inspected for evidence of staining. Representative soil samples were obtained by cutting open the acetate liners in order to collect soil from desired depths and to perform vapor screening with a photoionization detector (PID).

Soil samples for laboratory analysis were collected at depths of approximately 10, 20, and 30 feet bgs. Soil samples near Tank 3 were collected at depths to 60 feet bgs. Soil locations were adjusted due to the presence of subsurface utilities, and sample depths were adjusted if the sampling team observed distinct odors or stained soil. Because the depth to groundwater is approximately 77 feet bgs, groundwater was not encountered during borehole advancement.

En Core® Samplers were used for collecting soil samples that were analyzed for VOCs and TPH-G. Soil samples analyzed for metals and TPH-D were collected in 8-ounce glass jars.

4.3 Soil Gas Sampling

Soil gas sampling and analysis was conducted per applicable regulatory guidelines (DTSC and RWQCB, 2003). Soil vapor samples were collected in 2005 from installed soil gas probes and were then analyzed onsite with a State-certified mobile laboratory operated by Environmental Support Technologies, Inc., Irvine, California. Two rounds of supplemental soil gas samples were collected in July and August 2010 from installed vapor probes and were analyzed onsite with a State-certified mobile laboratory operated by Environmental Support Technologies, Inc., Irvine, California and Jones Environmental Inc, Fullerton, California. Soil vapor samples were collected in decontaminated glass syringes and were analyzed for VOCs by EPA Method 8260B. In order to confirm the mobile laboratory sampling results for analytes with low screening criteria (see Section 5.1), soil gas samples from select vapor probes were also collected in 6-liter Summa canisters for the analysis of VOCs by EPA Method TO-15. The Summa canisters were shipped under chain-of-custody procedures to a fixed-based laboratory, Severn Trent Laboratories, Inc., Simi Valley, California.

4.4 Groundwater Sampling

A 25-ton CPT rig was used to drive steel rods and collect first encountered groundwater slightly beneath the piezometric surface, which was approximately 77 to 80 feet bgs. Once the drive rod was driven to depth, the drive rod was retracted approximately 4 feet, leaving exposed screen and a disposable steel tip. A stainless steel bailer was then used to collect a groundwater sample. After a groundwater sample was collected, the drive rod was removed from the boring, and the borehole was abandoned with bentonite grout. The groundwater samples were analyzed for VOCs using EPA Method 8260B.

4.5 Equipment Decontamination

Downhole equipment used for groundwater sampling was steam cleaned prior to and after use. Downhole equipment used for soil sampling and soil probe installation were decontaminated prior to use at each sampling location. Downhole equipment included drive samplers, drive rods, trowels, and other miscellaneous field equipment. The following decontamination procedures were followed when cleaning downhole equipment:

- Wash with tap water, using a brush if necessary
- Wash with Alconox ™, or a phosphate-free detergent, and tap water solution, using a brush if necessary
- Rinse with tap water
- Rinse with deionized water
- Air dry

4.6 Management of Investigation Derived Waste

Waste generated during drilling included general refuse, soil cuttings, and decontamination water. General refuse (paper, plastic, latex gloves, etc.) was disposed onsite in trash receptacles. Waste soil cuttings and decontamination water was containerized separately in 55-gallon steel drums approved by the California Department of Transportation. The drums were labeled and left at an onsite staging location. Upon receipt of the analytical results for soil samples, the drums were appropriately disposed by Brookfield Homes.

5.0 Investigation Results

This section provides the results of the soil sample, soil gas, and groundwater analyses for the Phase II investigation. The results are summarized in Tables 5-1, 5-2, 5-3, and 5-4. Copies of the laboratory analytical reports are provided in Appendix A.

5.1 Screening Criteria

In order to facilitate a preliminary understanding of the significance of the chemicals detected at the Site, the soil samples, soil gas samples, and groundwater samples were compared to the following screening criteria:

- **Soil Samples**. Concentrations of constituents (metals, VOCs, and SVOCs) detected in the soil samples were compared to the residential and industrial CHHSLs [CalEPA, 2005] and RSLs published by the United States Environmental Protection Agency (EPA) Region 9 (EPA, 2010). It should be noted that soils naturally contain metals; so detected values are normal and expected. Furthermore, in the western United States, background concentrations of several metals (e.g. arsenic) often exceed RSLs as reported by the Kearney Foundation Special Report on Background Concentrations of Trace and Major Elements in California Soils (Bradford et al., 1996).

  Concentrations of TPH and unknown hydrocarbons in soil samples were compared with environmental screening level (ESL) of 4,200 mg/kg for TPH-D in residential and industrial deep soil (> 3 meter bgs) (CRWQCB, 2007).

- **Soil Gas Samples**. Concentrations of constituents (VOCs) detected in soil gas samples were compared to the CHHSLs (CalEPA, 2005). Soil gas concentrations were also compared to adjusted residential and industrial indoor air RSLs. The indoor air RSLs (EPA, 2010) were adjusted using shallow soil gas-to-indoor air attenuation factor of 0.1. However, it should be noted that a number of VOCs that are nondetect have a reporting limit (RL) greater than screening levels. For EPA Method 8260, the benzene RL is above residential CHHSL, adjusted residential and industrial RSLs. In addition, RLs for ethylbenzene, PCE, and 1,2,4-trimethylbenzene (TMB) are above adjusted residential and industrial RSLs. For EPA TO-15 Method, bromodichloromethane and chloroform RLs are above adjusted residential RSLs.

- **Groundwater Samples**. Concentrations of constituents (VOCs, SVOCs, TPH-D, and TPH-G) detected in groundwater samples were compared to the EPA MCLs, California Department of Public Health (CDPH) primary MCLs, and EPA residential tap water RSLs (EPA, 2010).

5.2 Data Validation

Laboratory analytical results from the soil investigation were validated by the CH2M HILL Project Chemist in accordance with EPA Functional Guidelines (EPA, 2002). Quality control (QC) parameters were reviewed for 100 percent of the data, while raw data checks were carried out for 10 percent of the data. Data validation entails a review of chromatograms

produced by the laboratory, and review of QC data (laboratory control standards and calibration checks). Data validation indicated concentrations of some constituents were outside validation criteria. In these instances, detected concentrations were qualified as estimated and flagged with a "J' qualifier.

5.3 Investigation Results

The results of the laboratory analyses and evaluation using the screening criteria are presented below.

5.3.1 Tanks 1 and 2

Because of their proximity to each other, Tanks 1 and 2 were investigated as one site. Tanks 1 and 2 contained unleaded gasoline and regular gasoline, respectively. The investigation included collection of soil, soil gas, and groundwater samples.

5.3.1.1 Soil Samples

In 2005, six soil samples were collected from SB-1 and SB-2 at depths of 10, 20, and 30 feet bgs. The soil samples were collected and analyzed for VOCs by EPA Method 8260B. The soil samples did not contain VOC concentrations above RLs. No additional soil samples were collected in July or August 2010.

5.3.1.2 Soil Gas Samples

In 2005, four soil gas samples were collected from SG-1 and SG-2 at depths of 5 and 15 feet bgs. The soil gas samples were analyzed for VOCs by an onsite mobile laboratory using EPA Method 8260B. The analytical results indicated tetrachloroethene (PCE) ranged from 220 micrograms per cubic meter ($\mu g/m^3$) to 340 $\mu g/m^3$. Soil gas at SG-1 (5 feet bgs) was additionally analyzed by EPA Method TO-15 using Summa canisters and sent to a fixed laboratory. The analytical results using the EPA TO-15 Method was 440 $\mu g/m^3$. These PCE soil gas concentrations exceed the residential CHHSL of 180 $\mu g/m^3$, but did not exceed the industrial CHHSL of 603 $\mu g/m^3$. PCE soil gas concentrations also exceeded adjusted residential and industrial indoor air RSLs (4.1 $\mu g/m^3$ and 21 $\mu g/m^3$). As analyzed by the onsite mobile laboratory, 1,2,4-TMB was detected in SG-2-5(640 $\mu g/m^3$) and SG-2-15 (1,600 $\mu g/m^3$). These TMB soil gas concentrations exceed the adjusted residential and industrial indoor air RSLs (73 $\mu g/m^3$ and 310 $\mu g/m^3$). The analytical results for the sample collected from SG-1(5 feet bgs) using the EPATO-15 Method were ND. However, the reported ND results for TMB in samples from SG-1 and SG-3 (500 $\mu g/m^3$) are above the RSLs. A summary of the soil gas analytical results for SG-1 and SG-2 is provided in Table 5-2.

During the supplemental soil gas investigation completed in July and August 2010, 24 step-out samples were collected from SG-15, SG-16, SG-18, SG-19, SG-24, SG-25, and SG-31 at sample depths of 5 and 15 ft bgs (see Figure 4-2). Samples were also collected from SG-18 at 30 ft bgs. The soil gas samples were analyzed for VOCs by an onsite mobile laboratory using Method 8260B. The soil gas samples SG-18B-30 and SG-25-5 were also analyzed by TO-15 method. The analytical results by 8260B method indicated PCE concentrations in samples collected from SG-25, SG-24, and SG-31 ranged from 9 $\mu g/m^3$ to 20 $\mu g/m^3$. These PCE soil gas concentrations exceeded the adjusted residential indoor air RSL (4.1 $\mu g/m^3$). The

analytical results for the sample collected from SG-25 at 5 feet bgs using the TO-15 method was 41 µg/m^3, which exceeded the adjusted residential and industrial indoor air RSLs (4.1 µg/m^3 and 21 µg/m^3). In addition, the reported ND results for PCE in samples from SG-15, SG-16, SG-18 and SG-19 (8 µg/m^3 and 14 µg/m^3) were above the adjusted residential indoor air RSL.

1,2,4-TMB was detected in soil gas at concentrations of 135 µg/m^3 (SG-16-5 and SG-16-15), 115 µg/m^3 (SG-18-5), 133 µg/m^3 (SG-18-15), and 122 µg/m^3 (SG-19-5) using 8260B method. These concentrations were above adjusted residential indoor air RSL (73 µg/m^3). In addition, the reported ND results for 1,2,4-TMB in samples from SG-24, SG-25 and SG-31 (500 µg/m^3) are above the RSLs. The analytical results for 1,2,4-TMB using TO-15 method in samples SG-18B-30 and SG-25-5 were below RSLs.

Ethylbenzene was detected in soil gas at concentrations of 90 µg/m^3 (SG-16-5), 85.8 µg/m^3 (SG-16-15), and 58.3 µg/m^3 (SG-19-5) using 8260B method. These concentrations were above the adjusted residential and industrial indoor air RSLs (9.7 µg/m^3 and 49 µg/m^3). In addition, ethylbenzene was detected at concentrations 22.4 µg/m^3 (SG-18-5), 32.6 µg/m^3 (SG-18-30), 20 µg/m^3 (SG-25-5), and 27 µg/m^3 (SG-25-15) which were above the adjusted residential indoor air RSL (9.7 µg/m^3). The analytical results for soil gas samples SG-18B-30 and SG-25-5 using TO-15 method were 55 µg/m^3 and 85 µg/m^3 respectively. These concentrations were above the adjusted residential and industrial indoor air RSLs.

Benzene was detected at concentrations 44.4 µg/m^3 (SG-16-5), 68.2 µg/m^3 (SG-16-15), 56.8 µg/m^3 (SG-18-30), and 60 µg/m^3 (SG-25-5) using 8260B method and 170 µg/m^3 (SG-18B-30) using TO-15 method. These concentrations of benzene were above residential CHHSL (36.2 µg/m^3) but below industrial CHHSL (122 µg/m^3). These concentrations and concentration of 35 µg/m^3 in a sample SG-25-5 were also above the adjusted residential and industrial indoor air RSLs (3.1 µg/m^3 and 16 µg/m^3). In addition, the reported non detect for benzene in other samples (8 µg/m^3 and 36 µg/m^3 by 8260 B and 9.6 µg/m^3 by TO-15) are above RSLs.

Chloroform was detected in a sample collected from SG-25 at depth of 5 ft bgs at concentration of 20 µg/m^3 (8260 method) and 17 µg/m^3 (TO-15 method). These concentrations were above the adjusted residential and industrial indoor air RSLs (1.1 µg/m^3 and 5.3 µg/m^3). In addition, the reported ND for chloroform in other samples (8 µg/m^3 and 200 µg/m^3 by 8260B and 9.8 µg/m^3 by TO-15) are above RSLs. A summary of the soil gas analytical results for SG-15, SG-16, SG-18, SG-19, SG-24, SG-25, and SG-31 is provided in Table 5-3.

5.3.1.3 Groundwater Samples

In 2005, one groundwater sample (GW-1) was collected to southwest of the former locations of Tanks 1 and 2 at a depth of 74 feet bgs. The sample was analyzed for TPH-G, TPH-D, and VOCs. TPH-G and VOCs were not detected above the RL in the groundwater sample collected. A summary of the groundwater analytical results for GW-1 is provided in Table 5-3. No additional groundwater samples were collected in July or August 2010.

5.3.2 Tank 3G

The investigation at Tank 3G only included soil gas samples. In 2005, to soil gas samples were collected from SG-3 at depths of 5 and 15 feet bgs and were analyzed for VOCs by an onsite mobile laboratory using EPA Method 8260B. The analytical results indicated concentrations of PCE at 200 $\mu g/m^3$ at 5 feet bgs and 190 $\mu g/m^3$ at 15 feet bgs. The soil gas concentrations exceed the residential CHHSL of 180 $\mu g/m^3$ but did not exceed the industrial CHHSL of 603 $\mu g/m^3$. The soil gas concentrations also exceeded adjusted residential and industrial air RSLs (4.1 $\mu g/m^3$ and 21 $\mu g/m^3$). A summary of the soil gas analytical results for SG-3 is provided in Table 5-2.

During the supplemental soil gas investigation completed in July and August 2010, four step-out samples were collected from SG-20, and SG-28 at sample depths of 5 and 15 ft bgs in 2010 (see Figure 4-2). The soil gas samples were analyzed for VOCs by an onsite mobile laboratory using Method 8260B. PCE was not detected at these two locations however RLs for PCE (8 $\mu g/m^3$ and 100 $\mu g/m^3$) were above adjusted residential and/or industrial indoor air RSLs (4.1 $\mu g/m^3$ and 21 $\mu g/m^3$). 1,2,4-TMB was detected in samples collected from SG-10 at depth of 5 and 15 ft bgs at concentrations (119 $\mu g/m^3$, and 123 $\mu g/m^3$) above the adjusted residential indoor air RSL (73 $\mu g/m^3$) but below the adjusted industrial indoor air RSL (310 $\mu g/m^3$). In addition, ethylbenzene was detected in a sample collected from SG-20 at depth of 15 ft bgs at a concentration (16.9 $\mu g/m^3$) above the adjusted residential indoor air RSL (9.7 $\mu g/m^3$) but below the adjusted industrial indoor air RSL (49 $\mu g/m^3$). A summary of the soil gas analytical results for SG-20 and SG-28 is provided in Table 5-3.

5.3.3 Tank 3P

The investigation at Tank 3P included soil samples, soil gas samples, and groundwater samples.

5.3.3.1 Soil Samples

In 2005, seven soil samples were collected from SB-5, SB-6, and SB-7 at depths of 10, 20, 30, and 40 feet bgs. The soil samples were analyzed for VOCs, TPH-D, and TPH-G. Two samples contained VOC concentrations above RLs. VOCs did not exceed residential and industrial CHHSLs. However, two detected VOCs, bromomethane (11 mg/kg) and naphthalene (28 to 100 mg/kg), exceeded adjusted residential RSLs of 7.3 mg/kg and 3.6 mg/kg, respectively. Naphthalene also exceeded industrial RSL (18 mg/kg).

One sample contained TPH-D concentrations above RLs. TPH-D was detected at concentration of 40,000 mg/kg at SB-6, which is above the residential and industrial ESL of 4200 mg/kg for TPH-D. One sample contained unknown hydrocarbons concentrations above RLs but below ESLs. A summary of the soil analytical results for SB-5, SB-6, and SB-7 is provided in Table 5-1. No additional soil samples were collected in July or August 2010.

5.3.3.2 Soil Gas Samples

In 2005, two soil gas samples were collected from SG-6 at depths of 5 and 15 feet bgs and were analyzed for VOCs by an onsite mobile laboratory using EPA Method 8260B. The analytical results indicated concentrations of PCE at 230 $\mu g/m^3$ at 5 feet bgs and 200 $\mu g/m^3$ at 15 feet bgs. The soil gas concentrations exceed the residential CHHSL of 180 $\mu g/m^3$, but did not exceed the industrial CHHSL of 603 $\mu g/m^3$. The soil gas concentrations also

exceeded adjusted residential and industrial air RSLs (4.1 μg/m^3 and 21 μg/m^3). A summary of the soil gas analytical results for SG-6 is provided in Table 5-2.

During the supplemental soil gas investigation completed in July and August 2010, 12 step-out samples were collected from SG-21, SG-22, SG-23, SG-29 and SG-32 at sample depths of 5, 15, and/or 30 ft bgs in 2010 (see Figure 4-2). The soil gas samples were analyzed for VOCs by an onsite mobile laboratory using Method 8260B. The soil gas sample collected from SG-22 at 30 ft bgs was additionally analyzed by TO-15 method. The analytical results indicated concentrations of PCE at 25 μg/m^3 from SG-23 and SG-29 at depth of 5 ft bgs using 8260 method. This concentration was above the adjusted residential and industrial indoor air RSLs (4.1 μg/m^3 and 21 μg/m^3). However, PCE was detected at concentrations 16 μg/m^3 (SG-23-15), 12 μg/m^3 (SG-23-30), 19 μg/m^3 (SG-29-15), 17 μg/m^3 (SG-32-5), and 11 μg/m^3 (SG-32-15) which were above the adjusted residential indoor air RSL but below the adjusted industrial indoor air RSL. The reported nondetect results for PCE in samples from SG-21 and SG-22 (8 μg/m^3 by 8260B and 14 μg/m^3 by TO-15) are above adjusted residential RSL.

1,2,4-TMB was detected in SG-21 at depth of 5 ft bgs at a concentration of 392 μg/m^3 using 8260B method. This concentration of 1,2,4-TMB was above the adjusted residential and industrial indoor air RSLs (73 and 310 μg/m^3). 1,2,4-TMB was detected in SG-22 at depth of 5, 15, and 30 ft bgs at a concentrations (120 μg/m^3, 130 μg/m^3, and 130 μg/m^3) above the adjusted residential indoor air RSLs but below industrial RSL. However, 1,2,4-TMB was not detected in a sample collected from SG-22 at 30 ft bgs by TO-15. The reported nondetect results for 1,2,4-TMB in samples from SG-23, SG-29 and SG-32 (500 μg/m^3) are above RSLs.

Ethylbenzene was detected in SG-21 at depth of 5 ft bgs at a concentration of 631 μg/m^3 using 8260B method. This concentration of ethylbenzene was above the adjusted residential and industrial indoor air RSLs (9.7 and 49 μg/m^3). Ethylbenzene was detected in SG-22 at depth of 5, 15, and 30 ft bgs at a concentrations (14.5 μg/m^3, 26.8 μg/m^3, and 34.3 μg/m^3) above the adjusted residential indoor air RSLs but below industrial RSL. However, ethylbenzene was not detected in a sample collected from SG-22 at 30 ft bgs by TO-15. The reported nondetect results for ethylbenzene in samples from SG-23, SG-29 and SG-32 (200 μg/m^3) are above RSLs.

Benzene was detected at a concentration of 383 μg/m^3 in a sample collected from SG-21 at a depth of 5 ft bgs. This concentration of benzene was above residential and industrial CHHSLs (36.2 μg/m^3 and 122 μg/m^3). This concentration of benzene was also above the adjusted residential and industrial indoor air RSLs (3.1 μg/m^3 and 16 μg/m^3). Benzene was also detected at a concentration of 13 μg/m^3 in a sample SG-23-30 which was above residential RSL. In addition, the reported nondetect for benzene in other samples (8 μg/m^3 and 36 μg/m^3 by 8260B and 9.6 μg/m^3 by TO-15) are above RSLs.

Chloroform was detected in a sample collected from SG-32 at depths of 5 and 15 ft bgs at concentrations of 51 μg/m^3 and 10 μg/m^3 respectively. These concentrations were above the adjusted residential and industrial indoor air RSLs (1.1 μg/m^3 and 5.3 μg/m^3). In addition, the reported nondetects for chloroform in other samples (8 μg/m^3 and 200 μg/m^3 by 8260B and 9.8 μg/m^3 by TO-15) are above RSLs.

Xylenes were detected above the adjusted residential indoor air RSL in one sample collected from SG-21 at depth of 5 ft bgs. A summary of the soil gas analytical results for SG-21, SG-22, SG-23, SG-29, and SG-32 is provided in Table 5-3.

5.3.3.3 Groundwater Samples

In 2005, one groundwater sample (GW-5) was collected southwest of Tank 3P and Building 27 at a depth of 74 feet bgs. The groundwater sample was analyzed for TPH-D, TPH-G, and VOCs. TPH-D and TPH-G were not detected above the RL. Toluene was detected above the RL at a concentration of 0.001 mg/L, but was less than the EPA MCL of 1 mg/L, the CDPH MCL of 0.15 mg/L, and the tap water RSL of 2.3 mg/L. A summary of the groundwater analytical results for GW-5 is provided in Table 5-3. No additional groundwater samples were collected in July or August 2010.

5.3.4 Tank 4G

The investigation at Tank 4G included soil samples, soil gas samples, and groundwater samples.

5.3.4.1 Soil Samples

In 2005, six soil samples were collected from SB-3 and SB-4 at depths of 10, 20, and 30 feet bgs and were analyzed for VOCs, and metals. Two soil samples contained VOC concentrations above RLs. However, detected VOCs did not exceed residential and industrial CHHSLs and RSLs. Six soil samples contained metals concentrations above RLs. Four metals (arsenic, cadmium, chromium, and lead) were detected above screening levels.

Arsenic concentrations ranged from 4.6 mg/kg to 13.8 mg/kg, which exceeded residential and industrial CHHSLs (0.07 mg/kg and 0.24 mg/kg). Arsenic concentrations also exceeded residential and industrial RSLs (0.39 mg/kg and 1.6 mg/kg).

Cadmium concentrations ranged from 1.8 mg/kg to 6 mg/kg, which exceeded residential CHHSLs for cadmium (1.7 mg/kg), but did not exceed industrial CHHSL (7.5 mg/kg). Cadmium concentrations did not exceed residential and industrial RSLs.

Chromium concentrations ranged from 21.7 mg/kg to 34.2 mg/kg, which exceeded residential CHHSL of 17 mg/kg, but did not exceed industrial CHHSL (37 mg/kg). Chromium concentrations also exceeded residential and industrial RSLs (0.29 and 5.6 mg/kg).

Lead was detected at concentrations above screening levels in the samples collected from 10 ft bgs at SB-3 and SB-4 (155 mg/kg and 673 mg/kg). These concentrations exceeded residential CHHSL (150 mg/kg) for lead, but did not exceed industrial CHHSL (3500 mg/kg). The maximum lead concentration also exceeded residential RSL (400 mg/kg), but did not exceed industrial RSL (800 mg/kg).

Elevated metal concentrations detected in the area are likely due to the background. As mentioned previously in section 5.1 that in the western United States, background concentrations of several metals (e.g. arsenic) often exceed RSLs as reported by the Kearney Foundation Special Report on Background Concentrations of Trace and Major Elements in

California Soils. A summary of the soil analytical results for SB-3 and SB-4 is provided in Table 5-1. No additional soil samples were collected in July or August 2010.

5.3.4.2 Soil Gas Samples

In 2005, two soil gas samples were collected from SG-4 at depths of 5 and 15 feet bgs and were analyzed for VOCs by an onsite mobile laboratory using EPA Method 8260B. The analytical results indicated maximum concentrations of 100 $\mu g/m^3$ for benzene at 5 and 15 feet bgs; 200 $\mu g/m^3$ for PCE at 5 feet bgs and 180 $\mu g/m^3$ at 15 feet bgs; and 580 $\mu g/m^3$ for ethylbenzene at 5 ft bgs. The benzene concentrations in soil gas exceed residential CHHSL (36.2 $\mu g/m^3$), but did not exceed industrial CHHSL (122 $\mu g/m^3$). Benzene concentrations also exceeded adjusted residential and industrial RSLs (3.1 $\mu g/m^3$ and 16 $\mu g/m^3$). In addition, the reported ND results for benzene (100 mg/kg) are above residential CHHSL, adjusted residential and industrial RSLs. PCE concentrations in soil gas exceed or are equal to the residential CHHSL (180 $\mu g/m^3$), but did not exceed the industrial CHHSL (603 $\mu g/m^3$). PCE concentrations also exceeded adjusted residential and industrial RSLs (4.1 $\mu g/m^3$ and 21 $\mu g/m^3$). The maximum ethylbenzene concentration (580 $\mu g/m^3$) exceeded adjusted residential and industrial RSLs (9.7 $\mu g/m^3$ and 49 $\mu g/m^3$). A summary of the soil gas analytical results for SG-4 is provided in Table 5-2.

During the supplemental soil gas investigation completed in July and August 2010, nine step-out samples were collected from SG-14, SG-17, SG-26, SG-27, and SG-30 at sample depths of 5 and 15 feet bgs in 2010 (see Figure 4-2). The soil gas samples were analyzed for VOCs by an onsite mobile laboratory using Method 8260B. The soil gas sample collected from SG-27 at 5 ft bgs was additionally analyzed by TO-15 method. The analytical results indicated benzene concentrations 257 $\mu g/m^3$ (SG-14-5), 122 $\mu g/m^3$ (SG-14-15), and 275 $\mu g/m^3$ (SG-17-5) above the adjusted residential and industrial indoor air RSLs (3.1 $\mu g/m^3$and 16 $\mu g/m^3$). In addition, the reported nondetects for benzene in other samples (8 $\mu g/m^3$ and 36 $\mu g/m^3$ by 8260B and 9.6 $\mu g/m^3$ by TO-15) are above residential and/or industrial RSLs.

Ethylbenzene was detected at concentrations 304 $\mu g/m^3$ (SG-14-5), 223 $\mu g/m^3$ (SG-17-5), and 160 $\mu g/m^3$ (SG-27-5) using 8260B method. These concentrations were above the adjusted residential and industrial indoor air RSLs. Ethylbenzene was detected at concentrations 35.1 (SG-14-15), 44 (SG-26-15), and 35 (SG-27-5) above residential RSL. In addition, the reported nondetect result for ethylbenzene in sample SG-30-5 is above RSLs. Ethylbenzene was not detected by TO-15 in sample SG-27-5. The maximum PCE concentration was 28 $\mu g/m^3$ detected in SG-27-5 which was above the adjusted residential and industrial RSL (4.1 $\mu g/m^3$ and 21 $\mu g/m^3$). PCE was also detected at concentrations 17 $\mu g/m^3$ (SG-26-5), 19 $\mu g/m^3$ (SG-26-15), 21 $\mu g/m^3$ (SG-27-15), and 10 $\mu g/m^3$ (SG-30-5) above residential RSL. In addition, the reported non detect result for PCE in other samples (8 $\mu g/m^3$ by 8260B method and 14 $\mu g/m^3$ by TO-15) are above residential RSL.

1,2,4-TMB was detected at concentrations 213 $\mu g/m^3$ (SG-14-5) and 178 $\mu g/m^3$ (SG-17-5) using 8260 method. These concentrations were above the adjusted residential indoor air RSL (73 $\mu g/m^3$) but below the industrial RSL (310 $\mu g/m^3$). In addition, the reported nondetect result for 1,2,4-TMB in samples from SG-26, SG-27 and SG-30 (500 $\mu g/m^3$) are above RSLs. 1,2,4-TMb was not detected by TO-15. A summary of the soil gas analytical results for SG-14, SG-17, SG-26, SG-27, and SG-30 is provided in Table 5-3.

5.3.4.3 Groundwater Samples

One groundwater sample (GW-2) was collected to southwest of Tank 4G at a depth of 74 feet bgs in 2005. The groundwater sample was analyzed for TPH-D, TPH-G, VOCs, and SVOCs. TPH-D, TPH-G, VOCs, and SVOCs were not detected above the RLs in the groundwater sample. A summary of the groundwater analytical results for GW-2 is provided in Table 5-3. No additional groundwater samples were collected in July or August 2010.

5.3.5 Adjacent Properties: Modine Manufacturing and Leggett & Platt

An investigation of the eastern border of the adjacent properties of Modine Manufacturing and Leggett & Platt included soil gas samples and groundwater samples.

5.3.5.1 Soil Gas Samples

Fourteen (14) soil gas samples were collected from SG-7, SG-8, SG-9, SG-10, SG-11, SG-12, and SG-13 at depths of 5 and 15 feet bgs in 2005. The soil gas samples were analyzed for VOCs by an onsite mobile laboratory using EPA Method 8260B. The analytical results indicated PCE ranged from 190 $\mu g/m^3$ to 220 $\mu g/m^3$ at SG-7, which exceed the residential CHHSL (180 $\mu g/m^3$), but did not exceed the industrial CHHSL (603 $\mu g/m^3$). PCE concentrations also exceeded adjusted residential and industrial RSLs (4.1 $\mu g/m^3$ and 21 $\mu g/m^3$). A summary of the soil gas analytical results for SG-7, SG-8, SG-9, SG-10, SG-11, SG-12, and SG-13 is provided in Table 5-2.

Soil gas sample collected from 15 ft bgs at SG-10 was additionally analyzed by EPA Method TO-15 using Summa canisters and sent to a fixed laboratory. The analytical results indicated bromodichloromethane and chloroform concentrations above residential RSLs. Bromodichloromethane was detected at concentration of 2.7 $\mu g/m^3$, which exceeded adjusted residential air RSL (0.66 $\mu g/m^3$), but did not exceed adjusted industrial air RSL (3.3 $\mu g/m^3$). Chloroform was detected at concentration of 3.5 $\mu g/m^3$ which exceeded adjusted residential air RSL (1.1 $\mu g/m^3$), but did not exceed adjusted industrial air RSL (5.3 $\mu g/m^3$). CHHSLs are not available for these compounds. A summary of the soil gas analytical results for SG-10 is provided in Table 5-2.

5.3.5.2 Groundwater Samples

Two groundwater samples at GW-3 and GW-4 were collected in 2005 along the eastern border of the Site at depths of 89 and 74 feet bgs, respectively and were analyzed for VOCs. Toluene was detected above the RL at a concentration of 0.001 mg/L, but was less than the EPA MCL (1 mg/l), CDPHMCL (0.15 mg/l) and tap water RSL (2.3 mg/l) for toluene. TCE was detected above the RL at a concentration of 0.0038 mg/L but was less than the EPA MCL (0.005 mg/L), CDPH MCL (0.005 mg/L), and tap water RSL (0.002 mg/L) for TCE. A summary of the groundwater analytical results for GW-3 and GW-4 is provided in Table 5-3.

Insert Table 5-1. Soil Sample Results (2005)

Insert Table 5-2. Soil Gas Sample Results (2005)

Insert Table 5-3. Soil Gas Sample Results (2010)

Insert Table 5-4. Groundwater Sample Results (2005)

6.0 Findings and Conclusions

CH2M HILL completed a Phase II investigation in 2005 and a supplemental soil gas investigation in 2010 to further characterize specific RECs identified in the Phase I ESA by the collection of soil samples, soil gas samples, and groundwater samples. The RECs further investigated as part of the Phase II investigation included:

- Building 15, Gasoline USTs (Tanks 1 and 2)
- Building 27, Boiler Room UST (Tank 3P)
- Building 15, Waste Oil LUST (Tank 3G)
- Building 15, Diesel UST (Tank 4G)
- Eastern Border (Adjacent Properties: Modine Manufacturing and Leggett & Platt)

6.1 Conclusions

Shallow Soil Sampling Investigation Results

In 2005 at the Tank 1 and 2 area, VOCs were not detected in soil. In the Tank 4G area, detected VOCs did not exceed residential or industrial CHHSLs and RSLs. In the Tank 3P area, detected VOCs did not exceed residential or industrial CHHSLs. However, the concentration of bromomethane (11 mg/kg) exceeded the adjusted residential RSLs of 7.3 mg/kg, but did not exceed the adjusted industrial RSL. Naphthalene (28 to 100 mg/kg) exceeded the adjusted residential RSLs (3.6 mg/kg) and the industrial RSL (18 mg/kg). One soil sample contained TPH-D at a concentration of 40,000 mg/kg at SB-6 that was above the residential and industrial ESL of 4,200 mg/kg for TPH-D.

Additional soil investigation could be conducted in the one area (Tank 3P) that exceed the screening levels to confirm the 2005 results. The 2010 investigations did not include additional soil sampling. Additional soil gas surveys were completed in 2010 to better characterize the nature and extent of the VOC impacts in soil gas at the site.

Soil Gas Sampling Investigation Results

In 2005 and 2010, several VOCs in soil gas exceeded the screening levels in each area investigated. Those included benzene, ethylbenzene, tetrachloroethene (PCE) and 1,2,4-trimethylbenzene (TMB) in the Tank 1 and 2 area; ethylbenzene, TMB, and PCE in the Tank 3G area; benzene, ethylbenzene, PCE, and TMB in the Tank 4G area; ethylbenzene, PCE, TMB, and xylene in Tank 3P area; and PCE, bromodichloromethane, and chloroform in the Modine Manufacturing and Leggett and Platt areas.

The additional soil gas investigations completed in 2010 in selected areas confirmed the 2005 results and reduced the uncertainty associated with the extent of the areas exceeding soil gas screening criteria (see Figure 4-2). The additional data also provides a measure of the changes that have occurred as a result of 5 years of natural attenuation at the site.

The results of the additional soil gas investigations provide evidence that the concentrations of VOCs in soil gas have naturally attenuated but remain in the soil at levels above the

screening criteria. Benzene in soil gas is present above residential CHHSLs and residential RSLs in the area of Tank 1 and 2, Tank 3P, and the Tank 4G area. Ethylbenzene in soil gas is present above residential RSLs at the area of Tank 1 and 2, Tank 3P, Tank 3G, and the Tank 4G area. TMB in soil gas is present above residential RSLs at the area of Tank 1 and 2, Tank 3P, Tank 3G, and the Tank 4G area. PCE in soil gas is present above the residential CHHSLs and residential RSLs in the area of Tank 1 and 2, Tank 3P, and the Tank 4G area.

A more detailed evaluation of the soil gas data and lines of evidence is recommended. The additional evaluation could include one or more of the following components:

- A systematic evaluation of multiple-lines of evidence, including spatial distribution of contamination (soil gas, soil, groundwater), potential sources.
- A qualitative evaluation of attenuation factors used to derive screening levels and include using a different attenuation factor to derive soil gas screening criteria.
- Investigate the use of site-specific screening criteria using USEPA Johnson and Ettinger (J&E) vapor intrusion model.
- A screening-level human health risk assessment.

Groundwater Sampling Investigation Results

Groundwater results for all sample locations in 2005 were below EPA MCLs, California primary MCLs and residential tap water RSLs. No additional actions are recommended for groundwater in the areas investigated.

7.0 Limitations

This report has been prepared for the exclusive use of Brookfield Homes for the specific purpose of evaluating the potential environmental liability associated with the former Fred C. Nelles Youth Correctional Facility. No warranty, expressed or implied, is made. CH2M HILL makes no representation regarding whether this investigation constitutes "all appropriate inquiry into the previous ownership and uses of this property consistent with good commercial or customary practice" as defined in Section 101(35)(B) of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). There are no beneficiaries of this report other than Brookfield Homes, and no third party is entitled to rely upon this report without the written authorization of CH2M HILL, and a written agreement limiting CH2M HILL's liability.

CH2M HILL is not responsible for any claims, damages, or liabilities associated with the interpretation by third parties of these findings or reuse of the analysis, associated site data, or recommendations by third parties without the express written authorization of CH2M HILL. Limitations of this assessment may not be altered or waived without written consent of CH2M HILL.

It was beyond CH2M HILL's authorized scope of work to review: (1) lead in drinking water, (2) issues associated with worker health and safety, (3) issues pertaining to compliance with environmental regulations, or (4) liabilities associated with the offsite management of solid or hazardous wastes. It was also beyond the scope of work to conduct interviews with local government officials. The exclusion of the above items is not a representation of the relevance of these non-scope considerations to the subject property.

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. These services were performed consistent with our agreement with our client. We also do not warrant the accuracy of information supplied by others nor the use of segregated portions of this report.

This is a technical report and is not a legal representation or interpretation of environmental laws, rules, regulations, or policies of local, state, or federal governmental agencies.

Any opinions or recommendations presented herein apply to site conditions existing when services were performed. CH2M HILL is unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces.

No investigation is thorough enough to exclude the presence of hazardous substances at a given site. If hazardous substances or hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such substances or conditions, but rather as the result of the services performed within the scope and limitations of the work performed.

8.0 Signature Page

The following CH2M HILL Environmental Professionals are primarily responsible for the Phase II ESA performed at the Fred C. Nelles Youth Correctional Facility.

_____ _____

Rob Lowey, Project Manager Date

_____ _____

Kimberly A. Waite, P.G., Senior Consultant Date

_____ _____

David Poley, Task Manager Date

9.0 References

Blasland, Bouck & Lee, Inc. (BBL), 1992 through 1995. *Quarterly Groundwater Monitoring Reports, Former Modine Manufacturing Facility*, 12252 East Whittier Boulevard, Whittier, California.

BBL, 1993. *Remedial Action Plan, Groundwater Treatment System, Former Modine Manufacturing Facility*. March 1993.

California Environmental Protection Agency (CalEPA). 2005. *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties*. January.

Calscience, 1991. Closure Report for Two Underground Storage Tanks at 11850 Whittier Boulevard, Whittier, California. April 1991.

CH2M HILL, 2005. *Phase I Environmental Site Assessment, Fred C. Nelles Youth Correctional Facility*, Whittier, California. April 2005.

California Regional Water Quality Control Board (CRWQCB), San Francisco Bay Region. 2007. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* Interim Final. November. Revised May 2008.

Earth Tech, 1989a. *Final Soil and Groundwater Investigation, Modine Manufacturing Company*, Whittier Facility. October 1989.

Earth Tech, 1989b. *Groundwater Investigation Summary, Modine Manufacturing Company*, Whittier, California. November 1989.

Essentia, 2003a. *Additional Site Assessment and First Quarter 2003 Groundwater Sampling, Diesel Fuel Bunker,* Fred C. Nelles Youth Correctional Facility, 11850 Whittier Boulevard, Whittier, California. February 2003.

Essentia, 2003b. *Second Quarter 2003 Groundwater Sampling Report*, Fred C. Nelles Youth Correctional Facility, 11850 Whittier Boulevard, Whittier, California. June 6, 2003.

Essentia, 2003c. *Third Quarter 2003 Groundwater Sampling Report*, Fred C. Nelles Youth Correctional Facility, 11850 Whittier Boulevard, Whittier, California. August 8, 2003.

Essentia, 2003d. *Fourth Quarter 2003 Groundwater Sampling Report*, Fred C. Nelles Youth Correctional Facility, 11850 Whittier Boulevard, Whittier, California. December 5, 2003.

Essentia, 2003e. *Fourth Quarter 2003 Groundwater Sampling Report and Site Closure Report*, Fred C. Nelles Youth Correctional Facility, 11850 Whittier Boulevard, Whittier, California. December 5, 2003.

Lawson and Associates, Geotechnical Consulting, Inc., 2005. Project Memorandum on Geologic data collected for Whittier Nelles Site. February 16, 2005.

Leighton and Associates, 1995. *Preliminary Environmental Assessment at the Department of the Youth Authority, Fred C. Nelles School*, 11850 East Whittier Boulevard, Whittier, California. October 1, 1995.

Ninyo & Moore, 2001. *Subsurface Assessment Diesel Vault*, Fred C. Nelles Correctional Facility, 11850 East Whittier Boulevard, Whittier, California. May 31, 2001.

Regional Water Quality Control Board, 1998. California Regional Water Control Board, Los Angeles Leaking UST Case Summary. Department of Youth Authority, 11850 Whittier Boulevard. Case Number: I-10912, Waste Oil Tank. Case Type: Soil Only.

United States Environmental Protection Agency (EPA). 2010. Regional Screening Levels, Last updated May 2010. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

Western Laboratories, 1988. *Soils Investigation - Earthquake Damaged Buildings at Fred C. Nelles School*, Located at 11850 East Whittier Boulevard, in the City of Whittier, California. January 6, 1988.

Bradford, G. R., Chang, A. C., Page, A. L., Bakhtar, D., Frampton, J. A. and Wright, H. 1996. Kearney Foundation Special Report. Background Concentrations of Trace and Major Elements in California Soils. Kearny Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, Riverside. March.

EPA. 2002. Guidance on Environmental Data Verification and Data Validation. EPA/240/R-02/004. November.

Figures

North

LEGEND

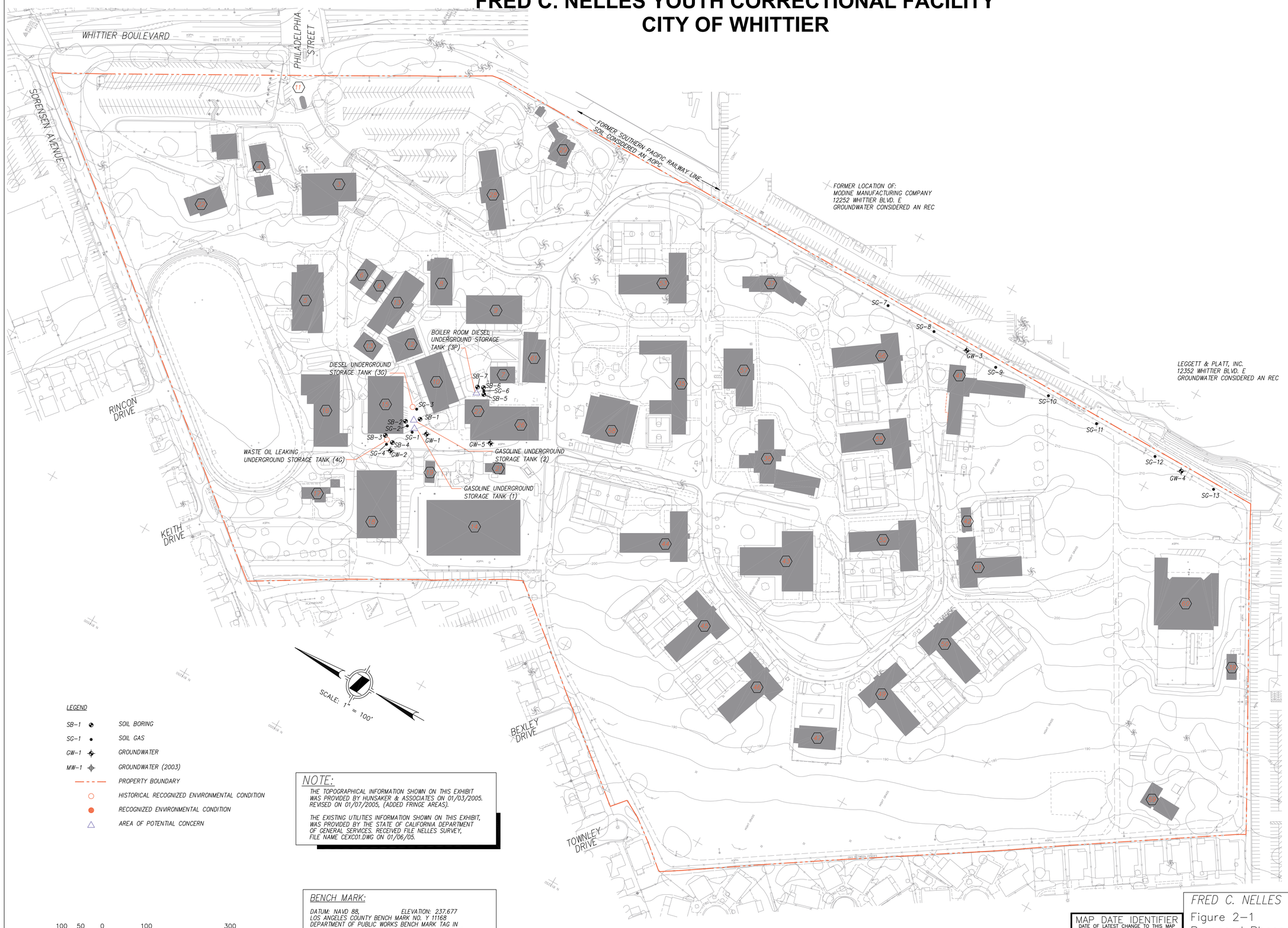
Site Boundary

FIGURE 1-1
Vicinity Map
Fred C. Nelles Site
Phase I Environmental Site Assessment

CH2MHILL

SCO324292.CD.EA VicinityMap.ai 01/2005

FRED C. NELLES YOUTH CORRECTIONAL FACILITY
CITY OF WHITTIER



EX. BUILDING LEGEND

BUILDING NO.	BUILDING DESCRIPTION
3	VISITING & CONTROL BLDG.
4	EMPLOYEE HOUSING UNIT
5	GYMNASIUM
6	CLASSROOMS
7	CLASSROOMS
8	AUDITORIUM
9	CLASSROOMS
10	CLASSROOMS
11	GUARD SHACK / CHECKPOINT
12	LIBRARY
13	SCHOOL OFFICES
14	TRADES BLDG.
15	GARAGE & MACHINE SHOP
16	ARTS, CRAFTS & MUSIC BLDG.
17	RESIDENCE BLDG.
18	WHAREHOUSE
19	LOCK SHOP & TAC-TEAM
21	ELECTRICAL SERVICE BLDG.
22	EMPLOYEE HOUSING & GARAGE
26	OLD MAINTENANCE GARAGE
27	BOILER PLANT
28	ADMINISTRATION BLDG.
29	RESIDENCE #1
35	PROGRAM CENTER / RECEIVING UNIT
37	HOSPITAL (OLD INFIRMARY)
38	CHAPEL, BARBER & TREATMENT LAB
39	S.E.C. MODULE
41	ADJUSTMENT CENTER (AC/TAFT)
42	KENNEDY MODULE
43	FOOD SERVICE BLDG.
44	LIVING UNIT (ROOSEVELT)
45	LIVING UNIT (CLEVELAND)
46	LIVING UNIT (JACKSON)
47	FORD COTTAGE / POOL
49	LIVING UNIT (WASHINGTON)
50	LIVING UNIT (HAYES)
51	LIVING UNIT (KENNEDY)
52	LIVING UNIT (MADISON)
53	LIVING UNIT (TYLER)
55	LIVING UNIT (ADAMS)
56	LIVING UNIT (MONROE)
57	NEW INFIRMARY
58	MULTI-PURPOSE BUILDING
59	FACILITY PLANNING COMPLEX
60	LIVING UNIT (CARTER / NIXON)
61	SCHOOL OFFICE & CLASSROOMS

NOTE:

THE BUILDING NUMBERS USED IN THIS EXHIBIT, ARE THE SAME NUMBERS USED BY THE STATE OF CALIFORNIA.

LEGEND

SB-1	SOIL BORING
SG-1	SOIL GAS
GW-1	GROUNDWATER
MW-1	GROUNDWATER (2003)
	PROPERTY BOUNDARY
	HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITION
	RECOGNIZED ENVIRONMENTAL CONDITION
	AREA OF POTENTIAL CONCERN

NOTE:

THE TOPOGRAPHICAL INFORMATION SHOWN ON THIS EXHIBIT WAS PROVIDED BY HUNSAKER & ASSOCIATES ON 01/03/2005. REVISED ON 01/07/2005, (ADDED FRINGE AREAS).

THE EXISTING UTILITIES INFORMATION SHOWN ON THIS EXHIBIT, WAS PROVIDED BY THE STATE OF CALIFORNIA DEPARTMENT OF GENERAL SERVICES. RECEIVED FILE NELLES SURVEY, FILE NAME CEXC01.DWG ON 01/06/05.

BENCH MARK:

DATUM: NAVD 88, ELEVATION: 237.677
LOS ANGELES COUNTY BENCH MARK NO. Y 11168
DEPARTMENT OF PUBLIC WORKS BENCH MARK TAG IN NORTHERLY CATCH BASIN 1 METER EAST OF BEGINNING OF CURB RETURN AT NORTHEAST CORNER WHITTIER BOULEVARD AND PHILADELPHIA STREET 16 METERS EAST AND 11 METERS NORTH OF CENTERLINE INTERSECTION.

100 50 0 100 300

GRAPHIC SCALE 1"=100'

Source: Hunsaker & Associates, 2005

MAP DATE IDENTIFIER
DATE OF LATEST CHANGE TO THIS MAP
2/17/05 BY: HPM
DATE OF THIS PLOT
2/17/05

FRED C. NELLES YOUTH CORRECTIONAL FACILITY

Figure 2-1
Proposed Phase II ESA Sample Locations
Fred C. Nelles Site
Phase II Environmental Site Assessment

NPM Walkup Brookfield Figure2-1.dwg 7-15-05

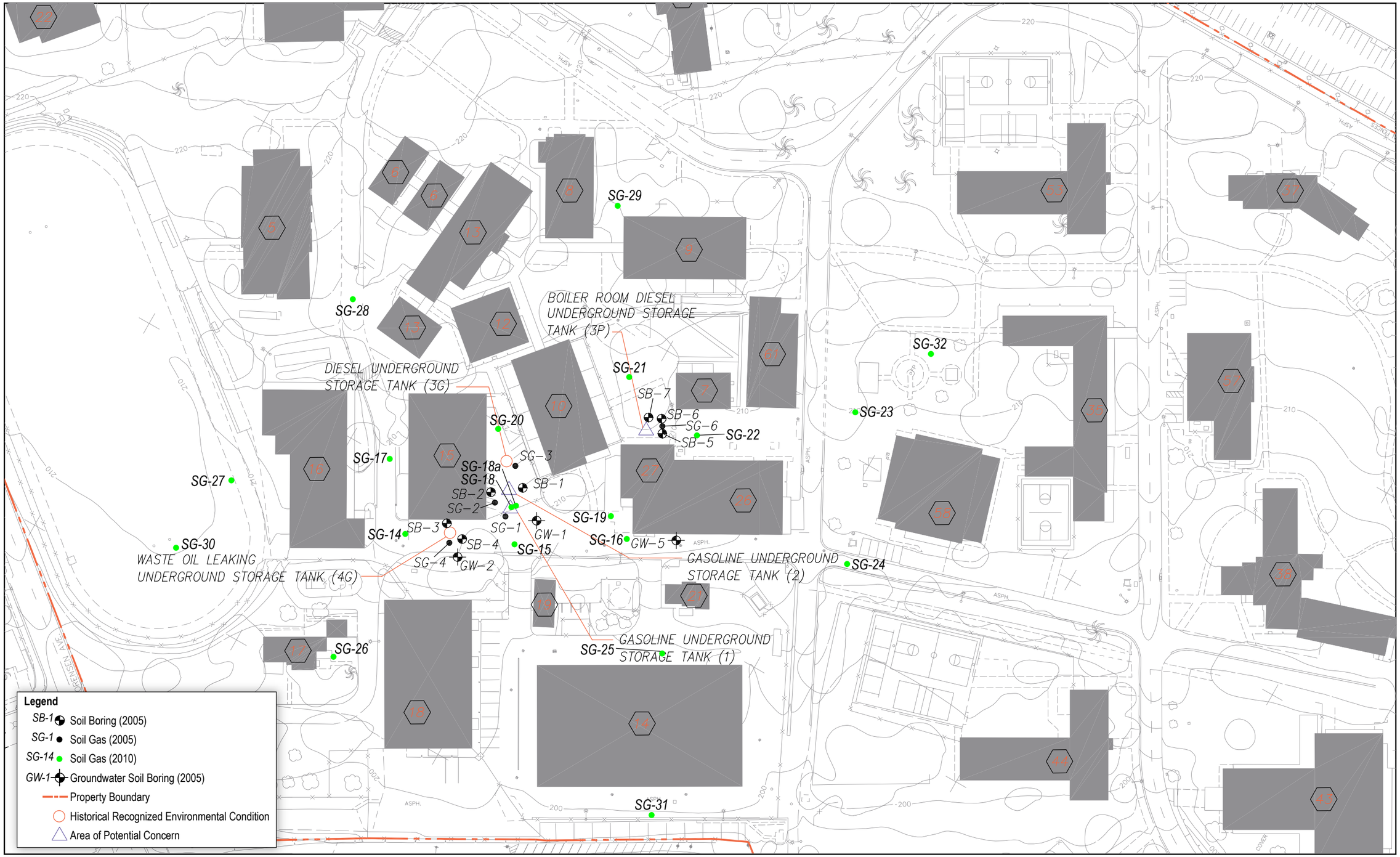


FIGURE 2-1
Phase II Sample Locations
Fred C. Nelles Site
Phase II Environmental Site Assessment

CH2MHILL

Appendix A
Laboratory Analytical Data Report

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-1-74

Sample #: 001 Date Sampled: 07/21/05 09:35 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Acetone	ND	10	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
Bromobenzene	ND	1.0	ug/L	SW846 8260B	
Bromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	2.0	ug/L	SW846 8260B	
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-1-74

Sample #: 001 Date Sampled: 07/21/05 09:35 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B	
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B	
o-Xylene	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Extractable Petroleum Hydrocarbons					Reviewed
TPH (as Diesel)	ND	1.0	mg/L	SW846 8015B	
Unknown Hydrocarbon	ND	1.0	mg/L	SW846 8015B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-1-74

Sample #: 001 Date Sampled: 07/21/05 09:35 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Petroleum Hydrocarbons					In Review
TPH (as Gasoline)	ND	0.10	mg/L	SW846 8015B	
Unknown Hydrocarbon	ND	0.10	mg/L	SW846 8015B	

Client Sample ID: GW-5-74

Sample #: 002 Date Sampled: 07/21/05 08:30 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Acetone	ND	10	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
Bromobenzene	ND	1.0	ug/L	SW846 8260B	
Bromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	2.0	ug/L	SW846 8260B	
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-5-74

Sample #: 002 Date Sampled: 07/21/05 08:30 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	**1.0**	**1.0**	**ug/L**	**SW846 8260B**	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B	
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-5-74
Sample #: 002 Date Sampled: 07/21/05 08:30 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B	
o-Xylene	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Extractable Petroleum Hydrocarbons					Reviewed
TPH (as Diesel)	ND	1.0	mg/L	SW846 8015B	
Unknown Hydrocarbon	ND	1.0	mg/L	SW846 8015B	
Volatile Petroleum Hydrocarbons					In Review
TPH (as Gasoline)	ND	0.10	mg/L	SW846 8015B	
Unknown Hydrocarbon	ND	0.10	mg/L	SW846 8015B	

Client Sample ID: EB-1
Sample #: 003 Date Sampled: 07/21/05 09:55 Date Received: 07/21/05 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
Acetone	ND	10	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
Bromobenzene	ND	1.0	ug/L	SW846 8260B	
Bromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	2.0	ug/L	SW846 8260B	
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: EB-1

Sample #: 003 Date Sampled: 07/21/05 09:55 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: EB-1
Sample #: 003 Date Sampled: 07/21/05 09:55 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B	
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B	
o-Xylene	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

Client Sample ID: GW-4-79
Sample #: 004 Date Sampled: 07/21/05 11:15 Date Received: 07/21/05 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
Acetone	ND	10	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
Bromobenzene	ND	1.0	ug/L	SW846 8260B	
Bromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	2.0	ug/L	SW846 8260B	
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-4-79

Sample #: 004 Date Sampled: 07/21/05 11:15 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	**1.0**	**1.0**	**ug/L**	**SW846 8260B**	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: GW-4-79
Sample #: 004 Date Sampled: 07/21/05 11:15 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Volatile Organics by GC/MS				Reviewed
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B

Client Sample ID: SG-1-5
Sample #: 005 Date Sampled: 07/21/05 13:45 Date Received: 07/21/05 Matrix: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Volatile Organics by TO15				Reviewed
Dichlorodifluoromethane	ND	4.5	ug/m3	EPA-2 TO-15
Chloromethane	ND	3.7	ug/m3	EPA-2 TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	6.3	ug/m3	EPA-2 TO-15
Vinyl chloride	ND	2.3	ug/m3	EPA-2 TO-15
Bromomethane	ND	3.5	ug/m3	EPA-2 TO-15
Chloroethane	ND	5.0	ug/m3	EPA-2 TO-15
Trichlorofluoromethane	ND	9.9	ug/m3	EPA-2 TO-15
1,1-Dichloroethene	ND	3.6	ug/m3	EPA-2 TO-15
Carbon disulfide	**20**	**14**	**ug/m3**	**EPA-2 TO-15**
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	14	ug/m3	EPA-2 TO-15
Acetone	**25**	**8.6**	**ug/m3**	**EPA-2 TO-15**
Methylene chloride	ND	3.1	ug/m3	EPA-2 TO-15
trans-1,2-Dichloroethene	ND	3.6	ug/m3	EPA-2 TO-15
1,1-Dichloroethane	ND	3.7	ug/m3	EPA-2 TO-15

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: SG-1-5

Sample #: 005 Date Sampled: 07/21/05 13:45 Date Received: 07/21/05 Matrix: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by TO15					Reviewed
Vinyl acetate	ND	16	ug/m3	EPA-2 TO-15	
cis-1,2-Dichloroethene	ND	3.6	ug/m3	EPA-2 TO-15	
2-Butanone (MEK)	ND	13	ug/m3	EPA-2 TO-15	
Chloroform	ND	4.4	ug/m3	EPA-2 TO-15	
1,1,1-Trichloroethane	ND	5.0	ug/m3	EPA-2 TO-15	
Carbon tetrachloride	ND	5.9	ug/m3	EPA-2 TO-15	
Benzene	ND	2.9	ug/m3	EPA-2 TO-15	
1,2-Dichloroethane	ND	3.7	ug/m3	EPA-2 TO-15	
Trichloroethene	ND	5.0	ug/m3	EPA-2 TO-15	
1,2-Dichloropropane	ND	4.2	ug/m3	EPA-2 TO-15	
Bromodichloromethane	ND	5.9	ug/m3	EPA-2 TO-15	
cis-1,3-Dichloropropene	ND	4.1	ug/m3	EPA-2 TO-15	
4-Methyl-2-pentanone (MIBK)	ND	7.2	ug/m3	EPA-2 TO-15	
Toluene	ND	5.0	ug/m3	EPA-2 TO-15	
trans-1,3-Dichloropropene	ND	4.1	ug/m3	EPA-2 TO-15	
1,1,2-Trichloroethane	ND	5.0	ug/m3	EPA-2 TO-15	
Tetrachloroethene	**440**	**6.3**	**ug/m3**	**EPA-2 TO-15**	
2-Hexanone	ND	7.2	ug/m3	EPA-2 TO-15	
Dibromochloromethane	ND	7.7	ug/m3	EPA-2 TO-15	
1,2-Dibromoethane (EDB)	ND	6.8	ug/m3	EPA-2 TO-15	
Chlorobenzene	ND	4.2	ug/m3	EPA-2 TO-15	
Ethylbenzene	ND	3.9	ug/m3	EPA-2 TO-15	
Xylenes (total)	ND	9.9	ug/m3	EPA-2 TO-15	
m-Xylene & p-Xylene	ND	9.9	ug/m3	EPA-2 TO-15	
o-Xylene	ND	3.9	ug/m3	EPA-2 TO-15	
Styrene	ND	3.8	ug/m3	EPA-2 TO-15	
Bromoform	ND	9.5	ug/m3	EPA-2 TO-15	
1,1,2,2-Tetrachloroethane	ND	6.3	ug/m3	EPA-2 TO-15	
Benzyl chloride	ND	29	ug/m3	EPA-2 TO-15	
4-Ethyltoluene	ND	9.0	ug/m3	EPA-2 TO-15	
1,3,5-Trimethylbenzene	ND	9.0	ug/m3	EPA-2 TO-15	
1,2,4-Trimethylbenzene	ND	9.0	ug/m3	EPA-2 TO-15	
1,3-Dichlorobenzene	ND	5.4	ug/m3	EPA-2 TO-15	
1,4-Dichlorobenzene	ND	5.4	ug/m3	EPA-2 TO-15	
1,2-Dichlorobenzene	ND	5.4	ug/m3	EPA-2 TO-15	
1,2,4-Trichloro-benzene	ND	27	ug/m3	EPA-2 TO-15	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: SG-1-5
Sample #: 005 Date Sampled: 07/21/05 13:45 Date Received: 07/21/05 Matrix: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by TO15					Reviewed
Hexachlorobutadiene	ND	19	ug/m3	EPA-2 TO-15	

Client Sample ID: SG-10-15
Sample #: 006 Date Sampled: 07/21/05 11:35 Date Received: 07/21/05 Matrix: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by TO15					Reviewed
Dichlorodifluoromethane	**3.8**	**0.99**	**ug/m3**	**EPA-2 TO-15**	
Chloromethane	ND	0.82	ug/m3	EPA-2 TO-15	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.4	ug/m3	EPA-2 TO-15	
Vinyl chloride	ND	0.51	ug/m3	EPA-2 TO-15	
Bromomethane	ND	0.78	ug/m3	EPA-2 TO-15	
Chloroethane	ND	1.1	ug/m3	EPA-2 TO-15	
Trichlorofluoromethane	**3.0**	**2.2**	**ug/m3**	**EPA-2 TO-15**	
1,1-Dichloroethene	ND	0.79	ug/m3	EPA-2 TO-15	
Carbon disulfide	ND	3.1	ug/m3	EPA-2 TO-15	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	3.1	ug/m3	EPA-2 TO-15	
Acetone	**12**	**1.9**	**ug/m3**	**EPA-2 TO-15**	
Methylene chloride	ND	0.69	ug/m3	EPA-2 TO-15	
trans-1,2-Dichloroethene	ND	0.79	ug/m3	EPA-2 TO-15	
1,1-Dichloroethane	ND	0.81	ug/m3	EPA-2 TO-15	
Vinyl acetate	ND	3.5	ug/m3	EPA-2 TO-15	
cis-1,2-Dichloroethene	ND	0.79	ug/m3	EPA-2 TO-15	
2-Butanone (MEK)	**2.9**	**2.9**	**ug/m3**	**EPA-2 TO-15**	
Chloroform	**3.5**	**0.97**	**ug/m3**	**EPA-2 TO-15**	
1,1,1-Trichloroethane	ND	1.1	ug/m3	EPA-2 TO-15	
Carbon tetrachloride	ND	1.3	ug/m3	EPA-2 TO-15	
Benzene	**0.72**	**0.64**	**ug/m3**	**EPA-2 TO-15**	
1,2-Dichloroethane	ND	0.81	ug/m3	EPA-2 TO-15	
Trichloroethene	ND	1.1	ug/m3	EPA-2 TO-15	
1,2-Dichloropropane	ND	0.92	ug/m3	EPA-2 TO-15	
Bromodichloromethane	**2.7**	**1.3**	**ug/m3**	**EPA-2 TO-15**	
cis-1,3-Dichloropropene	ND	0.91	ug/m3	EPA-2 TO-15	
4-Methyl-2-pentanone (MIBK)	ND	1.6	ug/m3	EPA-2 TO-15	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: SG-10-15

Sample #: 006 Date Sampled: 07/21/05 11:35 Date Received: 07/21/05 Matrix: AIR

Volatile Organics by TO15 — Reviewed

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Toluene	**15**	**1.1**	**ug/m3**	**EPA-2 TO-15**
trans-1,3-Dichloropropene	ND	0.91	ug/m3	EPA-2 TO-15
1,1,2-Trichloroethane	ND	1.1	ug/m3	EPA-2 TO-15
Tetrachloroethene	**12**	**1.4**	**ug/m3**	**EPA-2 TO-15**
2-Hexanone	ND	1.6	ug/m3	EPA-2 TO-15
Dibromochloromethane	ND	1.7	ug/m3	EPA-2 TO-15
1,2-Dibromoethane (EDB)	ND	1.5	ug/m3	EPA-2 TO-15
Chlorobenzene	ND	0.92	ug/m3	EPA-2 TO-15
Ethylbenzene	**9.3**	**0.87**	**ug/m3**	**EPA-2 TO-15**
Xylenes (total)	**52**	**2.2**	**ug/m3**	**EPA-2 TO-15**
m-Xylene & p-Xylene	**39**	**2.2**	**ug/m3**	**EPA-2 TO-15**
o-Xylene	**12**	**0.87**	**ug/m3**	**EPA-2 TO-15**
Styrene	ND	0.85	ug/m3	EPA-2 TO-15
Bromoform	ND	2.1	ug/m3	EPA-2 TO-15
1,1,2,2-Tetrachloroethane	ND	1.4	ug/m3	EPA-2 TO-15
Benzyl chloride	ND	6.4	ug/m3	EPA-2 TO-15
4-Ethyltoluene	**2.6**	**2.0**	**ug/m3**	**EPA-2 TO-15**
1,3,5-Trimethylbenzene	ND	2.0	ug/m3	EPA-2 TO-15
1,2,4-Trimethylbenzene	**2.7**	**2.0**	**ug/m3**	**EPA-2 TO-15**
1,3-Dichlorobenzene	ND	1.2	ug/m3	EPA-2 TO-15
1,4-Dichlorobenzene	ND	1.2	ug/m3	EPA-2 TO-15
1,2-Dichlorobenzene	ND	1.2	ug/m3	EPA-2 TO-15
1,2,4-Trichloro-benzene	ND	5.9	ug/m3	EPA-2 TO-15
Hexachlorobutadiene	ND	4.3	ug/m3	EPA-2 TO-15

Client Sample ID: TRIP BLANK

Sample #: 007 Date Sampled: 07/20/05 11:35 Date Received: 07/21/05 Matrix: WATER

Volatile Organics by GC/MS — Reviewed

Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: TRIP BLANK

Sample #: 007 Date Sampled: 07/20/05 11:35 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G250160 Brookfield-Nelles Facility **Date Reported:** 8/02/05

Client Sample ID: TRIP BLANK

Sample #: 007 Date Sampled: 07/20/05 11:35 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B	
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B	
o-Xylene	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

Client Sample ID: GW-2-74

Sample #: 001 Date Sampled: 07/20/05 10:20 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Acetone	ND	10	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
Bromobenzene	ND	1.0	ug/L	SW846 8260B	
Bromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	2.0	ug/L	SW846 8260B	
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

Client Sample ID: GW-2-74

Sample #: 001 Date Sampled: 07/20/05 10:20 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B	
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B	
o-Xylene	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Semivolatile Organic Compounds by GC/MS					Reviewed
Acenaphthene	ND	10	ug/L	SW846 8270C	
Acenaphthylene	ND	10	ug/L	SW846 8270C	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

Client Sample ID: GW-2-74

Sample #: 001 Date Sampled: 07/20/05 10:20 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Semivolatile Organic Compounds by GC/MS					Reviewed
Anthracene	ND	10	ug/L	SW846 8270C	
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C	
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C	
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C	
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C	
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C	
Benzoic acid	ND	50	ug/L	SW846 8270C	
Benzyl alcohol	ND	10	ug/L	SW846 8270C	
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C	
bis(2-Chloroethyl)- ether	ND	10	ug/L	SW846 8270C	
bis(2-Chloroisopropyl) ether	ND	10	ug/L	SW846 8270C	
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C	
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C	
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C	
Carbazole	ND	10	ug/L	SW846 8270C	
4-Chloroaniline	ND	10	ug/L	SW846 8270C	
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C	
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C	
2-Chlorophenol	ND	10	ug/L	SW846 8270C	
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C	
Chrysene	ND	10	ug/L	SW846 8270C	
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C	
Dibenzofuran	ND	10	ug/L	SW846 8270C	
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C	
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C	
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C	
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C	
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C	
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C	
Diethyl phthalate	ND	10	ug/L	SW846 8270C	
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

Client Sample ID: GW-2-74

Sample #: 001 Date Sampled: 07/20/05 10:20 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Semivolatile Organic Compounds by GC/MS					Reviewed
Dimethyl phthalate	ND	10	ug/L	SW846 8270C	
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C	
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C	
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C	
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C	
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C	
Fluoranthene	ND	10	ug/L	SW846 8270C	
Fluorene	ND	10	ug/L	SW846 8270C	
Hexachlorobenzene	ND	10	ug/L	SW846 8270C	
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C	
Hexachlorocyclopenta-diene	ND	50	ug/L	SW846 8270C	
Hexachloroethane	ND	10	ug/L	SW846 8270C	
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C	
Isophorone	ND	10	ug/L	SW846 8270C	
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C	
2-Methylphenol	ND	10	ug/L	SW846 8270C	
3-Methylphenol & 4-Methylphenol	ND	10	ug/L	SW846 8270C	
Naphthalene	ND	10	ug/L	SW846 8270C	
2-Nitroaniline	ND	50	ug/L	SW846 8270C	
3-Nitroaniline	ND	50	ug/L	SW846 8270C	
4-Nitroaniline	ND	50	ug/L	SW846 8270C	
Nitrobenzene	ND	10	ug/L	SW846 8270C	
2-Nitrophenol	ND	10	ug/L	SW846 8270C	
4-Nitrophenol	ND	50	ug/L	SW846 8270C	
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C	
N-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C	
Pentachlorophenol	ND	50	ug/L	SW846 8270C	
Phenanthrene	ND	10	ug/L	SW846 8270C	
Phenol	ND	10	ug/L	SW846 8270C	
Pyrene	ND	10	ug/L	SW846 8270C	
1,2,4-Trichloro-benzene	ND	10	ug/L	SW846 8270C	
2,4,5-Trichloro-phenol	ND	10	ug/L	SW846 8270C	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: GW-2-74					
Sample #: 001 Date Sampled: 07/20/05 10:20 Date Received: 07/21/05 Matrix: WATER					
Semivolatile Organic Compounds by GC/MS					Reviewed
2,4,6-Trichloro-phenol	ND	10	ug/L	SW846 8270C	
Extractable Petroleum Hydrocarbons					Reviewed
TPH (as Diesel)	ND	1.0	mg/L	SW846 8015B	
Unknown Hydrocarbon	ND	1.0	mg/L	SW846 8015B	
Volatile Petroleum Hydrocarbons					Reviewed
TPH (as Gasoline)	ND	0.10	mg/L	SW846 8015B	
Unknown Hydrocarbon	ND	0.10	mg/L	SW846 8015B	
Client Sample ID: GW-3-89					
Sample #: 002 Date Sampled: 07/20/05 15:30 Date Received: 07/21/05 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
Acetone	ND	10	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
Bromobenzene	ND	1.0	ug/L	SW846 8260B	
Bromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	2.0	ug/L	SW846 8260B	
2-Butanone	ND	5.0	ug/L	SW846 8260B	
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	2.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	2.0	ug/L	SW846 8260B	
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B	
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

Client Sample ID: GW-3-89

Sample #: 002 Date Sampled: 07/20/05 15:30 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B	
Dibromomethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	5.0	ug/L	SW846 8260B	
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B	
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B	
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

CH2M Hill Inc

Lot #: E5G260250 Brookfield-Nelles Facility **Date Reported:** 8/03/05

Client Sample ID: GW-3-89

Sample #: 002 Date Sampled: 07/20/05 15:30 Date Received: 07/21/05 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Trichloroethene	**3.8**	**1.0**	**ug/L**	**SW846 8260B**	
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B	
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B	
o-Xylene	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

STL Reference Data Summary

Structured Analysis Code: **S-88-XB-01-13**

Target Analyte List: COI: Standard TO-14A/TO-15 list

Matrix: AIR
Extraction: NO SAMPLE PREPARATION PERFORMED / DIRECT INJI
Method: Volatile Organics by GC/MS (TO-15) ug/m3
QC Program: STANDARD TEST SET
Location: STL City of Industry

Target List 5700			Detection Limits				Check List 5739							Spike List 5762						
Syn	Compound	RL	Units	MDL	Units	Run Date	T	A	Amt	Units	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD
11	Acetone	1.9	ug/m3	0.47	ug/m3	20040823		Y			0	0	20		Y			0	0	20
196	Benzene	0.64	ug/m3	0.26	ug/m3	20040823		Y			0	0	20		Y			0	0	20
220	Benzyl chloride	6.4	ug/m3	0.38	ug/m3	20040823		Y			0	0	20		Y			0	0	20
323	Bromodichloromethane	1.3	ug/m3	0.40	ug/m3	20040823		Y			0	0	20		Y			0	0	20
340	Bromoform	2.1	ug/m3	0.72	ug/m3	20040823		Y			0	0	20		Y			0	0	20
343	Bromomethane	0.78	ug/m3	0.46	ug/m3	20040823		Y			0	0	20		Y			0	0	20
3271	2-Butanone (MEK)	2.9	ug/m3	0.59	ug/m3	20040823		Y			0	0	20		Y			0	0	20
459	Carbon disulfide	3.1	ug/m3	0.44	ug/m3	20040823		Y			0	0	20		Y			0	0	20
463	Carbon tetrachloride	1.3	ug/m3	0.44	ug/m3	20040823		Y			0	0	20		Y			0	0	20
521	Chlorobenzene	0.92	ug/m3	0.41	ug/m3	20040823		Y			0	0	20		Y			0	0	20
535	Dibromochloromethane	1.7	ug/m3	0.68	ug/m3	20040823		Y			0	0	20		Y			0	0	20
550	Chloroethane	1.1	ug/m3	0.37	ug/m3	20040823		Y			0	0	20		Y			0	0	20
569	Chloroform	0.97	ug/m3	0.29	ug/m3	20040823		Y			0	0	20		Y			0	0	20
574	Chloromethane	0.82	ug/m3	0.37	ug/m3	20040823		Y			0	0	20		Y			0	0	20
3261	1,2-Dibromoethane (EDB)	1.5	ug/m3	0.46	ug/m3	20040823		Y			0	0	20		Y			0	0	20
904	1,2-Dichlorobenzene	1.2	ug/m3	0.42	ug/m3	20040823		Y			0	0	20		Y			0	0	20
907	1,3-Dichlorobenzene	1.2	ug/m3	0.48	ug/m3	20040823		Y			0	0	20		Y			0	0	20
910	1,4-Dichlorobenzene	1.2	ug/m3	0.36	ug/m3	20040823		Y			0	0	20		Y			0	0	20
924	Dichlorodifluoromethane	0.99	ug/m3	0.30	ug/m3	20040823		Y			0	0	20		Y			0	0	20
933	1,1-Dichloroethane	0.81	ug/m3	0.20	ug/m3	20040823		Y			0	0	20		Y			0	0	20
936	1,2-Dichloroethane	0.81	ug/m3	0.24	ug/m3	20040823		Y			0	0	20		Y			0	0	20
948	cis-1,2-Dichloroethene	0.79	ug/m3	0.20	ug/m3	20040823		Y			0	0	20		Y			0	0	20
950	trans-1,2-Dichloroethene	0.79	ug/m3	0.28	ug/m3	20040823		Y			0	0	20		Y			0	0	20
943	1,1-Dichloroethene	0.79	ug/m3	0.24	ug/m3	20040823	C	Y			70	130	30	C	Y			0	0	20
986	1,2-Dichloropropane	0.92	ug/m3	0.37	ug/m3	20040823		Y			0	0	20		Y			0	0	20
998	cis-1,3-Dichloropropene	0.91	ug/m3	0.36	ug/m3	20040823		Y			0	0	20		Y			0	0	20
1000	trans-1,3-Dichloropropene	0.91	ug/m3	0.36	ug/m3	20040823		Y			0	0	20		Y			0	0	20
1015	1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.4	ug/m3	0.63	ug/m3	20040823		Y			0	0	20		Y			0	0	20
1332	Ethylbenzene	0.87	ug/m3	0.30	ug/m3	20040823		Y			0	0	20		Y			0	0	20
3790	4-Ethyltoluene	2.0	ug/m3	0.34	ug/m3	20040823		Y			0	0	20		Y			0	0	20
1489	Hexachlorobutadiene	4.3	ug/m3	2.8	ug/m3	20040823		Y			0	0	20		Y			0	0	20
1515	2-Hexanone	1.6	ug/m3	0.82	ug/m3	20040823		Y			0	0	20		Y			0	0	20
1811	Methylene chloride	0.69	ug/m3	0.24	ug/m3	20040823	C	Y			65	125	30	C	Y			0	0	20
3283	4-Methyl-2-pentanone (MIBK)	1.6	ug/m3	0.37	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2355	Styrene	0.85	ug/m3	0.26	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2439	1,1,2,2-Tetrachloroethane	1.4	ug/m3	0.62	ug/m3	20040823	C	Y			55	135	30	C	Y			0	0	20

Structured Analysis Code: S-88-XB-01-13

Target Analyte List: COI: Standard TO-14A/TO-15 list

Matrix: AIR
Extraction: NO SAMPLE PREPARATION PERFORMED / DIRECT INJI
Method: Volatile Organics by GC/MS (TO-15) ug/m3
QC Program: STANDARD TEST SET
Location: STL City of Industry

Target List 5700		Detection Limits					Check List 5739							Spike List 5762						
Syn	Compound	RL	Units	MDL	Units	Run Date	T	A	Amt	Units	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD
2445	Tetrachloroethene	1.4	ug/m3	0.61	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2489	Toluene	1.1	ug/m3	0.34	ug/m3	20040823	C	Y			65	135	30	C	Y			0	0	20
2515	1,2,4-Trichlorobenzene	5.9	ug/m3	2.5	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2518	1,1,1-Trichloroethane	1.1	ug/m3	0.44	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2522	1,1,2-Trichloroethane	1.1	ug/m3	0.44	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2525	Trichloroethene	1.1	ug/m3	0.43	ug/m3	20040823	C	Y			65	135	30	C	Y			0	0	20
1428	Trichlorofluoromethane	2.2	ug/m3	1.1	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2566	1,1,2-Trichloro-1,2,2-trifluoroethane	3.1	ug/m3	0.54	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2587	1,2,4-Trimethylbenzene	2.0	ug/m3	0.39	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2592	1,3,5-Trimethylbenzene	2.0	ug/m3	0.44	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2610	Vinyl acetate	3.5	ug/m3	0.14	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2613	Vinyl chloride	0.51	ug/m3	0.15	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2940	m-Xylene & p-Xylene	2.2	ug/m3	0.87	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2623	o-Xylene	0.87	ug/m3	0.26	ug/m3	20040823		Y			0	0	20		Y			0	0	20
2627	Xylenes (total)	2.2	ug/m3	0.87	ug/m3	20040823		Y			0	0	20		Y			0	0	20
337	4-Bromofluorobenzene						X	Y			70	130	0							
2735	1,2-Dichloroethane-d4						X	Y			70	130	0							
2740	Toluene-d8						X	Y			70	130	0							

DRAFT DRAFT

TABLE 1
SUMMARY OF LABORATORY RESULTS FOR SOIL GAS SAMPLES
WHITTIER BOULEVARD AND PHILADELPHIA STREET
WHITTIER, CALIFORNIA

7/26/2005 2389 t1

Sample Identification	Probe Depth (ft)	Date Analyzed	1,2,4-TMB (μg/L)	BENZ (μg/L)	CS2 (μg/L)	EBENZ (μg/L)	m,p-XYL (μg/L)	o-XYL (μg/L)	PCE (μg/L)	TOL (μg/L)
SG-1-5	5	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.34	ND<0.2
SG-1-15	15	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.28	ND<0.2
SG-2-5	5	7/20/2005	0.64	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.23	ND<0.2
SG-2-15	15	7/20/2005	1.6	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.22	ND<0.2
SG-3-5	5	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.20	ND<0.2
SG-3-15	15	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.19	ND<0.2
SG-4-5 (1PV)	5	7/20/2005	ND<0.5	ND<0.1	ND<0.5	0.35	0.90	ND<0.2	0.19	0.38
SG-4-5 (3PV)	5	7/20/2005	ND<0.5	0.10	ND<0.5	0.58	1.5	0.28	0.20	0.69
SG-4-5 (7PV)	5	7/20/2005	ND<0.5	ND<0.1	ND<0.5	0.31	0.82	ND<0.2	0.20	0.31
SG-4-15 (IPV)	15	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.17	ND<0.2
SG-4-15 (3PV)	15	7/20/2005	ND<0.5	0.10	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.18	ND<0.2
SG-4-15 (7PV)	15	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.18	ND<0.2
SG-6-5	5	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.23	ND<0.2
SG-6-15	15	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.20	ND<0.2
SG-7-5	5	7/20/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	0.19	ND<0.2
SG-7-15	15	7/20/2005	ND<0.5	ND<0.1	2.1	ND<0.2	ND<0.5	ND<0.2	0.22	ND<0.2
SG-8-5	5	7/21/2005	ND<0.5	ND<0.1	0.84	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG-8-15	15	7/21/2005	ND<0.5	ND<0.1	0.62	ND<0.2	ND<0.5	ND<0.2	ND<0.1	0.22
SG-9-5	5	7/21/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG-9-15	15	7/21/2005	ND<0.5	ND<0.1	1.4	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG-10-5	5	7/21/2005	ND<0.5	ND<0.1	0.59	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG-10-15	15	7/21/2005	ND<0.5	ND<0.1	3.8	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2

DRAFT DRAFT

TABLE 1
SUMMARY OF LABORATORY RESULTS FOR SOIL GAS SAMPLES
WHITTIER BOULEVARD AND PHILADELPHIA STREET
WHITTIER, CALIFORNIA

7/26/2005 2389 t1

Sample Identification	Probe Depth (ft)	Date Analyzed	1,2,4-TMB (μg/L)	BENZ (μg/L)	CS2 (μg/L)	EBENZ (μg/L)	m,p-XYL (μg/L)	o-XYL (μg/L)	PCE (μg/L)	TOL (μg/L)
SG-11-5	5	7/21/2005	ND<0.5	ND<0.1	5.7	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG-11-15	15	7/21/2005	ND<0.5	ND<0.1	2.9	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG12-5	5	7/21/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG12-15	15	7/21/2005	ND<0.5	ND<0.1	3.8	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG13-5	5	7/21/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2
SG13-15	15	7/21/2005	ND<0.5	ND<0.1	ND<0.5	ND<0.2	ND<0.5	ND<0.2	ND<0.1	ND<0.2

ft = feet below grade
μg/L = micrograms per liter
ND = Not detected at or above the reporting limit.
1,2,4-TMB = 1,2,4-trimethylbenzene
BENZ = benzene
CS2 = carbon disulfide
EBENZ = ethylbenzene
m,p-XYL = meta- and para-xylenes
o-XYL = ortho-xylene
PCE = tetrachloroethene
TOL = toluene

SUPPLEMENTAL SITE INVESTIGATION

Fred C. Nelles Youth Correctional Facility
11850 Whittier Boulevard
Whittier, California 90606

Prepared for:

Brookfield Residential
3090 Bristol Street, Suite 200
Costa Mesa, California 92626

Prepared by:

engineers | scientists | innovators

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
Telephone: (805) 897-3800

www.geosyntec.com

January 28, 2014

SUPPLEMENTAL SITE INVESTIGATION

Fred C. Nelles Youth Correctional Facility
11850 Whittier Boulevard
Whittier, California 90606

Prepared for:

Brookfield Residential

Prepared by:

Geosyntec Consultants, Inc.

PROFESSIONAL GEOLOGIST
Geoffrey Frieman
No. 8610
Exp: 2/29/16
STATE OF CALIFORNIA

Geoffrey Frieman, P.G.
Senior Geologist

Ruth Custance
Principal

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY ES-1

1. INTRODUCTION 1

2. SITE BACKGROUND 2
2.1 Site Location 2
2.2 Description of On-Site Buildings and Structures 2
2.3 Current Uses of Adjacent Properties 2
2.4 Site History 3
2.5 Previous Investigations 3

3. SSI OBJECTIVES AND SAMPLING APPROACH 6
3.1 Soil Vapor Investigation Approach 7
3.2 Soil Investigation Approach 7
3.3 Laboratory Analysis 8

4. FIELD METHODOLOGY 10
4.1 Pre-Field Activities 10
4.2 Soil Boring Advancement 10
4.3 Soil Vapor Probe Installation and Sampling 11
4.4 Decontamination 12
4.5 Quality Assurance/Quality Control 12
4.6 Investigation Derived Waste 13

5. RESULTS 14
5.1 Soil Classification 14
5.2 UST Area and Former Modine Property 15
5.2.1 Soil Vapor Sample Results 15
5.2.2 Soil Results 16
5.3 Buildings: Lead-Based Paint and OCPs in Soil 18
5.4 Former Agricultural Areas 18
5.5 Railroad Easement 19
5.6 Transformers 19
5.7 Data Validation 20

6. HUMAN HEALTH SCREENING EVALUATION 22

TABLE OF CONTENTS (Continued)

Page

6.1 Introduction 22
6.2 Screening Evaluation Approach 22
6.3 Data Review and Evaluation 24
6.3.1 Selection of Chemicals of Potential Concern 24
6.4 Exposure Assessment 26
6.4.1 Conceptual Site Model 26
6.4.2 Summary of Selected Exposure Pathways 29
6.4.3 Fate and Transport Modeling 29
6.4.4 Estimating Chemical Intake 31
6.5 Toxicity Assessment 31
6.6 Risk-Based Concentrations 33
6.6.1 Methodology 33
6.6.2 RBCs Based on Cancer Health Effects 35
6.6.3 RBCs Based on Noncancer Health Effects 36
6.7 Risk Characterization 37
6.7.1 Cumulative Risk Methodology 37
6.7.2 Risk Characterization Results 39
6.8 Uncertainty Analysis 41
6.9 Summary 43

7. CONCLUSIONS AND RECOMMENDATIONS 45
7.1 Former UST Area and Former Modine Property 45
7.2 Buildings: Lead-Based Paint and OCPs in Soil 47
7.3 Former Agricultural Area 47
7.4 Railroad Easement 48
7.5 Transformers 48
7.6 Human Health Screening Evaluation Results 49

8. FUTURE ACTIVITIES/NEXT STEPS 50

9. REFERENCES 52

TABLE OF CONTENTS (Continued)

LIST OF TABLES

Table 1: Soil and Soil Vapor Sample Locations and Rationale – Former UST Area

Table 2 Shallow Soil Sample Locations and Rationale

Table 3: Chemical Concentrations in Soil Vapor

Table 4: Historical Detected Chemical Concentrations in Soil Vapor – Phase II Environmental Site Assessment

Table 5: Detected Chemical Concentrations in Soil

Table 6: Historical Detected Chemical Concentrations in Soil – Phase II Environmental Site Assessment

Table 7: Detected Lead Concentrations in Soil

Table 8: Detected Arsenic Concentrations in Soil

Table 9: Detected Pesticides Concentrations in Soil

Table 10: Transformer Survey

Table 11: Exposure Parameters

Table 12: Definition of Transfer Factors

Table 13: Toxicity Criteria

Table 14: Summary of Soil RBCs, Future Onsite Resident and Construction Worker

Table 15: Summary of Soil Vapor RBCs, Future Onsite Resident

Table 16: Cumulative Cancer Risk and Noncancer Hazard, Soil Exposure Pathways

Table 17: Cumulative Cancer Risk and Noncancer Hazard, Soil Vapor to Indoor Air Exposure Pathway

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

Figure 1: Site Location

Figure 2a: PCE Concentrations in Soil Vapor

Figure 2b: PCE Concentrations in Soil Vapor – Former UST Area

Figure 3a: Benzene Concentrations in Soil Vapor

Figure 3b: Benzene Concentrations in Soil Vapor – Former UST Area

Figure 4: Lead Concentrations in Soil

Figure 5: Arsenic Concentrations in Soil

Figure 6a: Pesticide Concentrations in Soil – Former Agricultural Area

Figure 6b: Pesticide Concentrations in Soil – Building Sample Locations

Figure 7: PCB Concentrations at Transformer Locations

Figure 8: Conceptual Site Model

Figure 9a: Future Onsite Resident, Potential Cancer Risk – Soil

Figure 9b: Future Onsite Resident, Potential Noncancer Hazard – Soil

Figure 10a: Future Onsite Resident, Potential Cancer Risk – Soil Vapor

Figure 10b: Future Onsite Resident, Potential Noncancer Hazard – Soil Vapor

Figure 11a: Future Construction Worker, Potential Cancer Risk – Soil

Figure 11b: Future Construction Worker, Potential Noncancer Hazard – Soil

TABLE OF CONTENTS (Continued)

LIST OF APPENDICES

Appendix A: Boring Logs
Appendix B: Waste Manifest
Appendix C: Laboratory Reports
Appendix D: Data Validation Reports
Appendix E: Human Health Screening Evaluation
Appendix F: Site Grading Plan and Redevelopment Plan

LIST OF ACRONYMS

%	percent
µg/dL	micrograms per deciliter
$\mu g/m^3$	micrograms per cubic meter
µg/mg	micrograms per milligram
AOPC	Area of Potential Concern
ASTM	American Society for Testing Materials
bgs	below ground surface
Cal-EPA	California Environmental Protection Agency
CEL	Calscience Environmental Laboratory
CHHSL	California Human Health Screening Level
COC	Chain-of-Custody
COPC	Chemical of Potential Concern
CR	Cancer Risk
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
DTSC	Department of Toxic Substances Control
EPC	Exposure Point Concentration
ECF	Exposure Concentration Factor
ESA	Environmental Site Assessment
ft	feet
ft bgs	feet below ground surface
Geosyntec	Geosyntec Consultants
HASP	Health and Safety Plan
HREC	Historical Recognized Environmental Concern
HSAA	California Hazardous Substances Account Act
HHSE	Human Health Screening Evaluation
HI	Non-Cancer Hazard Index
HQ	Hazard Quotient
IDW	Investigated Derived Waste
IF	Intake Factor
IRIS	Integrated Risk Information System
Jones	Jones Environmental
kg/m^3	kilograms per cubic meter

LIST OF ACRONYMS (Continued)

LARWQCB	Los Angeles Regional Water Quality Control Board
mg/kg	milligrams per kilogram
mg/kg-d	milligrams per kilogram per day
OCP	Organochlorine Pesticide
OEHHA	Office of Environmental Health Hazard Assessment
PAH	Polyaromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
ppmv	Parts Per Million by Volume
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control
RBC	Risk-Based Concentration Screening Level
REC	Recognized Environmental Concern
REL	Reference Exposure Level
RfC	Reference Concentration
RfD	Reference Dose
RME	Reasonable Maximum Estimates of Exposure
RSL	Regional Screening Level
SSI	Supplemental Site Investigation
SVOC	Semi-Volatile Organic Compound
SVP	Soil Vapor Probe
TF	Transfer Factor
THQ	Target Hazard Quotient
TPH	Total Petroleum Hydrocarbons
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
VF	Volatilization Factor
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Brookfield Residential (Brookfield) is considering the purchase and redevelopment of the former Fred C. Nelles Youth Correctional Facility (Site). The Site is comprised of an approximately 75-acre property located at 11850 Whittier Boulevard, Whittier, California 90606. The proposed redevelopment consists of mixed use commercial, residential, parks and open space.

The former Fred C. Nelles Youth Correctional Facility is currently owned and formerly operated by the State of California (State). During its operation, the Site was used for housing and training youth offenders under the oversight of the California Department of Corrections. The State ceased activities in June 2004 when the property was deemed surplus property.

In 2005, Brookfield initially began its due diligence for the Site and retained CH2MHill to prepare a Phase I Environmental Site Assessment (ESA). A Phase I ESA update was later completed in 2010. Based on the findings of the Phase I ESA reports, Recognized Environmental Conditions (RECs), Historical RECs (HRECs), and Areas of Potential Concern (AOPCs) were identified for the Site that warranted further investigation. Subsequently, CH2MHill conducted a Phase II ESA to further assess the RECs and HRECs, and the results were documented in a Draft Phase II ESA dated August 2010.

Geosyntec was then retained by Brookfield in 2013 to develop an investigative strategy to address data gaps identified in previous investigations that would help facilitate the re-development process. As a result, Geosyntec developed a Supplemental Site Investigation (SSI) scope of work. The SSI scope of work included the collection of soil and soil vapor data to further evaluate RECs, HRECs, and AOPCs, including:

- Installation and sampling of multi-depth soil vapor probes at 18 locations to further assess the extent of volatile organic compounds (VOCs) in soil vapor within the former underground storage tank (UST) Area of the Site. In addition, characterize soil concentrations in the upper 10 feet within the former UST Area for risk assessment purposes;

- Installation and sampling of three multi-depth soil vapor probes to assess the potential for horizontal migration of residual soil vapor impacts onto the Site from the offsite former Modine Property;

- Collect shallow soil samples to evaluate potential soil impacts related to lead-based paint (LBP) and organochlorine pesticide (OCP) use around buildings,

arsenic and OCP use within the former agricultural portion of the Site, and arsenic-based herbicide use along the Southern Pacific Railroad easement; and

- Conduct an inspection and document the condition of existing transformers at the Site. Assess potential for soil impacts related to PCBs at current transformer locations by collecting soil samples adjacent to stained concrete transformer pads or by collecting grab samples of oily residue.

The scope of work was consistent with regulatory guidance developed by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) but was reduced to provide more of a screening of Site issues (e.g., not all buildings were sampled for potential lead-based paint impacts in soil).

Based on the results of the SSI conducted in November 2013, and historical data collected in July 2005, and July and August 2010, the SSI report concludes and recommends the following:

Former UST Area and Former Modine Property

The former UST Area includes two former gasoline USTs (Tank 1 and 2), two former diesel USTs (3G and 3P), and one former waste oil tank (4G). All of the USTs were closed between 1996 and 2004. Following closure, all of the USTs were removed except for the boiler room UST (3P), which was abandoned in place by filling it with slurry. Presumably the removed UST excavations were backfilled with imported fill material. Previous investigations conducted at the Site evaluated potential soil vapor and groundwater impacts related to these former USTs. In addition, potential soil impacts at depths of 10 feet below ground surface (ft bgs) and greater were assessed.

Results of the previous investigations indicated that the highest concentrations of residual hydrocarbons, primarily diesel, were detected at approximately 30 ft bgs, and groundwater was not impacted by VOCs or total petroleum hydrocarbons (TPH) from the former USTs. In addition, five locations contained concentrations of benzene in soil vapor above the benzene screening level at depths ranging from 5 to 30 ft bgs, and one location had a concentration of PCE in soil vapor above the PCE screening level at a depth of 5 ft bgs.

Step-out soil vapor samples were collected from these six locations during the SSI, and the benzene and PCE screening levels were further refined by deriving depth and site-specific risk-based concentrations (RBCs) for these compounds. When compared to the RBCs, none of the concentrations of PCE in soil vapor exceeded the RBCs for PCE,

and the detected PCE concentrations are adequately defined in a vertical and lateral direction. An evaluation of benzene indicates that three historical detections of benzene at 5 ft bgs in soil vapor (SG-14, SG-17, and SG-21) exceeded the RBC for benzene. However, results of step-out sampling conducted during the SSI indicate that concentrations of benzene are significantly lower when compared to concentrations measured in 2005 and 2010, and the concentrations are adequately defined to concentrations below the depth-specific RBCs in a vertical and lateral direction.

Results of the human health screening evaluation for the soil vapor to indoor air pathway, indicated only four historical locations (SG-4, SG-14, SG-17, and SG-21) had cumulative cancer risk estimates marginally above the lower bound of the risk management range, ranging from 2×10^{-6} to 4×10^{-6}. Benzene was the primary contributor to the cancer risk (CR) estimates at depths of 5 feet bgs at these historical locations, with three locations where benzene was detected at concentrations above its RBC. When assuming a future scenario that includes the five feet of engineered fill that will be required beneath buildings, the CR estimates are estimated to be lower, with only one sample location estimate (SG-21) marginally above the lower-bound of the risk range with a result of 2×10^{-6}, which is considered negligible.

As discussed above, in more recent sampling, benzene concentrations were lower than observed previously in this area, which is likely due to biodegradation in shallow soils. This observation suggests that oxygen is present in the subsurface that creates a bio-attenuation zone that mitigates vapor intrusion concerns. This natural biodegradation process of petroleum hydrocarbons is recognized by the State Water Resources Control Board as a criterion for granting low-threat closure at UST sites. In addition, this area is within a planned high-density residential area which will require over-excavation of approximately five feet of soil followed by placement of engineered fill (see grading and redevelopment plan in Appendix F). The earthwork activities prior to redevelopment will likely result in lower concentrations due to oxygenation of soils.

Soil vapor results from VP-16 through VP-18 indicate no significant migration of PCE or other VOCs onto the Site from the adjacent former Modine Property. This finding is consistent with the soil vapor and groundwater results from the Phase II ESA.

Results of shallow soil sampling for VOCs at depths less than or equal to 10 ft bgs within the former UST Area indicate that PCE was not detected, and benzene was detected in two samples at concentrations slightly above the laboratory reporting limit. No further action is recommended at this time with respect to characterizing VOCs in soil within the former UST Area.

Results of shallow soil sampling for metals and other constituents indicate that lead, arsenic and TPH were detected at significant concentrations, and the impacts are generally co-located. In general, lead was detected at concentrations above the residential California Human Health Screening Level (CHHSL) of 80 mg/kg at approximately 5 ft bgs in the vicinity of the former gasoline USTs (Tanks 1 and 2), the former waste oil UST (4G), and beneath the slab of the former maintenance garage. The lead impacts may be associated with the fill material used to backfill the former UST excavations or other historical uses of lead-containing products in this area. An isolated detection of TPH (C6-C44) was found at 5 ft bgs in boring VP-04 that is located beneath the slab of the former maintenance garage. In addition, arsenic was detected above the southern California background level of 12 mg/kg at two locations (VP-13 and Historic-SB-03) but within the background range observed in Southern California and is co-located with lead impacts. The lead-impacted soil will be screened with analytical testing to confirm the volume of soil to be removed or otherwise addressed in accordance with DTSC requirements prior to redevelopment. A Soil Management and Contingency Plan will be developed that sets forth protocols for addressing soil impacted by hazardous substances that may be encountered during demolition and grading in this area. This plan will also include procedures for managing unexpected contaminated soil identified by staining or odors that are encountered during site excavation associated with redevelopment.

Lead-Based Paint and Organochlorine Pesticides (OCPs) in Soil

Lead was detected above the CHHSL in samples collected around five of six buildings. This suggests that buildings constructed at the Site prior to 1979 likely have soil impacts around the perimeter related to lead-based paint that has flaked off painted surfaces. Soil containing lead at concentrations exceeding the CHHSL should be removed prior to earthwork under DTSC oversight. An X-ray Fluorescence (XRF) analyzer or other technique approved by DTSC can be used to guide soil removal activities. Lead-impacted soils around buildings located in the planned commercial area of the Site (see Appendix F) should be assessed using the commercial CHHSL for lead to determine if soil removal is necessary.

Organochlorine pesticides were detected in samples collected around all of the assessed buildings indicating the potential application of pesticides as a termiticide. Concentrations of OCPs around four of six buildings were detected above risk-based screening levels. Based on these results, it is likely that the remaining buildings at the Site that were constructed prior to 1989 have soil impacts related to OCPs. Soil containing OCPs at concentrations exceeding RBCs should be removed prior to

earthwork in accordance with DTSC requirements. Confirmation soil sampling for OCPs can be used to guide soil removal activities. OCP-impacted soils around buildings located in the planned commercial area of the Site (see Appendix F) should be assessed using commercial RBCs to determine if soil removal is necessary.

Former Agricultural Area

Arsenic was detected above the Southern California Background Level of 12 mg/kg in seven of 11 locations sampled in the former agricultural area with two of the seven locations having concentrations within the range observed in Southern California soils. This may suggest the potential application of arsenic-based herbicides from historical agricultural land use. It is recommended that this area undergo further assessment in areas where concentrations are above the range observed in Southern California soils to delineate the vertical and lateral distribution of arsenic in soil.

OCPs were detected infrequently and at concentrations below RBCs in the samples collected from the former agricultural area. No further assessment for OCPs in this area is recommended.

Railroad Easement

Arsenic was detected above the Southern California Background Level of 12 mg/kg in two of five sample locations collected along the railroad easement but within the range observed in Southern California soils. This may suggest potential arsenic-based herbicide use, but which application resulted in concentrations within the background range. No further assessment is warranted for arsenic along the railroad easement.

Transformers

Based on information from State facility staff, 16 transformers were installed outside of Site buildings in the 1990s to replace 30 older transformers located inside Site buildings. The age and contents of the transformers could not be verified due to incomplete or missing labels; therefore, Geosyntec inspected all transformers to assess the use of potential PCB-containing fluids.

Of the 46 transformers inspected, eight of the transformers (four interior and four exterior) had stained and/or damaged concrete pads that were targeted for sample collection. Soil samples were collected at three exterior transformer locations, and a grab sample of oily material was collected from one interior transformer location. Samples could not be collected from the remaining four locations due to insufficient sample volume or logistical issues.

Soil sample results for the exterior transformer locations were non-detect for PCBs. Based on these non-detect results, and the assumption that the 16 exterior transformers were installed after 1979, it is unlikely that the subsurface area surrounding the 16 exterior transformers contain PCBs in soil at concentrations of regulatory concern. No further action is recommended for the exterior transformers. Soils beneath the transformer pads should be inspected for staining during demolition as an indicator that that the soils may be impacted with non-PCB containing oil.

The grab sample of the oily residue from transformer T-9 in Building 38 contained Aroclor-1260 at a concentration of 9,800 µg/kg. Based on these results, potential exists for at least one of the interior transformers (T-9), and possibly the other three interior transformer locations that had damaged concrete pads, to have PCB impacts in soil beneath the transformer pad that would require mitigation. In addition, given the sampling results and observed age of the interior transformers, they should be presumed to contain PCBs. Prior to demolition, any oil within the transformer should be analyzed for PCBs, removed by a qualified professional and transported to a facility licensed to accept such waste. Inspection of the concrete surfaces beneath the interior transformers is warranted during demolition to confirm that they are not impacted with PCB-containing oil.

Human Health Screening Evaluation

Potential cancer risk and noncancer hazard to onsite future residents and construction workers were evaluated assuming exposure occurs to current COPC concentrations detected in soil and soil vapor samples collected from the Site. The risk and hazard estimates presented in this screening evaluation likely over-estimate potential health risk because several conservative assumptions were used throughout the screening evaluation process. Moreover, no engineering or other controls were included in the assessment that would reduce or mitigate exposures post-development.

Based on the results of the HHSE, ten soil locations contain COPC concentrations that were greater than the lower-bound of the risk management range for future residents. Chemicals that contributed to the cumulative CR estimates greater than 1×10^{-6} were dieldrin, chlordane and heptachlor epoxide in soil samples collected around buildings likely associated with organochlorine pesticide use as a termiticide. At one location, T09, PCBs contributed to the CR estimate of 2×10^{-6}. Lead was evaluated using the CHHSL according to recommendations from DTSC. Several locations had lead concentrations greater than the residential soil CHHSL of 80 mg/kg located around buildings tested for potential lead-based paint impacts and in the former UST area. Arsenic concentrations are typically compared to background concentrations with

Southern California. Eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg; however six of the locations were similar to the range of background concentrations. Five locations primarily located in the former agricultural area have concentrations greater than 20 mg/kg.

For the soil vapor to indoor air pathway, the cumulative CR estimates for four samples were marginally greater than the lower-bound range of the risk management range: SG-4, SG-14, SG-17, and SG-21 ranging from 2×10^{-6} to 4×10^{-6}. Benzene was the primary contributor to the CR estimates at depths of 5 feet bgs at these locations with the chemical-specific RBC for benzene being exceeded at three of the locations. When assuming a future scenario that includes 5 feet of engineered fill beneath building in the former UST area, the CR estimates are estimated to be lower with only one sample location estimate (SG-21) marginally above the lower-bound of the risk range with a result of 2×10^{-6}, which is considered negligible.

For construction workers the cumulative CR and noncancer hazard index (HI) estimates for each soil sample location were below the TR and THQ of 1×10^{-5} and 1, respectively. Several locations had lead concentrations greater than the commercial soil CHHSL of 320 mg/kg and eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg.

Future Activities/Next Steps

Based on the types and concentrations of COPCs identified at the site, additional investigation and remediation activities can be implemented using best management practices without creating a significant hazard to the public or the environment related to the potential exposure to COPCs at the site during handling excavation, transport or disposal of contaminated material. The following future activities are planned:

1. Enter into DTSC Voluntary Cleanup Program. Brookfield will engage DTSC to provide regulatory oversight on this project through the state's voluntary cleanup program. This SSI report will be reviewed and approved by DTSC.

2. SSI Follow-up. Prior to demolition, a scope of work will be prepared to further delineate the soil impacts identified in this SSI Report that exceeded screening thresholds: arsenic-impacted soil in the former agricultural area; lead-impacted soil in the UST area; and lead/OCP-impacted soil around the periphery of all buildings. The SSI follow-up scope of work will be reviewed and approved by DTSC prior to implementation.

3. Prepare Removal Action Workplan (RAW). The findings of the SSI and SSI follow-up soil delineation will be used to prepare a RAW. The RAW is a workplan developed to carry out removal or response actions which, when implemented in an effective manner, render the Site protective of public health and safety and the environment. The RAW will include a detailed engineering plan for conducting the proposed removal/response action and will include a discussion of any alternative removal/response options that were also considered, and the basis for selecting the proposed removal/response action. The draft RAW will be reviewed and approved by DTSC.

4. RAW Public Participation. Notice that the draft RAW is available for public review and comment will be made in a newspaper of general circulation, and provided to affected citizens, adjacent neighbors, state and local officials, and, if applicable, to emergency management agencies. Any comments received from the public will be considered prior to finalizing the RAW.

5. RAW Implementation. The approved RAW removal/response actions will be implemented prior to Site redevelopment under the oversight of DTSC. The results of the RAW implementation will be summarized in a Removal Action Report that will be submitted to DTSC.

6. Prepare Soil Management and Contingency Plan. Prior to demolition, a Soil Management and Contingency Plan (SMCP) will be prepared and approved by DTSC that sets forth protocols for responding to soil impacted by hazardous substances that may be encountered during demolition and grading activities. The approved SMCP will be provided to the contractors responsible for demolition, grading and environmental oversight for the redevelopment.

1. INTRODUCTION

Brookfield Residential (Brookfield) is considering the purchase and redevelopment of the former Fred C. Nelles Youth Correctional Facility (Site). The Site is comprised of an approximately 75-acre property located at 11850 Whittier Boulevard, Whittier, California 90606 (Figure 1). The proposed redevelopment consists of mixed use commercial, residential, parks and open space.

The former Fred C. Nelles Youth Correctional Facility is currently owned and formerly operated by the State of California (State). During its operation, the Site was used for housing and training youth offenders under the oversight of the California Department of Corrections. The State ceased activities in June 2004.

In 2005, Brookfield initially began its due diligence for the Site and retained CH2MHill to prepare a Phase I Environmental Site Assessment (CH2MHill, 2005). Reportedly, the Phase I Environmental Site Assessment (ESA) was conducted in accordance with the requirements of the American Society for Testing and Materials (ASTM) for environmental due diligence (Standard E 1527-00). A Draft update to the 2005 Phase I ESA was prepared by CH2MHill in 2010 (CH2MHill, 2010a).

Based on the findings of the Phase I ESA reports, Recognized Environmental Conditions (RECs), Historical RECs (HRECs), and Areas of Potential Concern (AOPCs) were identified for the Site that warranted further investigation. Subsequently, CH2MHill conducted a Phase II ESA to further assess the RECs and HRECs, and the results were documented in a Draft Phase II ESA dated August 2010 (CH2MHill, 2010b). The AOPCs were not assessed during the Phase II ESA.

Geosyntec was subsequently retained in 2013 to develop an investigative strategy to address data gaps identified in previous investigations that would help facilitate the re-development process. As a result, Geosyntec developed a Supplemental Site Investigation (SSI) scope of work that was documented in the Proposal for Supplemental Site Investigation dated 9 September 2013. This report documents the results of the SSI activities.

2. SITE BACKGROUND

Information on the current and historical uses of the Site and adjacent properties was obtained from the Phase I and Phase II ESA reports (CH2MHill, 2010a and 2010b), and is briefly summarized in the following sections.

2.1 Site Location

The Site is located south of the intersection of Whittier Boulevard and Sorensen Avenue in Whittier, California (Figure 1). The Site is comprised of one parcel with a Los Angeles County Assessor Map Number of 8170-013-904. Areas surrounding the Site are developed for residential, commercial, and industrial land uses.

2.2 Description of On-Site Buildings and Structures

The Site contains 62 buildings spread throughout the property (CH2MHill, 2010b). The building types include unreinforced masonry brick, reinforced concrete brick and reinforced cast concrete and portable buildings. In addition to the buildings a football/athletic field and a number of play/recreational yards are also present at the Site. The buildings at the Site provided living quarters, dining room, church, library, infirmary, gymnasium, swimming pool, auditorium, and schooling facilities. Other structures at the Site were used as administration buildings, visiting hall, staff housing, security buildings, maintenance garage, carpenter and paint shop, boiler plant, emergency generator, and warehouse. Heating at the Site was provided by a boiler plant via a network of underground pipes. A security fence and perimeter road surrounds the Site.

2.3 Current Uses of Adjacent Properties

Current uses of adjacent properties to the Site include:

North Residential single-family homes and commercial stores and restaurants located to the North.

East Commercial warehouses and light industrial operations to the East.

South Presbyterian Intercommunity Hospital is located immediately South of the Site.

West Residential single-family homes and the Grace Community Assembly of God church are located immediately West of the Site.

2.4 Site History

According to the Phase I ESA (CH2MHill, 2010a), the Site opened in 1890 and was named Reform School for Juvenile Offenders. It was later re-named in 1891 to Whittier State School, and then again in 1941 as Fred C. Nelles Youth Correctional Facility. The Site was closed in 2004. Based on the chain-of-title report (CH2MHill, 2010a), the Site has been owned by the State since 1910. Review of historical aerial photographs and historical USGS topographic maps provided in the Phase I ESA (CH2MHill, 2010a) indicate various stages of Site development, and the configuration and number of buildings and roads have changed since 1928. In addition, historical aerial photographs indicate former agricultural use within much of the southern and southwestern portions of the Site from at least 1928 until sometime prior to 1968. The extent of the former agricultural use on the Site was estimated by Geosyntec to be approximately 33-acres.

2.5 Previous Investigations

The Phase I ESAs (CH2MHill, 2005 and 2010a) identified the following AOPCs, HRECs and RECs in connection with the Site:

AOPCs

- Building 15 – Hydraulic Lift
- Building 15 – Drain Pit
- Lead in Soil from lead-based paint (estimated 34 buildings constructed prior to 1979)
- Former Agricultural Areas
- PCBs in transformers and other electrical equipment
- Herbicide use along Southern Pacific Railroad easement located adjacent to Site

Historical RECs

- Tanks 1 and 2 (Gasoline USTs)
- Tank 3G (Waste Oil Leaking Underground Storage Tank [LUST])
- Tank 4G (Diesel UST)
- Tank 3P (Diesel UST)

RECs

- Chlorinated solvent releases at adjacent property – Former Leggett & Platt
- Chlorinated solvent releases at adjacent property – Former Modine Manufacturing Company (Former Modine Property)

A Phase II ESA (CH2MHill, 2010b) was conducted to assess the RECs and HRECs identified in the Phase I ESA. The objective of the Phase II ESA was to evaluate potential subsurface impacts related to the former USTs at the Site (i.e., HRECs), and the potential for migration of residual volatile organic compounds (VOCs) in soil vapor and groundwater onto the Site from the adjacent properties (i.e., RECs). The Phase II ESA included the collection of soil, soil vapor, and groundwater samples in July 2005 and July/August 2010. The primary finding relevant to characterizing potential risks at the site from the Phase II ESA was the presence of several VOCs at concentrations in soil vapor above residential screening levels, including: benzene, bromodichloromethane, chloroform, ethylbenzene, tetrachloroethene (PCE), 1,2,4-trimethylbenzene, and xylenes. The Phase II ESA recommended that these concentrations be evaluated further.

Deeper soil impacts were also noted from soil sampling conducted in 2005. Total petroleum hydrocarbons diesel range (TPHd) was detected at a concentration of 40,000 milligrams per kilogram (mg/kg) at 30 feet below ground surface (ft bgs) in the former boiler room UST area (Tank 3P) that was in the same order of magnitude of the results from earlier reports in that area (21,400 mg/kg at 55 feet bgs and 24,700 mg/kg at 65 feet bgs). CH2MHill concluded that additional soil investigation could be conducted in the Tank 3P area that exceeded the screening levels to confirm the 2005 results. In addition to hydrocarbon impacts in soil, lead was detected in soil above the current California Human Health Screening Level (CHHSL) for both residential and industrial land uses at a concentration of 673 mg/kg at 10 ft bgs in SB-3 located in the Tank 4G area. No samples were collected above the elevated sample to determine the vertical extent at shallower depths. In addition to the soil and soil vapor samples, groundwater samples were collected in 2005 at locations thought to be down-gradient from previously sampled wells in which TPHd and methyl tert-butyl ether were detected. Concentrations were non-detect or below MCLs; as a result CH2MHill recommended no further actions for groundwater.

An important consideration with respect to characterizing potential risks is the lack of investigation information for the AOPCs, and the incomplete delineation of soil vapor concentrations found during the Phase II ESA. Additionally, the majority of soil

samples collected during the Phase II ESA were at depths of 10 feet and greater, below the depth typically considered in risk assessment (i.e., 0 to 10 ft bgs).

With these data gaps in mind, a SSI scope of work was developed by Geosyntec. During this process, site-specific screening levels (SSLs) were calculated using California EPA and United States Environmental Protection Agency (USEPA) toxicity criteria and the Department of Toxic Substances Control (DTSC) vapor intrusion methodology (Cal-EPA, 2011a). The calculated SSLs were different (e.g., higher) from those previously used in the Phase II ESA (CH2MHill, 2010b) because they were calculated using a different methodology based on more recent guidance. The SSLs were compared to the Phase II ESA soil vapor results to determine the locations and compounds where soil vapor was detected at concentrations above SSLs. Based on this evaluation, benzene and PCE were identified as the primary compounds of concern (COCs) in soil vapor; fewer than the seven compounds previously identified in the Phase II ESA (benzene, bromodichloromethane, chloroform, ethylbenzene, PCE, 1,2,4-trimethylbenzene, and xylenes). Five locations contained concentrations of benzene above the benzene screening level at depths ranging from 5 to 30 ft bgs (SG-4, SG-14, SG-17, SG-18, and SG-21), and one location had a concentration of PCE above the PCE screening level at a depth of 5 ft bgs (SG-1). As a result, the SSI soil vapor sampling approach described in subsequent sections involved the collection of step-out samples at these locations to further evaluate the vertical and lateral extent of soil vapor impacts.

3. SSI OBJECTIVES AND SAMPLING APPROACH

The SSI scope of work included the collection of soil and soil vapor data to further evaluate RECs, HRECs, and AOPCs that were previously identified in the Phase I ESA. The objectives of the SSI are listed below:

- Further assess the vertical and lateral extent of benzene and PCE in soil vapor at former sample locations SG-1, SG-4, SG-14, SG-17, SG-18, and SG-21 that are located in the vicinity of the former USTs and buildings 15 and 27 (i.e., former UST Area). In addition, characterize soil concentrations in the upper 10 feet within the former UST Area for risk assessment purposes;

- Assess the potential for horizontal migration of residual concentrations of PCE in soil vapor onto the Site from the offsite former Modine Property;

- Evaluate the potential for shallow soil impacts related to lead-based paint (LBP) and organochlorine pesticide (OCP) use around buildings, arsenic and OCP use within the former agricultural portion of the Site, and arsenic-based herbicide use along the Southern Pacific Railroad easement; and

- Conduct an inspection and document the condition of existing transformers at the Site. Assess potential for soil impacts related to PCBs at current transformer locations by collecting soil samples adjacent to stained concrete transformer pads or by collecting grab samples of oily residue.

The scope of work was consistent with specific regulatory guidance developed by the California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC), including:

- *Preliminary Endangerment Assessment Guidance Document*, (Cal-EPA, 2013a);
- *Interim Guidance for Evaluation of School Sites With Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls From Electrical Transformers* (Cal-EPA, 2006);
- *Interim Guidance for Sampling Agricultural Properties, Third Revision* (Cal-EPA, 2008b); and
- *Advisory on Active Soil Gas Investigations* (Cal-EPA, 2012).

In addition, the scope of work was reduced to provide more of a screening of Site issues. For example, not all of the buildings were sampled for potential soil impacts related to LBP or OCPs. In addition, per the request of Brookfield, AOPCs located in Building 15 (drain pit and hydraulic hoist) were not included in the investigation because it is assumed that these will be addressed post-demolition. To gain DTSC approval, these tasks will likely need to be completed at some date in the future prior to Site redevelopment.

3.1 Soil Vapor Investigation Approach

Table 1 summarizes the soil vapor sample locations and rationale. The soil vapor investigation focused on the former UST Area and the area just west of the former Modine Property. Soil vapor sampling within the former UST Area generally consisted of collecting three step-out samples around each of the six soil vapor probes where elevated concentrations were previously detected. A total of 18 soil vapor borings were advanced at the following locations: 12 borings (VP-1 through VP-12) were located around Building 15 (former maintenance garage); three borings (VP-13 through VP-15) were located near Building 27 (former boiler room); and three borings (VP-16 through VP-18) were located in a general line trending west of the former Modine Property. During boring advancement, soil samples were collected from six borings (VP-2, VP-6, VP-7, VP-10 and VP-13) within the former UST Area at depths of 0.5, 5 and 10 ft bgs. In addition, one soil sample was collected at 5 ft bgs from boring VP-11a due to the presence of fill material in this area. The soil sample locations were generally distributed evenly throughout the UST Area with the assumption that the data would be representative of subsurface conditions in this area. Following boring advancement, multi depth soil vapor probes were installed inside each boring (Table 1).[1]

3.2 Soil Investigation Approach

Shallow soil samples (0.5 to 2 ft bgs) were collected from various locations across the Site as discussed below.

---

[1] Borings VP-11 and VP-11a are co-located. Vapor probes were installed at VP-11, and VP-11a was advanced so that a soil sample could be collected from the fill material at 5 ft bgs.

- Soil samples were collected at 0.5 ft bgs from six locations around six of the Site buildings constructed prior to 1979 to assess potential soil impacts related to lead-based paint use. A total of 36 soil samples were analyzed for lead.

- Soil samples were collected at 0.5 and 2 ft bgs from six locations around six of the Site buildings to assess potential soil impacts related to termiticide use for buildings constructed prior to 1989. Three soil samples from each depth were composited into one soil sample for a total of two composite soil samples per depth interval. A total of 24 composite soil samples were analyzed for OCPs.

- Soil samples were collected at 0.5 and 2 ft bgs at three transformer locations to assess potential soil impacts related to PCBs. A grab sample of an oily residue was collected from the concrete slab at the base of one transformer (T-9). The samples were analyzed for PCBs.

- Soil samples were collected at 0.5 ft bgs at five locations along the eastern property boundary to assess potential arsenic-based herbicide use along the railroad easement. The soil samples were analyzed for arsenic.

- A sampling grid was established within the former agricultural area of the Site, and soil samples were collected at 0.5 ft bgs at 43 locations within the grid. Up to four samples from adjacent locations were composited into one sample for OCP analysis (for a total of 11 composite samples). In addition, discrete soil samples were collected at 11 of the 43 locations for arsenic analysis.

3.3 Laboratory Analysis

The soil samples were analyzed for one or more of the following depending on the sample location (refer to Tables 1 and 2):

- Title 22 metals and mercury by EPA Methods 6010B/7471A;
- VOCs by EPA Method 8260B;
- PAHs by EPA Method 8270SIM;
- Total petroleum hydrocarbons (TPH) – carbon chain breakdown by EPA Method 8015B(M)
- PCBs by EPA Method 8082;
- Lead by EPA Method 6010B;
- Arsenic by EPA Method 6010B; and
- OCPs by EPA Method 8081A.

Soil vapor samples were analyzed by an onsite mobile laboratory, Jones Environmental, for VOCs by EPA Method 8260B. Five split soil vapor samples were collected and submitted offsite to Calscience Environmental Laboratory for VOC analysis by EPA Method TO-15.

4. FIELD METHODOLOGY

This section describes the pre-field and field investigative methodology that was used during the SSI. The investigation activities were conducted from October 30 through November 13, 2013 in accordance with DTSC guidance documents (Cal-EPA, 2006, 2008b and 2012) and the scope of work outlined in Geosyntec's proposal to Brookfield. Boring and sample locations are shown on Figures 2 through 7.

4.1 Pre-Field Activities

In an effort to provide for the health and safety of Site workers, a Site-Specific Health and Safety Plan (HASP) was prepared in accordance with the requirements of Title 29 Code of Federal Regulations, Section 5192 prior to the commencement of field activities. A site safety briefing was conducted each morning to identify potential physical and chemical hazards and outline measures to be taken in the event of an emergency.

On October 28, 2013, each sample location was cleared for the potential presence of buried utilities utilizing standard geophysical techniques. Utility clearance was also coordinated with Underground Service Alert notification that was conducted prior to initiating subsurface sampling. Sample locations that were not accessible were moved to the next closest accessible location.

4.2 Soil Boring Advancement

Soil borings were advanced with a direct push rig or hand auger. Interphase Environmental was subcontracted to provide direct-push drilling services. Direct push soil borings VP-1 through VP-18 were continuously cored to depths ranging from 15 to 45 ft bgs. Soils were sampled using a standard macro-core continuous sampling system fitted with standard core barrels and dedicated/disposable (1-¾-inch diameter by 4-foot long) acetate liners.

A portion of the retained soil core was placed into a plastic bag and screened with a Photoionization Detector (PID) for organic vapors and visually logged at a frequency of no less than every 4 feet or when a significant change in lithology was noted. Soil logging was overseen by a California Professional Geologist in general accordance with the Unified Soil Classification System (USCS). Boring logs are included in Appendix A.

A portion of the soil liner at the appropriate depth interval was capped at one end with Teflon® tape and plastic caps. Subsequently, a Terra Core® field preservation sampling kit was used to collect an aliquot of soil from the un-capped end of the core following EPA Method 5035. The core was then capped, and the soil samples were labeled and immediately placed within iced coolers. Soil samples were submitted to Calscience Environmental Laboratory (CEL) under Chain-of-Custody (COC) documentation for the analyses shown on Table 1.

Hand auger borings were advanced to depths ranging from 0.5 to 2 feet bgs. At the desired sample interval soil cuttings from the hand auger bucket were placed into laboratory-supplied glass jars. The glass jars were then labeled and immediately placed within iced coolers, and then transported to CEL under COC documentation for the analyses shown in Table 2.

4.3 Soil Vapor Probe Installation and Sampling

Soil vapor probes (SVPs) were installed and sampled in accordance with the DTSC *Advisory on Active Soil Gas Investigations* (Cal-EPA, 2012). On October 30 through November 1, 2013, multi-nested SVPs were installed at 18 boring locations (VP-1 through VP-18). Following boring advancement with the direct-push rig, multi-nested SVPs were installed at approximate depths of 5, 15, 30, and 45 ft bgs (see Table 1). SVPs were constructed with a prefabricated 6-inch stainless steel screen (approximate 5/8-inch diameter) attached to 1/4-inch diameter Teflon tubing. The stainless steel screen was placed within each soil boring at the mid-way point of an approximately 1-foot thick sand pack. Hydrated granular bentonite was placed between each sand interval to seal each of the target sampling intervals. The 18 SVP locations were completed with flush-mounted well boxes set in concrete to minimize the potential of water infiltration and damage.

On November 11 through 13, 2013, soil vapor samples were collected and analyzed by a mobile laboratory, Jones Environmental (Jones). Prior to purging and sampling of soil vapor probes a shut-in test was conducted in each soil vapor probe to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water column, sealing the entire system and observing the vacuum for approximately thirty seconds. A vacuum gauge attached in parallel to the apparatus measured the vacuum reading. If there was an observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably over an approximate thirty second interval.

A purge test was then conducted to assess the appropriate purge volume prior to sampling. A purge volume test was performed for the 5, 15 and 30 ft probes at VP-11 as the depth intervals in this probe were generally representative of the different soil types observed across the Site. Based on the purge volume test results, a 10 purge volume was selected for the 5-ft probes and a one purge volume was selected for the 15, 30 and 45 ft probes. Purging was conducted using a glass syringe at an approximate purge rate of 200 milliliters per minute (ml/min). Following purging, the soil vapor probes were sampled with a glass syringe equipped with a Teflon plunger. A mixture of n-propanol and n-pentane was placed around the surface seal and used as a liquid tracer during the soil vapor sample collection to evaluate the integrity of the surface seal. These tracer compounds were included on the analytical run. Neither n-propanol nor n-pentane was detected in any of the soil vapor samples.

A total of 53 soil vapor samples were collected and analyzed by the mobile lab using EPA Method 8260B. Duplicate soil vapor samples were collected by Jones at an approximate rate of 10% of the primary samples. Two samples (VP-5 at 15 and 30 ft bgs) were not collected due to low flow conditions. Split samples were collected at an approximate rate of 10% of the primary samples by using a 1-liter summa canister equipped with a flow controller calibrated to approximately 200 ml/min flow rate. Following sample collection, the summa canisters were properly labeled and transported under chain-of–custody documentation to CEL for VOC analysis by EPA Method TO-15.

4.4 Decontamination

During soil and soil vapor sample collection, decontamination of all sampling and drilling equipment was conducted between each sampling location using: i) non-phosphate detergent and tap water wash, using a brush if necessary; ii) tap-water rinse; and iii) final tap-water rinse. Decontamination wastes were placed into a 55-gallon waste drum (see Section 4.5).

4.5 Quality Assurance/Quality Control

Data quality is measured by the ability of the collected data to meet specific quantitative and qualitative objectives. Data quality indicators that are quantitative include precision, accuracy, and completeness. Qualitative data quality indicators include representativeness and comparability. The quality assurance/quality control (QA/QC) procedures for this project dictate that the data meet minimum requirements for precision, accuracy, completeness, representativeness, and comparability.

The following QA/QC procedures were followed during sampling and analysis:

- Duplicate soil vapor samples were collected and analyzed by the mobile laboratory at an approximate rate of 10% of the primary samples.
- Split soil vapor samples were collected at an approximate rate of 10% of the primary samples. The samples were collected immediately after or within 48-hours of collection of the primary samples and submitted to an offsite laboratory for VOC analysis. Split results were used for qualitative purposes to compare with the mobile laboratory concentrations.
- One trip blank was placed in each cooler submitted to the analytical laboratory that contained soil samples for VOC analysis.
- Equipment blanks were collected each day of soil sampling and analyzed for the same constituents as the soil samples.
- Samples were transferred under chain-of-custody control and subject to the laboratory's conventional QC analytical procedures, including method blank, laboratory control sample, matrix spike and sample duplicate analyses.

A Stage 2A data validation was conducted on the analytical data. A summary of the QA/QC and data validation results is presented in Section 5.7.

4.6 Investigation Derived Waste

Soil cuttings and decontamination water were placed into steel 55-gallon waste drums and stored on-Site pending waste characterization. Composite waste characterization samples were collected from the soil cuttings and decontamination water, and analyzed for:

- Total petroleum hydrocarbons gasoline, diesel and motor oil range organics by EPA Method 8015M, California Title 22 Metals by EPA Methods 6010B/7000CAM, and VOCs by EPA Method 8260B.

Based on the results, wastes were characterized as non-hazardous waste and transported offsite on December 5, 2012. Two drums of soil and liquid waste were transported to Soil Safe located in Adelanto, California. A copy of the waste manifest is included as Appendix B.

5. RESULTS

The following sections summarize the soil classification results, and the soil and soil vapor analytical results collected during the SSI. Analytical laboratory reports are provided as Appendix C.

To assist in the discussion of the soil results, concentrations of lead were compared to California Human Health Screening Level (CHHSL) of 80 mg/kg based on residential land use, and arsenic concentrations were compared to the Southern California Background Level of 12 mg/kg (Cal-EPA, 2008a) often used by DTSC for evaluating arsenic concentrations in Southern California (DTSC, 2008a). The value of 12 mg/kg was derived as an upper-bound estimate based on a dataset that ranged from 0.15 mg/kg to 19.63 mg/kg (DTSC, 2009). This range of arsenic concentrations is similar to the range of 2.2 mg/kg to 19 mg/kg reported from the regional study conducted by UC Riverside (Marrett, 1992). Depth and site-specific risk-based concentrations (RBCs) were developed for other analytes of concern detected in soil and soil vapor that are discussed below. Derivation of the RBCs and a more detailed evaluation of metals are provided in the cumulative Human Health Screening Evaluation (HHSE) provided in Section 6.0.

5.1 Soil Classification

In general, the soil from ground surface to approximately 15 ft bgs was classified as fine-grained, sand with silt. The soil at depths below 15 ft bgs to the maximum depth investigated of 45 ft bgs was generally classified as fine-grained, sandy silt. Generally the soil grain size decreased with depth. Soil consistency was medium dense to very dense from surface to the maximum depth investigated. Fill material was encountered at borings VP-8 and VP-11/11a from surface to approximately 12 to 14 ft bgs. These borings are located in the general vicinity of the former waste oil UST (4G) and the gasoline UST (Tank 1).

VOC concentrations measured with a PID ranged from 0.0 to 1.1 parts per million by volume (ppmv). The highest PID readings were recorded from soil screened from boring VP-06 at a depth of approximately 23 ft bgs. No staining or contaminant odors were noted in the soil samples. The boring logs are presented in Appendix A.

5.2 UST Area and Former Modine Property

Detected soil and soil vapor results are summarized in Tables 3 through 8 and select compounds in soil and soil vapor are depicted on Figures 2a through 5. A summary of the SSI results is provided below.

5.2.1 Soil Vapor Sample Results

As previously discussed in Section 2.5, benzene and PCE were identified as the primary compounds of concern in soil vapor at the Site. Step-out soil vapor probes were installed during the SSI to further delineate the extent of benzene at SG-4, SG-14, SG-17, SG-18, and SG-21, and PCE at SG-01. Other analytes detected in soil vapor are evaluated in the HHSE in Section 6.0.

PCE

Soil vapor concentrations of PCE are shown on Figures 2a and 2b and VOCs detected during the SSI and Phase II ESA are summarized in Tables 3 and 4. Concentrations of PCE in soil vapor detected in November 2013 were lower when compared to the concentrations detected in 2005 and 2010. During the SSI, the detected concentrations of PCE in soil vapor ranged from 3.9 $\mu g/m^3$ to 266J $\mu g/m^3$. The maximum concentration was detected in soil vapor probe VP-6 at 15 ft bgs that is located near the former waste oil UST (4G). The maximum concentration of PCE is below the RBC of 1,700 $\mu g/m^3$ for PCE at 15 ft bgs. Based on the analytical results from the Phase II ESA and the SSI, concentrations of PCE are adequately defined in a vertical and lateral direction within the former UST areas at concentrations below the RBC.

Soil vapor results from VP-16 through VP-18 indicate no significant migration of PCE or other VOCs onto the Site from the adjacent former Modine Property. Probe VP-16, located adjacent to the former Modine Property, contained the only PCE detection of 56J $\mu g/m^3$ at 5 ft bgs. In addition, the samples collected in 2005 adjacent to the former Modine Property contained concentrations of PCE below the RBC.

Benzene

Soil vapor concentrations of benzene are shown on Figures 3a and 3b and VOCs detected during the SSI and Phase II ESA are summarized in Tables 3 and 4. Concentrations of benzene in soil vapor detected in November 2013 were lower when compared to the concentrations detected in 2005 and 2010. During the SSI, benzene was detected in only three soil vapor probes at concentrations ranging from 6.3 $\mu g/m^3$ to

45 µg/m^3. The highest benzene concentration was detected at soil vapor probe VP-06 at 15 ft bgs located near the former waste oil UST (4G). The maximum concentration of benzene is below the RBC of 280 µg/m^3 for benzene at 15 ft bgs.

Benzene was previously detected during the July 2010 sampling event at concentrations above the RBC at 5 ft bgs in SG-14, SG-17, and SG-21. Results of the SSI soil vapor sampling indicate that concentrations of benzene at these three locations are adequately defined in a vertical and lateral direction within the former UST areas to concentrations below the RBCs or non-detect levels.

Split Soil Vapor Sample Results

Five soil vapor split samples were collected and sent to a fixed laboratory for qualitative comparison to the mobile laboratory results. The results are included in Table 3. For the primary petroleum hydrocarbon COCs for the Site, the fixed laboratory and mobile laboratory results were comparable but for some sample pairs for PCE the mobile laboratory results were higher than the fixed laboratory results or the fixed laboratory results were higher than the mobile laboratory results. In general, the fixed laboratory detected more compounds than the mobile laboratory due to differences in reporting limits (lower for fixed laboratory). The variability in the data between laboratories is not unexpected due to the different analytical methods (8260B vs. TO-15) and reporting limits. Both fixed laboratory and mobile laboratory results were utilized in the risk assessment.

5.2.2 Soil Results

Soil samples were collected from six locations within the former UST areas to evaluate surface and subsurface (i.e., ≤ 10 ft bgs) soil concentrations for risk assessment purposes. Detected lead and arsenic results in soil are shown on Figures 4 and 5, respectively. The SSI and historical results for detected compounds are summarized in Tables 5 through 8 (see Appendix C for all compounds). Compounds that were identified in previous reports or were detected at significant concentrations are discussed below.

- PCE was not detected in soil samples collected within the former UST Area.
- Benzene was detected in two soil samples at concentrations up to 2.2 µg/kg. The maximum concentration was detected in soil boring VP-02 at 10 ft bgs. The maximum concentration of benzene is well below the RBC for benzene of 360 µg/kg.

- Arsenic concentrations in soil ranged from 1.36 mg/kg to 18.6 mg/kg. The maximum concentration was detected in boring VP-13 at 0.5 ft bgs located near the boiler room diesel UST (3P). Two sample locations (VP-13 and historical boring SB-03) within the former UST Area exceed the Southern California Background Level of 12 mg/kg but were within the range of background concentrations. The arsenic concentration at historical boring SB-03 is adequately delineated by surrounding borings. Arsenic at VP-13 is bounded vertically by the 5 and 10 ft bgs samples from the same boring; however, the horizontal extent to concentrations above 12 mg/kg is not defined.

- Lead was detected at nine boring locations within the former UST Area at concentrations that exceed the CHHSL of 80 mg/kg. Lead concentrations in soil ranged from 3.62 mg/kg to 2,740 mg/kg. The maximum lead concentration was detected in VP-11a at 5 ft bgs. In general, lead was detected above the CHHSL of 80 mg/kg in the vicinity of the former gasoline USTs (Tanks 1 and 2), waste oil UST (4G), and beneath the slab in the former maintenance garage. In addition, lead was detected above the CHHSL at SG-21 that is located in the general vicinity of the former boiler room UST (3P). With the exception of boring SG-21, the lead concentrations above 80 mg/kg are generally located in areas where fill material was observed during drilling. Lead impacts are generally defined in a vertical direction.

- TPH (C6-C44) in soil was detected at concentrations up to 21,000 mg/kg. The maximum concentration was detected in soil boring VP-04 at 5 ft bgs located beneath the slab of Building 15. Concentrations of TPH C6-C44 were detected at much lower concentrations (ND to < 400 mg/kg) in surrounding borings, indicating that the TPH impacts appear to be isolated to beneath the slab in this building. The concentration of 21,000 mg/kg exceeds the water board screening level for protection of groundwater of 1,000 mg/kg[2] for TPH C23-32 (LARWQCB, 1996).

[2] Assumes depth to groundwater of approximately 75 ft bgs.

5.3 Buildings: Lead-Based Paint and OCPs in Soil

Detected lead and OCP results in soil are summarized in Tables 7 and 9 and shown in Figures 4 and 6b, respectively. The results are discussed below.

- Lead was detected above the CHHSL of 80 mg/kg in 26 of the 36 soil samples collected around 5 of 6 buildings. The maximum concentration of 394 mg/kg was detected at 0.5 ft bgs at Building 8.

- One or more of the OCPs chlordane, dieldrin, and heptachlor epoxide were detected at concentrations above their respective RBCs in samples collected around four of the six buildings. Chlordane concentrations in soil ranged from 60 µg/kg to 22,000 µg/kg, and eight samples exceeded the RBC for chlordane of 440 µg/kg. Dieldrin concentrations in soil ranged from 9.5 µg/kg to 560 µg/kg, and five samples exceeded the RBC for dieldrin of 30 µg/kg. Heptachlor epoxide concentrations in soil ranged from 7.3 µg/kg to 98 µg/kg, and one sample exceeded the RBC for heptachlor epoxide of 88 µg/kg. Other OCP compounds were detected below their respective RBCs.

5.4 Former Agricultural Areas

Arsenic and OCP results in soil are summarized in Tables 8 and 9, and shown in Figures 5 and 6a. The results are discussed below.

Arsenic was detected at concentrations ranging from 8.96 mg/kg to 35.6 mg/kg (Figure 5). Arsenic concentrations at seven of the 11 sample locations exceeded the Southern California Background Level of 12 mg/kg. The arsenic impacts are generally distributed around borings SB-07, SB-09, and SB-15, and borings SB-33, SB-40, and SB-42; however, the vertical and lateral extent of concentrations above 12 mg/kg is not defined.

The composite OCP sample locations and the extent of the approximately 33-acre former agricultural area are shown on Figure 6a. Each composite sample was comprised of four discrete samples, with the exception of Ag Composite-11 that only contained three discrete samples. Based on the analytical results, OCPs were detected infrequently and at low concentrations below their respective RBCs within the former agricultural area of the Site.

5.5 Railroad Easement

Detected soil results are summarized in Table 8 and shown in Figure 5. Arsenic was detected at concentrations ranging from 3.87 mg/kg to 19.8 mg/kg in samples collected along the railroad easement. Two of the five soil samples (RR-01 and RR-03) contained arsenic at concentrations above the Southern California Background Level of 12 mg/kg but were generally within the range of background concentrations (Figure 5). Around those two samples the vertical and lateral extent of arsenic concentrations above 12 mg/kg is not defined.

5.6 Transformers

Detected PCB results are summarized in Table 5 and shown in Figure 7. Observations from the transformer inspection are summarized in Table 10.

Based on information from Site maintenance staff that was reported in the Phase I ESA (CH2MHill, 2005 and 2010a), "all electrical transformers have been replaced with or retro-filled with non-PCB containing oil or have concentrations of less than 50 ppm." However, the location of current or former transformers, and documentation supporting this statement, was not provided in the Phase I ESA reports.

Upon request by Geosyntec, State facility staff provided Geosyntec with a map showing the locations of transformers at the Site. Subsequently, Geosyntec was able to inspect and verify the locations of 46 transformers on the map (see Figure 7) with the exception of two transformers (T-16 and T-20) that were not present inside Buildings 5 and 8, and two transformers (T-2 and T-8) that could not be accessed due to a sealed access door or asbestos concerns. Additional information provided by State facility staff indicated that approximately 16 transformers were installed outside of Site buildings sometime in the 1990s to replace the older transformers (presumably the 30 inspected by Geosyntec) located inside the Site buildings. This information could not be verified by Geosyntec.

A total of 30 transformers located inside Site buildings and 16 transformers located outside of Site buildings were inspected for PCB labeling, signs of leakage, and presence of staining on the concrete slab and slab condition. Based on the inspection, two of the transformers had labels with no date certifying that the units contained non-PCB containing fluid. The other 44 units were not labeled or were affixed with blank labels indicating that they may have been tested for PCBs on an unknown date. Geosyntec contacted Office of the State Architect, and they were unable to locate PCB test results for transformers located at the Site.

Four of the 30 interior transformers had evidence of cracked and stained concrete floor surfaces. One sample of oily residue was scraped from the concrete floor surface around T-9 (Building 38) and submitted for laboratory analysis. Samples of oily residue were not collected from the other three transformer locations due to insufficient sample volume on the surface of the concrete slab. Based on the analytical results from the T-9 grab sample, Aroclor-1260 was detected at a concentration of 9,800 µg/kg, which exceeds the RBC of 220 µg/kg. Of the remaining interior transformers, 13 had small reservoirs mounted above the unit that had signs of leakage onto the transformer equipment. However, the concrete beneath the transformers was unaffected. The oily residue on the transformer equipment could not be sampled due to insufficient volume of material. In addition, 11 of the interior transformers had no signs of leakage or concrete staining.

During the survey of the external transformer locations, a total of 16 units were observed to be mounted on concrete pads surrounded by unpaved or landscaped surfaces. Four of the transformers showed signs of leakage that may have impacted the surrounding soil. Soil samples were collected at 0.5 and 2 ft bgs from three of these locations and submitted for laboratory analysis, and PCBs were not-detected in any of the soil samples. The fourth transformer (T-4) had minor staining on a metal support beam beneath the unit, and the concrete pad could not be inspected beneath the transformer due to the presence of heavy debris. Due to the presence of debris and concrete, the area surrounding T-4 could not be sampled. The other 12 transformers showed no signs of leakage, no concrete staining, and no obvious damage to the concrete pad.

5.7 Data Validation

Data validation was performed to ensure that data quality objectives for this project were met. The data for the field QC samples discussed above were reviewed as part of the data validation, along with laboratory QC results. The Data Validation Memoranda are presented in Appendix D.

The organic data were reviewed based on USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008 (USEPA-540-R-08-01), as well as by the pertinent methods referenced by the data package and professional judgment. Additionally, the data were reviewed based on the criteria specified in the SSI scope of work.

The laboratory QC sample results indicate appropriate sample preparation and analysis, and the results of the field QC samples indicate appropriate sample collection, shipping, and handling procedures. The samples were analyzed as requested and holding times were met. Based on the Stage 2A data validation covering the quality control (QC) parameters, the data as qualified are usable for meeting project objectives with the following exception:

- Due to laboratory control sample (LCS) recovery less than 20% in batch D1-111313-Checks and based on technical and professional judgment, the undetected values of 4-isopropyltoluene in the associated soil vapor samples were R qualified as rejected.

6. HUMAN HEALTH SCREENING EVALUATION

6.1 Introduction

A human health screening evaluation was prepared to evaluate data collected during the Phase I ESA (CH2MHill, 2005), the Phase II ESA (CH2MHill, 2010b), and this SSI assuming residential land use. The objectives of this screening evaluation are to evaluate potential human health impacts to onsite receptors, including future construction workers and future residents, from exposures to chemicals detected in soil and soil vapor at the Site and to develop Risk-Based Concentrations (RBCs). The results of the screening evaluation will be used to identify chemicals and exposure media that may pose an unacceptable risk to potential future receptors at the Site and to provide information for remedial planning, if necessary.

The following section presents the approach that was used to estimate potential human health risks associated with residual chemicals detected in soil and soil vapor collected at the Site. The area of concern evaluated in this screening evaluation is the entire 75-acre Site (Figure 1).

6.2 Screening Evaluation Approach

The methodology used in this screening evaluation is consistent with current USEPA and Cal-EPA guidance (USEPA, 1989; 1991ab; 2002; 2013; Cal-EPA, 2011ab; 2013ab). The screening evaluation is a predictive tool used to assess the potential human health risks associated with releases of Site-related chemicals. The screening evaluation consists of six major components which are summarized briefly as follows:

- **Data Review and Evaluation:** Chemicals of potential concern (COPCs) at the Site (defined as potentially hazardous chemicals associated with the Site that are present at concentrations higher than background levels) were identified by reviewing available environmental sampling data collected in soil and soil vapor from the Site.

- **Exposure Assessment:** Potentially relevant populations that could be exposed to Site-related COPCs based on the current and likely future land use was identified. For each land use scenario, the magnitude, frequency and duration of the exposures, and the pathways by which humans could potentially be exposed to Site-related constituents were evaluated. 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.

- **Fate and Transport Modeling**: Current agency-approved fate and transport models were used to estimate the movement of COPCs from soil to outdoor air and soil vapor into indoor air. Both the Johnson and Ettinger Model (J&E, 1991; Cal-EPA, 2011a) and the Soil Screening Guidance (USEPA, 2002) were used to estimate COPC migration from soil and soil vapor into indoor or outdoor air.

- **Toxicity Assessment:** The relationship between the magnitude of exposure and potential adverse health effects on each receptor (dose-response assessment) is presented for each COPC. Toxicity criteria for each COPC were identified and used to estimate the likelihood of adverse effects which potentially could occur at different exposure levels.

- **Risk Characterization:** Results of the exposure and toxicity assessments were analyzed and combined to develop COPC-specific Risk-Based Concentrations (RBCs) for each of the exposure scenarios. Comparison of the RBCs to the detected soil and soil vapor concentrations was conducted to estimate the cumulative health risks to defined receptor populations posed by the presence of multiple COPCs.

- **Uncertainty Analysis:** The uncertainties associated with each of the previous steps were discussed to assist decision-makers in evaluating the screening evaluation results in the context of the assumptions and variability in the data used.

This screening evaluation addresses potential onsite exposures to future residents and future construction workers. This Site is located in an urban setting, is occupied by 62 building structures spread throughout the property, a football/athletic field and a number of play/recreational yards. Areas surrounding the Site are developed for residential, commercial, and industrial land uses. The Site does not maintain natural resources required to support wildlife habitats; therefore, onsite ecological exposures were not evaluated quantitatively in this screening evaluation.

Potential exposures to COPCs detected in shallow soils were evaluated for direct contact pathways, as well as inhalation of volatile COPCs in outdoor air and nonvolatile COPCs in fugitive dust for future residents and future construction workers. Additionally, the potential for volatile COPCs to migrate from the subsurface (using

soil vapor data) into structures that may be present above ground in the future was evaluated for future residents.

The exposure parameters used in this screening evaluation are considered to be adequately conservative and are consistent with typical values recommended and approved by regulatory agencies, including the DTSC. Reasonable maximum estimates of exposure (RME) 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 approach used in this screening evaluation for each of the components is discussed in the following sections. The supporting information and calculations are presented in Appendix E.

6.3 Data Review and Evaluation

An initial step in the screening evaluation process is an evaluation of available data to: 1) characterize the Site; 2) develop a data set for use in the estimation of potential risks; and 3) identify media-specific COPCs. Appropriate Site data must be available to support the characterization of chemical levels and media relevant to transport processes and exposure pathways. Federal (USEPA, 1989) and state (Cal-EPA, 2013) recommended methods were used to select chemicals with the potential to contribute to overall human health. This section discusses the data evaluation steps that were used in this screening evaluation, as well as the methodology that was used to identify the COPCs for the Site.

6.3.1 Selection of Chemicals of Potential Concern

USEPA risk assessment guidance presents a methodology for identifying which detected chemicals should be evaluated further in the screening evaluation as COPCs. These are defined by USEPA (1989) as chemicals potentially related to the site whose data are of sufficient quality for use in a quantitative risk assessment. 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).

All data determined to be of sufficient quality were carried forward into the COPC selection process described below.

Analytical results for soil samples collected between 0 and 10 ft bgs were used to evaluate the direct contact pathway and inhalation of fugitive dust and outdoor air vapors that may volatilize from soil. This soil interval was evaluated based on the assumption that 10 feet would be the likely maximum depth of disturbance during future redevelopment, and Site use and maintenance activities and is therefore the maximum depth of soil to which future receptor populations could be directly exposed. This same soil depth interval was also evaluated for construction workers.

Soil vapor data have been collected at 5, 15, 30, and 45 ft bgs. Because soil vapor data are preferred over soil data for the evaluation of the vapor intrusion pathway (Cal-EPA, 2011a), potential indoor air exposures estimated from soil samples were not included in this evaluation. The potential exposure to VOCs in soil for the vapor intrusion pathway was evaluated through the use of the soil vapor data collected at 5, 15, 30, and 45 ft bgs.

Typically, if concentrations of a metal are within background for an area, the metal is not selected as a COPC for the Site and, therefore, is not carried forward in the screening evaluation. Since the majority of metals concentrations were not expected to pose a significant risk, a background analysis was not conducted for these metals and they were evaluated quantitatively in the risk calculations. However for arsenic, background concentrations in Southern California soils are typically higher than a risk-based concentration, therefore a review of background data and the Site data distribution was conducted for this metal. Arsenic concentrations detected at the Site were compared to the Southern California Background Level of 12 mg/kg (Cal-EPA, 2008a) often used by DTSC for evaluating arsenic concentrations in Southern California (DTSC, 2008a). The value of 12 mg/kg was derived as an upper-bound estimate based on a dataset that ranged from 0.15 mg/kg to 19.63 mg/kg (DTSC, 2009). This range of arsenic concentrations is similar to the range of 2.2 mg/kg to 19 mg/kg reported from the regional study conducted by UC Riverside (Marrett, 1992). Lead concentrations were compared to the residential California Human Health Screening

Level (CHHSL) of 80 mg/kg and the commercial/industrial CHHSL of 320 mg/kg (Cal-EPA, 2009).

All chemicals detected in at least one sample in a given media were included as COPCs. The analytical results used in this screening evaluation are presented in Tables 3 through 9.

6.4 Exposure Assessment

The objectives of an exposure assessment are to identify receptors (populations) that may potentially be exposed to chemicals in environmental media, the exposure pathways, and the route of potential intake. In addition, for pathways considered complete, the chemical concentrations to which the receptors are potentially exposed (exposure point concentrations, EPCs) and the frequency, magnitude, and duration of these potential exposures (exposure parameters) need to be estimated.

A complete exposure pathway requires a source and mechanism of chemical release, a point of potential human contact within the impacted medium, and an exposure route (e.g., ingestion) at the contact point. These source-pathway-receptor relationships provide the basis for the quantitative exposure assessment. Potentially complete source-pathway-receptor relationships included in this screening evaluation are depicted in the Conceptual Site Model (CSM) discussed below.

The end product of the exposure assessment is a measure of chemical intake or exposure concentration factor (ECF, for inhalation exposures) that integrates the exposure parameters for the receptors of concern (e.g., contact rates, exposure frequency, and duration) with the EPCs for the media of concern.

6.4.1 Conceptual Site Model

The CSM identifies potential chemical sources, release mechanisms, transport media, routes of chemical migration through the environment, exposure media, and potential receptors. Potential receptors that may be exposed to Site-related chemicals are identified in the CSM to help assess the likelihood and extent of their potential exposures.

A general CSM was constructed based on a review of the available Site information regarding the environmental setting and COPC distribution in environmental media. The CSM, presented in Figure 8, represents the current understanding of the sources of

COPCs, the means by which they may be released and transported within and among media, and the exposure pathways and routes by which they may contact human receptors. The major components of the CSM are discussed below.

6.4.1.1 Chemical Characteristics and Potential Exposure Routes

Potential exposure to COPCs detected in soil and soil vapor at the Site 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 soil vapor. If volatile chemicals are detected in soil vapor, indirect exposures (indoor inhalation) from vapors migrating from the subsurface may occur. If metals or semi-volatile organic compounds (SVOCs) are detected in soil, the direct contact routes of exposure, such as incidental ingestion or dermal contact, are the most relevant.

6.4.1.2 Identification of Potential Receptors and Exposure Pathways

To determine whether the levels of chemicals present in soil and soil vapor at the Site would pose a risk to human populations, it is necessary to identify the populations that may potentially be exposed to these chemicals, and determine the pathways by which the exposures may occur.

Future redevelopment plans for the Site may include residential development. Therefore, the onsite receptors evaluated in this HHSE consist of future residents and, to address future construction activities, a future construction worker receptor.

Groundwater was not encountered during the SSI investigation. Information from groundwater investigations conducted at the adjacent Site (Modine Manufacturing) determined that groundwater was present at the depths from 77 to 80 feet bgs (Earth Tech, 1989). Groundwater was identified onsite at approximately 77 to 80 feet bgs during the Phase II investigation. Since groundwater is deep and is not currently used nor is it reasonably expected to be used in the future, potential exposure to groundwater was not considered in the CSM and was not evaluated quantitatively in this screening evaluation.

The exposure pathways evaluated in this SSI include indoor inhalation of volatiles from soil vapor and exposures via direct contact to soils (incidental ingestion and dermal contact with soils) and outdoor air inhalation. Outdoor air inhalation was not evaluated for soil vapor as the indoor air pathway is the most sensitive exposure for this media and provides the most conservative evaluation of potential risks associated with soil vapor exposure. The receptors and exposure pathways selected for evaluation in this

screening evaluation were based on these considerations and are discussed in more detail below.

Future Resident

A future residential land use scenario was evaluated to provide a risk assessment for unrestricted land use. Future residential exposures were evaluated for soils from 0 to 10 ft bgs. Consistent with the DTSC PEA Guidance Manual (Cal-EPA, 2013) for conducting a human health screening evaluation, it was conservatively assumed that the Site was partially uncovered and that bare soils were available for direct human contact under a residential exposure scenario. The exposure routes of concern for these residents include incidental soil ingestion, dermal contact, and outdoor inhalation of vapors and fugitive dust from soil. In addition, residential exposure to concentrations of volatile chemicals emanating from soil vapor into indoor air was assumed to occur at this Site.

Potential future residential exposure to COPCs in soil vapor is assumed to take place 100% of the time either indoors or outdoors. In other words, it was assumed that the future resident will be outdoors for the full 24 hour day when evaluating the soil to outdoor air pathway as well as indoors for 24 hours when evaluating the soil vapor to indoor air pathway. This assumption was made rather than try to predict the percentage of time spent indoors and outdoors each day and represents a conservative assumption that results in an overestimation of risk. It was assumed that the resident will be living onsite for 350 days a year for 30 years.

Future Construction Worker

If the Site is redeveloped, construction activities will occur such as Site grading and excavation for footings and utility lines. Such activities may potentially expose a construction worker to COPCs in shallow soil via dermal contact and incidental ingestion. The construction worker may also be exposed via inhalation to COPCs which migrate from soil into outdoor air and to COPCs present in airborne dust generated by wind erosion and by intrusive soil-handling activities. Therefore, construction worker exposures via incidental ingestion, dermal contact with soils, and outdoor air inhalation of vapors and dust were evaluated in this screening evaluation.

Based on Cal-EPA guidance (Cal-EPA, 2011b), an activity conducted under a single construction event was assumed to occur for up to 1 year. A construction worker was evaluated in this screening evaluation assuming exposures for 8 hours each day, 5 days per week for 50 weeks during one-year exposure duration (i.e., 250 days per year of

exposure). Although their exposures were evaluated in this screening evaluation, it is anticipated that potential exposure to construction workers would be minimized by adherence to Health and Safety plans that may potentially be required for work on the Site during any potential redevelopment.

6.4.1.3 Exposure Assumptions

The proposed exposure parameters for the receptors identified above are listed in Table 11. These assumptions are consistent with those recommended by Cal-EPA and USEPA.

6.4.2 Summary of Selected Exposure Pathways

Given the characteristics of the COPCs and the Site conditions, several exposure pathways have been identified as potentially complete. The CSM (Figure 8) presents a summary of the exposure pathways for each receptor evaluated in this screening evaluation. The following table summarizes the receptor groups, exposure medium and potential exposure pathways that were evaluated quantitatively in this screening evaluation.

Receptor Population	Exposure Medium	Potentially Complete Exposure Pathway
Future Onsite Resident	Shallow Soil (0 - 10 ft bgs)	• Incidental Ingestion • Dermal Contact • Outdoor Fugitive Dust Inhalation • Outdoor Vapor Inhalation
	Soil Vapor	• Indoor Air Inhalation
Future Construction Worker	Shallow Soil (0 - 10 ft bgs)	• Incidental Ingestion • Dermal Contact • Outdoor Fugitive Dust Inhalation • Outdoor Vapor Inhalation

6.4.3 Fate and Transport Modeling

Fate and transport modeling is the quantitative analysis of how chemicals move through the environment and how they are transformed by processes such as chemical reaction and biological degradation. In the context of this screening evaluation, fate and transport modeling was employed to predict the movement of COPCs from impacted

media (i.e., soil and soil vapor) to points of exposure for human populations. With respect to fate and transport modeling, chemical transformation processes of chemical reaction and biological degradation were not evaluated in this screening evaluation for the Site.

Fate and transport modeling was required to assess the indirect-exposure pathways identified in the CSM (Figure 8). Specifically, the following are the distinct transport mechanisms for which fate and transport modeling was employed:

- Transport of particulate-phase COPCs from soil matrix to outdoor air;
- Transport of vapor-phase COPCs from soil matrix to outdoor air; and
- Transport of vapor-phase COPCs from soil vapor to indoor air (vapor intrusion pathway).

For each of these transport mechanisms, fate and transport modeling quantifies the relationship between the chemical concentration in the impacted medium (soil or soil vapor) and the chemical concentration in the exposure medium (indoor or outdoor air). The relationship is expressed in the form of a "transfer factor," defined as, the ratio of the COPC concentration in the exposure medium to the COPC concentration in the impacted medium. The specific definition of the TF for each of the transport mechanisms identified above is presented in Table 12. The TFs were used in the intake factor and exposure concentration factor equations presented in the Sections below to derive COPC-specific RBCs.

Fate and transport modeling was conducted using the models presented in the *Supplemental Guidance for Developing Soil Screening Levels for Superfund* Sites (Soil Screening Guidance) (USEPA, 2002) for soil to outdoor air. For derivation of COPC-specific volatilization factors (VFs), standard equations presented in the Soil Screening Guidance were used incorporating local meteorological conditions for the Southern California area. Derivation of COPC-specific VFs is presented in Appendix E. Potential indoor air exposures to VOCs for the vapor intrusion pathway were evaluated utilizing soil vapor data and the Johnson and Ettinger (J&E, 1991) vapor intrusion model (Cal-EPA, 2011a). The J&E model was used to calculate vapor intrusion attenuation factors assuming native fill soil characteristics. In addition, to address the post-development scenario, a second evaluation was conducted assuming engineered fill consistent with DTSC guidance for evaluating future construction. According to the grading plan for the Site, areas of building pads will be constructed with 5 feet of engineered fill prior to building construction. The model input parameters and detailed

assumptions used for the vapor intrusion evaluation are presented in Appendix E, along with the J&E model spreadsheets in Attachment E-4.

Details of the fate and transport modeling that was used to assess the indirect-exposure pathways and the methodology for calculating the TFs are further discussed in Appendix E.

6.4.4 Estimating Chemical Intake

The exposure assessment quantifies the magnitude, frequency, and duration of chemical intake (daily intake) by receptor populations using guidelines in the Risk Assessment Guidance for Superfund (USEPA, 1989), PEA Guidance Manual (Cal-EPA, 2013), Site-specific information, and professional judgment, as appropriate. Estimates of exposure or chemical intake were calculated based on assumptions regarding exposure pathways and exposure parameters. The COPC intake factor (IF) was estimated for the incidental ingestion and dermal contact pathways. For the inhalation pathways, USEPA (2009) recommends that when estimating risk or hazard via inhalation, the concentration of the chemical in air should be used as the exposure metric (e.g., mg/m^3), rather than inhalation intake of a contaminant in air based on inhalation rate and body weight (e.g., mg/kg-day). Therefore, the COPC intake factor is replaced with an exposure concentration factor (ECF) for the inhalation pathways.

The complete equations for estimating IFs and ECFs for each COPC are presented in Appendix E and the exposure parameters are presented in Table 11. These parameters are considered to be adequately conservative and are consistent with typical values recommended and approved by regulatory agencies.

6.5 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. Consistent with regulatory risk assessment policy, adverse health effects resulting from potential chemical exposures are classified into two broad categories: cancer effects and noncancer effects. The basis for the selection of toxicity values in each of these categories is described in more detail below.

The two key toxicity criteria used in this screening evaluation are 1) oral cancer slope factors (CSFs) and inhalation unit risk factors (IURs) for estimating long term, chronic cancer risks from exposure to carcinogens and 2) oral reference doses (RfDs) and

inhalation reference concentrations (RfCs) for estimating long term hazard from exposure to noncarcinogens. In addition, Cal-EPA has developed chronic Reference Exposure Levels (RELs) for noncancer effects from inhalation exposures. For this screening evaluation, cancer toxicity criteria (except for trichloroethene [TCE] as discussed below) were selected from the following sources, in order of preference and based on availability:

1) Cal-EPA Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, online (Cal-EPA, 2014);
2) USEPA's Integrated Risk Information System (IRIS) (USEPA, 2014); and
3) USEPA Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites (USEPA, 2013).

For noncancer toxicity criteria, the most conservative between the following sources were used in this screening evaluation:

1) USEPA's Integrated Risk Information System (IRIS) (USEPA, 2014); and
2) Cal-EPA Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, online (Cal-EPA, 2014).

Several of the inhalation toxicity criteria were based on recommendations presented in Cal-EPA DTSC's Human Health Risk Assessment (HHRA) Note 3 (Cal-EPA, 2013b). For TCE, the updated USEPA inhalation URF of 4.1×10^{-6} $(\mu g/m^3)^{-1}$ and oral CSF of 4.6×10^{-2} $(mg/kg\text{-}day)^{-1}$ were used in this screening evaluation, which are the most recent USEPA published toxicity values for TCE (USEPA, 2011). Moreover, because TCE is considered carcinogenic by a mutagenic mode of action for kidney effects, separate cancer risk equations are presented for TCE as outlined in the USEPA RSL guidance (USEPA, 2013). These equations were used for TCE for future residents.

At the present time, Cal-EPA and USEPA have only published for use toxicity criteria for the oral and inhalation routes of exposure. In the absence of values specific to the dermal route, the oral toxicity criteria were used to evaluate dermal exposures to soil. For those chemicals for which RfCs or RELs are not available (e.g., o-chlorotoluene, 1,3,5-trimethylbenzene, dichlorobromomethane), route-to-route extrapolation from oral RfDs was used. Route-to-route extrapolation can be considered a conservative approach as current USEPA RSL guidance does not include the route-to-route extrapolation. For those COPCs for which noncarcinogenic toxicity values are not available, a surrogate chemical approach was employed in which toxicity values

developed for structurally similar compounds were assigned to the COPCs lacking toxicity criteria to avoid underestimating potential noncarcinogenic hazards (e.g., p-xylene for p-cymene; isobutyl alcohol for tert-butyl alcohol (TBA); pyrene for phenanthrene; beta-BHC for delta-BHC; endosulfan for endosulfan sulfate; endrin for endrin aldehyde).

The traditional RfD approach to the evaluation of chemicals is not applied to lead because most adverse human health effects data associated with exposure to lead have been correlated with concentrations of lead in blood and not with intake of lead by an individual (Cal-EPA, 1996). Blood lead concentration is an integrated measure of internal dose, reflecting total exposure from Site-related and background sources. In the absence of RfDs, Cal-EPA uses a 1 microgram per deciliter (µg/dL) benchmark for source-specific incremental change in blood lead levels for protection of school children and fetuses (Cal-EPA, 2007) as the revised health criterion for lead. This benchmark is the estimated incremental increase in a child's blood lead level that would reduce their IQ by up to 1 point. Based on this revised benchmark of 1 µg/dL, Cal-EPA has recommended a revised residential California Human Health Screening Level (CHHSL) of 80 mg/kg and a commercial/industrial CHHSL of 320 mg/kg (Cal-EPA, 2009), which are used to compare to Site data.

A summary of the toxicity criteria for the COPCs is presented in Table 13.

6.6 Risk-Based Concentrations

The following section presents the methodology used to derive RBCs for future residential populations, as well as for construction workers, that have the potential to be exposed to residual COPCs detected in soil or soil vapor. The RBCs include the results of the exposure assessment and toxicity assessment and represent the concentrations of COPCs in the relevant environmental media (e.g., soil and soil vapor) that would be considered safe for the various future land uses under conservative (i.e., protective) exposure conditions. Potential cumulative cancer risks and noncancer hazards may then be estimated by summing the ratios of measured COPC concentrations and the appropriate RBCs.

6.6.1 Methodology

Deriving RBCs for COPCs in soil and soil vapor requires information regarding the level of human intake of the COPC (exposure assessment), the relationship between intake of the COPC and its toxicity (toxicity assessment), and the assumed target risk or

hazard. The sections below present the equations used in the development of the RBCs for soil and soil vapor. The methodology is based principally on guidelines provided by the USEPA in *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), Interim Final* (USEPA, 1989) and *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part B: Development of Risk-Based Preliminary Remediation Goals),* (USEPA, 1991a).

Various demarcations of acceptable risk have been established by regulatory agencies. 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 1). In addition, other relevant guidance (USEPA, 1991b) states that sites posing a cumulative cancer risk of less than 10^{-4} and hazard indices less than unity (1) for noncancer endpoints are generally not considered to pose a significant risk warranting remediation. 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. In California, the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) regulates chemical exposures to the general population and is based on an acceptable risk level of 1×10^{-5}. The DTSC consider the 1×10^{-6} risk level as the generally accepted point of departure for unrestricted land use. For evaluating worker exposures, a 1×10^{-5} risk level is commonly used on sites in California.

Under most situations, cancer risks in the range of 10^{-6} to 10^{-4} may be considered to be acceptable with cancer risks less than 10^{-6} considered *de minimus*. These risk estimates are in contrast to the background risk of Americans developing cancer. The background risk is one chance in three (0.3 or 3×10^{-1}) for an American female, and one chance in two (0.5 or 5×10^{-1}) for an American male of eventually developing cancer (ACS, 2013).

For this screening evaluation, the 1×10^{-6} target cancer risk level was used to derive RBCs for the future residential scenario. For the construction worker scenario, the RBCs were derived using a target cancer risk level of 1×10^{-5}. The target hazard quotient (THQ) used for noncarcinogens of 1 was used for both exposure scenarios. Note, however, that the final target risk and hazard level to be considered in assessing Site corrective action is a risk management decision.

6.6.2 RBCs Based on Cancer Health Effects

The equations below describe the derivation of soil and soil vapor RBCs based on cancer health effects.

For COPCs in soil:

$$RBC_{Soil\text{-}C} = \frac{TR}{\left[CSF_{oral} \times \left(IF_{oral} + IF_{dermal}\right)\right] + \left(IUR \times ECF_{inh.s} \times CF_1\right)}$$

For COPCs in soil vapor:

$$RBC_{SV\text{-}C} = \frac{TR}{\left(IUR \times ECF_{SV\text{-}IA} \times CF_1\right)}$$

Where:

$RBC_{Soil\text{-}C}$	=	risk-based concentration for soil based on cancer effects (mg/kg);
TR	=	target cancer risk level (unitless);
CSF_{oral}	=	cancer slope factor for oral (ingestion and dermal-contact) exposures $(mg/kg\text{-}d)^{-1}$;
IF_{oral}	=	intake factor for ingestion (kg soil per kg body weight per day);
IF_{dermal}	=	intake factor for dermal contact (kg soil per kg body weight per day);
IUR	=	inhalation unit risk $(\mu g/m^3)^{-1}$;
$ECF_{inh,s}$	=	exposure concentration factor for outdoor inhalation of COPCs from soil (kg/m^3);
CF_1	=	conversion factor for soil and soil vapor (1,000 µg/mg);
$RBC_{SV\text{-}C}$	=	risk-based concentration for soil vapor based on cancer effects (mg/m^3);
$ECF_{SV\text{-}IA}$	=	exposure concentration factor for indoor inhalation of COPCs from soil vapor (unitless).

The formulas used in this screening evaluation for developing the soil and soil vapor IFs and ECFs for the inhalation pathways were presented in Appendix E. The exposure parameters used to estimate the IFs and ECFs are presented in Table 11. The soil RBCs are presented in Table 14. The soil vapor RBCs for the indoor air pathway are presented in Table 15 for future residents. The RBC derivation spreadsheets are presented in Attachment E-2 in Appendix E.

6.6.3 RBCs Based on Noncancer Health Effects

The equations below describe the derivation of soil and soil vapor RBCs based on noncancer health effects.

For COPCs in soil:

$$RBC_{Soil\text{-}NC} = \frac{THQ}{\left(\frac{IF_{oral}}{RfD_{oral}}\right) + \left(\frac{IF_{dermal}}{RfD_{oral}}\right) + \left(\frac{ECF_{inh,s}}{RfC}\right)}$$

For COPCs in soil vapor:

$$RBC_{SV\text{-}NC} = \frac{THQ}{\left(\frac{ECF_{SV\text{-}IA}}{RfC}\right)}$$

Where:

$RBC_{Soil\text{-}NC}$ = risk-based concentration for soil based on noncancer effects (mg/kg);

THQ = target noncancer hazard quotient (unitless);

RfD_{oral} = noncancer reference dose for oral (ingestion and direct-contact) exposures (mg/kg-day);

IF_{oral} = intake factor for ingestion (kg soil per kg body weight per day);

IF_{dermal} = intake factor for dermal contact (kg soil per kg body weight per day);

RfC = noncancer reference concentration for inhalation exposure (mg/m^3);

$ECF_{inh,s}$ = exposure concentration factor for outdoor inhalation of COPCs from soil (kg/m^3);

$RBC_{SV\text{-}NC}$ = risk-based concentration for soil vapor based on noncancer effects (mg/m^3);

$ECF_{SV\text{-}IA}$ = exposure concentration factor for indoor inhalation of COPCs from soil vapor (unitless).

The soil RBCs are presented in Table 14. The soil vapor RBCs for the indoor air pathway are presented in Table 15 for future residents. The RBC derivation spreadsheets are presented in Attachment E-2 in Appendix E.

6.7 Risk Characterization

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

The process of a risk assessment is an iterative process where factual site, receptor, and chemical-specific data are used when available. When specific data are not available, conservative, i.e., health protective, assumptions are utilized (e.g., assuming a resident will be living in the same home for 30 years and ingesting soil at a rate of 100 mg/day). The use of repeated, conservative assumptions can lead to overly conservative estimations of risk or hazard, but which provides an upper-bound estimate of the actual risk or hazard. Thus, for any site, the estimated risk or hazard level reflects an upper-bound estimate of the most probable risk or hazard. The most probable risk or hazard is likely to be much less, perhaps as low as zero, and probably not measurable in the potentially exposed population.

The methodology for deriving RBCs for the receptor populations and potential exposure routes were presented above. This section presents the methodology in which RBCs were used to evaluate chemical-specific and cumulative risk and hazard for the proposed future land use scenarios at the Site.

6.7.1 Cumulative Risk Methodology

This section presents the specific approach used in comparing the concentrations of individual chemicals detected in the various environmental media to the RBCs, and in estimating the cumulative cancer risk and noncancer hazard associated with exposure to all detected chemicals following potential redevelopment of the Site. This approach can be used to determine if the risk or hazard ranges are exceeded for a given land use scenario. The cumulative cancer risk and noncancer hazard posed by the presence of all COPCs detected in soil and soil vapor at a given sampling location was estimated in this screening evaluation using the following equations.

Cumulative cancer risk (at a given sampling location):

$$R_{tot} = \left[\sum_{i=1}^{n} \left(\frac{C_{Si}}{RBC_{Soil\text{-}C,i}} \right) \right] \times TR$$

$$R_{tot} = \left[\sum_{i=1}^{n} \left(\frac{C_{SVi}}{RBC_{SV\text{-}C,i}} \right) \right] \times TR$$

Cumulative noncancer hazard index (at a given sampling location):

$$HI_{tot} = \left[\sum_{i=1}^{n} \left(\frac{C_{Si}}{RBC_{Soil\text{-}NC,i}} \right) \right] \times THI$$

$$HI_{tot} = \left[\sum_{i=1}^{n} \left(\frac{C_{SVi}}{RBC_{SGVNC,i}} \right) \right] \times THI$$

Where:

R_{tot}	=	cumulative cancer risk from all chemicals detected in specific medium at given sampling location (unitless);
C_{Si}	=	concentration of chemical *i* detected in soil (mg/kg);
$RBC_{Soil\text{-}C,i}$	=	risk-based concentration for chemical *i* in soil based on cancer effects (mg/kg);
C_{SVi}	=	concentration of chemical *i* detected in soil vapor (mg/m^3);
$RBC_{SV\text{-}C,i}$	=	risk-based concentration for chemical *i* in soil vapor based on cancer effects (mg/m^3);
TR	=	target cancer risk (unitless);
HI_{tot}	=	cumulative noncancer hazard index from all chemicals detected in the specific medium at given sampling location (unitless);
$RBC_{Soil\text{-}NC,i}$	=	risk-based concentration for chemical *i* in soil based on noncancer effects (mg/kg);
$RBC_{SV\text{-}NC,i}$	=	risk-based concentration for chemical *i* in soil vapor based on noncancer effects (mg/m^3);
THI	=	target noncancer hazard index (unitless); and
n	=	number of COPCs for the medium evaluated (unitless).

Using the methodology presented here, the cumulative cancer risk and noncancer hazard posed by the presence of multiple chemicals can be estimated for each sample. Potential cumulative risks and hazards at the Site can then be estimated for each sampling location (i.e., a boring where multiple samples have been collected).

For soil matrix samples, potential risks or hazards were estimated for each soil sample location. Because the vapor migration evaluation considers the vertical migration of constituents from a subsurface source toward a building foundation, the shallowest sample provides the most relevant concentration in evaluating potential risk and hazard as it is closest to the surface (to evaluate outdoor air exposures) and to a proposed future building foundation. However, cumulative risk and hazard estimates for all sample depths are reported to document the estimated potential risks and hazards for each sample location and depth. While we believe the shallowest result closest to the surface or to a proposed future building foundation is most relevant for evaluating vapor intrusion, respectively, the results of deeper soil vapor samples are presented in this screening evaluation for completeness.

Soil matrix data were used to estimate potential risk and hazard due to direct contact and outdoor inhalation exposures. Soil vapor data were used to evaluate the potential risk and hazard due to indoor air inhalation. Note however, that this approach in evaluating all soil and soil vapor data, regardless of sample location and future redevelopment plans (construction of buildings), is considered conservative. For example, if a building were to be constructed at a particular location, then direct contact with soils would not be applicable at this location, since the soil would be covered by the building, and thus only the vapor intrusion risks or hazards would apply.

6.7.2 Risk Characterization Results

This section presents the results of the risk characterization which integrates the results of the exposure and toxicity assessments to estimate potential cancer risks (CR) and noncancer hazard index (HIs) associated with exposure to COPCs at the Site. Various demarcations of acceptable risk have been established by regulatory agencies as discussed in Section 6.6.1. Under most situations, cancer risks in the range of 10^{-6} to 10^{-4} may be considered to be acceptable with cancer risks less than 10^{-6} considered *de minimus*.

Cumulative CRs and HIs for the Site are summarized in Table 16 for soil and in Table 17 for soil vapor to indoor air. The J&E model spreadsheets are presented in Attachment E-1, the RBC derivation is presented in Attachment E-2, while the detailed

cancer risk and noncancer hazard calculation spreadsheets are presented in Attachment E-3 of Appendix E. The results for each receptor and exposure pathway scenarios are summarized in the following subsections in relation to the risk ranges mentioned above.

6.7.2.1 Future Resident

Soil

Soil risk characterization results for future residents potentially exposed via ingestion, dermal contact and inhalation for individual sampling locations are provided in Table 16 and presented in Figures 9a and 9b.

For future residents potentially exposed via incidental ingestion, inhalation, and dermal contact, the cumulative CR and noncancer HI estimates for 10 soil sample locations were greater than the lower-bound of the risk management range (Table 16). No soil sample locations were greater than the THQ of 1. Chemicals that contributed to the cumulative CR estimates greater than 1×10^{-6} were dieldrin, chlordane and heptachlor epoxide in soil samples collected around buildings likely associated with organochlorine pesticide use as a termiticide. At one location, T09, PCBs contributed to the CR estimate of 2×10^{-6}.

Several locations had lead concentrations greater than the residential soil CHHSL of 80 mg/kg, as indicated in Table 16 and in Figures 9a and 9b. Lead exceedances were located around buildings tested for potential lead-based paint impacts and in the former UST area. Eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg as indicated in Table 16 and in Figures 9a and 9b; however six of the locations were similar to the range of background concentrations. Five locations primarily located in the former agricultural area have concentrations greater than 20 mg/kg.

Soil Vapor to Indoor Air

Soil vapor risk characterization results for future residents potentially exposed via indoor air inhalation for individual sampling locations with COPCs selected for this medium are provided in Table 17 and presented in Figures 10a through 10b.

For the soil vapor to indoor air pathway, the cumulative CR estimates for four samples were marginally greater than the lower bound of the risk management range: SG-4, SG-14, SG-17, and SG-21 ranging from 2×10^{-6} to 4×10^{-6}, Benzene was the primary contributor to the CR estimates at depths of 5 feet bgs at these locations. The noncancer HI estimates for all soil vapor samples were less than the THQ of 1. When assuming a

future scenario that includes the 5 feet of engineered fill that will be required beneath buildings, the CR estimates are estimated to be lower with only one sample location estimate (SG-21) marginally above the lower-bound of the risk range with a result of 2×10^{-6}, which is considered negligible.

6.7.2.2 Construction Worker

Soil

Soil risk characterization results for construction workers potentially exposed via ingestion, dermal contact and inhalation for individual sampling locations with COPCs selected for this medium are provided in Table 16 and presented in Figures 11a and 11b.

For construction workers potentially exposed via incidental ingestion, inhalation, and dermal contact, the cumulative CR and noncancer HI estimates for each soil sample location were below the TR and THQ of 1×10^{-5} and 1, respectively. Seven locations had lead concentrations greater than the commercial soil CHHSL of 320 mg/kg, as indicated in Table 16 and in Figures 11a and 11b. Three locations were located around building sampled for potential lead-based paint impacts and four locations were in the former UST area. Eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg, as indicated in Table 16 and in Figures 11a and 11b; however six of the locations were similar to the range of background concentrations. Six locations primarily located in the former agricultural area have concentrations greater than 20 mg/kg.

6.8 Uncertainty Analysis

The results of risk assessment are estimates only and include some uncertainty. Where possible, conservative (health-protective) assumptions are used for the inputs into the risk assessment, which is consistent with agency guidance. Key uncertainties associated with this screening evaluation include:

- The potential for concentrations to attenuate over time were not considered in this screening evaluation. For example, the J&E vapor intrusion model assumes that the source of contamination is infinite (i.e., not depleting) and fixed in place (i.e., steady-state conditions are present) even though the concentrations would likely deplete over time, especially for petroleum hydrocarbon-related chemicals such as benzene. This depletion would be accelerated by biodegradation or other processes, which were not considered in this screening evaluation. The

chemical that contributed the most to the cumulative risk estimates was benzene. Studies have shown that significant biodegradation can occur for benzene and other petroleum hydrocarbons. Therefore, the risks and hazards estimated in this screening evaluation are likely to be lower than predicted, especially if biodegradation or other processes are occurring.

- There are uncertainties associated with the soil physical parameters (e.g., porosity and moisture content) that were used in the fate and transport models. Site-specific soil physical properties data were not analyzed in soil samples collected at the Site. The soil lithology is likely to vary across the area of concern both vertically and horizontally which may lead to variation in flux from different areas, which results in uncertainty in the estimation of potential risks and hazards. DTSC default values were used in a conservative fashion based on soil types documented from the SSI.
- Soil vapor data were used to evaluate the vapor intrusion pathway. Vapor intrusion risk estimates based on soil vapor data are considered to be more representative than those from soil or groundwater data, because the use of the soil vapor data reduces the uncertainty associated with groundwater to soil vapor partitioning and vadose zone biodegradation. These partitioning and degradation processes can be complex and difficult to predict. In addition, the use of one-dimensional models or simple chemical properties that define potential chemical behavior (e.g., Henry's Law) can over-predict the COPC concentration in soil vapor and thus overestimate risks and hazards.
- Uncertainty in the toxicity assessment arises for those chemicals which rely on animal studies as the basis for determining the appropriate toxicity value for effects on humans. Toxicity values typically assume that adverse effects observed in animal toxicity experiments would also be observed in humans. In addition, the use of surrogate chemicals to represent the COPCs that appear to be structurally similar could result in an over- or under-estimation of potential health risk or hazard for that compound. likewise, the use of route-to-route extrapolation for those COPCs for which inhalation toxicity criteria (RfCs or RELs) are not available could be considered a conservative approach and thus result in an over-estimation of potential health risk or hazard for that compound.
- Assumed exposure durations used in this screening evaluation represent upper-bound estimates of the total amount of time that an individual may be either indoors or outdoors for the full duration of the exposure period. In other words, the screening evaluation assumptions entail the receptor staying outdoor or

indoors the entire duration of the exposure period. As a result, the estimated incremental cancer risks and noncancer hazards are overestimated.

- A time-weighted PEF was developed for a construction worker assuming that only a fraction of the construction time would have elevated dust levels. It was assumed that the intrusive soil-handling activities will be conducted for the first 60 days of construction when Site soils will be graded and the emissions during the remaining 190 working days, of the total 250 working days, would primarily be due to wind-blown dust. This approach could over- or under-estimate COPC concentrations in fugitive dust as there is uncertainty as to the length and type of actual construction activities that will take place.
- The screening evaluation assumed that the soil is exposed to the surface and no hardscape, buildings or landscaping will be in place. If these types of coverings were included in the soil to outdoor air fugitive dust and vapor modeling, the emissions estimates would be significantly lower, resulting in lower risk and hazard estimates than reported.

In summary, because a screening evaluation contains multiple sources of uncertainty, simplifying assumptions are often made so that potential health risks and hazards can be estimated quantitatively. Since the exact amount of uncertainty cannot be quantified, the screening evaluation is intended to overestimate rather than underestimate probable cancer risk or noncancer hazard. The results of this assessment, therefore, are likely to be protective of health despite the inherent uncertainties in the process.

6.9 Summary

This screening evaluation was prepared consistent with Cal-EPA and USEPA guidance. Potential cancer risk and noncancer hazard to onsite future residents and construction workers were evaluated assuming exposure occurs to current COPC concentrations detected in soil and soil vapor samples collected from the Site. The risk and hazard estimates presented in this screening evaluation likely over-estimate potential health risk because several conservative assumptions were used throughout the screening evaluation process. Moreover, no engineering or other controls were included in the assessment that would reduce or mitigate exposures post-development.

Based on the results of this screening evaluation, ten soil locations contain COPC concentrations that were greater than the lower-bound of the risk management range for future residents. Chemicals that contributed to the cumulative CR estimates greater than 1×10^{-6} were dieldrin, chlordane and heptachlor epoxide in soil samples collected around

buildings likely associated with organochlorine pesticide use as a termiticide. At one location, T09, PCBs contributed to the CR estimate of 2×10^{-6}. Several locations had lead concentrations greater than the residential soil CHHSL of 80 mg/kg located around buildings tested for potential lead-based paint impacts and in the former UST area. Eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg; however six of the locations were similar to the range of background concentrations. Five locations primarily located in the former agricultural area have concentrations greater than 20 mg/kg.

For the soil vapor to indoor air pathway, the cumulative CR estimates for four samples were marginally greater than the lower-bound range of the risk management range: SG-4, SG-14, SG-17, and SG-21 ranging from 2×10^{-6} to 4×10^{-6}, Benzene was the primary contributor to the CR estimates at depths of 5 feet bgs at these locations with the chemical-specific RBC for benzene being exceeded at three of the locations. In more recent sampling benzene concentrations were lower than observed previously in this area. Benzene has been shown to biodegrade in shallow soils which may be the reason benzene concentrations in recent sampling are lower. When assuming a future scenario that includes 5 feet of engineered fill beneath building in the former UST area, the CR estimates are estimated to be lower with only one sample location (SG-21) marginally above the lower-bound of the risk range with a result of 2×10^{-6}, which is considered negligible.

For construction workers the cumulative CR and noncancer HI estimates for each soil sample location were below the TR and THQ of 1×10^{-5} and 1, respectively. Seven locations had lead concentrations greater than the commercial soil CHHSL of 320 mg/kg and eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg; although six locations are similar to the range of background concentrations.

7. CONCLUSIONS AND RECOMMENDATIONS

This section presents the primary conclusions and recommendations based on data collected in July 2005, July and August 2010, and during the SSI in November 2013 and the results of the Human Health Screening Evaluation.

7.1 Former UST Area and Former Modine Property

The former UST Area includes two former gasoline USTs (Tank 1 and 2), two former diesel USTs (3G and 3P), and one former waste oil tank (4G). All of the USTs were closed between 1996 and 2004. Following closure, all of the USTs were removed except for the boiler room UST (3P), which was abandoned in place by filling it with slurry. Presumably the removed UST excavations were backfilled with imported fill material. Previous investigations conducted at the Site (CH2MHill 2010b) evaluated potential soil vapor and groundwater impacts related to these former USTs. In addition, potential soil impacts at depths of 10 ft bgs and greater were assessed.

Results of the previous investigations by CH2MHill (CH2MHill, 2010b) indicated that the highest concentrations of residual hydrocarbons, primarily diesel, were detected at approximately 30 ft bgs, and groundwater was not impacted by VOCs or TPH from the former USTs. In addition, five locations contained concentrations of benzene in soil vapor above the benzene screening level at depths ranging from 5 to 30 ft bgs (SG-4, SG-14, SG-17, SG-18, and SG-21), and one location had a concentration of PCE in soil vapor above the PCE screening level at a depth of 5 ft bgs (SG-1).

Step-out soil vapor samples were collected from these six locations during the SSI, and the benzene and PCE screening levels were further refined by deriving depth and site-specific RBCs for these compounds. When compared to the RBCs, none of the concentrations of PCE in soil vapor exceeded the RBCs for PCE, and the detected PCE concentrations are adequately defined in a vertical and lateral direction. An evaluation of benzene indicates that three historical detections of benzene at 5 ft bgs in soil vapor (SG-14, SG-17, and SG-21) exceeded the RBC for benzene. However, results of step-out sampling conducted during the SSI indicate that concentrations of benzene are significantly lower when compared to concentrations measured in 2005 and 2010, and the concentrations are adequately defined to concentrations below the depth-specific RBCs in a vertical and lateral direction.

Results of the human health screening evaluation for the soil vapor to indoor air pathway, indicated only four historical locations (SG-4, SG-14, SG-17, and SG-21) had cumulative cancer risk estimates marginally above the lower bound of the risk

management range, ranging from 2×10^{-6} to 4×10^{-6}. Benzene was the primary contributor to the cancer risk (CR) estimates at depths of 5 feet bgs at these historical locations, with three locations where benzene was detected at concentrations above its RBC. When assuming a future scenario that includes the five feet of engineered fill that will be required beneath buildings, the CR estimates are estimated to be lower, with only one sample location estimate (SG-21) marginally above the lower-bound of the risk range with a result of 2×10^{-6}, which is considered negligible.

As discussed above, in more recent sampling, benzene concentrations were lower than observed previously in this area, which is likely due to biodegradation in shallow soils. This observation suggests that oxygen is present in the subsurface that creates a bio-attenuation zone that mitigates vapor intrusion concerns. This natural biodegradation process of petroleum hydrocarbons is recognized by the State Water Resources Control Board as a criterion for granting low-threat closure at UST sites. In addition, this area is within a planned high-density residential area which will require over-excavation of approximately five feet of soil followed by placement of engineered fill (see grading and redevelopment plan in Appendix F). The earthwork activities prior to redevelopment will likely result in lower concentrations due to oxygenation of soils.

Soil vapor results from VP-16 through VP-18 indicate no significant migration of PCE or other VOCs onto the Site from the adjacent former Modine Property. This finding is consistent with the soil vapor and groundwater results from the Phase II ESA.

Results of shallow soil sampling for VOCs at depths less than or equal to 10 ft bgs within the former UST Area indicate that PCE was not detected, and benzene was detected in two samples at concentrations slightly above the laboratory reporting limit. No further action is recommended at this time with respect to characterizing VOCs in soil within the former UST Area.

Results of shallow soil sampling for metals and other constituents indicate that lead, arsenic and TPH were detected at significant concentrations, and the impacts are generally co-located. In general, lead was detected at concentrations above the CHHSL of 80 mg/kg at approximately 5 ft bgs in the vicinity of the former gasoline USTs (Tanks 1 and 2), the former waste oil UST (4G), and beneath the slab of the former maintenance garage. The lead impacts may be associated with the fill material used to backfill the former UST excavations or other historical uses of lead-containing products in this area. An isolated detection of TPH (C6-C44) was found at 5 ft bgs in boring VP-04 that is located beneath the slab of the former maintenance garage. In addition, arsenic was detected above the Southern California background level of 12 mg/kg at

two locations (VP-13 and Historic-SB-03), but the concentrations are within the background range observed in Southern California and are co-located with lead impacts. The lead-impacted soil will be screened with analytical testing to confirm the volume of soil to be removed or otherwise addressed in accordance with DTSC requirements prior to redevelopment. A Soil Management and Contingency Plan will be developed that sets forth protocols for addressing soil impacted by hazardous substances that may be encountered during demolition and grading in this area. This plan will also include procedures for managing unexpected contaminated soil identified by staining or odors that are encountered during site excavation associated with redevelopment.

7.2 Buildings: Lead-Based Paint and OCPs in Soil

Lead was detected above the CHHSL in samples collected around five of six buildings. This suggests that buildings constructed at the Site prior to 1979 likely have soil impacts around the perimeter related to lead-based paint that has flaked off painted surfaces. Soil containing lead at concentrations exceeding the CHHSL should be removed prior to earthwork under DTSC oversight. An X-ray Fluorescence (XRF) analyzer or other technique approved by DTSC can be used to guide soil removal activities. Lead-impacted soils around buildings located in the planned commercial area of the Site (see Appendix F) should be assessed using the commercial CHHSL for lead to determine if soil removal is necessary.

OCPs were detected in samples collected around all of the assessed buildings indicating the potential application of pesticides as a termiticide. Concentrations of OCPs around four of six buildings were detected above risk-based screening levels. Based on these results, it is likely that the remaining buildings at the Site that were constructed prior to 1989 have soil impacts related to OCPs. Soil containing OCPs at concentrations exceeding RBCs should be removed prior to earthwork in accordance with DTSC requirements. Confirmation soil sampling for OCPs can be used to guide soil removal activities. OCP-impacted soils around buildings located in the planned commercial area of the Site (see Appendix F) should be assessed using commercial RBCs to determine if soil removal is necessary.

7.3 Former Agricultural Area

Arsenic was detected above the Southern California Background Level of 12 mg/kg in seven of 11 locations sampled in the former agricultural area with two of the seven locations having concentrations within the range observed in Southern California soils.

This may suggest the potential application of arsenic-based herbicides from historical agricultural land use. It is recommended that this area undergo further assessment in areas where concentrations are above the range observed in Southern California soils to delineate the vertical and lateral distribution of arsenic in soil.

OCPs were detected infrequently and at concentrations below RBCs in the samples collected from the former agricultural area. No further assessment for OCPs in this area is recommended.

7.4 Railroad Easement

Arsenic was detected above the Southern California Background Level of 12 mg/kg in two of five sample locations collected along the railroad easement but within the range of concentrations observed in Southern California soils. This may suggest potential arsenic-based herbicide use, but which application resulted in concentrations within the background range. No further assessment is warranted for arsenic along the railroad easement.

7.5 Transformers

Based on information from State facility staff, 16 transformers were installed outside of Site buildings in the 1990s to replace 30 older transformers located inside Site buildings. The age and contents of the transformers could not be verified due to incomplete or missing labels; therefore, Geosyntec inspected all transformers to assess the use of potential PCB-containing fluids.

Of the 46 transformers inspected, eight of the transformers (four interior and four exterior) had stained and/or damaged concrete pads that were targeted for sample collection. Soil samples were collected at three exterior transformer locations, and a grab sample of oily material was collected from one interior transformer location. Samples could not be collected from the remaining four locations due to insufficient sample volume or logistical issues.

Soil sample results for the exterior transformer locations were non-detect for PCBs. Based on these non-detect results, and the assumption that the 16 exterior transformers were installed after 1979, it is unlikely that the subsurface area surrounding the 16 exterior transformers contain PCBs in soil at concentrations of regulatory concern. No further action is recommended for the exterior transformers. Soils beneath the transformer pads should be inspected for staining during demolition to as an indicator that the soils may be impacted with non-PCB containing oil.

The grab sample of the oily residue from transformer T-9 in Building 38 contained Aroclor-1260 at a concentration of 9,800 µg/kg. Based on these results, potential exists for at least one of the interior transformers (T-9), and possibly the other three interior transformer locations that had damaged concrete pads, to have PCB impacts in soil beneath the transformer pad that would require mitigation. In addition, given the sampling results and observed age of the interior transformers, they should be presumed to contain PCBs. Prior to demolition, any oil within the transformer should be analyzed for PCBs, removed by a qualified professional and transported to a facility licensed to accept such waste. Inspection of the concrete surfaces beneath the interior transformers is warranted during demolition to confirm that they are not impacted with PCB-containing oil.

7.6 Human Health Screening Evaluation Results

Potential cancer risk and noncancer hazard to onsite future residents and construction workers were evaluated assuming exposure occurs to current COPC concentrations detected in soil and soil vapor samples collected from the Site. The risk and hazard estimates presented in this screening evaluation likely over-estimate potential health risk because several conservative assumptions were used throughout the screening evaluation process. Moreover, no engineering or other controls were assumed in the assessment that would reduce or mitigate exposures post-development.

Based on the results of the HHSE, areas of the Site contain COPC concentrations that may potentially pose an unacceptable cancer risk (i.e., above the target risk of 1×10^{-6}) for future residents. For the soil vapor to indoor air pathway, only four locations (SG-4, SG-14, SG-17, and SG-21) had cancer risk estimates that were marginally above the target risk of 1×10^{-6}, with benzene as the primary contributor to the cancer risk estimate. For soil, several locations had arsenic above background, lead greater than the CHHSL, and/or Aroclor 1260, chlordane, dieldrin, and heptachlor epoxide contributing to the cancer risk estimates for residential land use.

For construction workers the cumulative CR and noncancer HI estimates for each soil sample location were below the TR and THQ of 1×10^{-5} and 1, respectively. Several locations had lead concentrations greater than the commercial soil CHHSL of 320 mg/kg and eleven locations had arsenic concentrations greater than the DTSC background level of 12 mg/kg.

8. FUTURE ACTIVITIES/NEXT STEPS

Based on the types and concentrations of COPCs identified at the site, additional investigation and remediation activities can be implemented using best management practices without creating a significant hazard to the public or the environment related to the potential exposure to COPCs at the site during handling excavation, transport or disposal of contaminated material. The following future activities are planned:

1. Enter into DTSC Voluntary Cleanup Program. Brookfield will engage DTSC to provide regulatory oversight on this project through the state's voluntary cleanup program. This SSI report will be reviewed and approved by DTSC.

2. SSI Follow-up. Prior to demolition, a scope of work will be prepared to further delineate the soil impacts identified in this SSI Report that exceeded screening thresholds: arsenic-impacted soil in the former agricultural area; lead-impacted soil in the UST area; and lead/OCP-impacted soil around the periphery of all buildings. The SSI follow-up scope of work will be reviewed and approved by DTSC prior to implementation.

3. Prepare Removal Action Workplan (RAW). The findings of the SSI and SSI follow-up soil delineation will be used to prepare a RAW. The RAW is a workplan developed to carry out removal or response actions which, when implemented in an effective manner, render the Site protective of public health and safety and the environment. The RAW will include a detailed engineering plan for conducting the proposed removal/response action and will include a discussion of any alternative removal/response options that were also considered, and the basis for selecting the proposed removal/response action. The draft RAW will be reviewed and approved by DTSC.

4. RAW Public Participation. Notice that the draft RAW is available for public review and comment will be made in a newspaper of general circulation, and provided to affected citizens, adjacent neighbors, state and local officials, and, if applicable, to emergency management agencies. Any comments received from the public will be considered prior to finalizing the RAW.

5. RAW Implementation. The approved RAW removal/response actions will be implemented prior to Site redevelopment under the oversight of DTSC. The results of the RAW implementation will be summarized in a Removal Action Report that will be submitted to DTSC.

6. Prepare Soil Management and Contingency Plan. Prior to demolition, a Soil Management and Contingency Plan (SMCP) will be prepared and approved by DTSC that sets forth protocols for responding to soil impacted by hazardous substances that may be encountered during demolition and grading activities. The approved SMCP will be provided to the contractors responsible for demolition, grading and environmental oversight for the redevelopment.

9. REFERENCES

American Cancer Society (ACS) 2013. Cancer Facts and Figures. URL: http://www.cancer.org/research/cancerfactsfigures/cancerfactsfigures/cancer-facts-figures-2013

California Environmental Protection Agency (Cal-EPA), 2014. Toxicity Criteria Database. Office of Environmental Health Hazard Assessment (OEHHA). URL: http://www.oehha.org/risk/ChemicalDB/index.asp

Cal-EPA, 2013a. Preliminary Endangerment Assessment Guidance Manual. Interim Final – Revised October 2013 (First Printing, January 1994).

Cal-EPA, 2013b. Human Health Risk Assessment (HHRA) Note Number 3. DTSC recommended methodology for use of U.S. EPA Regional Screening Levels (RSLs) in the Human Health Risk Assessment process at hazardous waste sites and permitted facilities. May 21, 2013.

Cal-EPA, 2012. Advisory: Active Soil Gas Investigations. April 2012.

Cal-EPA, 2011a. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air - Final. Revised October 26, 2011.

Cal-EPA, 2011b. Human Health Risk Assessment (HHRA) Note. Office of Human and Ecological Risk (HERO) HHRA Note Number: 1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment At California Hazardous Waste Sites and Permitted Facilities. Issue Date: May 20, 2011.

Cal-EPA, 2009. Revised California Human Health Screening Levels for Lead. September 2009.

Cal-EPA, 2008a. Determination of a Southern California Regional Background Arsenic Concentration in Soil. March 2008

Cal-EPA, 2008b. Interim Guidance for Sampling Agricultural Properties (Third Revision). August 7, 2008

Cal-EPA, 2007. Development of Health Criteria for School Site Risk Assessment Pursuant to Health and Safety Code Section 901(g): Child-Specific Benchmark Change in Blood Lead Concentration for School Site Risk Assessment. Final Report - April.

Cal-EPA, 2006. Interim Guidance for Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers. Revised June 9, 2006.

Cal-EPA, 1996. Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities. Department of Toxic Substances Control. July. (Corrected and reprinted from 1992).

CH2MHill, 2010a. Draft Phase I Environmental Site Assessment. Fred C. Nelles Youth Correctional Facility, Whittier, California, June 2010.

CH2MHill, 2010b. Draft Phase II Environmental Site Assessment. Fred C. Nelles Youth Correctional Facility, Whittier, California, August 2010.

CH2MHill, 2005. Phase I Environmental Site Assessment. Fred C. Nelles Youth Correctional Facility, Whittier, California, April 2005.

Earth Tech, 1989. Groundwater Investigation Summary, Modine Manufacturing Company, Whittier, California. November 1989.

Geosyntec Consultants (Geosyntec), 2013. Proposal for Supplemental Site Assessment. Fred C. Nelles Youth Correctional Facility, 11850 Whittier Boulevard, Whittier, California 90606.

Johnson, P.C. and R.A. Ettinger (J&E), 1991. Heuristic model for predicting the intrusion rate of contaminant vapors into buildings. Environmental Science & Technology, vol. 25, no. 8:1445-1452.

LARWQCB, 1996. Interim Site Assessment and Cleanup Guidebook. California Regional Water Quality Control Board, Los Angeles and Ventura Counties, Region 4. May 1996.

Marrett, 1992. Background Levels of Soil Trace Elements in Southern California Soils. Department of Soil and Environmental Sciences, University of California, Riverside, CA 92521. June.

United States Environmental Protection Agency (USEPA), 2014. Integrated Risk Information System Database. URL: http://www.epa.gov/iris/. Office of Research and Development, National Center for Environmental Assessment.

USEPA, 2013. Regional Screening Levels for Chemical Contaminants at Superfund Sites. November. http://www.epa.gov/region9/superfund//prg/index.html

USEPA, 2011. Toxicological Review of Trichloroethylene (CAS No. 79-01-6) In Support of Summary Information on the Integrated Risk Information System (IRIS). EPA/635/R-09/011F. September.

USEPA, 2009. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. EPA-540-R-070-002, OSWER 9285.7-82. January

USEPA, 2004. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim Guidance. EPA/540/R-99/005. Office of Solid Waste and Emergency Response, Washington, DC. PB99-963312. OSWER 9285.7-02EP.

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer Review Draft. Office of Emergency and Remedial Response. OSWER 9355.4-24.

USEPA, 1991a. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part B: Development of Risk-Based Preliminary Remediation Goals). Office of Emergency and Remedial Response. Publication 9285.7-01B.

USEPA, 1991b. Role of Baseline Risk Assessment in Superfund Remedy Selection Decisions. Office of Solid Waste and Emergency Response. PB91-921359.

USEPA, 1989. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part A). Interim Final. Office of Emergency and Remedial Response. EPA-540/1-89/002.

TABLES

Table 1
Soil and Soil Vapor Sample Locations and Rationale - Former UST Area
Former Fred C. Nelles Youth Correctional Facility

Sample ID	Soil Sampling		Soil Vapor Sampling					Sample Rationale
	Depth (ft bgs)	Analyses	Depth (ft bgs)				Analysis	
	0.5, 5 and 10	Metals, VOCs, TPHcc, PAHs	5	15	30	45	VOCs	
VP-1	--	--	X	X	--	--	X	Characterize the extent of potential soil vapor impacts to the north of soil gas probe SG-17
VP-2	X	X	X	X	--	--	X	Characterize the extent of potential soil and soil vapor impacts to the east of soil gas probe SG-17
VP-3	--	--	X	X	X	--	X	Characterize the extent of potential soil vapor impacts to the west of soil gas probe SG-17 and to the north of soil gas probe SG-14
VP-4	X	X	X	X	X	--	X	Characterize the extent of potential soil and soil vapor impacts south of soil gas probe SG-17 and to the east of soil gas probe SG-14
VP-5	--	--	X	X	X	--	X	Characterize the extent of potential soil vapor impacts to the west of soil gas probe SG-14
VP-6	X	X	X	X	X	--	X	Characterize the extent of potential soil and soil vapor impacts to the south of soil gas probe SG-14 and to the west of soil gas probe SG-4
VP-7	X	X	X	X	X	--	X	Characterize the extent of potential soil and soil vapor impacts to the southeast of soil gas probe SG-14 and to the north of soil gas probe SG-4.
VP-8	--	--	X	X	X	--	X	Characterize the extent of potential soil vapor impacts to the east of soil gas probe SG-4 and to the west of soil gas probes SG-1 and SG-18 cluster
VP-9	--	--	X	X	X	--	X	Characterize the extent of potential soil vapor impacts to the east of soil gas probe SG-4
VP-10	X	X	X	X	X	X	X	Characterize the extent of potential soil and soil vapor impacts to the south of soil gas probes SG-1 and SG-18 cluster
VP-11/11a	X*	X*	X	X	X	X	X	Characterize the extent of potential soil vapor impacts at soil gas probe SG-18 cluster and to the east of soil gas probes SG-1.
VP-12	--	--	X	X	X	X	X	Characterize the extent of potential soil vapor impacts to the southeast of soil gas probe SG-18 cluster

Table 1
Soil and Soil Vapor Sample Locations and Rationale - Former UST Area
Former Fred C. Nelles Youth Correctional Facility

Sample ID	Soil Sampling		Soil Vapor Sampling					Sample Rationale
	Depth (ft bgs)	Analyses	Depth (ft bgs)				Analysis	
	0.5, 5 and 10	Metals, VOCs, TPHcc, PAHs	5	15	30	45	VOCs	
VP-13	X	X	X	X	X	--	X	Characterize the extent of potential soil and soil vapor impacts to the south of soil gas probe SG-21.
VP-14	--	--	X	X	--	--	X	Characterize the extent of potential soil vapor impacts to the west of soil gas probe SG-21
VP-15	--	--	X	X	--	--	X	Characterize the extent of potential soil vapor impacts to the northeast of soil gas probe SG-21
VP-16	--	--	X	X	--	--	X	Assess potential soil vapor impacts related to off-site sources
VP-17	--	--	X	X	--	--	X	Assess potential soil vapor impacts related to off-site sources
VP-18	--	--	X	X	--	--	X	Assess potential soil vapor impacts related to off-site sources

Notes:

ft bgs - feet below ground surface

X - denotes proposed sample interval/analysis

-- denotes no sample in this interval

* One soil sample was collected at 5 ft bgs from boring VP-11a. A soil vapor probe was not installed at VP-11a

Analytical Methods

Metals - Title 22 metals and mercury by EPA Method 6010B/7471A

VOCs - Volatile organic compounds by EPA Method 8260B (soil), and EPA Method 8260B and TO-15 (soil vapor)

PAHs - Polycyclic Aromatic Hydrocarbons by EPA Method 8270SIM

TPHcc - Total Petroleum Hydrocarbons-carbon chain breakdown by EPA Method 8015B(M)

Table 2
Shallow Soil Sample Locations and Rationale
Former Fred C. Nelles Youth Correctional Facility

Location	Soil Sampling Depth (ft bgs)	Analyte / Sample Quantity				Sample Rationale
		Lead (6010B)	Arsenic (6010B)	OCPs (8081A)	PCBs (8082)	
Agricultural Area	0.5	--	11	11 composite	--	Assess potential pesticide use in former agricultural area
Railroad Right of Way	0.5	--	5	--	--	Assess potential arsenic-based herbicide use along railroad right-of-way
Buildings Constructed Prior to 1978	0.5	36	--	--	--	Assess potential soil impacts related to lead-based paint use around buildings constructed prior to 1978
Buildings Constructed Prior to 1989	0.5, 2		--	24 composite	--	Assess potential soil impacts related to termiticide use around buildings constructed prior to 1989
Former Transformers	0.5, 2	--	--	--	9*	Assess potential soil impacts related to PCB use near former transformers

Notes:

ft bgs - feet below ground surface

-- denotes no sample in this interval

* One surface grab sample was collected at Transformer T9

Analytical Methods

Lead by EPA Method 6010B

Arsenic by EPA Method 6010B

OCPs - Organochlorine pesticides by EPA Method 8081A

PCBs - Polchlorinated biphenyls by EPA Method 8082

Table 3
Chemical Concentrations in Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	1,1,1-Trichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1-Ethyl-4-methylbenzene	Acetone	Benzene	Carbon Disulfide	Chlorodibromomethane	Chloroform	Chloromethane	Dichlorobromomethane	Ethylbenzene	Freon 11
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Former UST Area	VP-01	VP-1-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-1-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
	VP-02	VP-2-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-2-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
	VP-03	VP-3-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-3-5-111313 DUP	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-3-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-3-30-111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-3-30-111313S	30	11/13/2013	EPA TO-15	**7.2**	< 2.0	-	< 15	**32**	**12**	**32**	**82**	**19**	**70**	**5.0**	**6.5**	**1.2**	**6.6**	**31**	< 5.8
	VP-04	VP-4-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-4-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-4-30-111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-05	VP-5-5 111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
	VP-06	VP-6-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-6-15-111113S	15	11/11/2013	EPA TO-15	< 6.1	**31**	-	< 33	**43**	**16**	**12**	**75**	**45**	**40**	< 9.6	**9.6**	< 2.3	< 7.5	**32**	< 13
		VP-6-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-6-15-111313 DUP	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-6-30-111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	**13 J**	**8.0 J**	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-6-30-111313 DUP	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40 J	< 40 J	-	-	< 40 J	-	< 200 J	< 40 J	-	< 200 J	< 40 J	< 40 J
	VP-07	VP-7-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-7-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-7-30-111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	**22 J**	**10 J**	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-08	VP-8-5-111313	5	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-8-15-111213S	15	11/12/2013	EPA TO-15	< 2.7	< 2.0	-	< 15	< 7.4	< 2.5	< 2.5	**55**	< 1.6	< 6.2	< 4.3	< 2.4	< 1.0	< 3.4	< 2.2	< 5.6
		VP-8-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-8-30- 111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-09	VP-9-5- 111313	5	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-9-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-9-30-111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-10	VP-10-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-10-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-10-30-111213S	30	11/12/2013	EPA TO-15	< 2.7	< 2.0	-	< 15	**18**	**5.6**	**4.5**	**90**	**6.3**	**15**	< 4.3	< 2.4	**1.9**	< 3.4	**9.7**	< 5.6
		VP-10-30-111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-10-45-111313	45	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
	VP-11	VP-11-5-111313 1PV	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	**23 J**	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-11-5-111313 3PV	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-11-5-111313 10PV	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-11-15-111313 1PV	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-11-15-111313 3PV	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-11-15-111313 10PV	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40

Table 3
Chemical Concentrations in Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	1,1,1-Trichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1-Ethyl-4-methylbenzene	Acetone	Benzene	Carbon Disulfide	Chlorodibromomethane	Chloroform	Chloromethane	Dichlorobromomethane	Ethylbenzene	Freon 11
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Former UST Area	VP-11	VP-11-30-111313 1PV	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-11-30-111313 3PV	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-11-30-111313 10PV	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-11-45-111313	45	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-12	VP-12-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-12-15- 111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-12-30- 111313	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-12-45-111313	45	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-13	VP-13-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-13-15- 111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-13-30- 111313	30	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
	VP-14	VP-14-5- 111313	5	11/13/2013	EPA 8260B	< 40	**81**	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-14-15- 111313	15	11/13/2013	EPA 8260B	< 40	**224**	**8.0 J**	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-14-15-111313S	15	11/13/2013	EPA TO-15	< 2.7	< 2.0	-	< 15	< 7.4	< 2.5	**2.5**	**44**	< 1.6	< 6.2	< 4.3	< 2.4	< 1.0	< 3.4	**4.3**	< 5.6
	VP-15	VP-15-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-15-15- 111313	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
		VP-15-15-111313 DUP	15	11/13/2013	EPA 8260B	< 40	< 40	< 40	< 40	< 40	< 40	-	-	< 40	-	< 40	< 40	-	< 40	< 40	< 40
Vicinity of Former Modine Property	VP-16	VP-16-5- 111313	5	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
		VP-16-5-111313 DUP	5	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40 J	< 40 J	-	-	< 40 J	-	< 200 J	< 40 J	-	< 200 J	< 40 J	< 40 J
		VP-16-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
	VP-17	VP-17-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-17-15- 111313	15	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
	VP-18	VP-18-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40 J	< 40	< 40	< 40	< 40	-	-	< 40	-	< 200 J	< 40	-	< 200 J	< 40	< 40
		VP-18-15- 111313	15	11/13/2013	EPA 8260B	< 40 J	< 40 J	< 200 J	< 40 J	< 40	< 40	-	-	< 40	-	< 200 J	< 40 J	-	< 200 J	< 40	< 40
Cancer RBC - 5 ft bgs						NA	NA	NA	NA	NA	NA	NA	NA	1.1E+02	NA	4.1E+02	5.4E+02	NA	2.0E+02	1.4E+03	NA
Cancer RBC - 15 ft bgs						NA	NA	NA	NA	NA	NA	NA	NA	2.8E+02	NA	1.2E+03	1.3E+03	NA	6.0E+02	3.8E+03	NA
Cancer RBC - 30 ft bgs						NA	NA	NA	NA	NA	NA	NA	NA	5.4E+02	NA	2.5E+03	2.5E+03	NA	1.2E+03	7.3E+03	NA
Cancer RBC - 45 ft bgs						NA	NA	NA	NA	NA	NA	NA	NA	7.9E+02	NA	3.7E+03	3.7E+03	NA	1.8E+03	1.1E+04	NA
Noncancer RBC - 5 ft bgs						7.5E+06	2.7E+05	1.8E+04	6.4E+03	1.3E+04	1.3E+04	1.7E+05	3.4E+07	4.1E+04	8.6E+05	3.3E+05	1.2E+05	9.8E+04	2.3E+05	1.5E+06	9.7E+05
Noncancer RBC - 15 ft bgs						1.9E+07	6.9E+05	5.1E+04	1.9E+04	3.4E+04	3.4E+04	4.4E+05	7.9E+07	1.1E+05	2.1E+06	9.9E+05	3.0E+05	2.3E+05	6.6E+05	4.0E+06	2.5E+06
Noncancer RBC - 30 ft bgs						3.7E+07	1.3E+06	1.0E+05	3.8E+04	6.7E+04	6.7E+04	8.5E+05	1.5E+08	2.0E+05	4.0E+06	2.0E+06	5.6E+05	4.3E+05	1.3E+06	7.8E+06	4.7E+06
Noncancer RBC - 45 ft bgs						5.5E+07	1.9E+06	1.5E+05	5.6E+04	9.9E+04	1.0E+05	1.3E+06	2.2E+08	3.0E+05	5.9E+06	3.0E+06	8.2E+05	6.3E+05	2.0E+06	1.2E+07	7.0E+06

Notes:
µg/m^3 = micrograms per cubic meter
ft bgs = feet below ground surface
Bolded results indicate a detection.
- Not Sampled; NA = Not Applicable; J = estimated concentration
VOCs by EPA Method 8260B (mobile lab) or TO-15 (fixed lab)
RBC = risk-based concentration

Table 3
Chemical Concentrations in Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	Freon 12	Isopropylbenzene	m&p-Xylenes	Methyl Bromide	Methyl ethyl ketone	Methylene Chloride (DCM)	n-Propylbenzene	o-Chlorotoluene	o-Xylene	p-Cymene	sec-Butylbenzene	Tetrachloroethene	Toluene	Trichloroethene	Xylenes, Total
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Former UST Area	VP-01	VP-1-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-1-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**204 J**	< 40	**42**	< 40
	VP-02	VP-2-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-2-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	**12 J**	< 40	**32 J**	< 40
	VP-03	VP-3-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	**25 J**	< 40	< 40	< 40
		VP-3-5-111313 DUP	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	**13 J**	< 40	< 40	< 40
		VP-3-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	**223**	< 40	**13 J**	< 40
		VP-3-30-111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
		VP-3-30-111313S	30	11/13/2013	EPA TO-15	**5.9**	-	**110**	< 2.0	**110**	**22**	-	-	**32**	-	-	**120**	**110**	< 2.8	-
	VP-04	VP-4-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-4-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**87**	< 40	**14 J**	< 40
		VP-4-30-111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	**80**	< 40 J	< 40
	VP-05	VP-5-5 111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	**30 J**	< 40	**12 J**	< 40
	VP-06	VP-6-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	**10 J**	< 40
		VP-6-15-111113S	15	11/11/2013	EPA TO-15	< 5.6	-	**110**	< 4.4	**110**	< 39	-	-	**39**	-	-	**61**	**240**	**240**	-
		VP-6-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**98 J**	**102**	**14 J**	< 40
		VP-6-15-111313 DUP	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**266 J**	**127**	**66 J**	< 40
		VP-6-30-111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	**22 J**	< 40	< 40	-	< 40	< 40	**8.0 J**	**127**	< 40 J	**69 J**
		VP-6-30-111313 DUP	30	11/13/2013	EPA 8260B	< 40 J	< 40 J	-	-	-	**19 J**	< 40 J	< 40 J	-	< 40 J	< 40 J	**90 J**	**130 J**	< 40 J	**34 J**
	VP-07	VP-7-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-7-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**103**	< 40	**25 J**	< 40
		VP-7-30-111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	**120**	< 40	< 40 J	**80 J**
	VP-08	VP-8-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
		VP-8-15-111213S	15	11/12/2013	EPA TO-15	**2.7**	-	< 8.7	< 1.9	**63**	< 17	-	-	< 2.2	-	-	**3.9**	**13**	< 2.7	-
		VP-8-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**47**	< 40	**17 J**	< 40
		VP-8-30- 111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	**9.0 J**	< 40	< 40 J	< 40
	VP-09	VP-9-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	**100**	< 40 J	**25 J**
		VP-9-15-111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**136**	< 40	**40**	< 40
		VP-9-30-111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
	VP-10	VP-10-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-10-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-10-30-111213S	30	11/12/2013	EPA TO-15	**2.7**	-	**38**	< 1.9	**48**	< 17	-	-	**14**	-	-	**3.9**	**56**	< 2.7	-
		VP-10-30-111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
		VP-10-45-111313	45	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	**23 J**	< 40
	VP-11	VP-11-5-111313 1PV	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	**13 J**	-	**24 J**	**40**	**27 J**	< 40	< 40	< 40
		VP-11-5-111313 3PV	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	**12 J**	-	**10 J**	**28 J**	**27 J**	**116**	< 40	< 40
		VP-11-5-111313 10PV	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	**11 J**	-	**12 J**	**31 J**	**29 J**	< 40	< 40	< 40
		VP-11-15-111313 1PV	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**224**	< 40	< 40	< 40
		VP-11-15-111313 3PV	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**214**	< 40	**16 J**	< 40
		VP-11-15-111313 10PV	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**172**	< 40	**10 J**	< 40

Table 3
Chemical Concentrations in Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	Freon 12	Isopropylbenzene	m&p-Xylenes	Methyl Bromide	Methyl ethyl ketone	Methylene Chloride (DCM)	n-Propylbenzene	o-Chlorotoluene	o-Xylene	p-Cymene	sec-Butylbenzene	Tetrachloroethene	Toluene	Trichloroethene	Xylenes, Total
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Former UST Area	VP-11	VP-11-30-111313 1PV	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	**11 J**	< 40	**31 J**	**21 J**	< 40 J	< 40
		VP-11-30-111313 3PV	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	**15 J**	< 40	**21 J**	**14 J**	< 40 J	< 40
		VP-11-30-111313 10PV	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	**9.0 J**	< 40	**17 J**	< 40	< 40 J	< 40
		VP-11-45-111313	45	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
	VP-12	VP-12-5-111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-12-15- 111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**115**	< 40	**27 J**	< 40
		VP-12-30- 111313	30	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
		VP-12-45-111313	45	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
	VP-13	VP-13-5- 111313	5	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**110**	< 40	**28 J**	< 40
		VP-13-15- 111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**166**	< 40	**58**	< 40
		VP-13-30- 111313	30	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**70**	< 40	< 40	< 40
	VP-14	VP-14-5- 111313	5	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-14-15- 111313	15	11/13/2013	EPA 8260B	< 40 J	**9.0 J**	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**102**	< 40	**20 J**	< 40
		VP-14-15-111313S	15	11/13/2013	EPA TO-15	**2.7**	-	**17**	< 1.9	**42**	< 17	-	-	**4.7**	-	-	**4.0**	**2.5**	< 2.7	-
	VP-15	VP-15-5- 111313	5	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**127**	< 40	**28 J**	< 40
		VP-15-15- 111313	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**91 J**	< 40	**23 J**	< 40
		VP-15-15-111313 DUP	15	11/13/2013	EPA 8260B	< 40 J	< 40	-	-	-	< 400 J	< 40	< 40	-	< 40	< 40	**126 J**	< 40	**49 J**	< 40
Vicinity of Former Modine Property	VP-16	VP-16-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40 J	< 40	< 40 J	< 40
		VP-16-5-111313 DUP	5	11/13/2013	EPA 8260B	< 40 J	< 40 J	-	-	-	< 40 J	< 40 J	< 40 J	-	< 40 J	< 40 J	**53 J**	< 40 J	< 40 J	< 40 J
		VP-16-15-111313	15	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
	VP-17	VP-17-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-17-15- 111313	15	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
	VP-18	VP-18-5- 111313	5	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 200 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40	< 40
		VP-18-15- 111313	15	11/13/2013	EPA 8260B	< 40	< 40	-	-	-	< 40 J	< 40	< 40	-	< 40	< 40	< 40	< 40	< 40 J	< 40
Cancer RBC - 5 ft bgs						NA	NA	NA	NA	NA	2.9E+03	NA	NA	NA	NA	NA	6.3E+02	NA	6.2E+02	NA
Cancer RBC - 15 ft bgs						NA	NA	NA	NA	NA	7.2E+03	NA	NA	NA	NA	NA	1.7E+03	NA	1.6E+03	NA
Cancer RBC - 30 ft bgs						NA	NA	NA	NA	NA	1.4E+04	NA	NA	NA	NA	NA	3.2E+03	NA	3.1E+03	NA
Cancer RBC - 45 ft bgs						NA	NA	NA	NA	NA	2.0E+04	NA	NA	NA	NA	NA	4.7E+03	NA	4.5E+03	NA
Noncancer RBC - 5 ft bgs						1.7E+05	6.9E+05	1.6E+05	7.9E+03	7.2E+06	7.5E+05	1.8E+06	1.1E+05	1.4E+05	7.0E+05	3.3E+05	6.4E+04	7.0E+06	3.0E+03	1.4E+05
Noncancer RBC - 15 ft bgs						4.5E+05	1.8E+06	4.3E+05	2.1E+04	1.9E+07	1.9E+06	4.9E+06	2.9E+05	3.5E+05	1.9E+06	9.0E+05	1.7E+05	1.8E+07	7.7E+03	3.6E+05
Noncancer RBC - 30 ft bgs						8.7E+05	3.6E+06	8.3E+05	4.0E+04	3.6E+07	3.5E+06	9.6E+06	5.6E+05	6.8E+05	3.6E+06	1.8E+06	3.2E+05	3.4E+07	1.5E+04	6.9E+05
Noncancer RBC - 45 ft bgs						1.3E+06	5.3E+06	1.2E+06	5.9E+04	5.3E+07	5.2E+06	1.4E+07	8.3E+05	1.0E+06	5.4E+06	2.6E+06	4.8E+05	5.0E+07	2.2E+04	1.0E+06

Notes:
µg/m^3 = micrograms per cubic meter
ft bgs = feet below ground surface
Bolded results indicate a detection.
- Not Sampled; NA = Not Applicable; J = estimated concentration
VOCs by EPA Method 8260B (mobile lab) or TO-15 (fixed lab)
RBC = risk-based concentration

Table 4
Historical Detected Chemical Concentrations in Soil Vapor
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1-Ethyl-4-methylbenzene	Acetone	Benzene	Carbon Disulfide	Chloroform	Chloromethane	Dichlorobromomethane	Ethylbenzene	Freon 11	Freon 12
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Former UST Area	SG-01	SG-1-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-1	5	7/21/2005	EPA TO-15	< 9.0	-	< 9.0	**25**	< 2.9	**20**	< 4.4	-	< 5.9	< 3.9	< 9.9	< 4.5
		SG-1-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
	SG-02	SG-2-5	5	7/20/2005	EPA 8260B	**640**	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-2-15	15	7/20/2005	EPA 8260B	**1600**	-	-	-	< 100	< 500	-	-	-	< 200	-	-
	SG-03	SG-3-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-3-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
	SG-04	SG-4-5 (1PV)	5	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	**350**	-	-
		SG-4-5 (3PV)	5	7/20/2005	EPA 8260B	< 500	-	-	-	**100**	< 500	-	-	-	**580**	-	-
		SG-4-5 (7PV)	5	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	**310**	-	-
		SG-4-15 (1PV)	15	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-4-15 (3PV)	15	7/20/2005	EPA 8260B	< 500	-	-	-	**100**	< 500	-	-	-	< 200	-	-
		SG-4-15 (7PV)	15	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
	SG-06	SG-6-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-6-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
	SG-14	SG-14-5	5	7/19/2010	EPA 8260B	**213**	**129**	-	-	**257**	-	< 8.0	< 8.0	< 8.0	**304**	< 8.0	< 8.0
		SG-14-15	15	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	**122**	-	< 8.0	< 8.0	< 8.0	**35.1**	< 8.0	< 8.0
	SG-15	SG-15-5	5	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
		SG-15-15	15	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
	SG-16	SG-16-5	5	7/19/2010	EPA 8260B	**135**	**120**	-	-	**44.4**	-	< 8.0	< 8.0	< 8.0	**91**	< 8.0	< 8.0
		SG-16-15	15	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
		SG-16-15-DUP	15	7/19/2010	EPA 8260B	**135**	**118**	-	-	**68.2**	-	< 8.0	< 8.0	< 8.0	**85.8**	< 8.0	< 8.0
	SG-17	SG-17-5	5	7/19/2010	EPA 8260B	**178**	**109**	-	-	**275**	-	< 8.0	< 8.0	< 8.0	**223**	< 8.0	< 8.0
		SG-17-15	15	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
	SG-18	SG-18-5	5	7/16/2010	EPA 8260B	**115**	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
		SG-18-15	15	7/16/2010	EPA 8260B	**133**	**110**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**22.4**	< 8.0	< 8.0
		SG-18-30	30	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	**56.8**	-	< 8.0	< 8.0	< 8.0	**32.6**	< 8.0	< 8.0
		SG-18B-30	30	7/19/2010	EPA TO-15	**16**	< 20.0	**29**	**390**	**170**	**23**	< 9.8	< 8.3	< 13.0	**55**	< 11.0	< 15.0
	SG-19	SG-19-5	5	7/19/2010	EPA 8260B	**122**	**89**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**58.3**	< 8.0	< 8.0
		SG-19-15	15	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
		SG-20-5	5	7/16/2010	EPA 8260B	**119**	**99.4**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
	SG-20	SG-20-15	15	7/16/2010	EPA 8260B	**119**	**41.2**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**14.1**	< 8.0	< 8.0
		SG-20-15-DUP	15	7/16/2010	EPA 8260B	**123**	**64.8**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**16.9**	< 8.0	< 8.0
	SG-21	SG-21-5	5	7/19/2010	EPA 8260B	**392**	**193**	-	-	**383**	-	< 8.0	< 8.0	< 8.0	**631**	< 8.0	< 8.0
		SG-21-15	15	7/19/2010	EPA 8260B	< 8.0	< 8.0	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
		SG-22-5 (3P)	5	7/16/2010	EPA 8260B	**130**	**108**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**26.8**	< 8.0	< 8.0

Table 4
Historical Detected Chemical Concentrations in Soil Vapor
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1-Ethyl-4-methylbenzene	Acetone	Benzene	Carbon Disulfide	Chloroform	Chloromethane	Dichlorobromomethane	Ethylbenzene	Freon 11	Freon 12
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
	SG-22	SG-22-15	15	7/16/2010	EPA 8260B	**130**	**107**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**34.3**	< 8.0	< 8.0
		SG-22-30 (3P)	30	7/16/2010	EPA 8260B	**120**	**99.8**	-	-	< 8.0	-	< 8.0	< 8.0	< 8.0	**14.5**	< 8.0	< 8.0
		SG-22-30	30	7/19/2010	EPA TO-15	< 15.0	< 20.0	< 9.8	**34**	< 9.6	< 31.0	< 9.8	< 8.3	< 13.0	< 8.7	< 11.0	< 15.0
	SG-23	SG-23-5	5	8/4/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**6.0**	< 200	< 200
		SG-23-15	15	8/4/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**7.0**	< 200	< 200
		SG-23-30	30	8/4/2010	EPA 8260B	< 500	< 500	-	-	**13**	< 500	< 200	< 500	< 500	< 200	< 200	< 200
	SG-24	SG-24-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
		SG-24-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
	SG-25	SG-25-5	5	8/4/2010	EPA 8260B	< 500	< 500	-	-	**60**	< 500	**20**	< 500	< 500	**20**	< 200	< 200
		SG-25-5-20100805	5	8/5/2010	EPA TO-15	**15**	**13**	**39**	**48**	**35**	< 31.0	**17**	**13**	< 13.0	**85**	**50**	**11**
		SG-25-15	15	8/4/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**27**	**16**	< 200
	SG-26	SG-26-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**6.0**	< 200	< 200
		SG-26-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**44**	< 200	< 200
	SG-27	SG-27-5	5	8/4/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**35**	< 200	< 200
		SG-27-5-20100805	5	8/5/2010	EPA TO-15	< 15.0	< 20.0	< 9.8	< 24.0	< 9.6	< 31.0	< 9.8	**14**	< 13.0	< 8.7	< 11.0	< 15.0
		SG-27-15	15	8/4/2010	EPA 8260B	**6.0**	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**160**	< 200	< 200
	SG-28	SG-28-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**5.0**	< 200	< 200
		SG-28-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	**6.0**	< 200	< 200
	SG-29	SG-29-5	5	8/4/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
		SG-29-15	15	8/4/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
	SG-30	SG-30-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
		SG-30-15	15	8/15/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
	SG-31	SG-31-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
		SG-31-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
	SG-32	SG-32-5	5	8/5/2010	EPA 8260B	**9.0**	< 500	-	-	< 36.0	< 500	**51**	< 500	< 500	< 200	< 200	< 200
		SG-32-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	**10**	< 500	< 500	< 200	< 200	< 200
		SG-32-30	30	8/5/2010	EPA 8260B	< 500	< 500	-	-	< 36.0	< 500	< 200	< 500	< 500	< 200	< 200	< 200
Vicinity of Former Modine and Leggett & Platt Properties	SG-07	SG-7-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-7-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	< 100	**2100**	-	-	-	< 200	-	-
	SG-08	SG-8-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**800**	-	-	-	< 200	-	-
		SG-8-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**620**	-	-	-	< 200	-	-
	SG-09	SG-9-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-9-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**1400**	-	-	-	< 200	-	-
	SG-10	SG-10-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**590**	-	-	-	< 200	-	-
		SG-10-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**3800**	-	-	-	< 200	-	-
		SG-10	15	7/21/2005	EPA TO-15	**2.7**	-	**2.6**	**12**	**0.72**	< 3.1	**3.5**	-	**2.7**	**9.3**	**3.0**	**3.8**

Table 4
Historical Detected Chemical Concentrations in Soil Vapor
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1-Ethyl-4-methylbenzene	Acetone	Benzene	Carbon Disulfide	Chloroform	Chloromethane	Dichlorobromomethane	Ethylbenzene	Freon 11	Freon 12
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
	SG-11	SG-11-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**5700**	-	-	-	< 200	-	-
		SG-11-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**2900**	-	-	-	< 200	-	-
	SG-12	SG-12-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-12-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	**3800**	-	-	-	< 200	-	-
	SG-13	SG-13-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
		SG-13-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	< 100	< 500	-	-	-	< 200	-	-
Cancer RBC - 5 ft bgs						NA	NA	NA	NA	1.1E+02	NA	5.4E+02	NA	2.0E+02	1.4E+03	NA	NA
Cancer RBC - 15 ft bgs						NA	NA	NA	NA	2.8E+02	NA	1.3E+03	NA	6.0E+02	3.8E+03	NA	NA
Cancer RBC - 30 ft bgs						NA	NA	NA	NA	5.4E+02	NA	2.5E+03	NA	1.2E+03	7.3E+03	NA	NA
Cancer RBC - 45 ft bgs						NA	NA	NA	NA	7.9E+02	NA	3.7E+03	NA	1.8E+03	1.1E+04	NA	NA
Noncancer RBC - 5 ft bgs						1.3E+04	1.3E+04	1.7E+05	3.4E+07	4.1E+04	8.6E+05	1.2E+05	9.8E+04	2.3E+05	1.5E+06	9.7E+05	1.7E+05
Noncancer RBC - 15 ft bgs						3.4E+04	3.4E+04	4.4E+05	7.9E+07	1.1E+05	2.1E+06	3.0E+05	2.3E+05	6.6E+05	4.0E+06	2.5E+06	4.5E+05
Noncancer RBC - 30 ft bgs						6.7E+04	6.7E+04	8.5E+05	1.5E+08	2.0E+05	4.0E+06	5.6E+05	4.3E+05	1.3E+06	7.8E+06	4.7E+06	8.7E+05
Noncancer RBC - 45 ft bgs						9.9E+04	1.0E+05	1.3E+06	2.2E+08	3.0E+05	5.9E+06	8.2E+05	6.3E+05	2.0E+06	1.2E+07	7.0E+06	1.3E+06

Notes:
µg/m^3 = micrograms per cubic meter
ft bgs = feet below ground surface
Bolded results indicate a detection.
- Not Sampled; NA = Not Applicable
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
VOCs by EPA Method 8260B and TO-15
RBC = risk-based concentration
Results obtained from Tables 5-2 and 5-3 of Phase II ESA (CH2MHill, 2010b)

Table 4
Historical Detected Chemical Concentrations in Soil Vapor
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	m&p-Xylenes	Methyl Bromide	Methyl ethyl ketone	Methylene Chloride (DCM)	n-Propylbenzene	o-Xylene	p-Cymene	sec-Butylbenzene	Tetrachloroethene	Toluene	Xylenes, Total
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Former UST Area	SG-01	SG-1-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**340**	< 200	-
		SG-1	5	7/21/2005	EPA TO-15	< 9.9	-	< 13	-	-	< 3.9	-	-	**440**	< 5.0	-
		SG-1-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**280**	< 200	-
	SG-02	SG-2-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**230**	< 200	-
		SG-2-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**220**	< 200	-
	SG-03	SG-3-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**200**	< 200	-
		SG-3-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**190**	< 200	-
	SG-04	SG-4-5 (1PV)	5	7/20/2005	EPA 8260B	**900**	-	-	-	-	< 200	-	-	**190**	**380**	-
		SG-4-5 (3PV)	5	7/20/2005	EPA 8260B	**1500**	-	-	-	-	**280**	-	-	**200**	**690**	-
		SG-4-5 (7PV)	5	7/20/2005	EPA 8260B	**820**	-	-	-	-	< 200	-	-	**200**	**310**	-
		SG-4-15 (1PV)	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**170**	**220**	-
		SG-4-15 (3PV)	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**180**	< 200	-
		SG-4-15 (7PV)	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**180**	< 200	-
	SG-06	SG-6-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**230**	< 200	-
		SG-6-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**200**	< 200	-
	SG-14	SG-14-5	5	7/19/2010	EPA 8260B	-	-	-	< 8.0	**107**	-	< 8.0	< 8.0	< 8.0	**1150**	**809**
		SG-14-15	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**551**	**143**
	SG-15	SG-15-5	5	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
		SG-15-15	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**66.4**	< 8.0
	SG-16	SG-16-5	5	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	**200**	< 8.0	< 8.0	**520**	**209**
		SG-16-15	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**51.2**	< 8.0
		SG-16-15-DUP	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	**193**	< 8.0	< 8.0	**536**	**93**
	SG-17	SG-17-5	5	7/19/2010	EPA 8260B	-	-	-	< 8.0	**101**	-	< 8.0	< 8.0	< 8.0	**1170**	**586**
		SG-17-15	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**72.4**	< 8.0
	SG-18	SG-18-5	5	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**195**	< 8.0
		SG-18-15	15	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**123**	**68.8**
		SG-18-30	30	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**326**	**65.8**
		SG-18B-30	30	7/19/2010	EPA TO-15	**200**	< 16.0	**110**	**5.8**	-	**57**	-	-	< 14	**600**	**260**
	SG-19	SG-19-5	5	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**282**	**107**
		SG-19-15	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**89**	< 8.0
		SG-20-5	5	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**62.8**	< 8.0
	SG-20	SG-20-15	15	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**81.8**	< 8.0
		SG-20-15-DUP	15	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**94**	< 8.0
	SG-21	SG-21-5	5	7/19/2010	EPA 8260B	-	-	-	< 8.0	**138**	-	< 8.0	< 8.0	< 8.0	**2160**	**1760**
		SG-21-15	15	7/19/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**47**	< 8.0
		SG-22-5 (3P)	5	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**227**	**69.6**

Table 4
Historical Detected Chemical Concentrations in Soil Vapor
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	m&p-Xylenes	Methyl Bromide	Methyl ethyl ketone	Methylene Chloride (DCM)	n-Propylbenzene	o-Xylene	p-Cymene	sec-Butylbenzene	Tetrachloroethene	Toluene	Xylenes, Total
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
	SG-22	SG-22-15	15	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**546**	**71.4**
		SG-22-30 (3P)	30	7/16/2010	EPA 8260B	-	-	-	< 8.0	< 8.0	-	< 8.0	< 8.0	< 8.0	**76.8**	< 8.0
		SG-22-30	30	7/19/2010	EPA TO-15	< 17.0	< 16.0	< 30.0	**3.8**	-	< 8.7	-	-	< 14	**22**	< 8.7
	SG-23	SG-23-5	5	8/4/2010	EPA 8260B	**18**	< 500	-	< 200	< 500	< 200	-	< 500	**25**	**22**	-
		SG-23-15	15	8/4/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**16**	**12**	-
		SG-23-30	30	8/4/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**12**	**23**	-
	SG-24	SG-24-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**11**	**10**	-
		SG-24-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**9.0**	**8.0**	-
	SG-25	SG-25-5	5	8/4/2010	EPA 8260B	**45**	< 500	-	< 200	< 500	< 200	-	< 500	**19**	**44**	-
		SG-25-5-20100805	5	8/5/2010	EPA TO-15	**270**	**45**	< 29.0	< 6.9	-	**55**	-	-	**41**	**280**	**320**
		SG-25-15	15	8/4/2010	EPA 8260B	**46**	< 500	-	< 200	< 500	< 200	-	< 500	**12**	**21**	-
	SG-26	SG-26-5	5	8/5/2010	EPA 8260B	**15**	< 500	-	< 200	< 500	< 200	-	< 500	**17**	**24**	-
		SG-26-15	15	8/5/2010	EPA 8260B	**110**	< 500	-	< 200	< 500	**29**	-	**10**	**19**	**46**	-
	SG-27	SG-27-5	5	8/4/2010	EPA 8260B	**71**	< 500	-	< 200	< 500	< 200	-	< 500	**28**	**75**	-
		SG-27-5-20100805	5	8/5/2010	EPA TO-15	< 17.0	**41**	< 29.0	**7.1**	-	< 8.7	-	-	< 14	**4.5**	< 8.7
		SG-27-15	15	8/4/2010	EPA 8260B	**340**	< 500	-	< 200	< 500	**62**	-	< 500	**21**	**100**	-
	SG-28	SG-28-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	< 100	**17**	-
		SG-28-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	< 100	**7.0**	-
	SG-29	SG-29-5	5	8/4/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**25**	**16**	-
		SG-29-15	15	8/4/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**19**	**8.0**	-
	SG-30	SG-30-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**10**	< 500	-
		SG-30-15	15	8/15/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	< 100	< 500	-
	SG-31	SG-31-5	5	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**18**	**17**	-
		SG-31-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**20**	**10**	-
	SG-32	SG-32-5	5	8/5/2010	EPA 8260B	**26**	< 500	-	< 200	< 500	< 200	-	< 500	**17**	**39**	-
		SG-32-15	15	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	**11**	**13**	-
		SG-32-30	30	8/5/2010	EPA 8260B	< 500	< 500	-	< 200	< 500	< 200	-	< 500	< 100	< 500	-
Vicinity of Former Modine and Leggett & Platt Properties	SG-07	SG-7-5	5	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**190**	< 200	-
		SG-7-15	15	7/20/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	**220**	< 200	-
	SG-08	SG-8-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-8-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	**220**	-
	SG-09	SG-9-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-9-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
	SG-10	SG-10-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-10-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-10	15	7/21/2005	EPA TO-15	**39**	-	**2.9**	-	-	**12**	-	-	**12**	**15**	-

Table 4
Historical Detected Chemical Concentrations in Soil Vapor
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Method	m&p-Xylenes	Methyl Bromide	Methyl ethyl ketone	Methylene Chloride (DCM)	n-Propylbenzene	o-Xylene	p-Cymene	sec-Butylbenzene	Tetrachloroethene	Toluene	Xylenes, Total
						µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
	SG-11	SG-11-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-11-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
	SG-12	SG-12-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-12-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
	SG-13	SG-13-5	5	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
		SG-13-15	15	7/21/2005	EPA 8260B	< 500	-	-	-	-	< 200	-	-	< 100	< 200	-
Cancer RBC - 5 ft bgs						NA	NA	NA	2.9E+03	NA	NA	NA	NA	6.3E+02	NA	NA
Cancer RBC - 15 ft bgs						NA	NA	NA	7.2E+03	NA	NA	NA	NA	1.7E+03	NA	NA
Cancer RBC - 30 ft bgs						NA	NA	NA	1.4E+04	NA	NA	NA	NA	3.2E+03	NA	NA
Cancer RBC - 45 ft bgs						NA	NA	NA	2.0E+04	NA	NA	NA	NA	4.7E+03	NA	NA
Noncancer RBC - 5 ft bgs						1.6E+05	7.9E+03	7.2E+06	7.5E+05	1.8E+06	1.4E+05	7.0E+05	3.3E+05	6.4E+04	7.0E+06	1.4E+05
Noncancer RBC - 15 ft bgs						4.3E+05	2.1E+04	1.9E+07	1.9E+06	4.9E+06	3.5E+05	1.9E+06	9.0E+05	1.7E+05	1.8E+07	3.6E+05
Noncancer RBC - 30 ft bgs						8.3E+05	4.0E+04	3.6E+07	3.5E+06	9.6E+06	6.8E+05	3.6E+06	1.8E+06	3.2E+05	3.4E+07	6.9E+05
Noncancer RBC - 45 ft bgs						1.2E+06	5.9E+04	5.3E+07	5.2E+06	1.4E+07	1.0E+06	5.4E+06	2.6E+06	4.8E+05	5.0E+07	1.0E+06

Notes:
µg/m^3 = micrograms per cubic meter
ft bgs = feet below ground surface
Bolded results indicate a detection.
- Not Sampled; NA = Not Applicable
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the
VOCs by EPA Method 8260B and TO-15
RBC = risk-based concentration
Results obtained from Tables 5-2 and 5-3 of Phase II ESA (CH2MHill, 2010b)

Table 5
Detected Chemical Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Mercury	Molybdenum	Nickel	Silver	Vanadium	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Anthracene	Benz(a)anthracene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
UST Area	VP-02	VP2-0.5	0.5	10/30/2013	< 0.750	203	0.554	1.23	24.9	12.6	25.7	< 0.0835	2.66	32.9	< 0.250	51.5	65.7	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
		VP2-5	5	10/30/2013	< 0.750	196	0.561	1.16	25.6	12.4	24.9	< 0.0835	2.51	32.7	< 0.250	53.4	62.3	0.059	0.11	< 0.020	< 0.020	< 0.020
		VP2-10	10	10/30/2013	< 0.750	169	0.51	1.03	22.9	10.5	22.2	< 0.0835	2.41	28.4	< 0.250	48.3	54.9	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
	VP-04	VP4-0.5	0.5	10/30/2013	< 0.750	286	0.475	1.11	22.9	10.3	31.1	0.885	2.25	27.5	< 0.250	46.4	111	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
		VP4-5	5	10/30/2013	2.5	353	0.314	2.54	24.4	5.71	150	15.9	2.58	20.2	1.27	31.3	650	< 0.40	0.54	< 0.40	< 0.40	< 0.40
		VP4-10	10	10/30/2013	< 0.750	199	0.507	1.27	24.3	11.1	24.7	0.259	2.59	29.4	< 0.250	50.7	78.3	0.10	0.19	< 0.020	< 0.020	< 0.020
	VP-06	VP6-0.5	0.5	10/30/2013	< 0.750 J	239	0.445	1.04	19.7	17	27.3	0.13	2.27	24.9	0.493	41.7	94.8	0.12	0.19	< 0.020	< 0.020	< 0.020
		VP6-5	5	10/30/2013	< 0.750	218	0.543	1.11	25.7	11.6	25.5	< 0.0835	2.25	30.1	< 0.250	51.1	67.4	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
		VP6-10	10	10/30/2013	< 0.750	166	0.456	1.00	21.1	9.92	19.8	< 0.0835	2.14	26.4	< 0.250	44.6	50.9	0.024	0.041	< 0.020	< 0.020	< 0.020
	VP-07	VP7-0.5	0.5	10/31/2013	< 0.750	158	0.313	0.838	12.9	7.74	19	0.16	1.57	16.6	< 0.250	29.3	83.2	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
		VP7-5	5	10/31/2013	< 0.750	195	< 0.250	0.716	10.7	4.96	19.4	0.184	0.961	11.8	< 0.250	20	248	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
		VP7-10	10	10/31/2013	< 0.750	157	0.389	0.893	16.2	8.6	18.5	< 0.0835	1.64	21.7	< 0.250	35.3	47.9	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
	VP-10	VP10-0.5	0.5	10/31/2013	< 0.750	187	0.443	1.22	17.6	10.2	27.2	13.5	2.16	25.6	< 0.250	37.6	85.8	< 0.020	< 0.020	0.025	0.047	0.11
		VP10-5	5	10/31/2013	< 0.750	188	0.519	1.43	21	11.6	25.5	< 0.0835	2.37	29.8	< 0.250	44.2	63.8	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
		VP10-10	10	10/31/2013	< 0.750	178	0.548	1.14	23.1	11.2	26.2	< 0.0835	1.93	29.5	< 0.250	48.3	61	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
	VP-11a	VP11A-5	5	11/1/2013	1.61	702	< 0.250	1.20	19.9	3.86	39.1	0.526	1.55	12.6	< 0.250	19.3	297	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
	VP-13	VP13-0.5	0.5	11/1/2013	< 0.750	184	0.373	1.49	39.2	9.40	29.3	0.0881	1.77	25.2	< 0.250	40.6	156	< 0.020	< 0.020	< 0.020	< 0.020	0.025
		VP13-5	5	11/1/2013	< 0.750	168	0.420	1.20	18.6	9.50	23	< 0.0835	2.07	24.7	< 0.250	39.9	54.8	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
		VP13-10	10	11/1/2013	< 0.750	118	0.382	1.10	16.3	8.55	20.3	< 0.0835	2.27	21.7	< 0.250	35	48.8	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cancer RBC					NA	NA	1.2E+05	6.7E+04	NA	3.1E+04	NA	NA	NA	1.1E+06	NA	NA	NA	1.6E+01	NA	NA	NA	1.6E+00
Noncancer RBC					3.1E+01	1.6E+04	1.6E+02	7.0E+01	1.2E+05	2.3E+01	3.1E+03	3.6E+06	3.9E+02	1.6E+03	3.9E+02	3.9E+02	2.3E+04	4.0E+03	2.3E+02	3.4E+03	1.7E+04	NA
TPH Screening Level (LARWQCB, 1996)					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 5
Detected Chemical Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Mercury	Molybdenum	Nickel	Silver	Vanadium	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Anthracene	Benz(a)anthracene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Building 38	T09	T9-111313	0	11/13/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Building 45	T29-01	T29-01-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T29-01-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T29-02	T29-02-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T29-02-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Building 55	T33-01	T33-01-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T33-01-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T33-02	T33-02-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T33-02-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buildng 9	T34-01	T34-01-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T34-01-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T34-02	T34-02-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T34-02-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cancer RBC					NA	NA	1.2E+05	6.7E+04	NA	3.1E+04	NA	NA	NA	1.1E+06	NA	NA	NA	1.6E+01	NA	NA	NA	1.6E+00
Noncancer RBC					3.1E+01	1.6E+04	1.6E+02	7.0E+01	1.2E+05	2.3E+01	3.1E+03	3.6E+06	3.9E+02	1.6E+03	3.9E+02	3.9E+02	2.3E+04	4.0E+03	2.3E+02	3.4E+03	1.7E+04	NA
TPH Screening Level (LARWQCB, 1996)					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

µg/kg = micrograms per kilogram; mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

Bolded results indicate a detection.

- Not Sampled; NA = Not Applicable; J = estimated result

* = Risk-based concentration (RBC) was not derived due to the absence of detections at or above 10 ft bgs

For results of all analytes, please see analytical laboratory reports.

Table 5
Detected Chemical Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Naphthalene (8260B)	Phenanthrene	Pyrene	TPH C6-C44	Acetone	Benzene	Naphthalene (8270SIM)	tert-Butyl Alcohol (TBA)	Toluene	Aroclor 1260
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg
UST Area	VP-02	VP2-0.5	0.5	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.011	< 0.020	< 0.020	< 5.0	< 56	< 1.1	< 0.020	< 22	< 1.1	-
		VP2-5	5	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.012	< 0.020	< 0.020	< 5.0	< 62	< 1.2	< 0.020	< 25	< 1.2	-
		VP2-10	10	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.012	< 0.020	< 0.020	< 5.0	< 59	**2.2**	< 0.020	< 24	< 1.2	-
	VP-04	VP4-0.5	0.5	10/30/2013	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.012	< 0.040	< 0.040	**340 J**	< 58	< 1.2	< 0.040	< 23	< 1.2	-
		VP4-5	5	10/30/2013	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.014	< 0.40	< 0.40	**21000**	< 68	< 1.4	< 0.40	< 27	< 1.4	-
		VP4-10	10	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.011	< 0.020	< 0.020	**98 J**	< 56	< 1.1	< 0.020	< 22	< 1.1	-
	VP-06	VP6-0.5	0.5	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.011	**0.028**	< 0.020	**63 J**	**68 J**	< 1.1	**0.065**	**28**	**1.4**	-
		VP6-5	5	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0089	< 0.020	< 0.020	< 5.0	< 44	**1**	< 0.020	< 18	< 0.89	-
		VP6-10	10	10/30/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0098	< 0.020	< 0.020	< 5.0	**76 J**	< 0.98	< 0.020	**40**	**1.1**	-
	VP-07	VP7-0.5	0.5	10/31/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0085	< 0.020	< 0.020	< 5.0	< 42	< 0.85	< 0.020	< 17	< 0.85	-
		VP7-5	5	10/31/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0098	< 0.020	< 0.020	**11 J**	< 49	< 0.98	< 0.020	< 20	< 0.98	-
		VP7-10	10	10/31/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0093	< 0.020	< 0.020	< 5.0	< 46	< 0.93	< 0.020	< 19	< 0.93	-
	VP-10	VP10-0.5	0.5	10/31/2013	**0.12**	**0.075**	**0.08**	**0.088**	**0.12**	**0.31**	**0.083**	< 0.0095	**0.21**	**0.30**	< 5.0	< 48	< 0.95	< 0.020	< 19	< 0.95	-
		VP10-5	5	10/31/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.012	< 0.020	< 0.020	< 5.0	< 58	< 1.2	< 0.020	< 23	< 1.2	-
		VP10-10	10	10/31/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0088	< 0.020	< 0.020	< 5.0	< 44	< 0.88	< 0.020	< 18	< 0.88	-
	VP-11a	VP11A-5	5	11/1/2013	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.011	**0.046**	< 0.040	**210 J**	< 54	< 1.1	**0.08**	< 22	< 1.1	-
	VP-13	VP13-0.5	0.5	11/1/2013	**0.031**	**0.025**	**0.027**	**0.027**	**0.03**	**0.044**	**0.028**	< 0.012	< 0.020	**0.043**	**34 J**	**97**	< 1.2	< 0.020	< 24	< 1.2	-
		VP13-5	5	11/1/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.012	< 0.020	< 0.020	< 5.0	< 61	< 1.2	< 0.020	< 24	< 1.2	-
		VP13-10	10	11/1/2013	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.012	< 0.020	< 0.020	< 5.0	< 60	< 1.2	< 0.020	< 24	< 1.2	-
Cancer RBC					1.6E-01	1.6E+00	NA	1.6E+00	1.6E+01	NA	1.6E+00	4.2E+00	NA	NA	NA	NA	3.6E+02	4.2E+00	NA	NA	2.2E+02
Noncancer RBC					NA	NA	1.7E+03	NA	NA	2.3E+03	NA	1.6E+02	1.7E+03	1.7E+03	NA	6.3E+07	9.8E+04	1.6E+02	8.7E+06	5.1E+06	NA
TPH Screening Level (LARWQCB, 1996)					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E+03	NA	NA	NA	NA	NA	NA

Table 5
Detected Chemical Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Naphthalene (8260B)	Phenanthrene	Pyrene	TPH C6-C44	Acetone	Benzene	Naphthalene (8270SIM)	tert-Butyl Alcohol (TBA)	Toluene	Aroclor 1260
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Building 38	T09	T9-111313	0	11/13/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9800**
Building 45	T29-01	T29-01-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
		T29-01-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
	T29-02	T29-02-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
		T29-02-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
Building 55	T33-01	T33-01-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
		T33-01-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
	T33-02	T33-02-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
		T33-02-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
Buildng 9	T34-01	T34-01-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
		T34-01-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
	T34-02	T34-02-0.5	0.5	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
		T34-02-2	2	11/11/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50
				Cancer RBC	1.6E-01	1.6E+00	NA	1.6E+00	1.6E+01	NA	1.6E+00	4.2E+00	NA	NA	NA	NA	3.6E+02	4.2E+00	NA	NA	2.2E+02
				Noncancer RBC	NA	NA	1.7E+03	NA	NA	2.3E+03	NA	1.6E+02	1.7E+03	1.7E+03	NA	6.3E+07	9.8E+04	1.6E+02	8.7E+06	5.1E+06	NA
				TPH Screening Level (LARWQCB, 1996)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E+03	NA	NA	NA	NA	NA	NA

Notes:

µg/kg = micrograms per kilogram; mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

Bolded results indicate a detection.

- Not Sampled; NA = Not Applicable; J = estimated result

* = Risk-based concentration (RBC) was not derived due to the absence of detections at or above 10 ft bgs

For results of all analytes, please see analytical laboratory reports.

Table 6
Historical Detected Chemical Concentrations in Soil
Phase II Environmental Site Assessment
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	TPH as Diesel	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Butylbenzene	Dioctyl Phthalate	Methyl Bromide	Naphthalene (8260B)	n-Propylbenzene	p-Cymene	sec-Butylbenzene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Former UST Area	Historic-SB-01	SB-1-10-20050720	10	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 5.3	< 5.3	< 27	< 5.3	-	< 5.3	< 0.0053	< 5.3	< 5.3	< 5.3
		SB-1-20-20050720	20	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 5.8	< 5.8	< 290	< 5.8	-	< 5.8	< 0.0058	< 5.8	< 5.8	< 5.8
		SB-1-30-20050720	30	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 4.7	< 4.7	< 24	< 4.7	-	< 4.7	< 0.0047	< 4.7	< 4.7	< 4.7
	Historic-SB-02	SB-2-10-20050720	10	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 5.5	< 5.5	< 28	< 5.5	-	< 5.5	< 0.0055	< 5.5	< 5.5	< 5.5
		SB-2-20-20050720	20	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 25	< 5.0	-	< 5.0	< 0.0050	< 5.0	< 5.0	< 5.0
		SB-2-30-20050720	30	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.57	< 0.57	< 29	< 0.57	-	< 0.57	< 0.00057	< 0.57	< 0.57	< 0.57
	Historic-SB-03	SB-3-10-20050720	10	7/20/2005	< 6.0	**389**	< 0.50	**6.0**	**23.2**	**6.7**	**81**	**6.9**	< 4.0	**20.4**	**0.93**	< 1.0	**34.6**	**5520**	-	< 6.2	< 6.2	**33**	< 6.2	**1.99**	< 6.2	< 0.0062	< 6.2	< 6.2	< 6.2
		SB-3-20-20050720	20	7/20/2005	< 6.0	**210**	**0.57**	**2.1**	**27.2**	**8.9**	**27.8**	< 0.10	< 4.0	**25.7**	**0.97**	< 1.0	**60**	**71.9**	-	< 5.6	< 5.6	< 28	< 5.6	< 0.33	< 5.6	< 0.0056	< 5.6	< 5.6	< 5.6
		SB-3-30-20050720	30	7/20/2005	< 6.0	**189**	**0.56**	**1.8**	**23.5**	**9.5**	**22**	< 0.10	< 4.0	**22.9**	**1.6**	< 1.0	**54.1**	**55.5**	-	< 5.0	< 5.0	< 25	< 5.0	**0.58**	< 10	< 0.0050	< 5.0	< 5.0	< 5.0
	Historic-SB-04	SB-4-10-20050720	10	7/20/2005	< 6.0	**213**	**0.53**	**2.1**	**34.2**	**8.7**	**36.6**	**2.6**	< 4.0	**29.3**	**0.59**	< 1.0	**54.6**	**168**	-	< 5.7	< 5.7	**ND**	< 5.7	< 0.33	< 5.7	< 0.0057	< 5.7	< 5.7	< 5.7
		SB-4-10-20050720-DUP	10	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 5.3	< 5.3	< 26	< 5.3	-	< 5.3	< 0.0053	< 5.3	< 5.3	< 5.3
		SB-4-20-20050720	20	7/20/2005	< 6.0	**221**	**0.59**	**2.3**	**30.9**	**8.9**	**28.6**	**0.57**	< 4.0	**27.2**	**0.81**	< 1.0	**64**	**64.8**	-	< 6.5	< 6.5	< 33	< 6.5	< 0.33	< 6.5	< 0.0065	< 6.5	< 6.5	< 6.5
		SB-4-30-20050720	30	7/20/2005	< 6.0	**185**	< 0.50	**2.0**	**21.7**	**8.7**	**19.4**	< 0.10	< 4.0	**20.7**	**1.5**	< 1.0	**48.1**	**48.6**	-	< 5.1	< 5.1	< 25	< 5.1	< 0.33	< 5.1	< 0.0051	< 5.1	< 5.1	< 5.1
	Historic-SB-05	SB-5-10-20050720	10	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 10.0	< 5.4	< 5.4	< 27	< 5.4	-	< 5.4	< 0.0054	< 5.4	< 5.4	< 5.4
		SB-5-20-20050720	20	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 10.0	< 4.9	< 4.9	< 25	< 4.9	-	< 4.9	< 0.0049	< 4.9	< 4.9	< 4.9
		SB-5-30-20050720	30	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 10.0	< 5.7	< 5.7	< 29	< 5.7	-	< 5.7	< 0.0057	< 5.7	< 5.7	< 5.7
	Historic-SB-06	SB-6-10-20050720	10	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50.0	< 5.2	< 5.2	< 260	< 5.2	-	< 5.2	< 0.0052	< 5.2	< 5.2	< 5.2
		SB-6-20-20050720	20	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50.0	**1500**	< 550	**4800**	**1900**	-	< 1100	**28**	**1100**	**1000**	**1500**
		SB-6-30-20050720	30	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**40000**	**23000**	**7800**	< 27000	**10000**	-	**11000**	**100**	< 5400	**6000**	**6600**
	Historic-SB-07	SB-7-40-20050720	40	7/20/2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 10.0	-	-	-	-	-	-	-	-	-	-
Cancer RBC					NA	NA	1.2E+05	6.7E+04	NA	3.1E+04	NA	NA	NA	1.1E+06	NA	NA	NA	NA	NA	*	*	NA	*	NA	*	4.2E+00	*	*	*
Noncancer RBC					3.1E+01	1.6E+04	1.6E+02	7.0E+01	1.2E+05	2.3E+01	3.1E+03	3.6E+06	3.9E+02	1.6E+03	3.9E+02	3.9E+02	3.9E+02	2.3E+04	NA	*	*	6.3E+07	*	6.1E+02	*	1.6E+02	*	*	*
TPH Screening Level (LARWQCB, 1996)					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

µg/kg = micrograms per kilogram; mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

Bolded results indicate a detection.

- Not Sampled; NA = Not Applicable

RBC = risk-based concentration

* = Risk-based concentration was not derived for this compound due to the absence of detections at or above 10 ft bgs

Results obtained from Table 5-1 of Phase II ESA (CH2MHill, 2010b)

Table 7
Detected Lead Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Units	Lead
Building 5	B05-01	Pb-5-01-0.5	0.5	11/5/2013	mg/kg	**86.9**
	B05-02	Pb-5-02-0.5	0.5	11/5/2013	mg/kg	**98.8**
	B05-03	Pb-5-03-0.5	0.5	11/5/2013	mg/kg	**151**
	B05-04	Pb-5-04-0.5	0.5	11/5/2013	mg/kg	**60.6**
	B05-05	Pb-5-05-0.5	0.5	11/5/2013	mg/kg	**99.6 J+**
	B05-06	Pb-5-06-0.5	0.5	11/5/2013	mg/kg	**194**
Building 8	B08-01	Pb-8-01-0.5	0.5	11/5/2013	mg/kg	**90.3**
	B08-02	Pb-8-02-0.5	0.5	11/5/2013	mg/kg	**25.9**
	B08-03	Pb-8-03-0.5	0.5	11/5/2013	mg/kg	**394**
	B08-04	Pb-8-04-0.5	0.5	11/5/2013	mg/kg	**142**
	B08-05	Pb-8-05-0.5	0.5	11/5/2013	mg/kg	**108**
	B08-06	Pb-8-06-0.5	0.5	11/5/2013	mg/kg	**113**
Building 29	B29-01	Pb-29-01-0.5	0.5	11/5/2013	mg/kg	**87.5**
	B29-02	Pb-29-02-0.5	0.5	11/5/2013	mg/kg	**279**
	B29-03	Pb-29-03-0.5	0.5	11/5/2013	mg/kg	**191**
	B29-04	Pb-29-04-0.5	0.5	11/5/2013	mg/kg	**224**
	B29-05	Pb-29-05-0.5	0.5	11/5/2013	mg/kg	**257**
	B29-06	Pb-29-06-0.5	0.5	11/5/2013	mg/kg	**97.1**
Building 38	B38-01	Pb-38-01-0.5	0.5	11/5/2013	mg/kg	**182**
	B38-02	Pb-38-02-0.5	0.5	11/5/2013	mg/kg	**167**
	B38-03	Pb-38-03-0.5	0.5	11/5/2013	mg/kg	**83.6**
	B38-04	Pb-38-04-0.5	0.5	11/5/2013	mg/kg	**335**
	B38-05	Pb-38-05-0.5	0.5	11/5/2013	mg/kg	**99**
	B38-06	Pb-38-06-0.5	0.5	11/5/2013	mg/kg	**175**
Building 50	B50-01	Pb-50-01-0.5	0.5	11/5/2013	mg/kg	**335**
	B50-02	Pb-50-02-0.5	0.5	11/5/2013	mg/kg	**86.7**
	B50-03	Pb-50-03-0.5	0.5	11/5/2013	mg/kg	**48.6**
	B50-04	Pb-50-04-0.5	0.5	11/5/2013	mg/kg	**59.9**
	B50-05	Pb-50-05-0.5	0.5	11/5/2013	mg/kg	**101**
	B50-06	Pb-50-06-0.5	0.5	11/5/2013	mg/kg	**81**
Building 59	B59-01	Pb-59-01-0.5	0.5	11/5/2013	mg/kg	**49.5**
	B59-02	Pb-59-02-0.5	0.5	11/5/2013	mg/kg	**70.7**
	B59-03	Pb-59-03-0.5	0.5	11/5/2013	mg/kg	**75.1**
	B59-04	Pb-59-04-0.5	0.5	11/5/2013	mg/kg	**19.6**
	B59-05	Pb-59-05-0.5	0.5	11/5/2013	mg/kg	**3.04**
	B59-06	Pb-59-06-0.5	0.5	11/5/2013	mg/kg	**51.7**
Former UST Area	Historic-SB-03	SB-3-10-20050720	10	7/20/2005	mg/kg	**673**
		SB-3-20-20050720	20	7/20/2005	mg/kg	**8.3**
		SB-3-30-20050720	30	7/20/2005	mg/kg	**4.2**
	Historic-SB-04	SB-4-10-20050720	10	7/20/2005	mg/kg	**155**
		SB-4-20-20050720	20	7/20/2005	mg/kg	**5.2**
		SB-4-30-20050720	30	7/20/2005	mg/kg	**3.9**

Table 7
Detected Lead Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Units	Lead
Former UST Area	VP-02	VP2-0.5	0.5	10/30/2013	mg/kg	**5.93**
		VP2-5	5	10/30/2013	mg/kg	**5.14**
		VP2-10	10	10/30/2013	mg/kg	**4.33**
	VP-04	VP4-0.5	0.5	10/30/2013	mg/kg	**178**
		VP4-5	5	10/30/2013	mg/kg	**2380**
		VP4-10	10	10/30/2013	mg/kg	**79.9**
	VP-06	VP6-0.5	0.5	10/30/2013	mg/kg	**250**
		VP6-5	5	10/30/2013	mg/kg	**11**
		VP6-10	10	10/30/2013	mg/kg	**4.35**
	VP-07	VP7-0.5	0.5	10/31/2013	mg/kg	**127**
		VP7-5	5	10/31/2013	mg/kg	**1100**
		VP7-10	10	10/31/2013	mg/kg	**4.43**
	VP-10	VP10-0.5	0.5	10/31/2013	mg/kg	**79.8**
		VP10-5	5	10/31/2013	mg/kg	**6.88**
		VP10-10	10	10/31/2013	mg/kg	**5.06**
	VP-11a	VP11A-5	5	11/1/2013	mg/kg	**2740**
	VP-13	VP13-0.5	0.5	11/1/2013	mg/kg	**81.2**
		VP13-5	5	11/1/2013	mg/kg	**4.51**
		VP13-10	10	11/1/2013	mg/kg	**3.62**
					Residential CHHSL	80

Notes:

Bolded results indicate a sampling detection.

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

J+ = The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference (inorganic analysis only).

CHHSL = California Human Health Screening Level (OEHHA, 2009)

Table 8
Detected Arsenic Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Units	Arsenic
Railroad Easement	RR-01	RR-01-0.5	0.5	11/4/2013	mg/kg	**19.8**
	RR-02	RR-02-0.5	0.5	11/4/2013	mg/kg	**10.1**
	RR-03	RR-03-0.5	0.5	11/4/2013	mg/kg	**16.5**
	RR-04	RR-04-0.5	0.5	11/4/2013	mg/kg	**3.87**
	RR-05	RR-05-0.5	0.5	11/4/2013	mg/kg	**7.15**
Former Agricultural Area	SB-03	AG-SB3-0.5	0.5	11/4/2013	mg/kg	**22.9**
	SB-07	AG-SB7-0.5	0.5	11/4/2013	mg/kg	**21.7**
	SB-09	AG-SB9-0.5	0.5	11/4/2013	mg/kg	**32.3**
	SB-15	AG-SB15-0.5	0.5	11/4/2013	mg/kg	**22.4**
	SB-23	AG-SB23-0.5	0.5	11/4/2013	mg/kg	**11.7**
	SB-24	AG-SB24-0.5	0.5	11/4/2013	mg/kg	**9.37**
	SB-26	AG-SB26-0.5	0.5	11/4/2013	mg/kg	**8.96**
	SB-33	AG-SB33-0.5	0.5	11/4/2013	mg/kg	**18**
	SB-35	AG-SB35-0.5	0.5	11/4/2013	mg/kg	**11.3**
	SB-40	AG-SB40-0.5	0.5	11/4/2013	mg/kg	**14.8**
	SB-42	AG-SB42-0.5	0.5	11/4/2013	mg/kg	**35.6**
Former UST Area	Historic-SB-03	SB-3-10-20050720	10	7/20/2005	mg/kg	**13.8**
		SB-3-20-20050720	20	7/20/2005	mg/kg	**5.6**
		SB-3-30-20050720	30	7/20/2005	mg/kg	**5.2**
	Historic-SB-04	SB-4-10-20050720	10	7/20/2005	mg/kg	**6.4**
		SB-4-20-20050720	20	7/20/2005	mg/kg	**6.4**
		SB-4-30-20050720	30	7/20/2005	mg/kg	**4.6**
	VP-02	VP2-0.5	0.5	10/30/2013	mg/kg	**8.01**
		VP2-5	5	10/30/2013	mg/kg	**7.36**
		VP2-10	10	10/30/2013	mg/kg	**6.46**
	VP-04	VP4-0.5	0.5	10/30/2013	mg/kg	**6.39**
		VP4-5	5	10/30/2013	mg/kg	**11.1**
		VP4-10	10	10/30/2013	mg/kg	**6.45**

Table 8
Detected Arsenic Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Sample Location	Sample ID	Depth (ft bgs)	Date Sampled	Units	Arsenic
Former UST Area	VP-06	VP6-0.5	0.5	10/30/2013	mg/kg	**8.27**
		VP6-5	5	10/30/2013	mg/kg	**7.4**
		VP6-10	10	10/30/2013	mg/kg	**5.98**
	VP-07	VP7-0.5	0.5	10/31/2013	mg/kg	**5.36**
		VP7-5	5	10/31/2013	mg/kg	**3.76**
		VP7-10	10	10/31/2013	mg/kg	**4.61**
	VP-10	VP10-0.5	0.5	10/31/2013	mg/kg	**6.36**
		VP10-5	5	10/31/2013	mg/kg	**7.12**
		VP10-10	10	10/31/2013	mg/kg	**7.43**
	VP-11a	VP11A-5	5	11/1/2013	mg/kg	**3.48**
	VP-13	VP13-0.5	0.5	11/1/2013	mg/kg	**18.6**
		VP13-5	5	11/1/2013	mg/kg	**1.36**
		VP13-10	10	11/1/2013	mg/kg	**2.32**
Cancer RBC					mg/kg	0.061
Noncancer RBC					mg/kg	22
Southern California Background Level					mg/kg	12

Notes:

Bolded results indicate a detection.

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

RBC = risk-based concentration

Southern California Background Level (DTSC, March 2008)

Table 9
Detected Pesticide Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Area	Location	Sample ID	Depth (ft bgs)	Date Sampled	Units	4,4'-DDD	4,4'-DDE	4,4'-DDT	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan Sulfate	Endrin Aldehyde	Heptachlor Epoxide
Former Agricultural Area	Ag Composite-01 (SB-01, SB-02, SB-03, SB-04)	AG-01-0.5	0.5	11/4/2013	µg/kg	< 5.0	**30**	**38**	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-02 (SB-05, SB-06, SB-07, SB-10)	AG-02-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-03 (SB-08, SB-09, SB-11, SB-12)	AG-03-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	**5.4**	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-04 (SB-13, SB-15, SB-16, SB-19)	AG-04-0.5	0.5	11/4/2013	µg/kg	< 5.0	**26**	**10**	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-05 (SB-14, SB-17, SB-18, SB-24)	AG-05-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-06 (SB-25, SB-29, SB-30, SB-35)	AG-06-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-07 (SB-36, SB-39, SB-42, SB-43)	AG-07-0.5	0.5	11/4/2013	µg/kg	< 5.0	**19**	**8.4**	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-08 (SB-37, SB-38, SB-40, SB-41)	AG-08-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-09 (SB-28, SB-32, SB-33, SB-34)	AG-09-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-10 (SB-21, SB-22, SB-23, SB-27)	AG-10-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Ag Composite-11 (SB-20, SB-26, SB-31)	AG-11-0.5	0.5	11/4/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Building 5	B05 Composite-01 (B05-01, B05-02, B05-03)	OCP-5-01-0.5	0.5	11/5/2013	µg/kg	< 5.0	**10**	< 5.0	< 50	**5.6**	**93**	< 5.0	< 5.0	< 5.0	< 5.0
	B05 Composite-01 (B05-01, B05-02, B05-03)	OCP-5-01-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	**16**	< 5.0	< 5.0	< 5.0	< 5.0
	B05 Composite-02 (B05-04, B05-05, B05-06)	OCP-5-02-0.5	0.5	11/5/2013	µg/kg	< 5.0	**16**	**18**	< 50	< 5.0	**46**	< 5.0	< 5.0	< 5.0	< 5.0
	B05 Composite-02 (B05-04, B05-05, B05-06)	OCP-5-02-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	**8.7**	< 50	< 5.0	**9.5**	< 5.0	< 5.0	< 5.0	< 5.0
Building 8	B08 Composite-01 (B08-01, B08-02, B08-03)	OCP-8-01-0.5	0.5	11/5/2013	µg/kg	< 5.0	**24**	**58**	**68**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B08 Composite-01 (B08-01, B08-02, B08-03)	OCP-8-01-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	**7.0**	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B08 Composite-02 (B08-04, B08-05, B08-06)	OCP-8-02-0.5	0.5	11/5/2013	µg/kg	< 5.0	**5.4**	**7.3**	**60**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B08 Composite-02 (B08-04, B08-05, B08-06)	OCP-8-02-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Building 29	B29 Composite-01 (B29-01, B29-02, B29-06)	OCP-29-01-0.5	0.5	11/5/2013	µg/kg	**190**	**240**	**260**	**920**	< 25	**560**	< 25	< 25	**76**	**98**
	B29 Composite-01 (B29-01, B29-02, B29-06)	OCP-29-01-2	2	11/5/2013	µg/kg	**67**	**97**	**59**	**370**	< 5.0	**190**	< 5.0	**5.4**	**16**	< 5.0
	B29 Composite-02 (B29-03, B29-04, B29-05)	OCP-29-02-0.5	0.5	11/5/2013	µg/kg	**140**	**100**	**69**	**1400**	< 5.0	**140**	< 5.0	< 5.0	< 5.0	< 5.0
	B29 Composite-02 (B29-03, B29-04, B29-05)	OCP-29-02-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Building 38	B38 Composite-01 (B38-01, B38-02, B38-03)	OCP-38-01-0.5	0.5	11/5/2013	µg/kg	**27**	**73**	**44**	**98**	< 5.0	**24**	< 5.0	< 5.0	< 5.0	< 5.0
	B38 Composite-01 (B38-01, B38-02, B38-03)	OCP-38-01-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B38 Composite-02 (B38-04, B38-05, B38-06)	OCP-38-02-0.5	0.5	11/5/2013	µg/kg	**110**	**260**	**150**	**350**	< 5.0	**14**	< 5.0	< 5.0	< 5.0	**7.3**
	B38 Composite-02 (B38-04, B38-05, B38-06)	OCP-38-02-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Building 50	B50 Composite-01 (B50-01, B50-02, B50-03)	OCP-50-01-0.5	0.5	11/5/2013	µg/kg	< 5.0	< 5.0	**6.4**	**2700**	< 5.0	< 5.0	**16**	< 5.0	< 5.0	**47**
	B50 Composite-01 (B50-01, B50-02, B50-03)	OCP-50-01-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	**130**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B50 Composite-02 (B50-04, B50-05, B50-06)	OCP-50-02-0.5	0.5	11/5/2013	µg/kg	< 5.0	< 5.0	**5.7**	**2100**	< 5.0	< 5.0	< 5.0	< 5.0	**8.0**	< 5.0
	B50 Composite-02 (B50-04, B50-05, B50-06)	OCP-50-02-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	**600**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**9.9**
Building 59	B59 Composite-01 (B59-04, B59-05, B59-06)	OCP-59-01-0.5	0.5	11/5/2013	µg/kg	< 5.0	**5.6**	**9.5**	**860**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B59 Composite-01 (B59-04, B59-05, B59-06)	OCP-59-01-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	B59 Composite-02 (B59-01, B59-02, B59-03)	OCP-59-02-0.5	0.5	11/5/2013	µg/kg	< 25	< 25	**60**	**22000**	< 25	< 25	< 25	< 25	< 25	< 25
	B59 Composite-02 (B59-01, B59-02, B59-03)	OCP-59-02-2	2	11/5/2013	µg/kg	< 5.0	< 5.0	**5.2**	**580**	< 5.0	< 5.0	**6.6**	< 5.0	< 5.0	< 5.0
				Cancer RBC	µg/kg	2.00E+03	1.40E+03	1.70E+03	4.40E+02	3.20E+02	3.00E+01	NA	NA	NA	8.80E+01
				Noncancer RBC	µg/kg	NA	NA	3.60E+04	3.50E+04	NA	3.10E+03	3.70E+05	3.70E+05	1.80E+04	7.90E+02

Notes

Bolded results indicate a detection.

ft bgs = feet below ground surface

µg/kg = micrograms per kilogram

NA = Not Applicable

RBC = risk-based concentration

For results of all analytes, please see analytical laboratory reports.

Table 10
Transformer Survey
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Transformer	Location	Building Number	Description
T-1	Interior	35	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-2	Interior	44	The room was sealed but a partial view indicated signs of leakage from the transformer reservoir onto the equipment but not the floor.
T-3	Interior	50	Signs of leakage, concrete staining or cracks were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-4	Exterior	47	Minor staining was noted on the metal support below the transformer. View of the concrete pad beneath the transformer was obstructed due to debris.
T-5	Interior	46	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-6	Interior	51	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-7	Interior	52	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-8	Interior	43	The room was sealed due to the presence of asbestos. A survey was not performed.
T-9	Interior	38	Signs of leakage were observed from the transformer onto the concrete floor. A grab sample of the oily residue was analyzed and contained Aroclor-1260 at a concentration of 9,800 ug/kg. Small cracks were present beneath the transformer. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-10	Interior	55	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-11	Interior	41	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-12	Interior	56	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.

Table 10
Transformer Survey
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Transformer	Location	Building Number	Description
T-13	Interior	61	Signs of leakage, concrete staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs and contained no PCBs. The analytical reporting limit was not listed.
T-14	Interior	9	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Staining or cracks on the concrete were not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-15	Interior	13	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining was not observed. Small cracks were present beneath the transformer. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-16	Interior	8	The transformer was not present.
T-17	Interior	28	Signs of leakage, concrete staining, or cracks on the concrete were not observed.
T-18	Interior	53	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining was not observed. Small cracks were present beneath the transformer. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-19	Interior	16	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining was not observed. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-20	Interior	5	The transformer was not present.
T-21	Interior	3	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-24	Exterior	57	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-26	Interior	60	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-27	Exterior	35	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-28	Exterior	58	No signs of leakage, concrete staining, or cracks in the concrete were observed. A visual inspection of the interior of the transformer revealed a label certifying the transformer contained less than 1 ppm PCBs at the time of manufacture.
T-29	Exterior	45	Staining was observed on the concrete pad. Surface and sub-surface soil samples were collected adjacent to the concrete pad and analyze for PCBs. Soil samples were non-detect for PCBs.
T-30	Exterior	46	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-31	Exterior	50	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-32	Exterior	51	No signs of leakage, concrete staining, or cracks in the concrete were observed.

Table 10
Transformer Survey
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Transformer	Location	Building Number	Description
T-33	Exterior	55	Staining was observed on the concrete pad. Surface and sub-surface soil samples were collected adjacent to the concrete pad and analyze for PCBs. Soil samples were non-detect for PCBs.
T-34	Exterior	9	Staining was observed on the concrete pad. Surface and sub-surface soil samples were collected adjacent to the concrete pad and analyze for PCBs. Soil samples were non-detect for PCBs.
T-35	Exterior	58	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-36	Exterior	14	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-37	Exterior	16	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-38	Exterior	22	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-39	Exterior	22	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-40	Exterior	22	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-41	Interior	21	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-42	Interior	21	No signs of leakage, concrete staining, or cracks in the concrete were observed. A label on the transformer certified that the transformer was filled with non-PCB containing fluid.
T-43	Interior	21	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining and small cracks were present beneath the transformer. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-44	Interior	21	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining and small cracks were present beneath the transformer. A label on the transformer certified that the dielectric fluid was tested by the Office of the State Architect for PCBs. However, the PCB concentration was omitted.
T-45	Interior	21	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining and small cracks were present beneath the transformer. No label was observed.
T-46	Interior	21	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining or cracks in the concrete were not observed.
T-47	Interior	21	Signs of leakage were observed from the transformer reservoir onto the equipment but not the floor. Concrete staining or cracks in the concrete were not observed.
T-48	Interior	21	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-49	Interior	27	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-50	Interior	27	No signs of leakage, concrete staining, or cracks in the concrete were observed.
T-51	Interior	27	No signs of leakage, concrete staining, or cracks in the concrete were observed.

Table 11
Exposure Parameters
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Exposure Parameters	Units	Future Onsite Resident			Future Construction Worker	
		Adult	Child	Source	Adult	Source
Soil Ingestion Rate (IngR)	mg/day	100	200	Cal-EPA 2011b	330	USEPA 2002
Skin Surface Area (SA)	cm^2/day	5,700	2,900	Cal-EPA 2011b	3,300[(1)]	USEPA 2004
Percent Dermal Absorption (ABSd)	unitless	--	--	COPC-specific; USEPA 2013	--	COPC-specific; USEPA 2013
Soil Adherence Factor (AF)	mg/cm^2	0.07	0.2	Cal-EPA 2011b	0.8	Cal-EPA 2011b
Exposure Frequency (EF)	days/year	350	350	USEPA 1991	250	USEPA 2002
Exposure Duration (ED)	years	24	6	Cal-EPA 2013	1	Cal-EPA 2011b
Exposure Time (ET)	hours/day	24	24	USEPA 1991	8	Cal-EPA 2011b
Body Weight (BW)	kg	70	15	USEPA 1991	70	USEPA 1991
Averaging Time for Noncarcinogens (AT_n)	days	8,760	2,190	USEPA 1989	365	USEPA 1989
Averaging Time for Carcinogens (AT_c)	days	25,550	25,550	USEPA 1989	25,550	USEPA 1989

Notes:

" -- " not applicable

(1) A surface area of 3,300 cm^2/day was based on exposures being limited to the head, neck, hands, and forearms for a worker wearing a short-sleeved shirt, long pants, and shoes, which is the typical industry standard for workers engaged in construction activities.

References:

Cal-EPA 2013. Preliminary Endangerment Assessment Guidance Manual.

Cal-EPA 2011b. Human Health Risk Assessment Note. HERO Note #1. Recommended DTSC Default Exposure Factors For Use In Risk Assessment at California Hazardous Waste Sites and Permitted Facilities. May 20, 2011.

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

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

USEPA 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response. OSWER 9355.4-24

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

USEPA 2013. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. November. www.epa.gov/region09/superfund/prg/index.html

Table 12
Definition of Transfer Factors
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Exposure Route	Transfer Factor	Definition
Inhalation of particulates in outdoor air	Particulate emission factor (PEF) (kg/m^3)	Ratio of COPC concentration in outdoor air (mg/m^3) to COPC concentration in soil (mg/kg)
Inhalation of vapors in outdoor air	Soil-to-air volatilization factor (VF_{soil}) (kg/m^3)	Ratio of COPC concentration in outdoor air (mg/m^3) to COPC concentration in soil (mg/kg)
Inhalation of vapors in indoor air	Soil vapor-to-indoor air attenuation factor (AF_{SV-IA}) (unitless)	Ratio of COPC concentration in indoor air (mg/m^3) to COPC concentration in soil vapor (mg/m^3)

Note:
" COPC " chemical of potential concern

Table 13
Toxicity Criteria
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	% Dermal ABSd	% GI ABS	Cancer Toxicity Criteria					Noncancer Toxicity Criteria				
				Oral Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Source	Dermal Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Inhalation Unit Risk, IUR (µg/m^3)$^{-1}$	Source	Oral Reference Dose, RfD (mg/kg-day)	Dermal Reference Dose, RfD (mg/kg-day)	Source	Inhalation Reference Concentration, RfC or REL (mg/m^3)	Source
Inorganics													
7440-36-0	Antimony	NA	15	NC		NC	NC		4.0E-04	NA	3	NA	
7440-38-2	Arsenic	3	100	9.5E+00	5	9.5E+00	3.3E-03	5	3.0E-04	3.0E-04	3	1.5E-05	5
7440-39-3	Barium	NA	7	NC		NC	NC		2.0E-01	NA	3	5.0E-04	2
7440-41-7	Beryllium	NA	0.7	NC		NC	2.4E-03	5	2.0E-03	NA	3	2.0E-05	3
7440-43-9	Cadmium	0.1	2.5	NC		NC	4.2E-03	5	1.0E-03	2.5E-05	3	2.0E-05	5
7440-47-3	Chromium	NA	1.3	NC		NC	NC		1.5E+00	NA	3	NA	
7440-48-4	Cobalt	NA	100	NC		NC	9.0E-03	1	3.0E-04	NA	1	6.0E-06	1
7440-50-8	Copper	NA	100	NC		NC	NC		4.0E-02	NA	2	NA	
7439-92-1	Lead	NA	100	NC		NC	NC		NA	NA		NA	
7439-97-6	Mercury	NA	100	NC		NC	NC		NA	NA	3	3.0E-05	5
7439-98-7	Molybdenum	NA	100	NC		NC	NC		5.0E-03	NA	3	NA	
7440-02-0	Nickel	NA	4	NC		NC	2.6E-04	5	2.0E-02	NA	3	9.0E-05	6
7782-49-2	Selenium	NA	100	NC		NC	NC		5.0E-03	NA	3	2.0E-02	5
7440-22-4	Silver	NA	4	NC		NC	NC		5.0E-03	NA	3	NA	
7440-62-2	Vanadium	NA	100	NC		NC	NC		5.0E-03	NA	1	1.0E-04	6
7440-66-6	Zinc	NA	100	NC		NC	NC		3.0E-01	NA	3	NA	
PAHs													
90-12-0	1-Methylnaphthalene	13	100	2.9E-02	1	2.9E-02	NC		7.0E-02	7.0E-02	6	NA	
91-57-6	2-Methylnaphthalene	13	100	NC		NC	NC		4.0E-03	4.0E-03	3	NA	
83-32-9	Acenaphthene	13	100	NC		NC	NC		6.0E-02	6.0E-02	3	2.1E-01	4
120-12-7	Anthracene	13	100	NC		NC	NC		3.0E-01	3.0E-01	3	1.1E+00	4
56-55-3	Benzo (a) anthracene	13	100	2.9E-01	5*	2.9E-01	1.1E-04	5	NA	NA		NA	
50-32-8	Benzo (a) pyrene	13	100	2.9E+00	5*	2.9E+00	1.1E-03	5	NA	NA		NA	

Table 13
Toxicity Criteria
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	% Dermal ABSd	% GI ABS	Cancer Toxicity Criteria					Noncancer Toxicity Criteria				
				Oral Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Source	Dermal Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Inhalation Unit Risk, IUR (µg/m^3)$^{-1}$	Source	Oral Reference Dose, RfD (mg/kg-day)	Dermal Reference Dose, RfD (mg/kg-day)	Source	Inhalation Reference Concentration, RfC or REL (mg/m^3)	Source
205-99-2	Benzo (b) fluoranthene	13	100	2.9E-01	5*	2.9E-01	1.1E-04	5	NA	NA		NA	
191-24-2	Benzo (g,h,i) perylene *	13	100	NC		NC	NC		3.0E-02	3.0E-02	3	1.1E-01	4
207-08-9	Benzo (k) fluoranthene	13	100	2.9E-01	5*	2.9E-01	1.1E-04	5	NA	NA		NA	
218-01-9	Chrysene	13	100	2.9E-02	5*	2.9E-02	1.1E-05	5	NA	NA		NA	
206-44-0	Fluoranthene	13	100	NC		NC	NC		4.0E-02	4.0E-02	3	1.4E-01	4
193-39-5	Indeno (1,2,3-cd) pyrene	13	100	2.9E-01	5*	2.9E-01	1.1E-04	5	NA	NA		NA	
85-01-8	Phenanthrene *	13	100	NC		NC	NC		3.0E-02	3.0E-02	3	1.1E-01	4
129-00-0	Pyrene	13	100	NC		NC	NC		3.0E-02	3.0E-02	3	1.1E-01	4
PCBs													
11096-82-5	Aroclor 1260	14	100	2.0E+00	1	2.0E+00	5.7E-04	1	NA	NA		NA	
Pesticides													
72-54-8	4,4'-DDD	10	100	2.4E-01	5	2.4E-01	6.9E-05	5	NA	NA		NA	
72-55-9	4,4'-DDE	10	100	3.4E-01	5	3.4E-01	9.7E-05	5	NA	NA		NA	
50-29-3	4,4'-DDT	3	100	3.4E-01	5	3.4E-01	9.7E-05	5	5.0E-04	5.0E-04	3	NA	
57-74-9	Chlordane	4	100	1.3E+00	5	1.3E+00	3.4E-04	5	5.0E-04	5.0E-04	3	7.0E-04	3
319-86-8	delta-BHC *	10	100	1.5E+00	5	1.5E+00	4.3E-04	5	NA	NA		NA	
60-57-1	Dieldrin	10	100	1.6E+01	5	1.6E+01	4.6E-03	5	5.0E-05	5.0E-05	3	NA	
959-98-8	Endosulfan I *	10	100	NC		NC	NC		6.0E-03	6.0E-03	3	NA	
1031-07-8	Endosulfan Sulfate *	10	100	NC		NC	NC		6.0E-03	6.0E-03	3	NA	
7421-93-4	Endrin Aldehyde *	10	100	NC		NC	NC		3.0E-04	3.0E-04	3	NA	
1024-57-3	Heptachlor Epoxide	10	100	5.5E+00	5	5.5E+00	2.6E-03	3	1.3E-05	1.3E-05	3	NA	
SVOCs													
117-84-0	Di-n-Octyl Phthalate	10	100	NC		NC	NC		1.0E-02	1.0E-02	1	3.5E-02	4

Table 13
Toxicity Criteria
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	% Dermal ABSd	% GI ABS	Cancer Toxicity Criteria					Noncancer Toxicity Criteria				
				Oral Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Source	Dermal Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Inhalation Unit Risk, IUR (µg/m^3)$^{-1}$	Source	Oral Reference Dose, RfD (mg/kg-day)	Dermal Reference Dose, RfD (mg/kg-day)	Source	Inhalation Reference Concentration, RfC or REL (mg/m^3)	Source
VOCs													
71-55-6	1,1,1-Trichloroethane	NA	100	NC		NC	NC		2.0E+00	NA	3	1.0E+00	5
75-35-4	1,1-Dichloroethene	NA	100	NC		NC	NC		5.0E-02	NA	3	7.0E-02	5
87-61-6	1,2,3-Trichlorobenzene	10	100	NC		NC	NC		8.0E-04	8.0E-04	1	2.8E-03	4
120-82-1	1,2,4-Trichlorobenzene	NA	100	2.9E-02	1	NA	NC		1.0E-02	NA	3	2.0E-03	1
95-63-6	1,2,4-Trimethylbenzene	NA	100	NC		NC	NC		NA	NA		7.0E-03	1
108-67-8	1,3,5-Trimethylbenzene	NA	100	NC		NC	NC		1.0E-02	NA	1	3.5E-02	4
622-96-8	1-Ethyl-4-methylbenzene*	NA	100	NC		NC	NC		2.0E-01	NA	1	1.0E-01	1
67-64-1	Acetone	NA	100	NC		NC	NC		9.0E-01	NA	3	3.1E+01	6
71-43-2	Benzene	NA	100	1.0E-01	5	NA	2.9E-05	5	4.0E-03	NA	3	3.0E-02	3
104-51-8	Butylbenzene, n-	NA	100	NC		NC	NC		5.0E-02	NA		1.8E-01	4
135-98-8	Butylbenzene, sec-	NA	100	NC		NC	NC		1.0E-01	NA	1	3.5E-01	4
75-15-0	Carbon disulfide	NA	100	NC		NC	NC		1.0E-01	NA	3	7.0E-01	3
124-48-1	Chlorodibromomethane	10	100	9.4E-02	5	9.4E-02	2.7E-05	5	2.0E-02	2.0E-02	3	7.0E-02	4
67-66-3	Chloroform	NA	100	3.1E-02	5	NA	2.3E-05	3	1.0E-02	NA	3	9.8E-02	6
74-87-3	Chloromethane	NA	100	NC		NC	NC		2.6E-02	NA	4	9.0E-02	3
95-49-8	Chlorotoluene, o-	NA	100	NC		NC	NC		2.0E-02	NA	3	7.0E-02	4
99-87-6	Cymene, p- *	NA	100	NC		NC	NC		2.0E-01	NA	1	1.0E-01	1
75-27-4	Dichlorobromomethane	NA	100	1.3E-01	5	NA	3.7E-05	5	2.0E-02	NA	3	7.0E-02	4
100-41-4	Ethylbenzene	NA	100	1.1E-02	5	NA	2.5E-06	5	1.0E-01	NA	3	1.0E+00	3
75-69-4	Freon 11	NA	100	NC		NC	NC		3.0E-01	NA	3	7.0E-01	2
75-71-8	Freon 12	NA	100	NC		NC	NC		2.0E-01	NA	3	1.0E-01	1
98-82-8	Isopropylbenzene	NA	100	NC		NC	NC		1.0E-01	NA	3	4.0E-01	3
74-83-9	Methyl Bromide	NA	100	NC		NC	NC		1.4E-03	NA	3	5.0E-03	3

Table 13
Toxicity Criteria
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	% Dermal ABSd	% GI ABS	Cancer Toxicity Criteria					Noncancer Toxicity Criteria				
				Oral Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Source	Dermal Cancer Slope Factor, CSF (mg/kg-day)$^{-1}$	Inhalation Unit Risk, IUR (µg/m^3)$^{-1}$	Source	Oral Reference Dose, RfD (mg/kg-day)	Dermal Reference Dose, RfD (mg/kg-day)	Source	Inhalation Reference Concentration, RfC or REL (mg/m^3)	Source
78-93-3	Methyl ethyl ketone	NA	100	NC		NC	NC		6.0E-01	NA	3	5.0E+00	3
75-09-2	Methylene chloride	NA	100	1.4E-02	5	NA	1.0E-06	5	6.0E-03	NA	3	4.0E-01	5
91-20-3	Naphthalene	13	100	NC		NC	3.4E-05	5	2.0E-02	2.0E-02	3	3.0E-03	3
103-65-1	Propylbenzene	10	100	NC		NC	NC		1.0E-01	1.0E-01	1	1.0E+00	1
75-65-0	tert-Butyl Alcohol (TBA) *	10	100	NC		NC	NC		3.0E-01	3.0E-01	3	1.1E+00	4
127-18-4	Tetrachloroethene	NA	100	5.4E-01	5	NA	5.9E-06	5	6.0E-03	NA	3	3.5E-02	5
108-88-3	Toluene	NA	100	NC		NC	NC		8.0E-02	NA	3	3.0E-01	5
79-01-6	Trichloroethene	NA	100	4.6E-02	3	NA	4.1E-06	3	5.0E-04	NA	3	2.0E-03	3
79-01-6m	Trichloroethene	NA	100	9.3E-03	3	NA	1.0E-06	3	5.0E-04	NA	3	2.0E-03	3
79-01-6c	Trichloroethene	NA	100	3.7E-02	3	NA	3.1E-06	3	5.0E-04	NA	3	2.0E-03	3
95-47-6	Xylene, o-	NA	100	NC		NC	NC		2.0E-01	NA	1	1.0E-01	1
179601-23-1	Xylenes, m&p- *	NA	100	NC		NC	NC		2.0E-01	NA	1	1.0E-01	1
1330-20-7	Xylenes, Total	NA	100	NC		NC	NC		2.0E-01	NA	3	1.0E-01	1

Notes:

" -- " not applicable; " NA " not available; " GI " gastrointestinal; " NC " noncarcinogen

* Toxicity values for p-xylene used as a surrogate for p-cymene, 4-ethyltoluene, and m&p-xylenes; isobutyl alcohol for tert-butyl alcohol (TBA); methyl tert-butyl ether for ethyl tert-butyl ether; pyrene for benzo (g,h,i) perylene and phenanthrene; beta-BHC for delta-BHC; endosulfan for endosulfan I and endosulfan sulfate; endrin for endrin aldehyde

" ABSd " percent dermal absorption, reported in USEPA, 2013

Sources:

1. USEPA (2013) Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. November. www.epa.gov/region09/superfund/prg
2. Health Effects Assessment Summary Tables (HEAST), as referenced in USEPA 2013
3. Integrated Risk Information System (IRIS) either reported in USEPA 2013a or USEPA 2014
4. Route-to-Route extrapolated values and/or DTSC correspondence
5. Cal-EPA (2014) OEHHA, Toxicity Criteria Database www.oehha.ca.gov/risk/chemicalDB/index.asp
6. Agency For Toxic Substances And Disease Registry (ATSDR) as reported in USEPA 2013

Table 14
Summary of Soil RBCs
Future Onsite Resident and Future Construction Worker
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	Future Onsite Resident		Future Construction Worker	
		Soil RBC_{NC} (mg/kg)	Soil RBC_{C} (mg/kg)	Soil RBC_{NC} (mg/kg)	Soil RBC_{C} (mg/kg)
	Inorganics				
7440-36-0	Antimony	3.1E+01	--	1.2E+02	--
7440-38-2	Arsenic	2.2E+01	6.1E-02	5.9E+01	1.8E+01
7440-39-3	Barium	1.6E+04	--	8.0E+03	--
7440-41-7	Beryllium	1.6E+02	1.2E+05	2.3E+02	5.3E+03
7440-43-9	Cadmium	7.0E+01	6.7E+04	1.4E+02	3.0E+03
7440-47-3	Chromium	1.2E+05	--	4.6E+05	--
7440-48-4	Cobalt	2.3E+01	3.1E+04	5.0E+01	1.4E+03
7440-50-8	Copper	3.1E+03	--	1.2E+04	--
7439-92-1	Lead	8.0E+01	--	3.2E+02	--
7439-97-6	Mercury	2.3E+01	--	7.9E+01	--
7439-98-7	Molybdenum	3.9E+02	--	1.5E+03	--
7440-02-0	Nickel	1.6E+03	1.1E+06	1.3E+03	4.9E+04
7782-49-2	Selenium	3.9E+02	--	1.5E+03	--
7440-22-4	Silver	3.9E+02	--	1.5E+03	--
7440-62-2	Vanadium	3.9E+02	--	8.4E+02	--
7440-66-6	Zinc	2.3E+04	--	9.3E+04	--
	PAHs				
90-12-0	1-Methylnaphthalene	4.0E+03	1.6E+01	1.1E+04	3.7E+03
91-57-6	2-Methylnaphthalene	2.3E+02	--	6.1E+02	--
83-32-9	Acenaphthene	3.4E+03	--	9.1E+03	--
120-12-7	Anthracene	1.7E+04	--	4.5E+04	--
56-55-3	Benz[a]anthracene	--	1.6E+00	--	3.7E+02
50-32-8	Benzo(a)pyrene	--	1.6E-01	--	3.7E+01

Table 14
Summary of Soil RBCs
Future Onsite Resident and Future Construction Worker
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	Future Onsite Resident		Future Construction Worker	
		Soil RBC_{NC} (mg/kg)	Soil RBC_{C} (mg/kg)	Soil RBC_{NC} (mg/kg)	Soil RBC_{C} (mg/kg)
205-99-2	Benzo(b)fluoranthene	--	1.6E+00	--	3.7E+02
191-24-2	Benzo(g,h,i)perylene	1.7E+03	--	4.5E+03	--
207-08-9	Benzo[k]fluoranthene	--	1.6E+00	--	3.7E+02
218-01-9	Chrysene	--	1.6E+01	--	3.7E+03
206-44-0	Fluoranthene	2.3E+03	--	6.1E+03	--
193-39-5	Indeno(1,2,3-cd)pyrene	--	1.6E+00	--	3.7E+02
85-01-8	Phenanthrene	1.7E+03	--	4.5E+03	--
129-00-0	Pyrene	1.7E+03	--	4.5E+03	--
	PCBs				
11096-82-5	Aroclor 1260	--	2.2E-01	--	5.1E+01
	Pesticides				
72-54-8	4,4'-DDD	--	2.0E+00	--	5.0E+02
72-55-9	4,4'-DDE	--	1.4E+00	--	3.5E+02
50-29-3	4,4'-DDT	3.6E+01	1.7E+00	1.2E+02	5.1E+02
57-74-9	Chlordane	3.5E+01	4.4E-01	1.2E+02	1.3E+02
319-86-8	delta-BHC	--	3.2E-01	--	8.0E+01
60-57-1	Dieldrin	3.0E+00	3.0E-02	8.6E+00	7.5E+00
959-98-8	Endosulfan I	3.6E+02	--	1.0E+03	--
1031-07-8	Endosulfan Sulfate	3.6E+02	--	1.0E+03	--
7421-93-4	Endrin Aldehyde	1.8E+01	--	5.2E+01	--
1024-57-3	Heptachlor Epoxide	7.9E-01	8.8E-02	2.2E+00	2.2E+01
	SVOCs				
117-84-0	Dioctyl Phthalate	6.1E+02	--	1.7E+03	--

Table 14
Summary of Soil RBCs
Future Onsite Resident and Future Construction Worker
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	Future Onsite Resident		Future Construction Worker	
		Soil RBC_{NC} (mg/kg)	Soil RBC_C (mg/kg)	Soil RBC_{NC} (mg/kg)	Soil RBC_C (mg/kg)
	VOCs				
95-63-6	1,2,4-Trimethylbenzene	7.4E+01	--	2.7E+01	--
108-67-8	1,3,5-Trimethylbenzene	2.2E+02	--	1.1E+02	--
67-64-1	Acetone	6.3E+04	--	1.2E+05	--
71-43-2	Benzene	9.8E+01	3.6E-01	5.1E+01	4.2E+01
104-51-8	Butylbenzene, n-	1.3E+03	--	6.7E+02	--
135-98-8	Butylbenzene, sec-	2.4E+03	--	1.2E+03	--
99-87-6	Cymene, p-	1.1E+03	--	4.2E+02	--
74-83-9	Methyl Bromide	8.8E+00	--	3.5E+00	--
91-20-3	Naphthalene	1.6E+02	4.2E+00	6.7E+01	4.7E+02
103-65-1	Propylbenzene, n-	3.7E+03	--	2.9E+03	--
75-65-0	tert-Butyl Alcohol (TBA)	8.7E+03	--	5.5E+03	--
108-88-3	Toluene	1.3E+03	--	6.2E+02	--

Notes:

" -- " not applicable

" RBC_{NC} " risk-based concentration using a target noncancer hazard = 1 for both future onsite residents and construction workers

" RBC_C " risk-based concentration using a target cancer = 1×10^{-6} for future onsite residents and 1×10^{-5} for construction workers

Soil Risk-Based Concentrations (RBCs) based on incidental ingestion, dermal contact with soil, and outdoor air inhalation

Table 15
Summary of Soil Vapor RBCs
Future Onsite Resident
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	Soil Vapor RBC_{NC} ($\mu g/m^3$)				Soil Vapor RBC_C ($\mu g/m^3$)			
		5 ft bgs	15 ft bgs	30 ft bgs	45 ft bgs	5 ft bgs	15 ft bgs	30 ft bgs	45 ft bgs
71-55-6	1,1,1-Trichloroethane	1.4E+06	3.7E+06	7.1E+06	1.0E+07	--	--	--	--
75-35-4	1,1-Dichloroethene	9.1E+04	2.3E+05	4.3E+05	6.4E+05	--	--	--	--
87-61-6	1,2,3-Trichlorobenzene	6.8E+03	1.9E+04	3.8E+04	5.7E+04	--	--	--	--
120-82-1	1,2,4-Trichlorobenzene	6.1E+03	1.8E+04	3.5E+04	5.3E+04	--	--	--	--
95-63-6	1,2,4-Trimethylbenzene	1.2E+04	3.2E+04	6.3E+04	9.4E+04	--	--	--	--
108-67-8	1,3,5-Trimethylbenzene	6.1E+04	1.6E+05	3.2E+05	4.7E+05	--	--	--	--
622-96-8	1-Ethyl-4-methylbenzene	1.6E+05	4.2E+05	8.1E+05	1.2E+06	--	--	--	--
67-64-1	Acetone	3.3E+07	7.6E+07	1.4E+08	2.0E+08	--	--	--	--
71-43-2	Benzene	4.0E+04	1.0E+05	1.9E+05	2.8E+05	1.1E+02	2.7E+02	5.1E+02	7.5E+02
135-98-8	Butylbenzene, sec-	6.3E+05	1.7E+06	3.3E+06	4.9E+06	--	--	--	--
75-15-0	Carbon Disulfide	8.3E+05	2.0E+06	3.8E+06	5.6E+06	--	--	--	--
124-48-1	Chlorodibromomethane	3.1E+05	9.4E+05	1.9E+06	2.8E+06	3.8E+02	1.2E+03	2.3E+03	3.5E+03
67-66-3	Chloroform	1.2E+05	2.8E+05	5.3E+05	7.8E+05	1.2E+02	2.9E+02	5.5E+02	8.1E+02
74-87-3	Chloromethane	9.5E+04	2.2E+05	4.1E+05	6.0E+05	--	--	--	--
95-49-8	Chlorotoluene, o-	1.1E+05	2.8E+05	5.3E+05	7.8E+05	--	--	--	--
99-87-6	Cymene, p-	1.9E+05	5.3E+05	1.0E+06	1.5E+06	--	--	--	--
75-27-4	Dichlorobromomethane	2.2E+05	6.3E+05	1.2E+06	1.9E+06	1.9E+02	5.7E+02	1.1E+03	1.7E+03
100-41-4	Ethylbenzene	1.5E+06	3.8E+06	7.4E+06	1.1E+07	1.4E+03	3.6E+03	6.9E+03	1.0E+04
75-69-4	Freon 11	9.4E+05	2.4E+06	4.5E+06	6.6E+06	--	--	--	--
75-71-8	Freon 12	1.6E+05	4.3E+05	8.2E+05	1.2E+06	--	--	--	--
98-82-8	Isopropylbenzene	6.6E+05	1.7E+06	3.4E+06	5.0E+06	--	--	--	--
74-83-9	Methyl Bromide	7.6E+03	2.0E+04	3.8E+04	5.6E+04	--	--	--	--
78-93-3	Methyl ethyl ketone	6.9E+06	1.8E+07	3.4E+07	5.0E+07	--	--	--	--
75-09-2	Methylene Chloride	4.8E+05	1.2E+06	2.2E+06	3.3E+06	2.8E+03	6.9E+03	1.3E+04	1.9E+04

Table 15
Summary of Soil Vapor RBCs
Future Onsite Resident
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

CAS Number	Chemical of Potential Concern	Soil Vapor RBC_{NC} ($\mu g/m^3$)				Soil Vapor RBC_C ($\mu g/m^3$)			
		5 ft bgs	15 ft bgs	30 ft bgs	45 ft bgs	5 ft bgs	15 ft bgs	30 ft bgs	45 ft bgs
103-65-1	Propylbenzene, n-	1.7E+06	4.7E+06	9.1E+06	1.3E+07	--	--	--	--
127-18-4	Tetrachloroethene	5.3E+04	1.4E+05	2.7E+05	4.0E+05	6.0E+02	1.6E+03	3.0E+03	4.5E+03
108-88-3	Toluene	4.0E+05	1.0E+06	1.9E+06	2.8E+06	--	--	--	--
79-01-6	Trichloroethene	2.9E+03	7.3E+03	1.4E+04	2.1E+04	5.9E+02	1.5E+03	2.9E+03	4.3E+03
95-47-6	Xylene, o-	1.3E+05	3.4E+05	6.4E+05	9.4E+05	--	--	--	--
179601-23-1	Xylenes, m&p-	1.6E+05	4.1E+05	7.8E+05	1.2E+06	--	--	--	--
1330-20-7	Xylenes, Total	1.4E+05	3.4E+05	6.6E+05	9.7E+05	--	--	--	--

Notes:

" -- " not applicable

" RBC_{NC} " risk-based concentration using a target noncancer hazard = 1 for future onsite residents

" RBC_C " risk-based concentration using a target cancer = 1×10^{-6} for future onsite residents

Soil Vapor Risk-Based Concentrations (RBCs) based on indoor air inhalation of vapors emanating from the subsurface

Table 16
Cumulative Cancer Risk and Noncancer Hazard
Soil Exposure Pathways
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Future Onsite Resident			Future Construction Worker		
		Cancer Risk	Noncancer Hazard	Risk Drivers	Cancer Risk	Noncancer Hazard	Risk Drivers
Ag Composite-01 (SB-01, SB-02, SB-03, SB-04)	0.5	4E-08	1E-03		2E-09	3E-04	
Ag Composite-02 (SB-05, SB-06, SB-07, SB-10)	0.5	nd	nd		nd	nd	
Ag Composite-03 (SB-08, SB-09, SB-11, SB-12)	0.5	3E-09	2E-04		1E-10	4E-05	
Ag Composite-04 (SB-13, SB-15, SB-16, SB-19)	0.5	2E-08	3E-04		9E-10	8E-05	
Ag Composite-05 (SB-14, SB-17, SB-18, SB-24)	0.5	nd	nd		nd	nd	
Ag Composite-06 (SB-25, SB-29, SB-30, SB-35)	0.5	nd	nd		nd	nd	
Ag Composite-07 (SB-36, SB-39, SB-42, SB-43)	0.5	2E-08	2E-04		7E-10	7E-05	
Ag Composite-08 (SB-37, SB-38, SB-40, SB-41)	0.5	nd	nd		nd	nd	
Ag Composite-09 (SB-28, SB-32, SB-33, SB-34)	0.5	nd	nd		nd	nd	
Ag Composite-10 (SB-21, SB-22, SB-23, SB-27)	0.5	nd	nd		nd	nd	
Ag Composite-11 (SB-20, SB-26, SB-31)	0.5	nd	nd		nd	nd	
B05 Composite-01 (B05-01, B05-02, B05-03)	0.5	**3E-06** [L]	3E-02 [L]	Dieldrin	1E-07	1E-02	
	2	5E-07	5E-03		2E-08	2E-03	
B05 Composite-02 (B05-04, B05-05, B05-06)	0.5	**2E-06** [L]	2E-02 [L]	Dieldrin	6E-08	5E-03	
	2	3E-07	3E-03		1E-08	1E-03	
B05-01	0.5	[L]	[L]		--	--	
B05-02	0.5	[L]	[L]		--	--	
B05-03	0.5	[L]	[L]		--	--	
B05-04	0.5	--	--		--	--	
B05-05	0.5	[L]	[L]		--	--	
B05-06	0.5	[L]	[L]		--	--	
B08 Composite-01 (B08-01, B08-02, B08-03)	0.5	2E-07 [L]	4E-03 [L]		7E-09 [L]	1E-03 [L]	
	2	4E-09	2E-04		1E-10	6E-05	
B08 Composite-02 (B08-04, B08-05, B08-06)	0.5	1E-07 [L]	2E-03 [L]		5E-09	6E-04	
	2	--	--		--	--	
B08-01	0.5	[L]	[L]		--	--	
B08-02	0.5	--	--		--	--	

Table 16
Cumulative Cancer Risk and Noncancer Hazard
Soil Exposure Pathways
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Future Onsite Resident			Future Construction Worker		
		Cancer Risk	Noncancer Hazard	Risk Drivers	Cancer Risk	Noncancer Hazard	Risk Drivers
B08-03	0.5	L	L		L	L	
B08-04	0.5	L	L		--	--	
B08-05	0.5	L	L		--	--	
B08-06	0.5	L	L		--	--	
B29 Composite-01 (B29-01, B29-02, B29-06)	0.5	**2E-05** L	3E-01 L	Chlordane; Dieldrin; Heptachlor Epoxide	9E-07	1E-01	
	2	**7E-06**	8E-02	Dieldrin	3E-07	3E-02	
B29 Composite-02 (B29-03, B29-04, B29-05)	0.5	**8E-06** L	9E-02 L	Chlordane; Dieldrin	3E-07	3E-02	
	2	--	--		--	--	
B29-01	0.5	L	L		--	--	
B29-02	0.5	L	L		--	--	
B29-03	0.5	L	L		--	--	
B29-04	0.5	L	L		--	--	
B29-05	0.5	L	L		--	--	
B29-06	0.5	L	L		--	--	
B38 Composite-01 (B38-01, B38-02, B38-03)	0.5	1E-06 L	1E-02 L		4E-08	4E-03	
	2	nd	nd		nd	nd	
B38 Composite-02 (B38-04, B38-05, B38-06)	0.5	**2E-06** L	3E-02 L	no COPC-specific risk > 1E-06	6E-08 L	9E-03 L	
	2	--	--		--	--	
B38-01	0.5	L	L		--	--	
B38-02	0.5	L	L		--	--	
B38-03	0.5	L	L		--	--	
B38-04	0.5	L	L		L	L	
B38-05	0.5	L	L		--	--	
B38-06	0.5	L	L		--	--	
B50 Composite-01 (B50-01, B50-02, B50-03)	0.5	**7E-06** L	1E-01 L	Chlordane	2E-07 L	4E-02 L	
	2	3E-07	4E-03		1E-08	1E-03	

Table 16
Cumulative Cancer Risk and Noncancer Hazard
Soil Exposure Pathways
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Future Onsite Resident			Future Construction Worker		
		Cancer Risk	Noncancer Hazard	Risk Drivers	Cancer Risk	Noncancer Hazard	Risk Drivers
B50 Composite-02 (B50-04, B50-05, B50-06)	0.5	**5E-06** [L]	6E-02 [L]	Chlordane	2E-07	2E-02	
	2	1E-06	3E-02		5E-08	1E-02	
B50-01	0.5	[L]	[L]		[L]	[L]	
B50-02	0.5	[L]	[L]		--	--	
B50-03	0.5	--	--		--	--	
B50-04	0.5	--	--		--	--	
B50-05	0.5	[L]	[L]		--	--	
B50-06	0.5	[L]	[L]		--	--	
B59 Composite-01 (B59-04, B59-05, B59-06)	0.5	**2E-06**	2E-02	Chlordane	7E-08	7E-03	
	2	nd	nd		nd	nd	
B59 Composite-02 (B59-01, B59-02, B59-03)	0.5	**5E-05**	6E-01	Chlordane	2E-06	2E-01	
	2	1E-06	2E-02		5E-08	5E-03	
B59-01	0.5	--	--		--	--	
B59-02	0.5	--	--		--	--	
B59-03	0.5	--	--		--	--	
B59-04	0.5	--	--		--	--	
B59-05	0.5	--	--		--	--	
B59-06	0.5	--	--		--	--	
Historic-SB-01	10	nd	nd		nd	nd	
Historic-SB-02	10	nd	nd		nd	nd	
Historic-SB-03	10	3E-10 [A-L]	1E+00 [A-L]		7E-08 [A-L]	4E-01 [A-L]	
Historic-SB-04	10	3E-10 [L]	7E-01 [L]		8E-08	3E-01	
Historic-SB-05	10	nd	nd		nd	nd	
Historic-SB-06	10	nd	nd		nd	nd	
RR-01	0.5	[A]	[A]		[A]	[A]	
RR-02	0.5	--	--		--	--	
RR-03	0.5	[A]	[A]		[A]	[A]	

Table 16
Cumulative Cancer Risk and Noncancer Hazard
Soil Exposure Pathways
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Future Onsite Resident			Future Construction Worker		
		Cancer Risk	Noncancer Hazard	Risk Drivers	Cancer Risk	Noncancer Hazard	Risk Drivers
RR-04	0.5	--	--		--	--	
RR-05	0.5	--	--		--	--	
SB-03	0.5	A	A		A	A	
SB-07	0.5	A	A		A	A	
SB-09	0.5	A	A		A	A	
SB-15	0.5	A	A		A	A	
SB-23	0.5	--	--		--	--	
SB-24	0.5	--	--		--	--	
SB-26	0.5	--	--		--	--	
SB-33	0.5	A	A		A	A	
SB-35	0.5	--	--		--	--	
SB-40	0.5	A	A		A	A	
SB-42	0.5	A	A		A	A	
T09	0	**4E-05**	--	Aroclor 1260	2E-06	--	
T29-01	0.5	nd	nd		nd	nd	
	2	nd	nd		nd	nd	
T29-02	0.5	nd	nd		nd	nd	
	2	nd	nd		nd	nd	
T33-01	0.5	nd	nd		nd	nd	
	2	nd	nd		nd	nd	
T33-02	0.5	nd	nd		nd	nd	
	2	nd	nd		nd	nd	
T34-01	0.5	nd	nd		nd	nd	
	2	nd	nd		nd	nd	
T34-02	0.5	nd	nd		nd	nd	
	2	nd	nd		nd	nd	

Table 16
Cumulative Cancer Risk and Noncancer Hazard
Soil Exposure Pathways
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Future Onsite Resident			Future Construction Worker		
		Cancer Risk	Noncancer Hazard	Risk Drivers	Cancer Risk	Noncancer Hazard	Risk Drivers
VP-02	0.5	5E-10	7E-01		1E-07	4E-01	
	5	4E-09	7E-01		1E-07	4E-01	
	10	7E-09	6E-01		8E-08	3E-01	
VP-04	0.5	[L]	[L]		8E-08	3E-01	
	5	2E-10 [L]	1E+00 [L]		5E-08 [L]	5E-01 [L]	
	10	7E-09	7E-01		9E-08	3E-01	
VP-06	0.5	[L]	[L]		1E-07	5E-01	
	5	3E-09	7E-01		9E-08	4E-01	
	10	2E-09	6E-01		8E-08	3E-01	
VP-07	0.5	3E-10 [L]	5E-01 [L]		6E-08	2E-01	
	5	2E-10 [L]	3E-01 [L]		4E-08 [L]	2E-01 [L]	
	10	3E-10	5E-01		7E-08	3E-01	
VP-10	0.5	1E-06	1E+00		1E-07	5E-01	
	5	4E-10	7E-01		9E-08	3E-01	
	10	4E-10	7E-01		9E-08	3E-01	
VP-11a	5	2E-08 [L]	4E-01 [L]		4E-08 [L]	2E-01 [L]	
VP-13	0.5	3E-07 [A-L]	6E-01 [A-L]		9E-08 [A]	3E-01 [A]	
	5	3E-10	6E-01		8E-08	3E-01	
	10	3E-10	5E-01		7E-08	3E-01	

Notes:

nd chemicals were non-detect

-- not applicable or sample location had lead below a CHHSL or arsenic below the southern California background level = 12 mg/kg

[L] Lead concentration exceeded a California Human Health Sreening Level (CHHSL) = 80 mg/kg for a future onsite resident and 320 mg/kg for a worker

[A] Arsenic concentration exceeded the southern California background level = 12 mg/kg

Target cancer risk = 10^{-5} for construction workers and 10^{-6} for future onsite residents and Target noncancer hazard = 1 for both receptors

Risk drivers are those chemicals that have a cancer risk > target risk or a noncancer hazard > target hazard

Shaded+Bold: indicates cumulative risk > target risk and/or cumulative hazard > target noncancer hazard

Table 17
Cumulative Cancer Risk and Noncancer Hazard
Soil Vapor to Indoor Air Exposure Pathway
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Soil Vapor to Indoor Air - Future Onsite Resident		
		Cancer Risk	Noncancer Hazard	Risk Drivers
SG-01	5	7E-07	8E-03	
	15	2E-07	2E-03	
SG-02	5	4E-07	6E-02	
	15	1E-07	5E-02	
SG-03	5	3E-07	4E-03	
	15	1E-07	1E-03	
SG-06	5	4E-07	4E-03	
	15	1E-07	1E-03	
SG-07	5	3E-07	4E-03	
	15	1E-07	3E-03	
SG-08	5	--	1E-03	
	15	--	5E-04	
SG-09	15	--	7E-04	
SG-10	5	--	7E-04	
	15	3E-08	2E-03	
SG-11	5	--	7E-03	
	15	--	1E-03	
SG-12	15	--	2E-03	
SG-13	5	nd	nd	
	15	nd	nd	
SG-14	5	**3E-06**	4E-02	Benzene
	15	5E-07	2E-03	
SG-15	15	--	7E-05	
SG-16	5	5E-07	2E-02	
	15	3E-07	7E-03	
SG-17	5	**3E-06**	3E-02	Benzene
	15	--	7E-05	
SG-18	5	--	1E-02	
	15	6E-09	5E-03	
	30	3E-07	2E-03	
SG-19	5	4E-08	1E-02	
	15	--	9E-05	
SG-20	5	--	1E-02	
	15	5E-09	4E-03	
SG-21	5	**4E-06**	6E-02	Benzene
	15	--	5E-05	
SG-22	5	2E-08	1E-02	
	15	1E-08	5E-03	
	30	2E-09	2E-03	

Table 17
Cumulative Cancer Risk and Noncancer Hazard
Soil Vapor to Indoor Air Exposure Pathway
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Soil Vapor to Indoor Air - Future Onsite Resident		
		Cancer Risk	Noncancer Hazard	Risk Drivers
SG-23	5	5E-08	6E-04	
	15	1E-08	1E-04	
	30	3E-08	1E-04	
SG-24	5	2E-08	2E-04	
	15	6E-09	7E-05	
SG-25	5	9E-07	1E-02	
	15	2E-08	2E-04	
SG-26	5	3E-08	5E-04	
	15	2E-08	6E-04	
SG-27	5	7E-08	7E-03	
	15	6E-08	1E-03	
SG-28	5	4E-09	5E-05	
	15	2E-09	9E-06	
SG-29	5	4E-08	5E-04	
	15	1E-08	1E-04	
SG-30	5	2E-08	2E-04	
SG-31	5	3E-08	4E-04	
	15	1E-08	2E-04	
SG-32	5	5E-07	2E-03	
	15	4E-08	1E-04	
SG-4-15 (1PV)	15	1E-07	1E-03	
SG-4-15 (3PV)	15	5E-07	2E-03	
SG-4-15 (7PV)	15	1E-07	1E-03	
SG-4-5 (1PV)	5	6E-07	1E-02	
SG-4-5 (3PV)	5	**2E-06**	2E-02	no COPC-specific risk > 1.0E-06
SG-4-5 (7PV)	5	6E-07	1E-02	
VP-01	15	2E-07	7E-03	
VP-02	15	3E-08	4E-03	
VP-03	5	4E-08	5E-04	
	15	2E-07	3E-03	
	30	1E-07	1E-03	
VP-04	15	6E-08	3E-03	
	30	--	4E-05	
VP-05	5	7E-08	5E-03	
VP-06	5	2E-08	3E-03	
	15	5E-07	4E-02	
	30	3E-08	8E-04	
VP-07	15	8E-08	4E-03	
	30	4E-08	1E-03	

Table 17
Cumulative Cancer Risk and Noncancer Hazard
Soil Vapor to Indoor Air Exposure Pathway
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Sample Location	Sample Depth (ft bgs)	Soil Vapor to Indoor Air - Future Onsite Resident		
		Cancer Risk	Noncancer Hazard	Risk Drivers
VP-08	15	4E-08	3E-03	
	30	3E-09	3E-05	
VP-09	5	--	4E-04	
	15	1E-07	6E-03	
VP-10	30	2E-08	5E-04	
	45	5E-09	1E-03	
VP-11-15 (1PV)	15	1E-07	2E-03	
VP-11-15 (3PV)	15	1E-07	4E-03	
VP-11-15 (10PV)	15	1E-07	3E-03	
VP-11-30 (1PV)	30	1E-08	1E-04	
VP-11-30 (3PV)	30	7E-09	1E-04	
VP-11-30 (10PV)	30	6E-09	7E-05	
VP-11-5 (1PV)	5	4E-08	5E-03	
VP-11-5 (3PV)	5	4E-08	1E-03	
VP-11-5 (10PV)	5	5E-08	8E-04	
VP-12	15	9E-08	5E-03	
VP-13	5	2E-07	1E-02	
	15	1E-07	9E-03	
	30	2E-08	3E-04	
VP-14	5	--	9E-04	
	15	8E-08	5E-03	
VP-15	5	3E-07	1E-02	
	15	1E-07	8E-03	
VP-16	5	9E-08	1E-03	
VP-17	5	nd	nd	
	15	nd	nd	
VP-18	5	nd	nd	
	15	nd	nd	

Notes:

-- not applicable

" nd " chemicals were non-detect

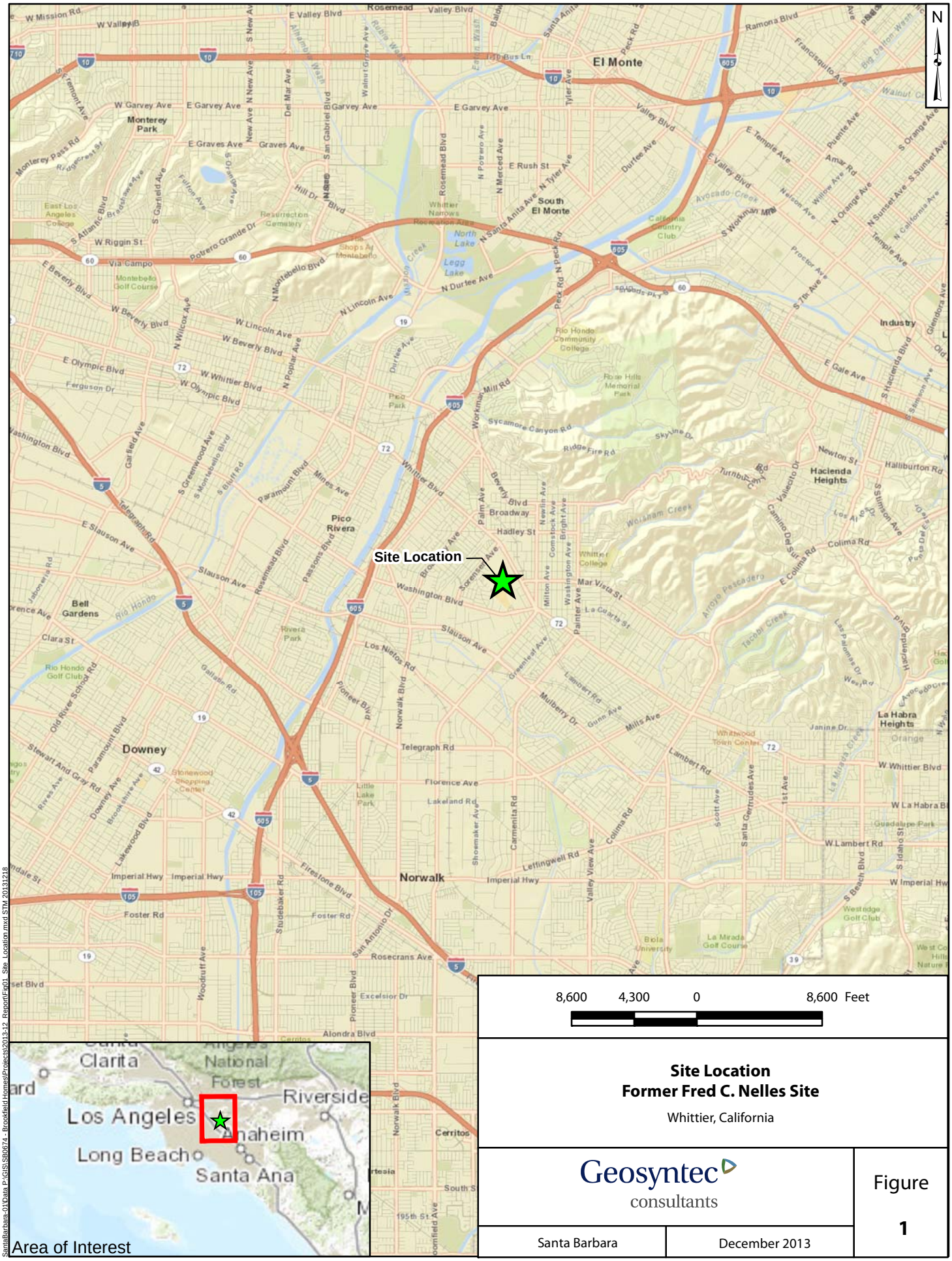
Target cancer risk = 10^{-6} for future onsite residents and Target noncancer hazard = 1

Risk drivers are those chemicals that have a cancer risk > target risk or a noncancer hazard > target hazard

Shaded+Bold: indicates cumulative risk > target risk and/or cumulative hazard > target noncancer hazard

Geosyntec consultants

FIGURES



Site Location
Former Fred C. Nelles Site

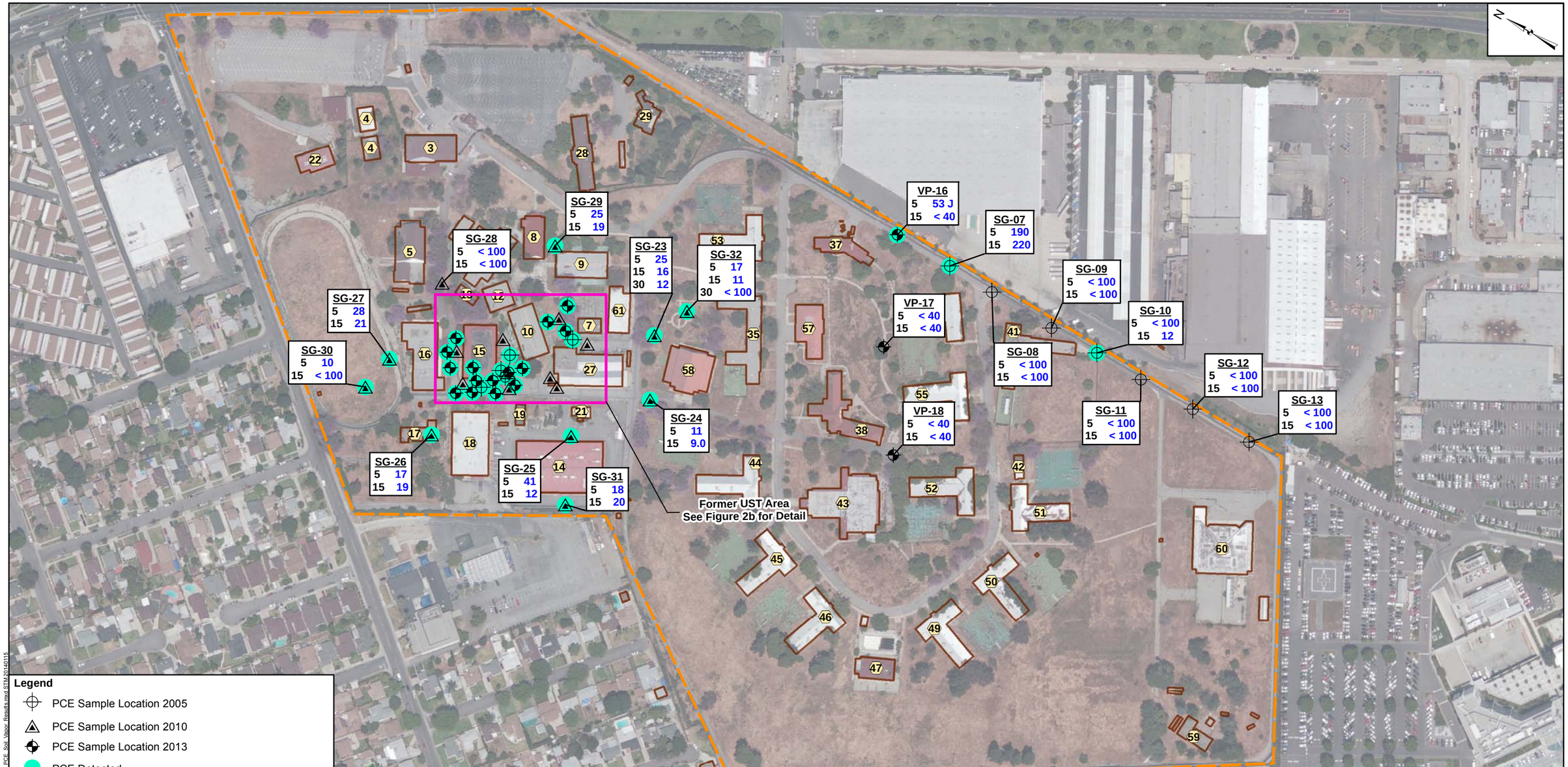
Whittier, California

Geosyntec consultants

Figure 1

Santa Barbara | December 2013

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig01 Site Location.mxd STM 20131218



Legend

- PCE Sample Location 2005
- PCE Sample Location 2010
- PCE Sample Location 2013
- PCE Detected
- Property Boundary
- Building Outline
- 18 Building Number

Notes:

SG-32 = Location ID
5 17 = ft bgs Result (µg/m^3)
15 11 = ft bgs Result (µg/m^3)
30 <100 = ft bgs Result (µg/m^3)

In the case of duplicates, the maximum detected value is reported (or the minimum RL if both are ND).
PCE Site-Specific Cancer Risk-Based Concentrations (in µg/m^3): 5ft bgs = 630, 15ft bgs = 1700, 30ft bgs = 3200, 45ft bgs = 4700.
Depth recorded in feet below ground surface (ft bgs)

250 125 0 250 Feet

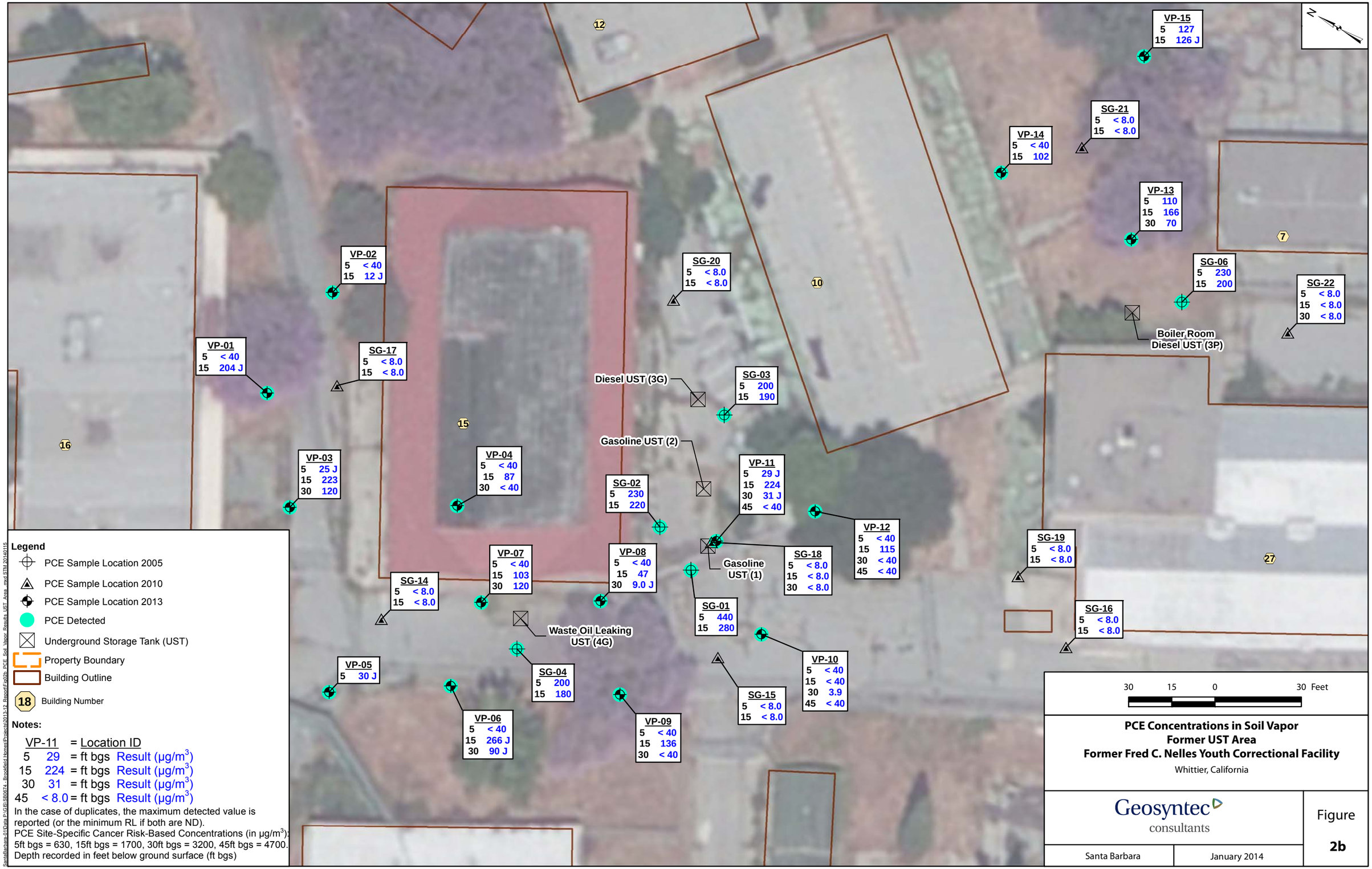
PCE Concentrations in Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure **2a**

SantaBarbara:01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig02a PCE Soil Vapor Results.mxd STM 20140115



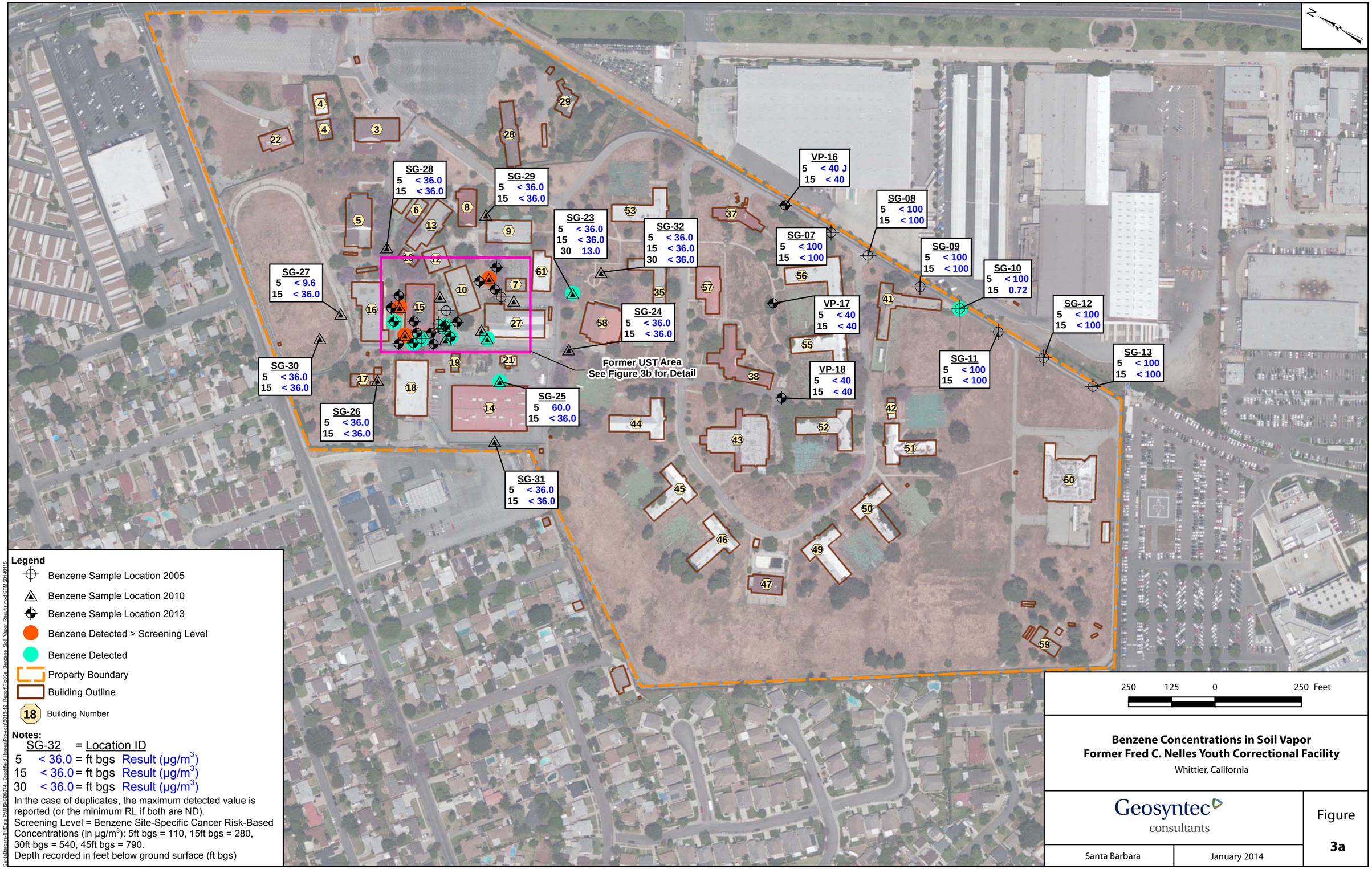
PCE Concentrations in Soil Vapor
Former UST Area
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure **2b**

SantaBarbara:01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig\2b PCE Soil Vapor Results UST Area mxd STM 20140115



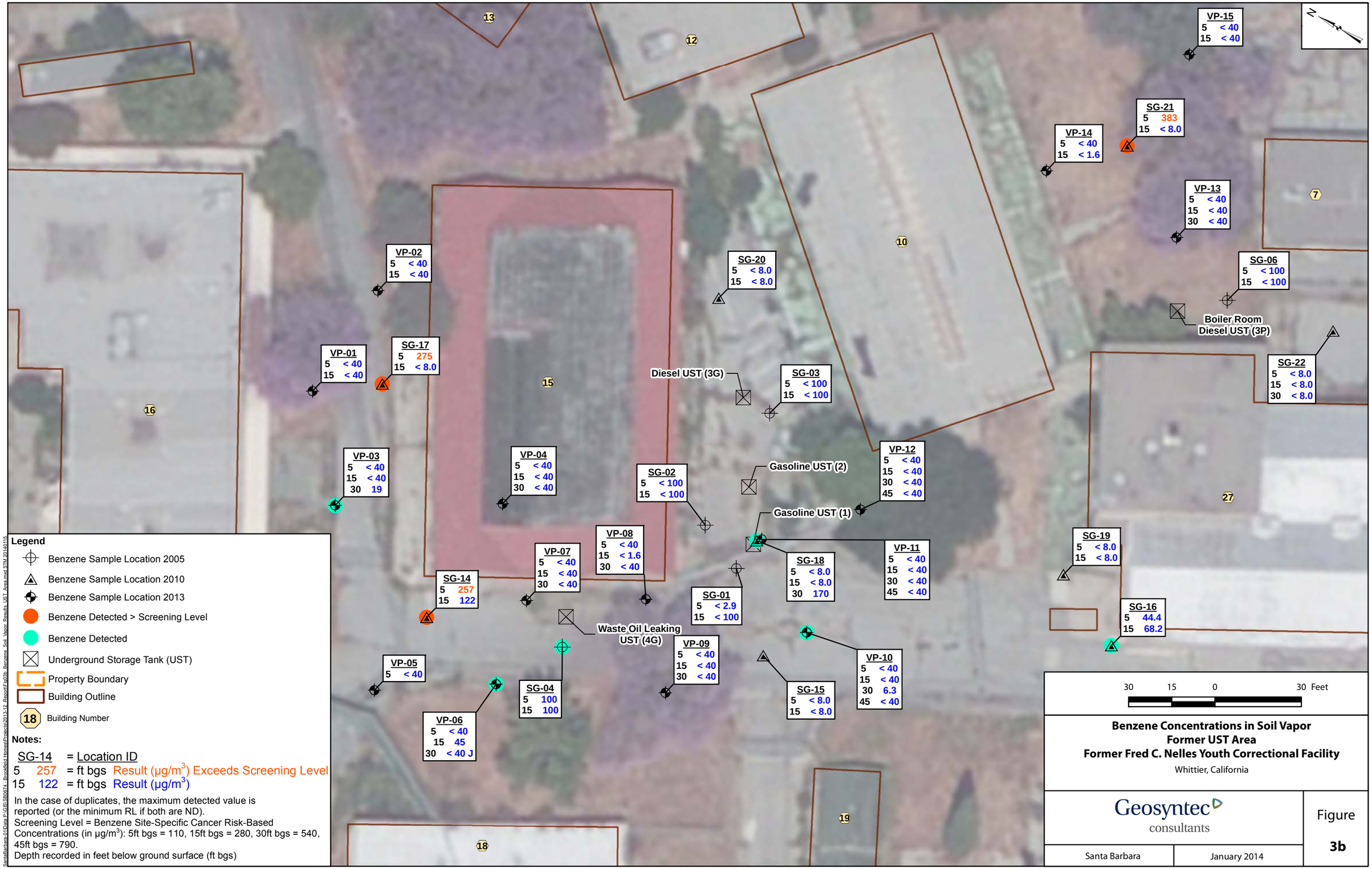
Benzene Concentrations in Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

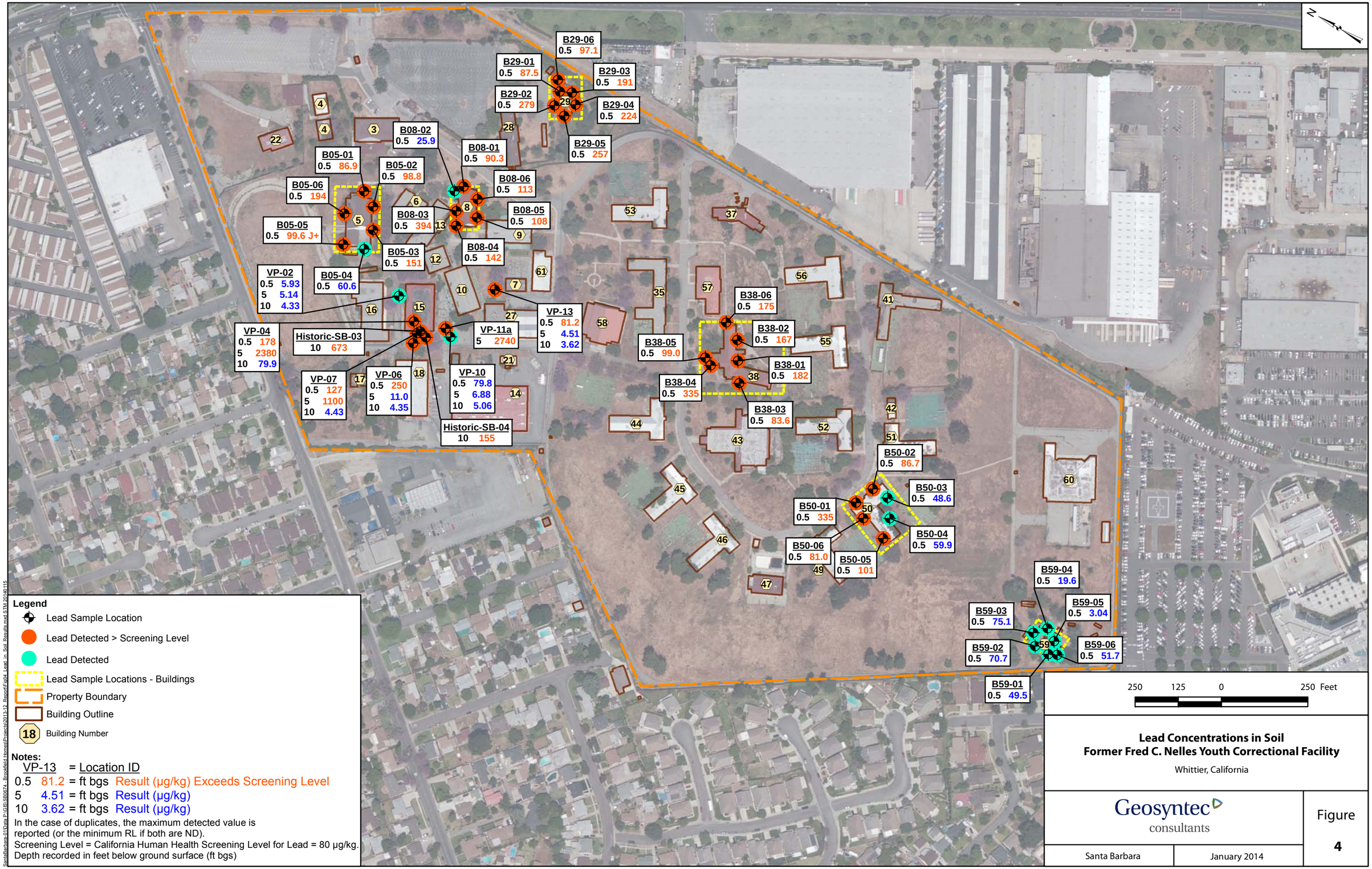
Figure **3a**

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig03a Benzene Soil Vapor Results.mxd STM 2014/0115



Benzene Concentrations in Soil Vapor
Former UST Area
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig03b_Benzene_Soil_Vapor_Results_UST_Area.mxd STM 20140115



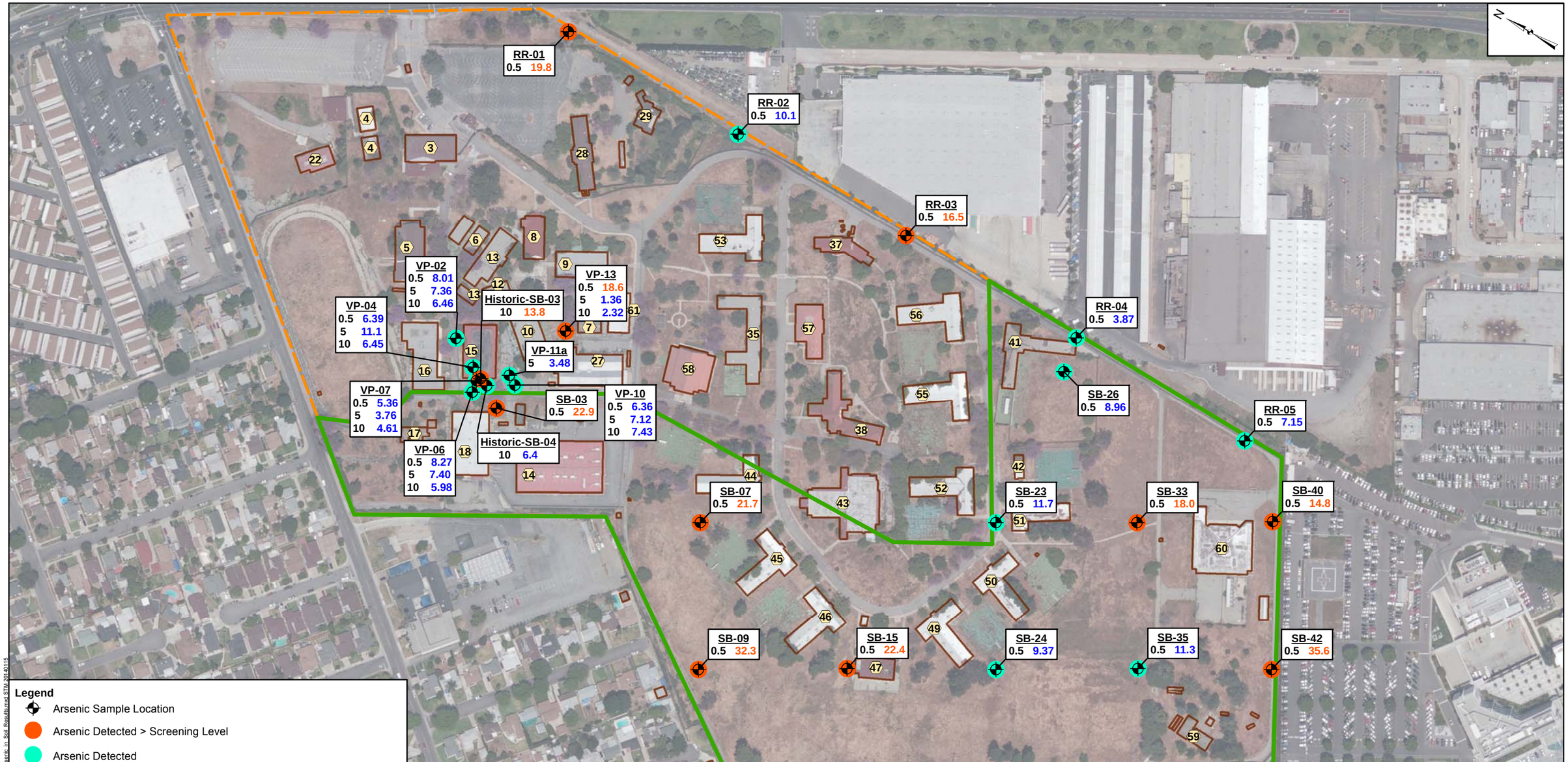
Lead Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure 4

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig04 Lead in Soil Results.mxd STM 20140115



Legend

- Arsenic Sample Location
- Arsenic Detected > Screening Level
- Arsenic Detected
- Property Boundary
- Approximate Extent of Former Agriculture Use
- Building Outline
- 18 Building Number

Notes:

VP-13 = Location ID

0.5 18.6 = ft bgs Result (µg/kg) Exceeds Screening Level

5 1.36 = ft bgs Result (µg/kg)

10 2.32 = ft bgs Result (µg/kg)

In the case of duplicates, the maximum detected value is reported (or the minimum RL if both are ND).

Screening Level = Southern California Background Level for Arsenic = 12 µg/kg.

Depth recorded in feet below ground surface (ft bgs)

250 125 0 250 Feet

Arsenic Concentrations in Soil
Former Fred C. Nelles Youth Correctional Facility

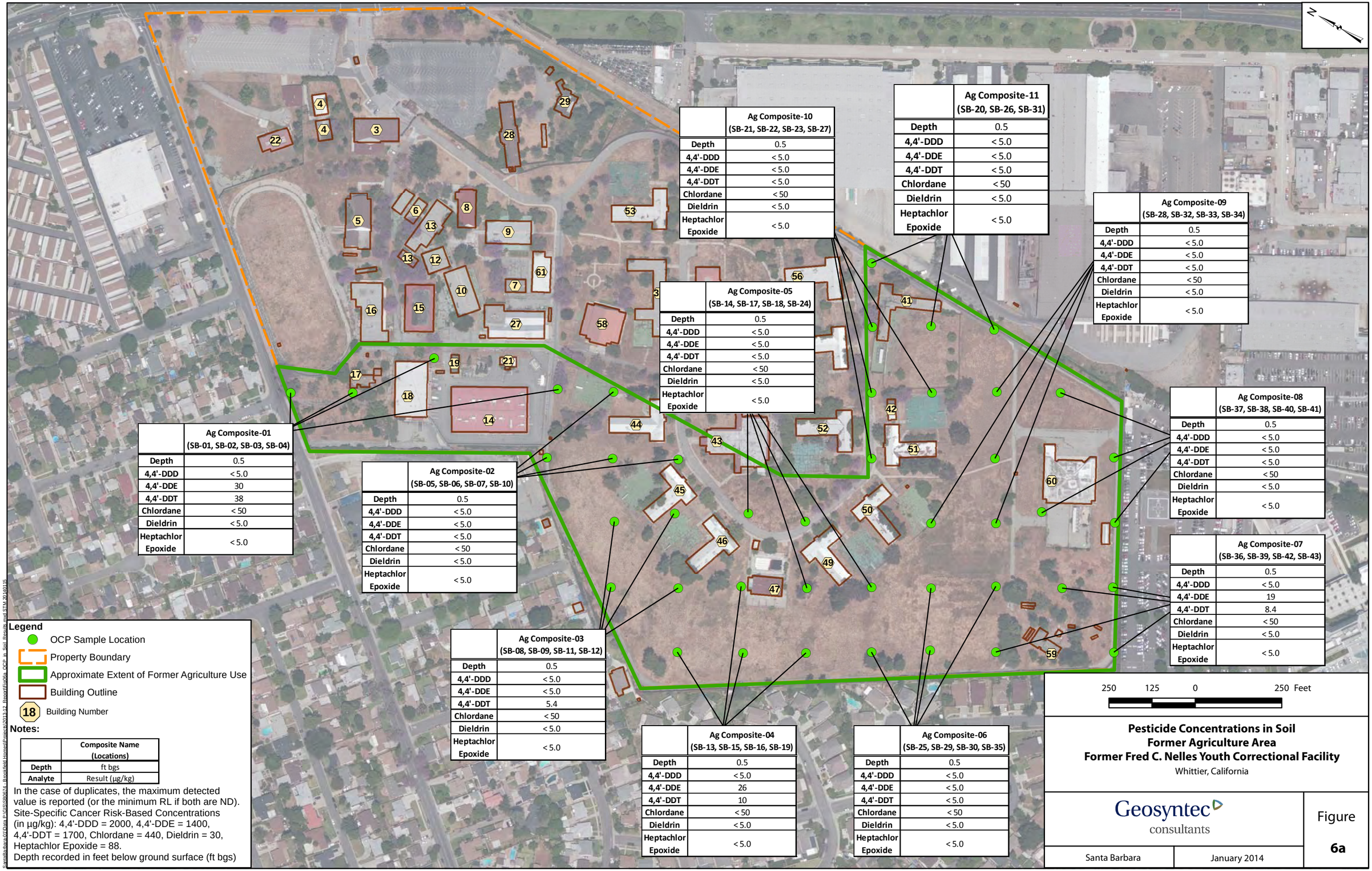
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure 5

SantaBarbara-01\Data P:\GIS\SB0074 - Brookfield Homes\Projects\2013-12 Report\Fig05_Arsenic_in_Soil_Results.mxd STM 20140115



	Ag Composite-01 (SB-01, SB-02, SB-03, SB-04)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	30
4,4'-DDT	38
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-02 (SB-05, SB-06, SB-07, SB-10)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-03 (SB-08, SB-09, SB-11, SB-12)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	5.4
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-04 (SB-13, SB-15, SB-16, SB-19)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	26
4,4'-DDT	10
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-05 (SB-14, SB-17, SB-18, SB-24)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-06 (SB-25, SB-29, SB-30, SB-35)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-07 (SB-36, SB-39, SB-42, SB-43)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	19
4,4'-DDT	8.4
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-08 (SB-37, SB-38, SB-40, SB-41)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-09 (SB-28, SB-32, SB-33, SB-34)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-10 (SB-21, SB-22, SB-23, SB-27)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

	Ag Composite-11 (SB-20, SB-26, SB-31)
Depth	0.5
4,4'-DDD	< 5.0
4,4'-DDE	< 5.0
4,4'-DDT	< 5.0
Chlordane	< 50
Dieldrin	< 5.0
Heptachlor Epoxide	< 5.0

Notes:

	Composite Name (Locations)
Depth	ft bgs
Analyte	Result (µg/kg)

In the case of duplicates, the maximum detected value is reported (or the minimum RL if both are ND).
Site-Specific Cancer Risk-Based Concentrations (in µg/kg): 4,4'-DDD = 2000, 4,4'-DDE = 1400, 4,4'-DDT = 1700, Chlordane = 440, Dieldrin = 30, Heptachlor Epoxide = 88.
Depth recorded in feet below ground surface (ft bgs)

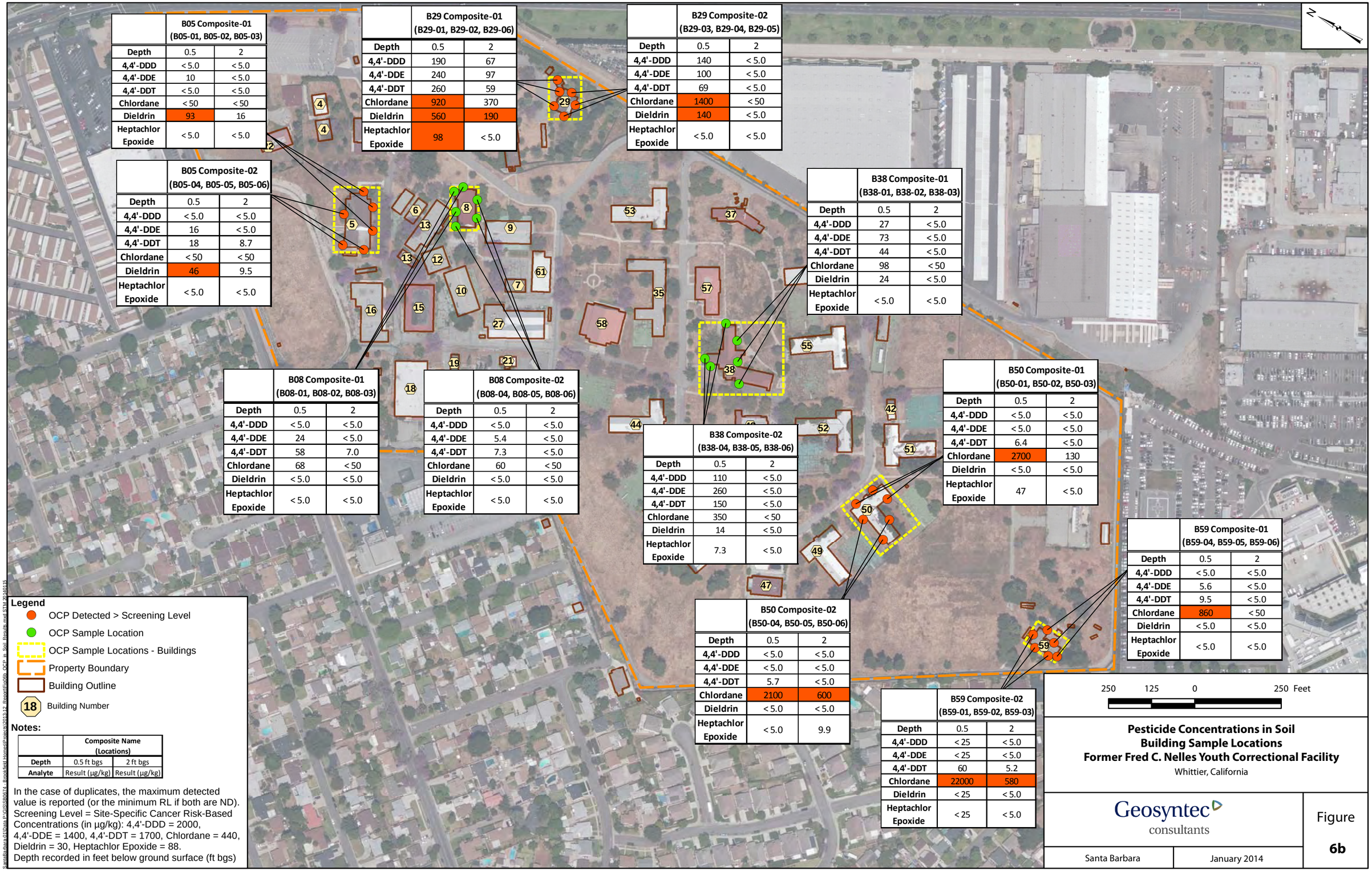
Pesticide Concentrations in Soil
Former Agriculture Area
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure **6a**

SantaBarbara:01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig06a_OCP in Soil Results.mxd STM 20140115



	B05 Composite-01 (B05-01, B05-02, B05-03)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	10	< 5.0
4,4'-DDT	< 5.0	< 5.0
Chlordane	< 50	< 50
Dieldrin	93	16
Heptachlor Epoxide	< 5.0	< 5.0

	B05 Composite-02 (B05-04, B05-05, B05-06)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	16	< 5.0
4,4'-DDT	18	8.7
Chlordane	< 50	< 50
Dieldrin	46	9.5
Heptachlor Epoxide	< 5.0	< 5.0

	B08 Composite-01 (B08-01, B08-02, B08-03)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	24	< 5.0
4,4'-DDT	58	7.0
Chlordane	68	< 50
Dieldrin	< 5.0	< 5.0
Heptachlor Epoxide	< 5.0	< 5.0

	B08 Composite-02 (B08-04, B08-05, B08-06)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	5.4	< 5.0
4,4'-DDT	7.3	< 5.0
Chlordane	60	< 50
Dieldrin	< 5.0	< 5.0
Heptachlor Epoxide	< 5.0	< 5.0

	B29 Composite-01 (B29-01, B29-02, B29-06)	
Depth	0.5	2
4,4'-DDD	190	67
4,4'-DDE	240	97
4,4'-DDT	260	59
Chlordane	920	370
Dieldrin	560	190
Heptachlor Epoxide	98	< 5.0

	B29 Composite-02 (B29-03, B29-04, B29-05)	
Depth	0.5	2
4,4'-DDD	140	< 5.0
4,4'-DDE	100	< 5.0
4,4'-DDT	69	< 5.0
Chlordane	1400	< 50
Dieldrin	140	< 5.0
Heptachlor Epoxide	< 5.0	< 5.0

	B38 Composite-01 (B38-01, B38-02, B38-03)	
Depth	0.5	2
4,4'-DDD	27	< 5.0
4,4'-DDE	73	< 5.0
4,4'-DDT	44	< 5.0
Chlordane	98	< 50
Dieldrin	24	< 5.0
Heptachlor Epoxide	< 5.0	< 5.0

	B38 Composite-02 (B38-04, B38-05, B38-06)	
Depth	0.5	2
4,4'-DDD	110	< 5.0
4,4'-DDE	260	< 5.0
4,4'-DDT	150	< 5.0
Chlordane	350	< 50
Dieldrin	14	< 5.0
Heptachlor Epoxide	7.3	< 5.0

	B50 Composite-01 (B50-01, B50-02, B50-03)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	< 5.0	< 5.0
4,4'-DDT	6.4	< 5.0
Chlordane	2700	130
Dieldrin	< 5.0	< 5.0
Heptachlor Epoxide	47	< 5.0

	B50 Composite-02 (B50-04, B50-05, B50-06)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	< 5.0	< 5.0
4,4'-DDT	5.7	< 5.0
Chlordane	2100	600
Dieldrin	< 5.0	< 5.0
Heptachlor Epoxide	< 5.0	9.9

	B59 Composite-01 (B59-04, B59-05, B59-06)	
Depth	0.5	2
4,4'-DDD	< 5.0	< 5.0
4,4'-DDE	5.6	< 5.0
4,4'-DDT	9.5	< 5.0
Chlordane	860	< 50
Dieldrin	< 5.0	< 5.0
Heptachlor Epoxide	< 5.0	< 5.0

	B59 Composite-02 (B59-01, B59-02, B59-03)	
Depth	0.5	2
4,4'-DDD	< 25	< 5.0
4,4'-DDE	< 25	< 5.0
4,4'-DDT	60	5.2
Chlordane	22000	580
Dieldrin	< 25	< 5.0
Heptachlor Epoxide	< 25	< 5.0

Legend

- OCP Detected > Screening Level
- OCP Sample Location
- OCP Sample Locations - Buildings
- Property Boundary
- Building Outline
- 18 Building Number

Notes:

	Composite Name (Locations)	
Depth	0.5 ft bgs	2 ft bgs
Analyte	Result (µg/kg)	Result (µg/kg)

In the case of duplicates, the maximum detected value is reported (or the minimum RL if both are ND).
Screening Level = Site-Specific Cancer Risk-Based Concentrations (in µg/kg): 4,4'-DDD = 2000, 4,4'-DDE = 1400, 4,4'-DDT = 1700, Chlordane = 440, Dieldrin = 30, Heptachlor Epoxide = 88.
Depth recorded in feet below ground surface (ft bgs)

250 125 0 250 Feet

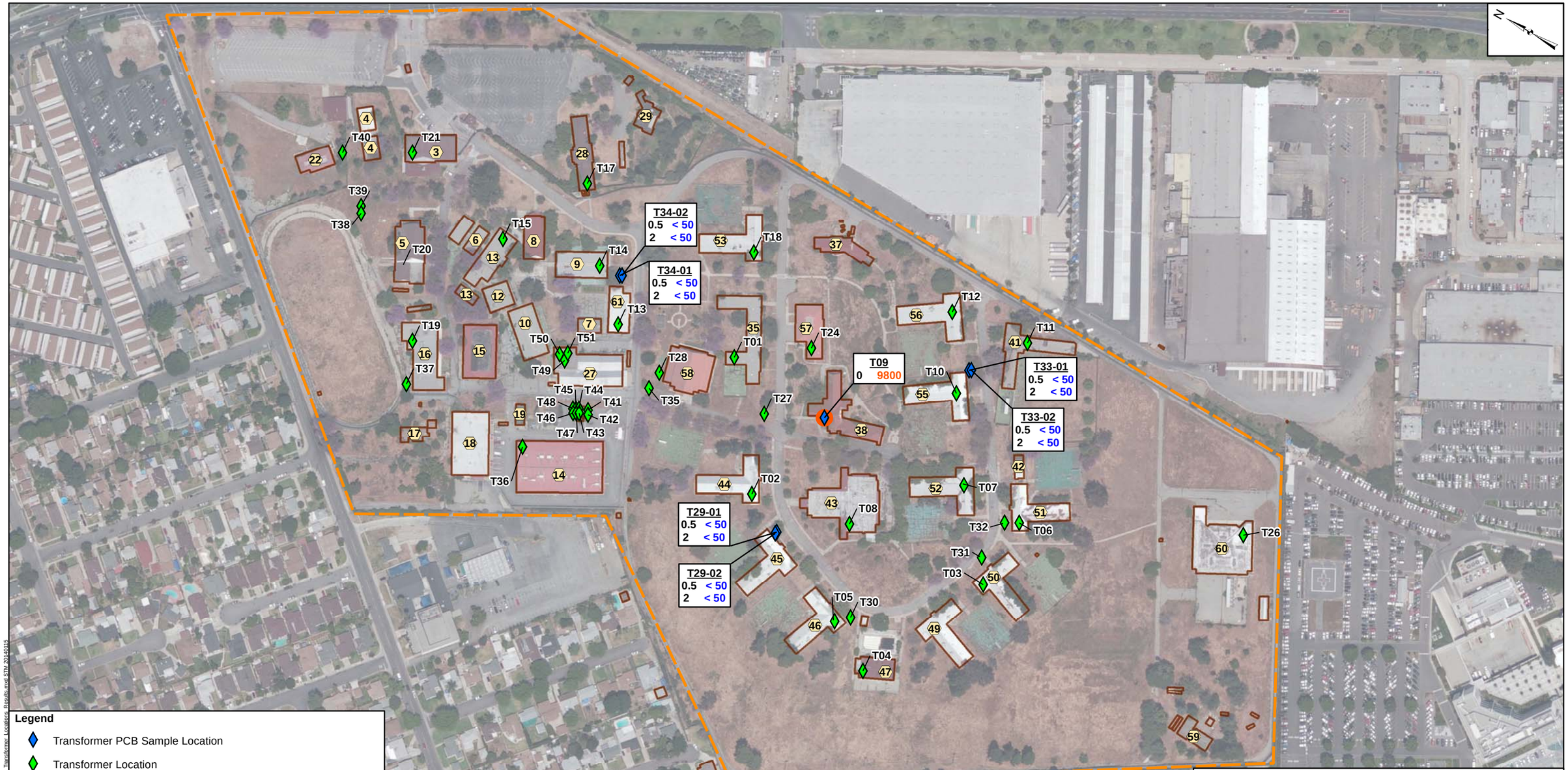
Pesticide Concentrations in Soil
Building Sample Locations
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure **6b**

SantaBarbara-01\Data P:\GIS\SB0974 - Brookfield Homes\Projects\2013-12 Report\Fig06b_OCP in Soil Results.mxd STM 20140115



Legend

- Transformer PCB Sample Location
- Transformer Location
- Aroclor-1260 Detected > Screening Level
- Property Boundary
- Building Outline
- 18 Building Number

Notes:

T09 = Location ID

0 9800 = ft bgs Result (µg/kg) Exceeds Screening Level

In the case of duplicates, the maximum detected value is reported (or the minimum RL if both are ND).

Screening Level = Aroclor-1260 Site-Specific Cancer Risk-Based Concentration = 220 µg/kg.

Depth recorded in feet below ground surface (ft bgs)

250 125 0 250 Feet

PCB Concentrations at Transformer Locations
Former Fred C. Nelles Youth Correctional Facility

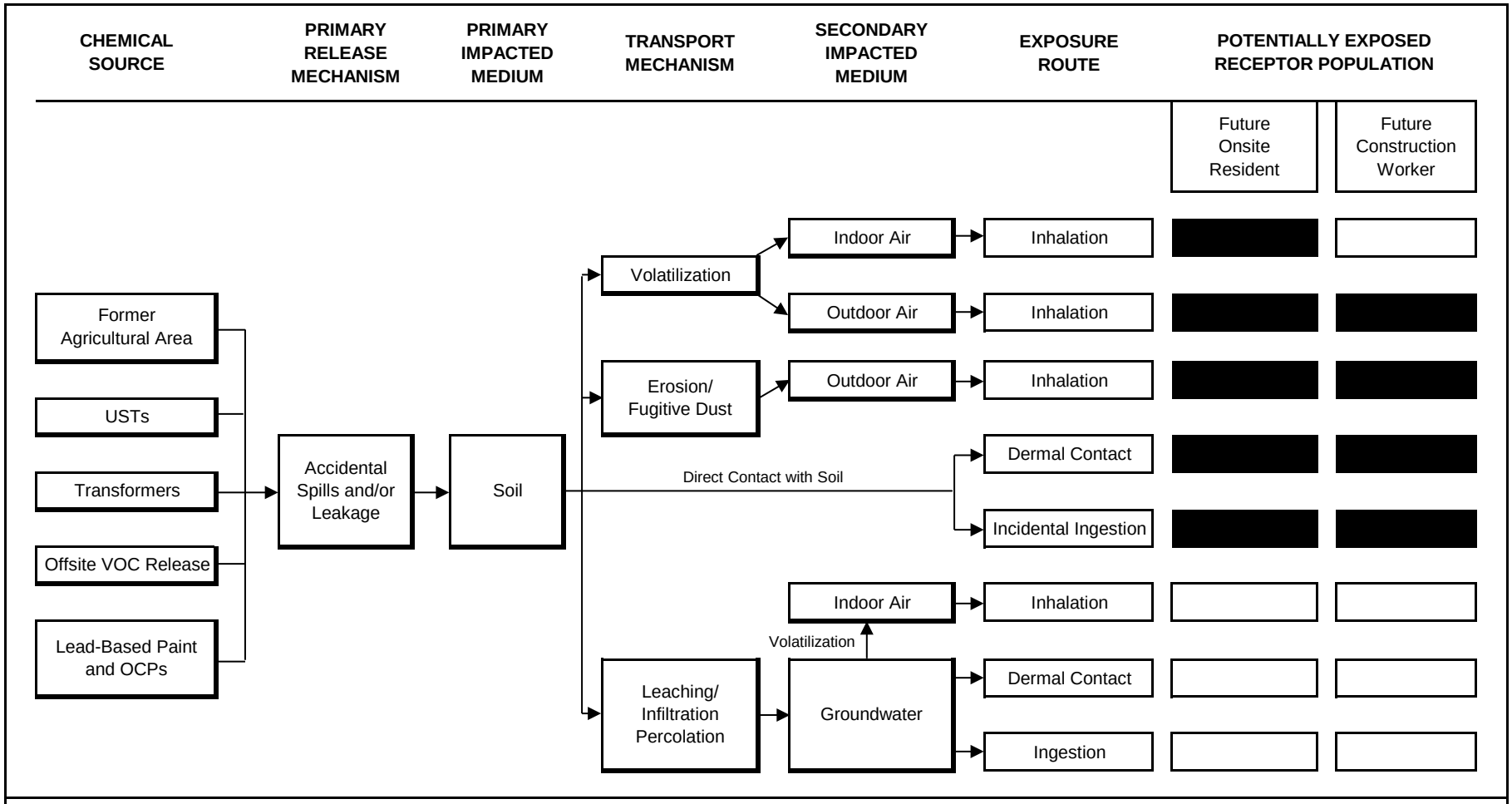
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure 7

SantaBarbara-01 Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig07 Transformer Locations Results.mxd STM 20140115



NOTES:

Complete exposure pathway, quantitatively evaluated in the human health screening evaluation

Incomplete exposure pathway; no quantitative evaluation necessary

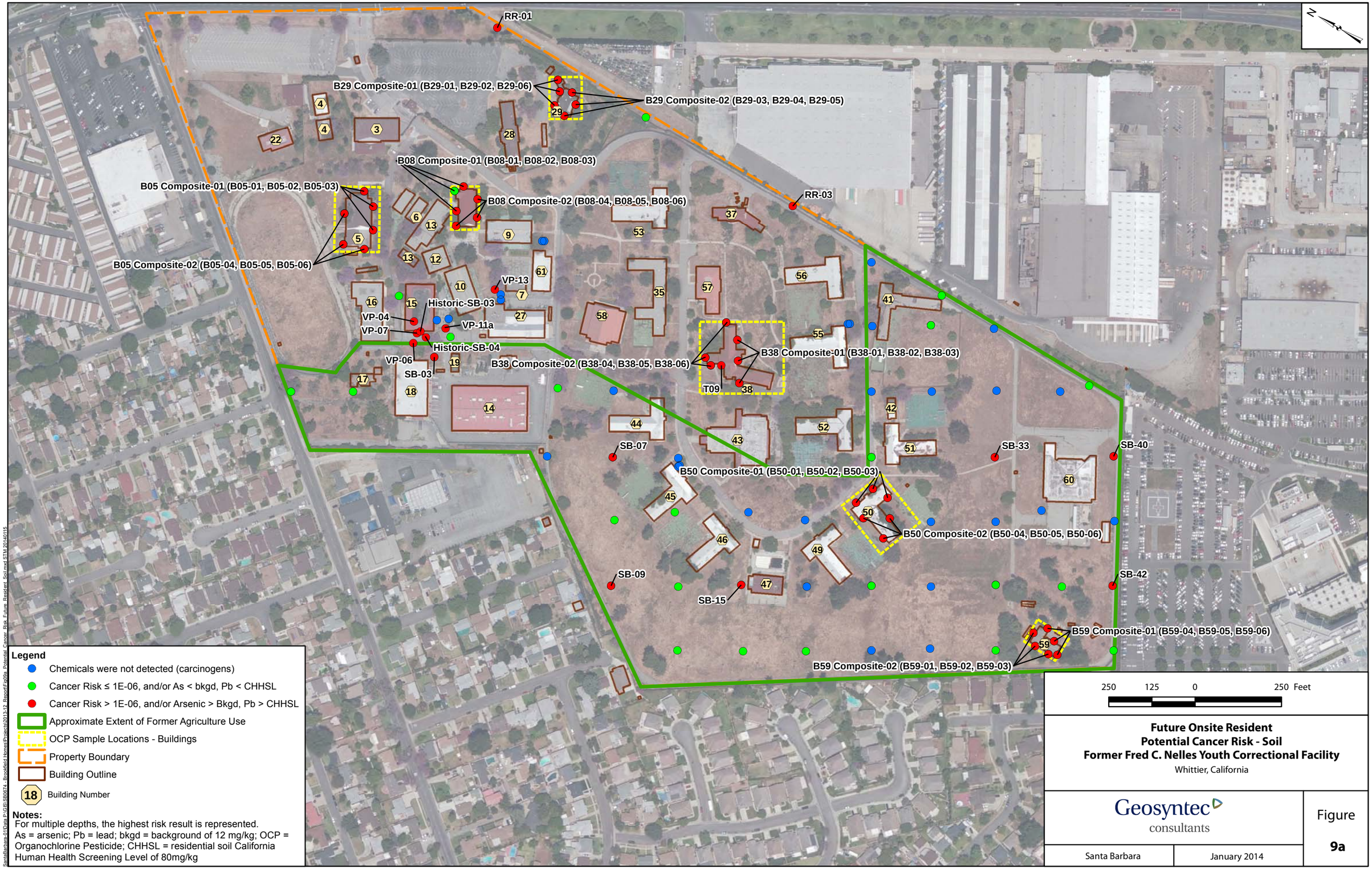
CONCEPTUAL SITE MODEL
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

January 2014

Figure **8**

SB0674_CSM_Fig8.xls



Legend

- Chemicals were not detected (carcinogens)
- Cancer Risk ≤ 1E-06, and/or As < bkgd, Pb < CHHSL
- Cancer Risk > 1E-06, and/or Arsenic > Bkgd, Pb > CHHSL
- Approximate Extent of Former Agriculture Use
- OCP Sample Locations - Buildings
- Property Boundary
- Building Outline
- 18 Building Number

Notes:
For multiple depths, the highest risk result is represented.
As = arsenic; Pb = lead; bkgd = background of 12 mg/kg; OCP = Organochlorine Pesticide; CHHSL = residential soil California Human Health Screening Level of 80mg/kg

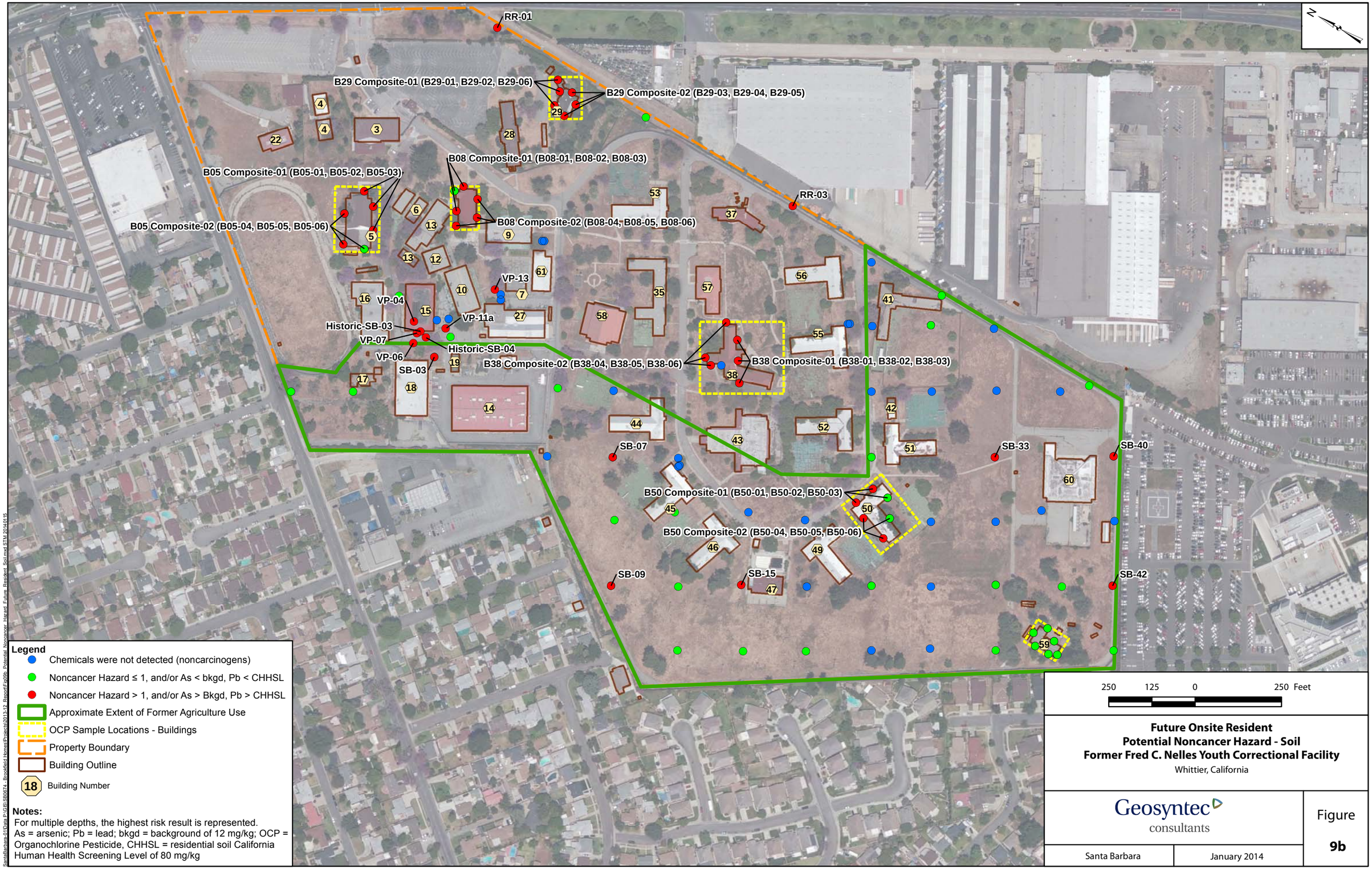
Future Onsite Resident
Potential Cancer Risk - Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Figure **9a**

Santa Barbara | January 2014

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig09a Potential Cancer Risk Future Resident Soil.mxd STM 20140115



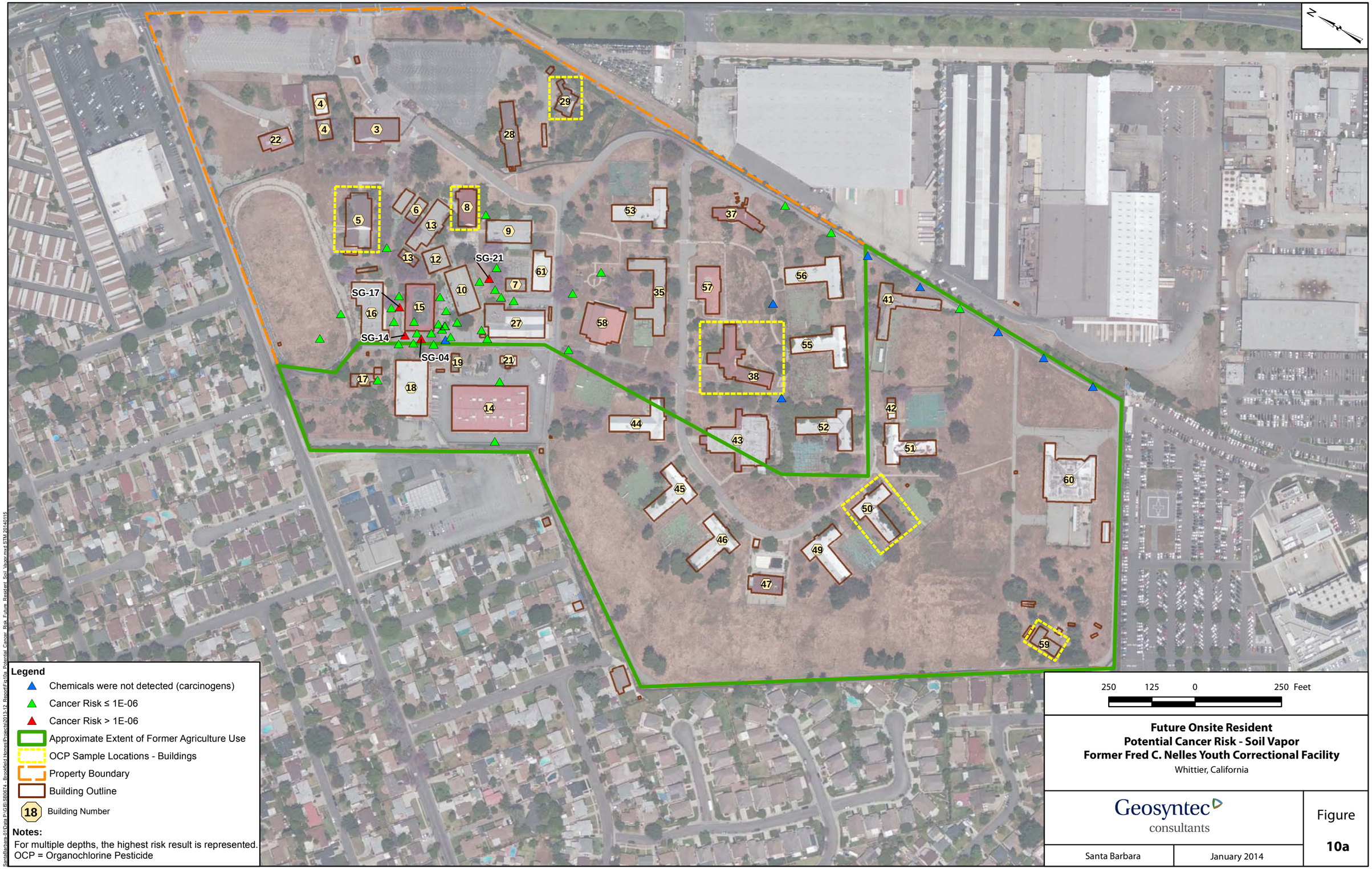
Future Onsite Resident
Potential Noncancer Hazard - Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Figure **9b**

Santa Barbara | January 2014

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig09b Potential Noncancer Hazard Future Resident Soil.mxd STM 20140115



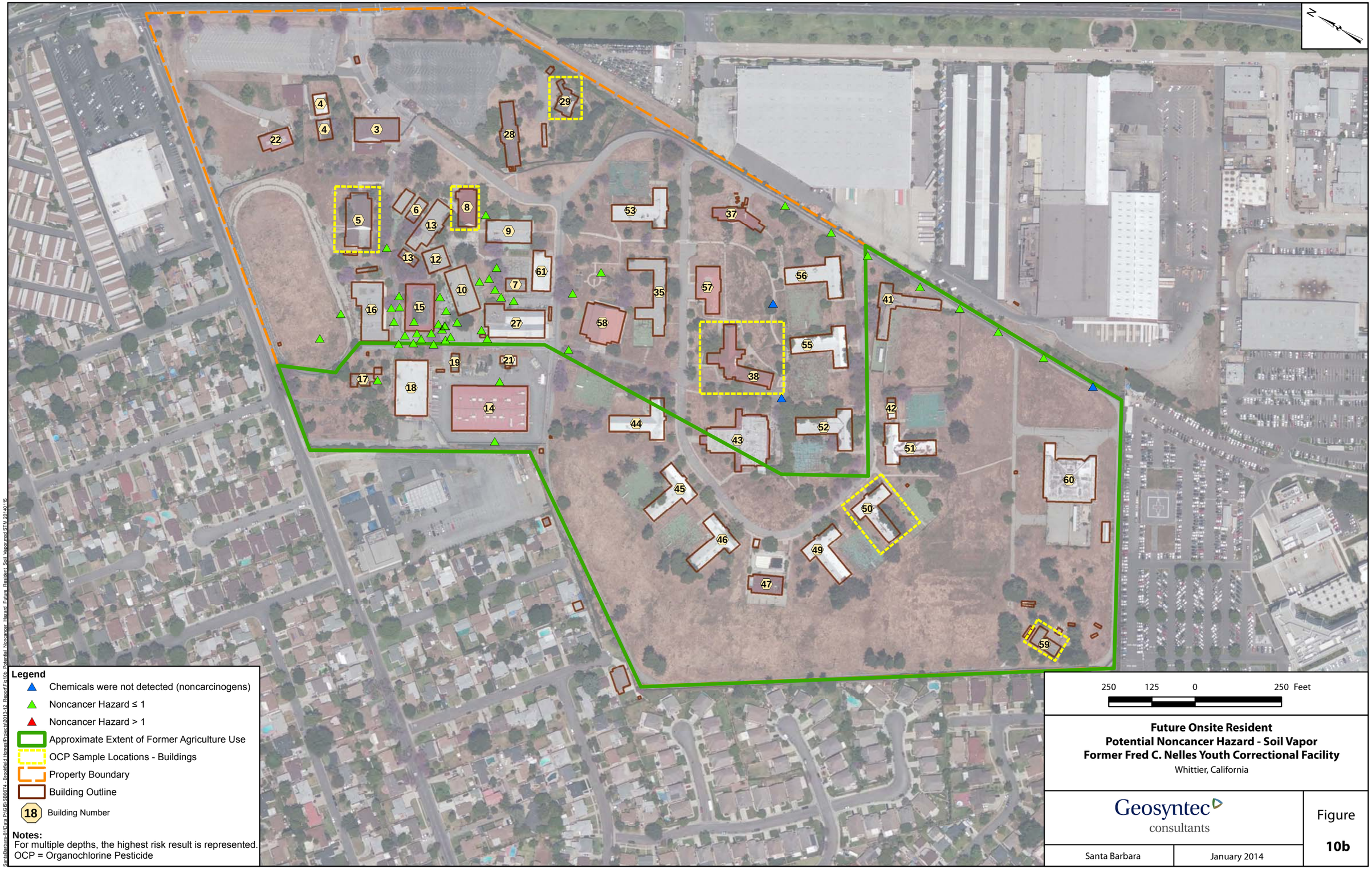
Future Onsite Resident
Potential Cancer Risk - Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Santa Barbara | January 2014

Figure **10a**

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig10a Potential Cancer Risk Future Resident Soil Vapor.mxd STM 20140115



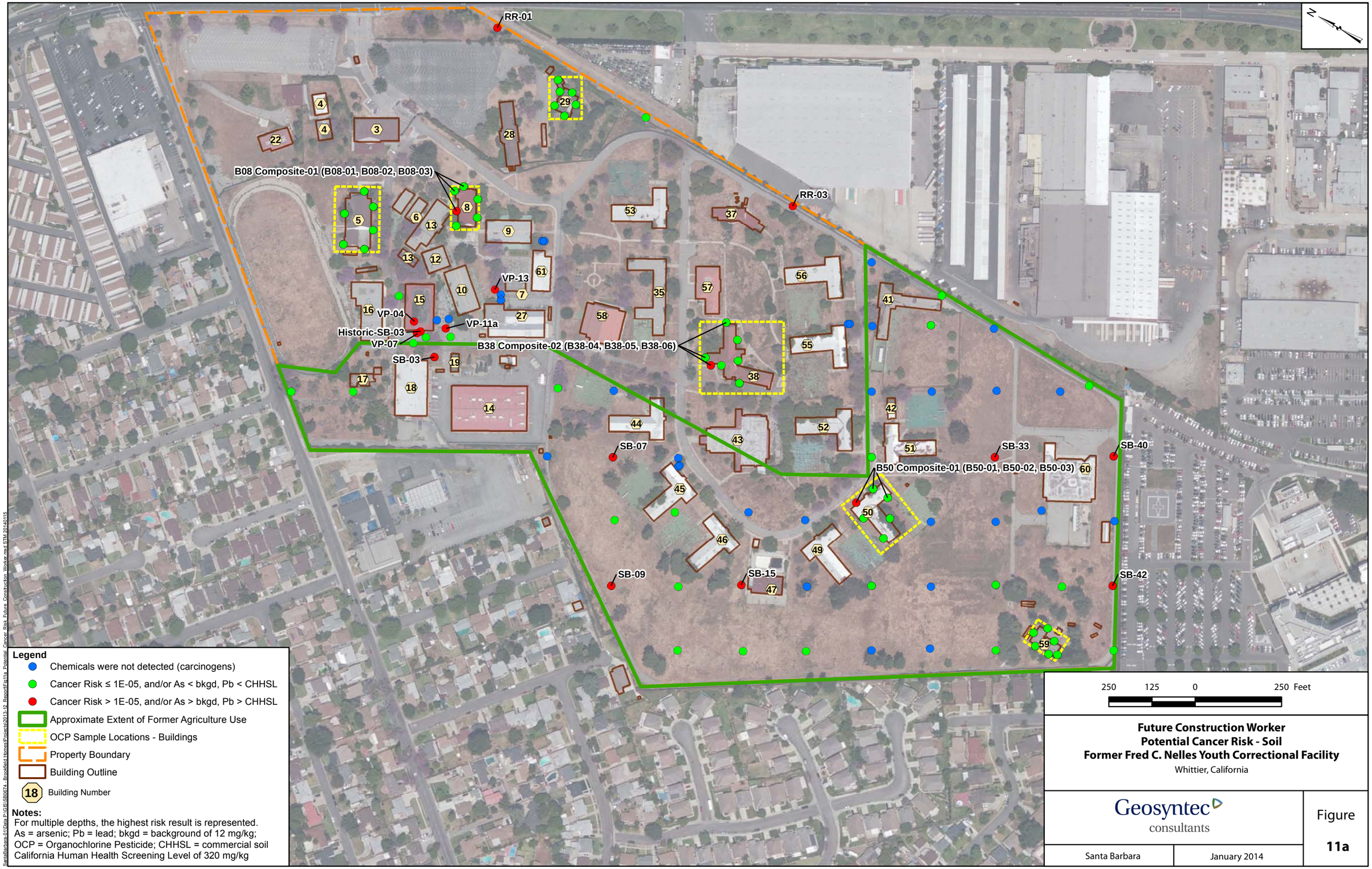
Future Onsite Resident
Potential Noncancer Hazard - Soil Vapor
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

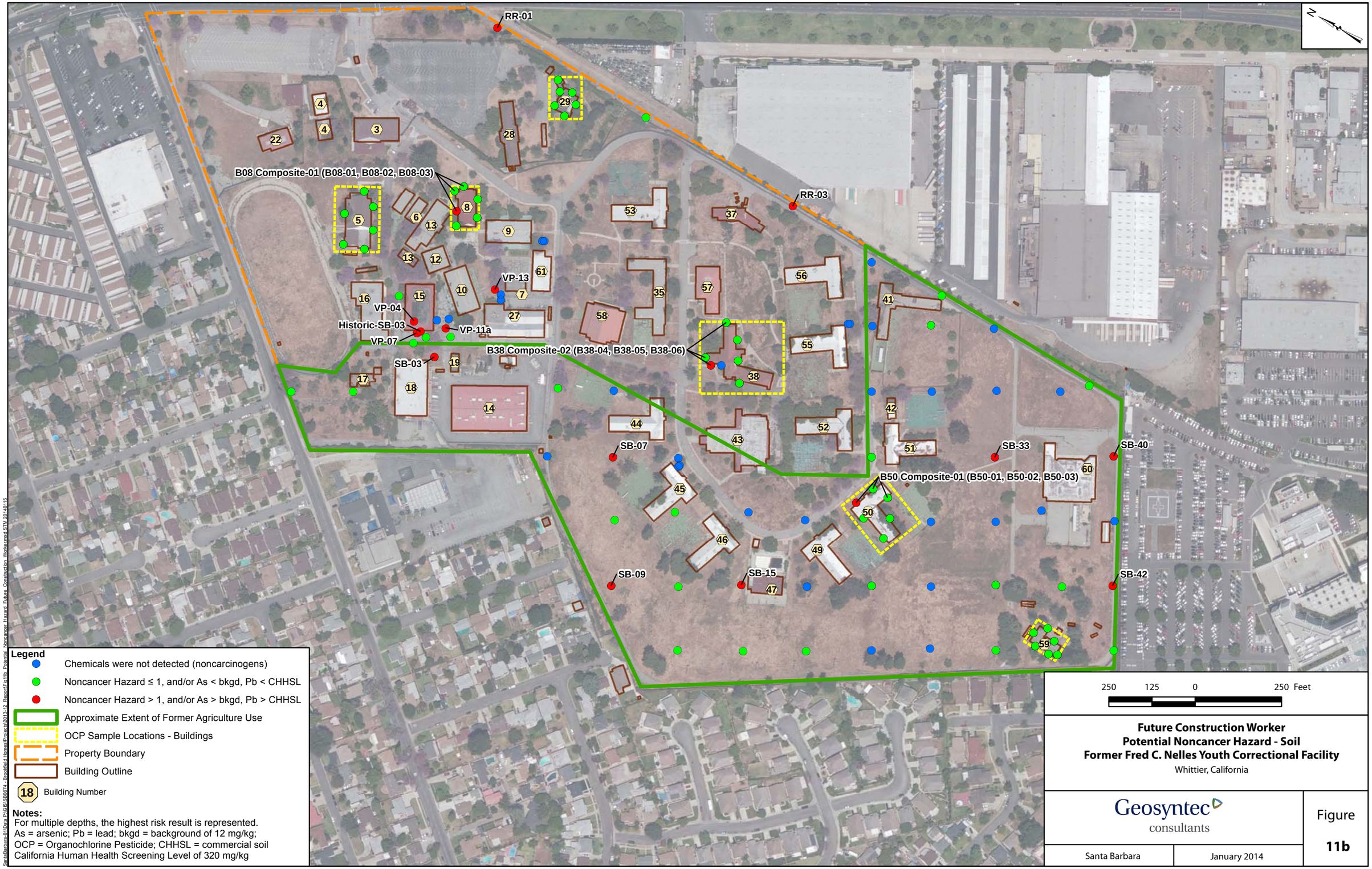
Santa Barbara | January 2014

Figure **10b**

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig10b Potential Noncancer Hazard Future Resident Soil Vapor.mxd STM 20140115



SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-\2. Report\Fig11a Potential Cancer Risk Future Construction Worker.mxd STM 20140115



Future Construction Worker
Potential Noncancer Hazard - Soil
Former Fred C. Nelles Youth Correctional Facility
Whittier, California

Geosyntec consultants

Figure **11b**

Santa Barbara | January 2014

SantaBarbara-01\Data P:\GIS\SB0674 - Brookfield Homes\Projects\2013-12 Report\Fig11b Potential Noncancer Hazard Future Construction Worker.mxd STM 20140115

APPENDIX A

BORING LOGS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-01 **SHEET** 1 **OF** 1
START DRILL DATE Oct 30, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 30, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with some silt; (0,85,15); Dense										755	Start hand augering 0-4 ft bgs
1												
2												
3	Tree root											
4												
5						1						Start direct push
6												
7												
8	SAA except with increasing moisture content					2				0.0	810	
9												
10												
11												
12						3				0.0	815	
13												
14												
15												
16										0.0	820	Borehole terminated at 16 ft bgs
17												
18												
19												
20												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760172.86200
EASTING 402847.44680
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-02 **SHEET** 1 **OF** 1
START DRILL DATE Oct 30, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 30, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Asphalt											Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with silt; (0,85,15); Dense											
2												
3												
4												
5						1				0.0	850	Start direct push
6												
7												
8	SAA											
9						2				0.0	857	
10												
11												
12						3				0.0	900	
13												
14												
15												
16												Borehole terminated at 16 ft bgs
17												
18												
19												
20												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760165.27800
EASTING 402862.25270
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-03 **SHEET** 1 **OF** 1
START DRILL DATE Oct 30, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 30, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Asphalt											Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with silt; (0,85,15); Dense											
2												
3												
4												
5						1				0.0	920	Start direct push
6												
7												
8						2				0.0	933	
9												
10												
11												
12						3				0.0	935	
13												
14												
15												
16						4				0.0	940	
17												
18												
19												
20						5				0.0	945	
21												
22	Silt (ML); Dark brown; (7.5 YR 3/3); Moist; Fine sandy silt (0,25,75); Very dense											
23						6				0.0	950	
24												
25												
26												
27						7				0.0	955	
28												
29												
30												
31												
32											1000	Borehole terminated at 32 ft bgs
33												
34												
35												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760157.81500
EASTING 402840.29680
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-04 **SHEET** 1 **OF** 1
START DRILL DATE Oct 30, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 30, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs) | DESCRIPTION (1) Unit/Formation, Mem. 2) Soil/Rock Name 3) Color 4) Moisture 5) Grain Size 6) Percentage 7) Plasticity 8) Density/Consistency 9) Structure 10) Other (Mineralization, Discoloration, Odor, etc.) | GRAPHIC LOG | WELL LOG | GROUNDWATER OR STRUCTURE | ELEVATION (ft) | SAMPLE: SAMPLE NO. | TYPE | BLOWS PER 6" | RECOVERY (%) | PID READING (ppm) | TIME (00:00) | COMMENTS (1) Rig Behavior 2) Air Monitoring

Depth (ft-bgs)	Description	Sample No.	PID Reading (ppm)	Time (00:00)	Comments
	Concrete				Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with silt; (0,85,15); Dense		0.0	1105	
5		1	0.0	1110	Start direct push
9		2	0.0	1115	
13		3	0.0	1120	
14	Coarse sand string				
17		4	0.0	1122	
21	Silt (ML); Dark brown; (7.5 YR 3/3); Moist; Fine sandy silt (0,25,75); Very dense	5	0.0	1126	
25		6	0.0	1130	
27		7	0.1	1135	
32			0.0	1140	Borehole terminated at 32 ft bgs

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760142.55500
EASTING 402849.30410
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-05 **SHEET** 1 **OF** 1
START DRILL DATE Oct 30, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 30, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Asphalt											Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with silt; (0,85,15); Dense											
2												
3												
4												
5						1						Start direct push
6												
7												
8						2				0.0	1300	
9												
10												
11						3				0.0	1303	
12												
13												
14	Silt (ML); Dark brown; (7.5 YR 3/3); Moist; Fine sandy silt (0,15,85); Very dense					4				0.0	1306	
15												
16												
17												
18	Gravel horizon					5				0.0	1309	
19												
20												
21												
22						6				0.0	1312	
23												
24	Coarse sand horizon											
25						7				0.0	1313	
26												
27												
28						8				0.0		
29												
30												
31												
32						9				0.0	1315	Borehole terminated at 32 ft bgs
33												
34												
35												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760144.43500
EASTING 402825.42740
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-06 **SHEET** 1 **OF** 1
START DRILL DATE Oct 30, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 30, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs) | DESCRIPTION (1) Unit/Formation, Mem. 2) Soil/Rock Name 3) Color 4) Moisture 5) Grain Size 6) Percentage 7) Plasticity 8) Density/Consistency 9) Structure 10) Other (Mineralization, Discoloration, Odor, etc.) | GRAPHIC LOG | WELL LOG | GROUNDWATER OR STRUCTURE | ELEVATION (ft) | SAMPLE: SAMPLE NO. | TYPE | BLOWS PER 6" | RECOVERY (%) | PID READING (ppm) | TIME (00:00) | COMMENTS (1) Rig Behavior 2) Air Monitoring

Depth (ft-bgs)	Description	Sample No.	PID Reading (ppm)	Time (00:00)	Comments
	Asphalt				Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with silt; (0,65,35); Dense				
5		1	0.0	1414	Start direct push
8		2	0.0	1417	
11		3	0.0	1430	
14		4	0.0	1433	
17		5	0.0	1435	
18	Silt (ML); Dark brown; (7.5 YR 3/3); Moist; Fine sandy silt (0,35,65); Very dense				
20		6	0.0	1436	
23		7	1.1	1438	
25		8	0.0	1440	
27		9	0.0	1442	
31	2-inch thick medium sand layer with trace gravel				
32			0.0	1445	Borehole terminated at 32 ft bgs

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760133.60300
EASTING 402832.43350
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-07 **SHEET** 1 **OF** 1
START DRILL DATE Oct 31, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 31, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Asphalt										755	Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Fine sand with silt; (0,65,35); Dense											
2												
3												
4												
5						1					800	Start direct push
6												
7												
8												
9						2					805	
10												
11												
12	Silt (ML); Dark yellowish brown; (10 YR 4/4); Moist; Fine sandy silt (0,30,70); Dense											
13						3					808	
14												
15												
16												
17						4					810	
18												
19												
20	SAA except with increasing sand content											
21						5					812	
22												
23												
24	Small gravel horizon					6					813	
25												
26	SAA except with decreasing sand content											
27						7					815	
28												
29												
30												
31												
32											818	Borehole terminated at 32 ft bgs
33												
34												
35												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760135.24500
EASTING 402841.69860
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-08 **SHEET** 1 **OF** 1
START DRILL DATE Oct 31, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 31, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG / WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Asphalt									905	Start hand augering 0-4 ft bgs
1	FILL: Sand (SP); Mottled black and dark yellowish brown; (10 YR 4/4); Moist; Organic debris, glass fragments and gravel mixed with fine sand; Soft										
2									0.1		
3											
4					1				0.1	910	
5											Start direct push
6									0.0		
7											
8					2				0.1	912	
9									0.0		
10											
11									0.0		
12					3				0.0	914	
13									0.0		
14	Sand (SM); Yellowish brown; (10 YR 4/4); Moist; Silty fine to medium sand; (0,65,35); Moderately dense										
15									0.0		
16					4				0.1	918	
17											
18											
19											
20					5				0.3	920	
21									0.1		
22											
23											
24	Silt (ML); Yellowish brown; (10 YR 4/4); Silt with some sand (0,20,80); Dense to very dense				6				0.7	922	
25											
26											
27					7				0.1	925	
28											
29											
30											
31											
32	Coarse sand horizon								0.1	930	Borehole terminated at 32 ft bgs
33											
34											
35											

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760124.37500
EASTING 402848.14470
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-09 **SHEET** 1 **OF** 1
START DRILL DATE Oct 31, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 31, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs) | DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.) | GRAPHIC LOG | WELL LOG | GROUNDWATER OR STRUCTURE | ELEVATION (ft) | SAMPLE: SAMPLE NO. | TYPE | BLOWS PER 6" | RECOVERY (%) | PID READING (ppm) | TIME (00:00) | COMMENTS (1) Rig Behavior (2) Air Monitoring

Depth (ft-bgs)	Description	Sample No.	PID Reading (ppm)	Time (00:00)	Comments
	Asphalt				Start hand augering 0-4 ft bgs
1	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Silty fine sand; (0,65,35); Dense				
5		1	.1	1010	Start direct push
9		2	.1	1011	
10	SAA				
13		3	.7	1013	
17		4	.3	1014	
20	SAA				
21		5	.4	1015	
25		6	.3	1018	
26	Silt (ML); Strong brown; (7.5 YR 5/6); Moist; Silt (0,90,10); Very dense				
28	Sand (SM); Strong brown; (7.5 YR 5/6); Silty fine sand; (0,65,35); Dense				
29		7	1.0	1022	
30				1030	Borehole terminated at 30 ft bgs

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760117.63400
EASTING 402840.59360
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-10 **SHEET** 1 **OF** 1
START DRILL DATE Oct 31, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 31, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs) | DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.) | GRAPHIC LOG | WELL LOG | GROUNDWATER OR STRUCTURE | ELEVATION (ft) | SAMPLE: SAMPLE NO. | TYPE | BLOWS PER 6" | RECOVERY (%) | PID READING (ppm) | TIME (00:00) | COMMENTS (1) Rig Behavior (2) Air Monitoring

Depth (ft-bgs)	Description	Sample No.	Type	Blows per 6"	Recovery (%)	PID Reading (ppm)	Time (00:00)	Comments
1	Asphalt							Start hand augering 0-4 ft bgs
2	Sand (SM); Strong brown; (7.5 YR 5/6); Moist; Silty fine sand; (0,65,35); Dense							
5		1				0.1	1105	Start direct push
8		2					1115	
11		3				0.2	1118	
						0.2		
						0.0		
14		4				0.5	1120	
17		5				0.1	1122	
20		6				0.1	1124	
23		7				0.2	1126	
25	SAA except with increasing gravel content							
26	Silt (ML); Strong brown; (7.5 YR 5/6); Moist; Fine sandy silt (0,35,65); Dense	8				0.0	1128	
29		9				0.0	1130	
32	Sand (SP); Strong brown; (7.5 YR 5/6); Moist; Medium to coarse sand with fine gravel; (5,85,10)	10				0.0	1133	
36	Sand (SM); Moist; Silty sands grades into coarse sand (SW) with fine gravel	11				0.1	1136	
40		12				0.1	1139	
44	Silt (ML); Strong brown; (7.5 YR 5/6); Moist to very moist; Silt (0,5,95); Dense					0.1	1140	Borehole terminated at 45 ft bgs

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760107.85900
EASTING 402853.61160
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-11 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs) | DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.) | GRAPHIC LOG | WELL LOG | GROUNDWATER OR STRUCTURE | ELEVATION (ft) | SAMPLE: SAMPLE NO. | TYPE | BLOWS PER 6" | RECOVERY (%) | PID READING (ppm) | TIME (00:00) | COMMENTS (1) Rig Behavior (2) Air Monitoring

Depth (ft-bgs)	Description	Sample No.	PID Reading (ppm)	Time (00:00)	Comments
1–12	Asphalt; FILL: Sand (SP); Dark brown; (7.5 YR 3/2); Moist; Organic debris and gravel mixed with poorly graded sand				Start hand augering 0-4 ft bgs
5		1		730	Start direct push
8		2			
12–30	Silt (ML); Brown; (7.5 YR 4/4); Dry; Silt (0,5,95); SAA except with increasing sand content (0,15,85)	3			
16		4	0.1	733	
20		5	0.1	735	
25		6	0.1	737	
28		7			
30–38	Sand (SM); Strong brown; (7.5 YR 4/6); Slightly moist; Silty fine sand; (0,80,20)	8	0.1	740	
36		9			
38–45	Gravel (GP); Strong brown (7.5 YR 4/6): Slightly moist; Coarse gravel with sand; (0,15,85); Sand (SM); Strong brown; (7.5 YR 4/6); Moist; Silty fine sand; (0,60,40)	10	0.0	747	
45			0.0	755	Borehole terminated at 45 ft bgs

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Fisher
REVIEWER

NORTHING 3760116.91600
EASTING 402859.76830
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-12 **SHEET** 1 **OF** 1
START DRILL DATE Oct 31, 13 **ELEVATION DATA:**
FINISH DRILL DATE Oct 31, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DESCRIPTION: 1) Unit/Formation, Mem. 2) Soil/Rock Name 3) Color 4) Moisture 5) Grain Size 6) Percentage 7) Plasticity 8) Density/Consistency 9) Structure 10) Other (Mineralization, Discoloration, Odor, etc.)

DEPTH (ft-bgs)	DESCRIPTION	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
1–23	Sand (SM); Dark yellowish brown; (10 YR 4/6); Slightly moist; Fine sand with silt; (0,85,15); Dense							Start hand augering 0-4 ft bgs
5		1				0.0	1320	Start direct push
10		2						
14–23	SAA except with increasing silt content	3				0.3	1325	
17		4						
21		5				0.5	1330	
24–29	Silt (ML); Dark yellowish brown; (10 YR 4/6); Moist; Fine sandy silt (0,15,85); Dense	6						
29		7				0.0	1335	
30–34	Sand (SM); Dark yellowish brown; (10 YR 4/6); Fine sand with silt; (0,80,20); Dense	8						
35–44	Silt (ML); Silt with fine sand (0,15,85); Dense Gravel string SAA except with increasing sand content	9						
41		10				0.0	1340	
45						0.9	1345	Borehole terminated at 45 ft bgs

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760109.44600
EASTING 402867.72660
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-13 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
1	Sand (SM); Dark yellowish brown; (10 YR 4/4); Dry; Silty fine sand; (0,60,40); Mod. dense											Start hand augering 0-4 ft bgs
5						1				0.0	915	Start direct push
9						2				0.0	917	
10	SAA except with increasing silt content											
13						3				0.0	919	
16	Silt (ML); Dark yellowish brown; (10 YR 4/4); Slightly moist; Silt with some fine sand (0,15,85); Dense with calcium carbonate filled root holes					4				0.3	922	
21						5				0.0	924	
22	SAA except with decreasing sand content; Silt (0,5,95); Dark brown; (7.5 YR 3/3); Very Dense											
25						6				0.0	926	
28	Sand (SM); Dark yellowish brown; (10 YR 4/4); Dry; Silty fine sand; (0,90,10); Dense											
29						7				0.0	928	
30	Silt (0,5,95); Dark brown; (7.5 YR 3/3); Very Dense											
32										0.0	1000	Borehole terminated at 32 ft bgs
35												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760094.85300
EASTING 402909.39790
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-14 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Sand (SM); Dark yellowish brown; (10 YR 4/6); Silty fine sand with trace gravel; (tr,70,30)											Start hand augering 0-4 ft bgs
1												
2												
3												
4						1					1100	Start direct push
5												
6												
7												
8						2				0.0	1103	
9												
10	SAA except with increasing silt content											
11												
12	SAA except with decreasing silt content					3				0.5	1105	
13												
14												
15												
16										0.0	1108	Borehole terminated at 16 ft bgs
17												
18												
19												
20												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760109.15500
EASTING 402909.86650
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-15 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Sand (SM); Dark yellowish brown; (10 YR 4/6); Dry; Fine sand with silt; (0,85,15)											Start hand augering 0-4 ft bgs
1												
2												
3												
4						1						Start direct push
5												
6												
7												
8	SAA except with increasing silt content; Silty fine sand (0,65,35); Dense					2				0.0	1030	
9												
10												
11												
12						3				0.0	1033	
13												
14												
15												
16										0.0	1035	Borehole terminated at 16 ft bgs
17												
18												
19												
20												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3760103.37800
EASTING 402926.85250
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-16 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Sand (SM); Brownish yellow; (10 YR 6/6); Dry; Fine sand with trace coarse sand and some silt; (0,65,35); Dense											Start hand augering 0-4 ft bgs
1												
2												
3												
4						1				0.3	1200	Start direct push
5												
6												
7												
8						2				0.5	1202	
9												
10										0.5		
11												
12	SAA except brown					3				0.1	1203	
13												
14												
15												
16										0.1	1205	Borehole terminated at 16 ft bgs
17												
18												
19												
20												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3759910.27900
EASTING 403101.65750
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-17 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Sand (SM); Brownish yellow; (10 YR 6/6); Dry; Silty fine sand; (0,60,40); Dense											Start hand augering 0-4 ft bgs
1												
2												
3												
4						1				0.0	1230	Start direct push
5												
6												
7	SAA											
8						2				0.0	1231	
9												
10												
11												
12						3				0.0	1233	
13												
14	Gravel (GW); Brownish yellow (10YR 6/6); Small to large gravel with medium to coarse sand; (65,30,5); Dense											
15												
16										0.0	1235	Borehole terminated at 16 ft bgs
17												
18												
19												
20												

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3759876.20800
EASTING 403021.49550
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
924 Anacapa St
Suite 4A
Santa Barbara, CA 93101
Tel: (805) 897-3800
Fax: (805) 899-8689

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING VP-18 **SHEET** 1 **OF** 1
START DRILL DATE Nov 1, 13 **ELEVATION DATA:**
FINISH DRILL DATE Nov 1, 13 **GROUND SURF.** N/A
LOCATION 11850 Whittier Blvd, Whittier **TOP OF CASING**
PROJECT Brookfield Homes Whittier **DATUM** N/A
NUMBER SB0674

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) Soil/Rock Name (3) Color (4) Moisture (5) Grain Size (6) Percentage (7) Plasticity (8) Density/Consistency (9) Structure (10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG / WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Sand (SM); Brownish yellow; (10 YR 6/6); Dry; Silty fine sand; (0,65,35)										Start hand augering 0-4 ft bgs
1											
2											
3											
4					1					1300	Start direct push
5											
6											
7									0.1	1305	
8					2				0.3	1310	
9	SAA except with decreasing sand content										
10											
11											
12					3				0.1	1312	
13											
14	Sand (SP); Brownish yellow (10YR 6/6); Poorly graded sand with gravel; (10,75,15); Dense										
15											
16									0.0	1315	Borehole terminated at 16 ft bgs
17											
18											
19											
20											

CONTRACTOR InterPhase
EQUIPMENT Geoprobe 6600
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER R. Kovacs
REVIEWER

NORTHING 3759828.06900
EASTING 402953.04580
COORDINATE SYSTEM: NAD_1983_UTM_Zone_11N

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

APPENDIX B

WASTE MANIFEST

Manifest

SOIL SAFE OF CA – TPST
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transport Truck #:	Facility #:	Approval Number:	Load #
	Transporter		A07	42044	001

Generator and/or Consultant

Generator's Name and Billing Address: Brookfield Homes, 3090 Bristol, Suite 200, Costa Mesa, CA 92626-3051	Generator's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number
Consultant's Name and Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number
Generation Site (Transport from): *(name & address)* Brookfield Homes - Former Fred C. Nelles Youth Correctional Facility, 11650 Whittier Blvd., Whittier, CA 90601	Site Phone #:	
	Person to Contact:	
	FAX#:	
Designated Facility (Transport to): *(name & address)* Soil Safe, 12328 Hibiscus Rd., Adelanto, CA 92301-1700	Facility Phone #: (510) 887-4001	
	Person to Contact: Dellena Jeffery	
	FAX#: (760) 246-8004	
Transporter Name and Mailing Address: American Integrated Services, Inc., P.O. Box 92316, Long Beach, CA 90809-2316	Transporter's Phone #: (310) 522-1168	CAR000140338
	Person to Contact: Jennifer Sherman	
	FAX#: (310) 522-0474	Customer Account Number 770-4808

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	2				
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above: AIS Project # 33000-21-14

Scale Ticket #

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils descried in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ AIS on behalf of Generator - J. Sherman

Signature and date: Month 11 Day 27 Year 13

Transporter

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Alonzo Delgado

Signature and date: Month 11 Day 27 Year 13

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: D. Jeffery/J. Provanzal

Signature and date:

Please print or type.

GENERATOR/CONSULTANTS COPY

APPENDIX C

LABORATORY REPORTS

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 13-10-2288

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Geosyntec Consultants

Client Project Name: Brookfield / SB0674.03

Attention: Geoff Frieman
924 Anacapa Street
Suite 4A
Santa Barbara, CA 93101-2177

Approved for release on 11/08/2013 by:
Stephen Nowak
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: Brookfield / SB0674.03
Work Order Number: 13-10-2288

1 Work Order Narrative. 3

2 Sample Summary. 4

3 Detections Summary. 5

4 Client Sample Data. 11
4.1 EPA 8015B (M) C6-C44 (Solid). 11
4.2 EPA 8015B (M) C6-C44 (Aqueous). 21
4.3 EPA 6010B/7471A CAC Title 22 Metals (Solid). 23
4.4 EPA 6010B/7470A CAC Title 22 Metals (Aqueous). 33
4.5 EPA 7470A Mercury (Aqueous). 35
4.6 EPA 7471A Mercury (Solid). 36
4.7 EPA 8270C SIM PAHs (Solid). 38
4.8 EPA 8270C SIM PAHs (Aqueous). 49
4.9 EPA 8260B Volatile Organics + Oxygenates Prep 5035 (Solid). 51
4.10 EPA 8260B Volatile Organics + Oxygenates (Aqueous). 81

5 Quality Control Sample Data. 90
5.1 MS/MSD. 90
5.2 PDS/PDSD. 98
5.3 LCS/LCSD. 99

6 Sample Analysis Summary. 113

7 Glossary of Terms and Qualifiers. 114

8 Chain of Custody/Sample Receipt Form. 115

Calscience Environmental Laboratories, Inc.

Work Order Narrative

Work Order: 13-10-2288

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 10/30/13. They were assigned to Work Order 13-10-2288.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Return to Contents

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	Geosyntec Consultants 924 Anacapa Street, Suite 4A Santa Barbara, CA 93101-2177	Work Order:	13-10-2288
		Project Name:	Brookfield / SB0674.03
		PO Number:	
		Date/Time Received:	10/30/13 17:55
		Number of Containers:	53
Attn:	Geoff Frieman		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
VP2-0.5	13-10-2288-1	10/30/13 08:55	5	Solid
VP2-10	13-10-2288-2	10/30/13 09:00	5	Solid
VP2-5	13-10-2288-3	10/30/13 08:57	5	Solid
VP4-0.5	13-10-2288-4	10/30/13 11:05	5	Solid
VP4-5	13-10-2288-5	10/30/13 11:10	5	Solid
VP4-10	13-10-2288-6	10/30/13 11:15	5	Solid
VP6-0.5	13-10-2288-7	10/30/13 14:10	5	Solid
VP6-5	13-10-2288-8	10/30/13 14:14	5	Solid
VP6-10	13-10-2288-9	10/30/13 14:30	5	Solid
QCEB-103013	13-10-2288-10	10/30/13 15:15	6	Aqueous
QCTB-103013	13-10-2288-11	10/30/13 00:00	2	Aqueous

Return to Contents

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2288
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674.03
	Santa Barbara, CA 93101-2177	Received:	10/30/13
Attn:	Geoff Frieman		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP2-0.5 (13-10-2288-1)						
Arsenic	8.01		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	203		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.554		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.23		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	24.9		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	12.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	25.7		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	5.93		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.66		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	32.9		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	51.5		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	65.7		1.00	mg/kg	EPA 6010B	EPA 3050B
VP2-10 (13-10-2288-2)						
Arsenic	6.46		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	169		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.510		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.03		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	22.9		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	10.5		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	22.2		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	4.33		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.41		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	28.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	48.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	54.9		1.00	mg/kg	EPA 6010B	EPA 3050B
Benzene	2.2		1.2	ug/kg	EPA 8260B	EPA 5035

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2288
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674.03
	Santa Barbara, CA 93101-2177	Received:	10/30/13
Attn:	Geoff Frieman		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP2-5 (13-10-2288-3)						
Arsenic	7.36		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	196		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.561		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.16		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	25.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	12.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	24.9		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	5.14		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.51		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	32.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	53.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	62.3		1.00	mg/kg	EPA 6010B	EPA 3050B
2-Methylnaphthalene	0.11		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
1-Methylnaphthalene	0.059		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
VP4-0.5 (13-10-2288-4)						
Arsenic	6.39		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	286		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.475		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.11		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	22.9		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	10.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	31.1		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	178		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.25		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	27.5		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	46.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	111		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.885		0.0835	mg/kg	EPA 7471A	EPA 7471A Total
C25-C28	48		25	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	75		25	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	76		25	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	69		25	mg/kg	EPA 8015B (M)	EPA 3550B
C41-C44	29		25	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	340		25	mg/kg	EPA 8015B (M)	EPA 3550B

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2288
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674.03
	Santa Barbara, CA 93101-2177	Received:	10/30/13
Attn:	Geoff Frieman		

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP4-5 (13-10-2288-5)						
Antimony	2.50		0.750	mg/kg	EPA 6010B	EPA 3050B
Arsenic	11.1		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	353		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.314		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	2.54		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	24.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.71		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	150		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	2380		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.58		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	20.2		0.250	mg/kg	EPA 6010B	EPA 3050B
Silver	1.27		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	31.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	650		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	15.9		0.834	mg/kg	EPA 7471A	EPA 7471A Total
C17-C18	690		500	mg/kg	EPA 8015B (M)	EPA 3550B
C19-C20	1300		500	mg/kg	EPA 8015B (M)	EPA 3550B
C21-C22	1400		500	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	1700		500	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	3400		500	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	4100		500	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	3600		500	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	3000		500	mg/kg	EPA 8015B (M)	EPA 3550B
C41-C44	1500		500	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	21000		500	mg/kg	EPA 8015B (M)	EPA 3550B
2-Methylnaphthalene	0.54		0.40	mg/kg	EPA 8270C SIM PAHs	EPA 3545

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2288
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674.03
	Santa Barbara, CA 93101-2177	Received:	10/30/13
Attn:	Geoff Frieman		

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP4-10 (13-10-2288-6)						
Arsenic	6.45		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	199		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.507		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.27		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	24.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	11.1		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	24.7		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	79.9		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.59		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	29.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	50.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	78.3		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.259		0.0835	mg/kg	EPA 7471A	EPA 7471A Total
C25-C28	11		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	17		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	21		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	22		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C41-C44	16		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	98		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
2-Methylnaphthalene	0.19		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
1-Methylnaphthalene	0.10		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2288
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674.03
	Santa Barbara, CA 93101-2177	Received:	10/30/13
Attn:	Geoff Frieman		

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP6-0.5 (13-10-2288-7)						
Arsenic	8.27		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	239		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.445		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.04		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	19.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	17.0		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	27.3		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	250		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.27		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	24.9		0.250	mg/kg	EPA 6010B	EPA 3050B
Silver	0.493		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	41.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	94.8		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.130		0.0835	mg/kg	EPA 7471A	EPA 7471A Total
C29-C32	20		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	16		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	13		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	63		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
Acetone	68		54	ug/kg	EPA 8260B	EPA 5035
Toluene	1.4		1.1	ug/kg	EPA 8260B	EPA 5035
Tert-Butyl Alcohol (TBA)	28		21	ug/kg	EPA 8260B	EPA 5035
Naphthalene	0.065		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
2-Methylnaphthalene	0.19		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
1-Methylnaphthalene	0.12		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Phenanthrene	0.028		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2288
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674.03
	Santa Barbara, CA 93101-2177	Received:	10/30/13
Attn:	Geoff Frieman		

Client SampleID Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP6-5 (13-10-2288-8)						
Arsenic	7.40		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	218		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.543		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.11		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	25.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	11.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	25.5		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	11.0		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.25		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	30.1		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	51.1		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	67.4		1.00	mg/kg	EPA 6010B	EPA 3050B
Benzene	1.0		0.89	ug/kg	EPA 8260B	EPA 5035
VP6-10 (13-10-2288-9)						
Arsenic	5.98		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	166		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.456		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.00		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	21.1		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	9.92		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	19.8		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	4.35		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.14		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	26.4		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	44.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	50.9		1.00	mg/kg	EPA 6010B	EPA 3050B
Acetone	76		49	ug/kg	EPA 8260B	EPA 5035
Toluene	1.1		0.98	ug/kg	EPA 8260B	EPA 5035
Tert-Butyl Alcohol (TBA)	40		20	ug/kg	EPA 8260B	EPA 5035
2-Methylnaphthalene	0.041		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
1-Methylnaphthalene	0.024		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545

Subcontracted analyses, if any, are not included in this summary.

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 1 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-0.5	**13-10-2288-1-A**	**10/30/13 08:55**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 21:29**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	99	61-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 2 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-10	**13-10-2288-2-A**	**10/30/13 09:00**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 21:45**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	92	61-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 3 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-5	**13-10-2288-3-A**	**10/30/13 08:57**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 22:02**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	103	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 4 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-0.5	**13-10-2288-4-A**	**10/30/13 11:05**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 22:19**	**131031B20A**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	25	5	
C7	ND	25	5	
C8	ND	25	5	
C9-C10	ND	25	5	
C11-C12	ND	25	5	
C13-C14	ND	25	5	
C15-C16	ND	25	5	
C17-C18	ND	25	5	
C19-C20	ND	25	5	
C21-C22	ND	25	5	
C23-C24	ND	25	5	
C25-C28	48	25	5	
C29-C32	75	25	5	
C33-C36	76	25	5	
C37-C40	69	25	5	
C41-C44	29	25	5	
C6-C44 Total	340	25	5	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	107	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 5 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-5	**13-10-2288-5-A**	**10/30/13 11:10**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 22:35**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	500	100	
C7	ND	500	100	
C8	ND	500	100	
C9-C10	ND	500	100	
C11-C12	ND	500	100	
C13-C14	ND	500	100	
C15-C16	ND	500	100	
C17-C18	690	500	100	
C19-C20	1300	500	100	
C21-C22	1400	500	100	
C23-C24	1700	500	100	
C25-C28	3400	500	100	
C29-C32	4100	500	100	
C33-C36	3600	500	100	
C37-C40	3000	500	100	
C41-C44	1500	500	100	
C6-C44 Total	21000	500	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	111	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 6 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-10	**13-10-2288-6-A**	**10/30/13 11:15**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 22:51**	**131031B20A**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	11	5.0	1	
C29-C32	17	5.0	1	
C33-C36	21	5.0	1	
C37-C40	22	5.0	1	
C41-C44	16	5.0	1	
C6-C44 Total	98	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	92	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 7 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-0.5	**13-10-2288-7-A**	**10/30/13 14:10**	**Solid**	**GC 46**	**10/31/13**	**11/05/13 14:46**	**131031B20A**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	20	5.0	1	
C33-C36	16	5.0	1	
C37-C40	13	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	63	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	86	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 8 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-5	**13-10-2288-8-A**	**10/30/13 14:14**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 23:23**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	91	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 9 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-10	**13-10-2288-9-A**	**10/30/13 14:30**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 23:55**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	91	61-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 10 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-490-611**	**N/A**	**Solid**	**GC 46**	**10/31/13**	**11/04/13 19:52**	**131031B20A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	92	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103013	**13-10-2288-10-E**	**10/30/13 15:15**	**Aqueous**	**GC 47**	**10/31/13**	**10/31/13 21:43**	**131031B13A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	100	1	
C7	ND	100	1	
C8	ND	100	1	
C9-C10	ND	100	1	
C11-C12	ND	100	1	
C13-C14	ND	100	1	
C15-C16	ND	100	1	
C17-C18	ND	100	1	
C19-C20	ND	100	1	
C21-C22	ND	100	1	
C23-C24	ND	100	1	
C25-C28	ND	100	1	
C29-C32	ND	100	1	
C33-C36	ND	100	1	
C37-C40	ND	100	1	
C41-C44	ND	100	1	
C6-C44 Total	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	93	68-140	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-498-114**	**N/A**	**Aqueous**	**GC 47**	**10/31/13**	**10/31/13 20:08**	**131031B13A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	100	1	
C7	ND	100	1	
C8	ND	100	1	
C9-C10	ND	100	1	
C11-C12	ND	100	1	
C13-C14	ND	100	1	
C15-C16	ND	100	1	
C17-C18	ND	100	1	
C19-C20	ND	100	1	
C21-C22	ND	100	1	
C23-C24	ND	100	1	
C25-C28	ND	100	1	
C29-C32	ND	100	1	
C33-C36	ND	100	1	
C37-C40	ND	100	1	
C41-C44	ND	100	1	
C6-C44 Total	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	94	68-140	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 1 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-0.5	**13-10-2288-1-A**	**10/30/13 08:55**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:35**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	8.01	0.750	1	
Barium	203	0.500	1	
Beryllium	0.554	0.250	1	
Cadmium	1.23	0.500	1	
Chromium	24.9	0.250	1	
Cobalt	12.6	0.250	1	
Copper	25.7	0.500	1	
Lead	5.93	0.500	1	
Molybdenum	2.66	0.250	1	
Nickel	32.9	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	51.5	0.250	1	
Zinc	65.7	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 2 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-10	**13-10-2288-2-A**	**10/30/13 09:00**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:36**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	6.46	0.750	1	
Barium	169	0.500	1	
Beryllium	0.510	0.250	1	
Cadmium	1.03	0.500	1	
Chromium	22.9	0.250	1	
Cobalt	10.5	0.250	1	
Copper	22.2	0.500	1	
Lead	4.33	0.500	1	
Molybdenum	2.41	0.250	1	
Nickel	28.4	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	48.3	0.250	1	
Zinc	54.9	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 3 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-5	**13-10-2288-3-A**	**10/30/13 08:57**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:41**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	7.36	0.750	1	
Barium	196	0.500	1	
Beryllium	0.561	0.250	1	
Cadmium	1.16	0.500	1	
Chromium	25.6	0.250	1	
Cobalt	12.4	0.250	1	
Copper	24.9	0.500	1	
Lead	5.14	0.500	1	
Molybdenum	2.51	0.250	1	
Nickel	32.7	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	53.4	0.250	1	
Zinc	62.3	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 4 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-0.5	**13-10-2288-4-A**	**10/30/13 11:05**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:42**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	6.39	0.750	1	
Barium	286	0.500	1	
Beryllium	0.475	0.250	1	
Cadmium	1.11	0.500	1	
Chromium	22.9	0.250	1	
Cobalt	10.3	0.250	1	
Copper	31.1	0.500	1	
Lead	178	0.500	1	
Molybdenum	2.25	0.250	1	
Nickel	27.5	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	46.4	0.250	1	
Zinc	111	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 5 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-5	**13-10-2288-5-A**	**10/30/13 11:10**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:43**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	2.50	0.750	1	
Arsenic	11.1	0.750	1	
Barium	353	0.500	1	
Beryllium	0.314	0.250	1	
Cadmium	2.54	0.500	1	
Chromium	24.4	0.250	1	
Cobalt	5.71	0.250	1	
Copper	150	0.500	1	
Lead	2380	0.500	1	
Molybdenum	2.58	0.250	1	
Nickel	20.2	0.250	1	
Selenium	ND	0.750	1	
Silver	1.27	0.250	1	
Thallium	ND	0.750	1	
Vanadium	31.3	0.250	1	
Zinc	650	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 6 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-10	**13-10-2288-6-A**	**10/30/13 11:15**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:44**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	6.45	0.750	1	
Barium	199	0.500	1	
Beryllium	0.507	0.250	1	
Cadmium	1.27	0.500	1	
Chromium	24.3	0.250	1	
Cobalt	11.1	0.250	1	
Copper	24.7	0.500	1	
Lead	79.9	0.500	1	
Molybdenum	2.59	0.250	1	
Nickel	29.4	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	50.7	0.250	1	
Zinc	78.3	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 7 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-0.5	**13-10-2288-7-A**	**10/30/13 14:10**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:45**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	8.27	0.750	1	
Barium	239	0.500	1	
Beryllium	0.445	0.250	1	
Cadmium	1.04	0.500	1	
Chromium	19.7	0.250	1	
Cobalt	17.0	0.250	1	
Copper	27.3	0.500	1	
Lead	250	0.500	1	
Molybdenum	2.27	0.250	1	
Nickel	24.9	0.250	1	
Selenium	ND	0.750	1	
Silver	0.493	0.250	1	
Thallium	ND	0.750	1	
Vanadium	41.7	0.250	1	
Zinc	94.8	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 8 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-5	**13-10-2288-8-A**	**10/30/13 14:14**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:47**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	7.40	0.750	1	
Barium	218	0.500	1	
Beryllium	0.543	0.250	1	
Cadmium	1.11	0.500	1	
Chromium	25.7	0.250	1	
Cobalt	11.6	0.250	1	
Copper	25.5	0.500	1	
Lead	11.0	0.500	1	
Molybdenum	2.25	0.250	1	
Nickel	30.1	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	51.1	0.250	1	
Zinc	67.4	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 9 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-10	**13-10-2288-9-A**	**10/30/13 14:30**	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:48**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	5.98	0.750	1	
Barium	166	0.500	1	
Beryllium	0.456	0.250	1	
Cadmium	1.00	0.500	1	
Chromium	21.1	0.250	1	
Cobalt	9.92	0.250	1	
Copper	19.8	0.500	1	
Lead	4.35	0.500	1	
Molybdenum	2.14	0.250	1	
Nickel	26.4	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	44.6	0.250	1	
Zinc	50.9	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 10 of 10

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-17571**	**N/A**	**Solid**	**ICP 7300**	**10/31/13**	**10/31/13 21:50**	**131031L04**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	ND	0.750	1	
Barium	ND	0.500	1	
Beryllium	ND	0.250	1	
Cadmium	ND	0.500	1	
Chromium	ND	0.250	1	
Cobalt	ND	0.250	1	
Copper	ND	0.500	1	
Lead	ND	0.500	1	
Molybdenum	ND	0.250	1	
Nickel	ND	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	ND	0.250	1	
Zinc	ND	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
		Units:	mg/L
Project: Brookfield / SB0674.03			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103013	**13-10-2288-10-D**	**10/30/13 15:15**	**Aqueous**	**ICP 7300**	**10/31/13**	**11/01/13 13:54**	**131031LA1**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.0150	1	
Arsenic	ND	0.0100	1	
Barium	ND	0.0100	1	
Beryllium	ND	0.0100	1	
Cadmium	ND	0.0100	1	
Chromium	ND	0.0100	1	
Cobalt	ND	0.0100	1	
Copper	ND	0.0100	1	
Lead	ND	0.0100	1	
Molybdenum	ND	0.0100	1	
Nickel	ND	0.0100	1	
Selenium	ND	0.0150	1	
Silver	ND	0.00500	1	
Thallium	ND	0.0150	1	
Vanadium	ND	0.0100	1	
Zinc	ND	0.0100	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
		Units:	mg/L
Project: Brookfield / SB0674.03			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-13784**	**N/A**	**Aqueous**	**ICP 7300**	**10/31/13**	**10/31/13 18:14**	**131031LA1**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.0150	1	
Arsenic	ND	0.0100	1	
Barium	ND	0.0100	1	
Beryllium	ND	0.0100	1	
Cadmium	ND	0.0100	1	
Chromium	ND	0.0100	1	
Cobalt	ND	0.0100	1	
Copper	ND	0.0100	1	
Lead	ND	0.0100	1	
Molybdenum	ND	0.0100	1	
Nickel	ND	0.0100	1	
Selenium	ND	0.0150	1	
Silver	ND	0.00500	1	
Thallium	ND	0.0150	1	
Vanadium	ND	0.0100	1	
Zinc	ND	0.0100	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7470A Total
		Method:	EPA 7470A
		Units:	mg/L
Project: Brookfield / SB0674.03			Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103013	**13-10-2288-10-O**	**10/30/13 15:15**	**Aqueous**	**Mercury**	**10/31/13**	**10/31/13 16:20**	**131031L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.000500	1	

Method Blank	**099-04-008-6701**	**N/A**	**Aqueous**	**Mercury**	**10/31/13**	**10/31/13 12:32**	**131031L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.000500	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-0.5	**13-10-2288-1-A**	**10/30/13 08:55**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 17:58**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

VP2-10	**13-10-2288-2-A**	**10/30/13 09:00**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:05**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

VP2-5	**13-10-2288-3-A**	**10/30/13 08:57**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:07**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

VP4-0.5	**13-10-2288-4-A**	**10/30/13 11:05**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:09**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.885	0.0835	1	

VP4-5	**13-10-2288-5-A**	**10/30/13 11:10**	**Solid**	**Mercury**	**10/31/13**	**11/01/13 11:17**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	15.9	0.834	9.98	

VP4-10	**13-10-2288-6-A**	**10/30/13 11:15**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:14**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.259	0.0835	1	

VP6-0.5	**13-10-2288-7-A**	**10/30/13 14:10**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:16**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.130	0.0835	1	

VP6-5	**13-10-2288-8-A**	**10/30/13 14:14**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:18**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-10	**13-10-2288-9-A**	**10/30/13 14:30**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:25**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

Method Blank	**099-04-007-9793**	**N/A**	**Solid**	**Mercury**	**10/31/13**	**10/31/13 17:54**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 1 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-0.5	**13-10-2288-1-A**	**10/30/13 08:55**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 14:20**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	64	14-146	
Nitrobenzene-d5	58	18-162	
p-Terphenyl-d14	74	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 2 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-10	**13-10-2288-2-A**	**10/30/13 09:00**	**Solid**	**GC/MS AAA**	**11/05/13**	**11/05/13 18:12**	**131105L02**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	62	14-146	
Nitrobenzene-d5	56	18-162	
p-Terphenyl-d14	71	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 3 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-5	**13-10-2288-3-A**	**10/30/13 08:57**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 15:06**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	0.11	0.020	1	
1-Methylnaphthalene	0.059	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	66	14-146	
Nitrobenzene-d5	56	18-162	
p-Terphenyl-d14	73	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 4 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-0.5	**13-10-2288-4-A**	**10/30/13 11:05**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 15:29**	**131031L05**

Comment(s): - The reporting limit is elevated resulting from matrix interference.

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.040	2	
2-Methylnaphthalene	ND	0.040	2	
1-Methylnaphthalene	ND	0.040	2	
Acenaphthylene	ND	0.040	2	
Acenaphthene	ND	0.040	2	
Fluorene	ND	0.040	2	
Phenanthrene	ND	0.040	2	
Anthracene	ND	0.040	2	
Fluoranthene	ND	0.040	2	
Pyrene	ND	0.040	2	
Benzo (a) Anthracene	ND	0.040	2	
Chrysene	ND	0.040	2	
Benzo (k) Fluoranthene	ND	0.040	2	
Benzo (b) Fluoranthene	ND	0.040	2	
Benzo (a) Pyrene	ND	0.040	2	
Indeno (1,2,3-c,d) Pyrene	ND	0.040	2	
Dibenz (a,h) Anthracene	ND	0.040	2	
Benzo (g,h,i) Perylene	ND	0.040	2	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	76	14-146	
Nitrobenzene-d5	66	18-162	
p-Terphenyl-d14	88	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 5 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-5	**13-10-2288-5-A**	**10/30/13 11:10**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 15:52**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.40	20	
2-Methylnaphthalene	0.54	0.40	20	
1-Methylnaphthalene	ND	0.40	20	
Acenaphthylene	ND	0.40	20	
Acenaphthene	ND	0.40	20	
Fluorene	ND	0.40	20	
Phenanthrene	ND	0.40	20	
Anthracene	ND	0.40	20	
Fluoranthene	ND	0.40	20	
Pyrene	ND	0.40	20	
Benzo (a) Anthracene	ND	0.40	20	
Chrysene	ND	0.40	20	
Benzo (k) Fluoranthene	ND	0.40	20	
Benzo (b) Fluoranthene	ND	0.40	20	
Benzo (a) Pyrene	ND	0.40	20	
Indeno (1,2,3-c,d) Pyrene	ND	0.40	20	
Dibenz (a,h) Anthracene	ND	0.40	20	
Benzo (g,h,i) Perylene	ND	0.40	20	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	77	14-146	
Nitrobenzene-d5	28	18-162	
p-Terphenyl-d14	97	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 6 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-10	**13-10-2288-6-A**	**10/30/13 11:15**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 16:16**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	0.19	0.020	1	
1-Methylnaphthalene	0.10	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	61	14-146	
Nitrobenzene-d5	52	18-162	
p-Terphenyl-d14	72	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 7 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-0.5	**13-10-2288-7-A**	**10/30/13 14:10**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 16:39**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	0.065	0.020	1	
2-Methylnaphthalene	0.19	0.020	1	
1-Methylnaphthalene	0.12	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	0.028	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	65	14-146	
Nitrobenzene-d5	56	18-162	
p-Terphenyl-d14	77	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 8 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-5	**13-10-2288-8-A**	**10/30/13 14:14**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 17:02**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	51	14-146	
Nitrobenzene-d5	53	18-162	
p-Terphenyl-d14	70	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 9 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-10	**13-10-2288-9-A**	**10/30/13 14:30**	**Solid**	**GC/MS AAA**	**10/31/13**	**11/05/13 17:25**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	0.041	0.020	1	
1-Methylnaphthalene	0.024	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	59	14-146	
Nitrobenzene-d5	51	18-162	
p-Terphenyl-d14	69	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 10 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-010-1889**	**N/A**	**Solid**	**GC/MS AAA**	**10/31/13**	**10/31/13 18:51**	**131031L05**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	73	14-146	
Nitrobenzene-d5	87	18-162	
p-Terphenyl-d14	89	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674.03			Page 11 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-010-1893**	**N/A**	**Solid**	**GC/MS AAA**	**11/05/13**	**11/05/13 12:01**	**131105L02**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	72	14-146	
Nitrobenzene-d5	69	18-162	
p-Terphenyl-d14	78	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM PAHs
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103013	**13-10-2288-10-F**	**10/30/13 15:15**	**Aqueous**	**GC/MS AAA**	**10/31/13**	**11/04/13 17:40**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.20	1	
2-Methylnaphthalene	ND	0.20	1	
1-Methylnaphthalene	ND	0.20	1	
Acenaphthylene	ND	0.20	1	
Acenaphthene	ND	0.20	1	
Fluorene	ND	0.20	1	
Phenanthrene	ND	0.20	1	
Anthracene	ND	0.20	1	
Fluoranthene	ND	0.20	1	
Pyrene	ND	0.20	1	
Benzo (a) Anthracene	ND	0.20	1	
Chrysene	ND	0.20	1	
Benzo (k) Fluoranthene	ND	0.20	1	
Benzo (b) Fluoranthene	ND	0.20	1	
Benzo (a) Pyrene	ND	0.20	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1	
Dibenz (a,h) Anthracene	ND	0.20	1	
Benzo (g,h,i) Perylene	ND	0.20	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	59	28-139	
2-Fluorobiphenyl	65	33-144	
p-Terphenyl-d14	73	23-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM PAHs
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-008-641**	**N/A**	**Aqueous**	**GC/MS AAA**	**10/31/13**	**11/04/13 16:07**	**131031L06**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.20	1	
2-Methylnaphthalene	ND	0.20	1	
1-Methylnaphthalene	ND	0.20	1	
Acenaphthylene	ND	0.20	1	
Acenaphthene	ND	0.20	1	
Fluorene	ND	0.20	1	
Phenanthrene	ND	0.20	1	
Anthracene	ND	0.20	1	
Fluoranthene	ND	0.20	1	
Pyrene	ND	0.20	1	
Benzo (a) Anthracene	ND	0.20	1	
Chrysene	ND	0.20	1	
Benzo (k) Fluoranthene	ND	0.20	1	
Benzo (b) Fluoranthene	ND	0.20	1	
Benzo (a) Pyrene	ND	0.20	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1	
Dibenz (a,h) Anthracene	ND	0.20	1	
Benzo (g,h,i) Perylene	ND	0.20	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	58	28-139	
2-Fluorobiphenyl	63	33-144	
p-Terphenyl-d14	74	23-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 1 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-0.5	**13-10-2288-1-D**	**10/30/13 08:55**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 16:04**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.11	
Benzene	ND	1.1	1.11	
Bromobenzene	ND	1.1	1.11	
Bromochloromethane	ND	2.2	1.11	
Bromodichloromethane	ND	1.1	1.11	
Bromoform	ND	5.6	1.11	
Bromomethane	ND	22	1.11	
2-Butanone	ND	22	1.11	
n-Butylbenzene	ND	1.1	1.11	
sec-Butylbenzene	ND	1.1	1.11	
tert-Butylbenzene	ND	1.1	1.11	
Carbon Disulfide	ND	11	1.11	
Carbon Tetrachloride	ND	1.1	1.11	
Chlorobenzene	ND	1.1	1.11	
Chloroethane	ND	2.2	1.11	
Chloroform	ND	1.1	1.11	
Chloromethane	ND	22	1.11	
2-Chlorotoluene	ND	1.1	1.11	
4-Chlorotoluene	ND	1.1	1.11	
Dibromochloromethane	ND	2.2	1.11	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.11	
1,2-Dibromoethane	ND	1.1	1.11	
Dibromomethane	ND	1.1	1.11	
1,2-Dichlorobenzene	ND	1.1	1.11	
1,3-Dichlorobenzene	ND	1.1	1.11	
1,4-Dichlorobenzene	ND	1.1	1.11	
Dichlorodifluoromethane	ND	2.2	1.11	
1,1-Dichloroethane	ND	1.1	1.11	
1,2-Dichloroethane	ND	1.1	1.11	
1,1-Dichloroethene	ND	1.1	1.11	
c-1,2-Dichloroethene	ND	1.1	1.11	
t-1,2-Dichloroethene	ND	1.1	1.11	
1,2-Dichloropropane	ND	1.1	1.11	
1,3-Dichloropropane	ND	1.1	1.11	
2,2-Dichloropropane	ND	5.6	1.11	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 2 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.11	
c-1,3-Dichloropropene	ND	1.1	1.11	
t-1,3-Dichloropropene	ND	2.2	1.11	
Ethylbenzene	ND	1.1	1.11	
2-Hexanone	ND	22	1.11	
Isopropylbenzene	ND	1.1	1.11	
p-Isopropyltoluene	ND	1.1	1.11	
Methylene Chloride	ND	11	1.11	
4-Methyl-2-Pentanone	ND	22	1.11	
Naphthalene	ND	11	1.11	
n-Propylbenzene	ND	2.2	1.11	
Styrene	ND	1.1	1.11	
1,1,1,2-Tetrachloroethane	ND	1.1	1.11	
1,1,2,2-Tetrachloroethane	ND	2.2	1.11	
Tetrachloroethene	ND	1.1	1.11	
Toluene	ND	1.1	1.11	
1,2,3-Trichlorobenzene	ND	2.2	1.11	
1,2,4-Trichlorobenzene	ND	2.2	1.11	
1,1,1-Trichloroethane	ND	1.1	1.11	
1,1,2-Trichloroethane	ND	1.1	1.11	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.11	
Trichloroethene	ND	2.2	1.11	
Trichlorofluoromethane	ND	11	1.11	
1,2,3-Trichloropropane	ND	2.2	1.11	
1,2,4-Trimethylbenzene	ND	2.2	1.11	
1,3,5-Trimethylbenzene	ND	2.2	1.11	
Vinyl Acetate	ND	11	1.11	
Vinyl Chloride	ND	1.1	1.11	
p/m-Xylene	ND	2.2	1.11	
o-Xylene	ND	1.1	1.11	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.11	
Tert-Butyl Alcohol (TBA)	ND	22	1.11	
Diisopropyl Ether (DIPE)	ND	1.1	1.11	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.11	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.11	
Ethanol	ND	560	1.11	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 3 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 4 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-10	**13-10-2288-2-D**	**10/30/13 09:00**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 16:31**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	59	1.18	
Benzene	2.2	1.2	1.18	
Bromobenzene	ND	1.2	1.18	
Bromochloromethane	ND	2.4	1.18	
Bromodichloromethane	ND	1.2	1.18	
Bromoform	ND	5.9	1.18	
Bromomethane	ND	24	1.18	
2-Butanone	ND	24	1.18	
n-Butylbenzene	ND	1.2	1.18	
sec-Butylbenzene	ND	1.2	1.18	
tert-Butylbenzene	ND	1.2	1.18	
Carbon Disulfide	ND	12	1.18	
Carbon Tetrachloride	ND	1.2	1.18	
Chlorobenzene	ND	1.2	1.18	
Chloroethane	ND	2.4	1.18	
Chloroform	ND	1.2	1.18	
Chloromethane	ND	24	1.18	
2-Chlorotoluene	ND	1.2	1.18	
4-Chlorotoluene	ND	1.2	1.18	
Dibromochloromethane	ND	2.4	1.18	
1,2-Dibromo-3-Chloropropane	ND	5.9	1.18	
1,2-Dibromoethane	ND	1.2	1.18	
Dibromomethane	ND	1.2	1.18	
1,2-Dichlorobenzene	ND	1.2	1.18	
1,3-Dichlorobenzene	ND	1.2	1.18	
1,4-Dichlorobenzene	ND	1.2	1.18	
Dichlorodifluoromethane	ND	2.4	1.18	
1,1-Dichloroethane	ND	1.2	1.18	
1,2-Dichloroethane	ND	1.2	1.18	
1,1-Dichloroethene	ND	1.2	1.18	
c-1,2-Dichloroethene	ND	1.2	1.18	
t-1,2-Dichloroethene	ND	1.2	1.18	
1,2-Dichloropropane	ND	1.2	1.18	
1,3-Dichloropropane	ND	1.2	1.18	
2,2-Dichloropropane	ND	5.9	1.18	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 5 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.4	1.18	
c-1,3-Dichloropropene	ND	1.2	1.18	
t-1,3-Dichloropropene	ND	2.4	1.18	
Ethylbenzene	ND	1.2	1.18	
2-Hexanone	ND	24	1.18	
Isopropylbenzene	ND	1.2	1.18	
p-Isopropyltoluene	ND	1.2	1.18	
Methylene Chloride	ND	12	1.18	
4-Methyl-2-Pentanone	ND	24	1.18	
Naphthalene	ND	12	1.18	
n-Propylbenzene	ND	2.4	1.18	
Styrene	ND	1.2	1.18	
1,1,1,2-Tetrachloroethane	ND	1.2	1.18	
1,1,2,2-Tetrachloroethane	ND	2.4	1.18	
Tetrachloroethene	ND	1.2	1.18	
Toluene	ND	1.2	1.18	
1,2,3-Trichlorobenzene	ND	2.4	1.18	
1,2,4-Trichlorobenzene	ND	2.4	1.18	
1,1,1-Trichloroethane	ND	1.2	1.18	
1,1,2-Trichloroethane	ND	1.2	1.18	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.18	
Trichloroethene	ND	2.4	1.18	
Trichlorofluoromethane	ND	12	1.18	
1,2,3-Trichloropropane	ND	2.4	1.18	
1,2,4-Trimethylbenzene	ND	2.4	1.18	
1,3,5-Trimethylbenzene	ND	2.4	1.18	
Vinyl Acetate	ND	12	1.18	
Vinyl Chloride	ND	1.2	1.18	
p/m-Xylene	ND	2.4	1.18	
o-Xylene	ND	1.2	1.18	
Methyl-t-Butyl Ether (MTBE)	ND	2.4	1.18	
Tert-Butyl Alcohol (TBA)	ND	24	1.18	
Diisopropyl Ether (DIPE)	ND	1.2	1.18	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.18	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.18	
Ethanol	ND	590	1.18	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 6 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	114	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 7 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP2-5	**13-10-2288-3-D**	**10/30/13 08:57**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 16:57**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	62	1.25	
Benzene	ND	1.2	1.25	
Bromobenzene	ND	1.2	1.25	
Bromochloromethane	ND	2.5	1.25	
Bromodichloromethane	ND	1.2	1.25	
Bromoform	ND	6.2	1.25	
Bromomethane	ND	25	1.25	
2-Butanone	ND	25	1.25	
n-Butylbenzene	ND	1.2	1.25	
sec-Butylbenzene	ND	1.2	1.25	
tert-Butylbenzene	ND	1.2	1.25	
Carbon Disulfide	ND	12	1.25	
Carbon Tetrachloride	ND	1.2	1.25	
Chlorobenzene	ND	1.2	1.25	
Chloroethane	ND	2.5	1.25	
Chloroform	ND	1.2	1.25	
Chloromethane	ND	25	1.25	
2-Chlorotoluene	ND	1.2	1.25	
4-Chlorotoluene	ND	1.2	1.25	
Dibromochloromethane	ND	2.5	1.25	
1,2-Dibromo-3-Chloropropane	ND	6.2	1.25	
1,2-Dibromoethane	ND	1.2	1.25	
Dibromomethane	ND	1.2	1.25	
1,2-Dichlorobenzene	ND	1.2	1.25	
1,3-Dichlorobenzene	ND	1.2	1.25	
1,4-Dichlorobenzene	ND	1.2	1.25	
Dichlorodifluoromethane	ND	2.5	1.25	
1,1-Dichloroethane	ND	1.2	1.25	
1,2-Dichloroethane	ND	1.2	1.25	
1,1-Dichloroethene	ND	1.2	1.25	
c-1,2-Dichloroethene	ND	1.2	1.25	
t-1,2-Dichloroethene	ND	1.2	1.25	
1,2-Dichloropropane	ND	1.2	1.25	
1,3-Dichloropropane	ND	1.2	1.25	
2,2-Dichloropropane	ND	6.2	1.25	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 8 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.5	1.25	
c-1,3-Dichloropropene	ND	1.2	1.25	
t-1,3-Dichloropropene	ND	2.5	1.25	
Ethylbenzene	ND	1.2	1.25	
2-Hexanone	ND	25	1.25	
Isopropylbenzene	ND	1.2	1.25	
p-Isopropyltoluene	ND	1.2	1.25	
Methylene Chloride	ND	12	1.25	
4-Methyl-2-Pentanone	ND	25	1.25	
Naphthalene	ND	12	1.25	
n-Propylbenzene	ND	2.5	1.25	
Styrene	ND	1.2	1.25	
1,1,1,2-Tetrachloroethane	ND	1.2	1.25	
1,1,2,2-Tetrachloroethane	ND	2.5	1.25	
Tetrachloroethene	ND	1.2	1.25	
Toluene	ND	1.2	1.25	
1,2,3-Trichlorobenzene	ND	2.5	1.25	
1,2,4-Trichlorobenzene	ND	2.5	1.25	
1,1,1-Trichloroethane	ND	1.2	1.25	
1,1,2-Trichloroethane	ND	1.2	1.25	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.25	
Trichloroethene	ND	2.5	1.25	
Trichlorofluoromethane	ND	12	1.25	
1,2,3-Trichloropropane	ND	2.5	1.25	
1,2,4-Trimethylbenzene	ND	2.5	1.25	
1,3,5-Trimethylbenzene	ND	2.5	1.25	
Vinyl Acetate	ND	12	1.25	
Vinyl Chloride	ND	1.2	1.25	
p/m-Xylene	ND	2.5	1.25	
o-Xylene	ND	1.2	1.25	
Methyl-t-Butyl Ether (MTBE)	ND	2.5	1.25	
Tert-Butyl Alcohol (TBA)	ND	25	1.25	
Diisopropyl Ether (DIPE)	ND	1.2	1.25	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.25	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.25	
Ethanol	ND	620	1.25	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 9 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 10 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-0.5	**13-10-2288-4-D**	**10/30/13 11:05**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 17:23**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	58	1.17	
Benzene	ND	1.2	1.17	
Bromobenzene	ND	1.2	1.17	
Bromochloromethane	ND	2.3	1.17	
Bromodichloromethane	ND	1.2	1.17	
Bromoform	ND	5.8	1.17	
Bromomethane	ND	23	1.17	
2-Butanone	ND	23	1.17	
n-Butylbenzene	ND	1.2	1.17	
sec-Butylbenzene	ND	1.2	1.17	
tert-Butylbenzene	ND	1.2	1.17	
Carbon Disulfide	ND	12	1.17	
Carbon Tetrachloride	ND	1.2	1.17	
Chlorobenzene	ND	1.2	1.17	
Chloroethane	ND	2.3	1.17	
Chloroform	ND	1.2	1.17	
Chloromethane	ND	23	1.17	
2-Chlorotoluene	ND	1.2	1.17	
4-Chlorotoluene	ND	1.2	1.17	
Dibromochloromethane	ND	2.3	1.17	
1,2-Dibromo-3-Chloropropane	ND	5.8	1.17	
1,2-Dibromoethane	ND	1.2	1.17	
Dibromomethane	ND	1.2	1.17	
1,2-Dichlorobenzene	ND	1.2	1.17	
1,3-Dichlorobenzene	ND	1.2	1.17	
1,4-Dichlorobenzene	ND	1.2	1.17	
Dichlorodifluoromethane	ND	2.3	1.17	
1,1-Dichloroethane	ND	1.2	1.17	
1,2-Dichloroethane	ND	1.2	1.17	
1,1-Dichloroethene	ND	1.2	1.17	
c-1,2-Dichloroethene	ND	1.2	1.17	
t-1,2-Dichloroethene	ND	1.2	1.17	
1,2-Dichloropropane	ND	1.2	1.17	
1,3-Dichloropropane	ND	1.2	1.17	
2,2-Dichloropropane	ND	5.8	1.17	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 11 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.17	
c-1,3-Dichloropropene	ND	1.2	1.17	
t-1,3-Dichloropropene	ND	2.3	1.17	
Ethylbenzene	ND	1.2	1.17	
2-Hexanone	ND	23	1.17	
Isopropylbenzene	ND	1.2	1.17	
p-Isopropyltoluene	ND	1.2	1.17	
Methylene Chloride	ND	12	1.17	
4-Methyl-2-Pentanone	ND	23	1.17	
Naphthalene	ND	12	1.17	
n-Propylbenzene	ND	2.3	1.17	
Styrene	ND	1.2	1.17	
1,1,1,2-Tetrachloroethane	ND	1.2	1.17	
1,1,2,2-Tetrachloroethane	ND	2.3	1.17	
Tetrachloroethene	ND	1.2	1.17	
Toluene	ND	1.2	1.17	
1,2,3-Trichlorobenzene	ND	2.3	1.17	
1,2,4-Trichlorobenzene	ND	2.3	1.17	
1,1,1-Trichloroethane	ND	1.2	1.17	
1,1,2-Trichloroethane	ND	1.2	1.17	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.17	
Trichloroethene	ND	2.3	1.17	
Trichlorofluoromethane	ND	12	1.17	
1,2,3-Trichloropropane	ND	2.3	1.17	
1,2,4-Trimethylbenzene	ND	2.3	1.17	
1,3,5-Trimethylbenzene	ND	2.3	1.17	
Vinyl Acetate	ND	12	1.17	
Vinyl Chloride	ND	1.2	1.17	
p/m-Xylene	ND	2.3	1.17	
o-Xylene	ND	1.2	1.17	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.17	
Tert-Butyl Alcohol (TBA)	ND	23	1.17	
Diisopropyl Ether (DIPE)	ND	1.2	1.17	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.17	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.17	
Ethanol	ND	580	1.17	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 12 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 13 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-5	**13-10-2288-5-D**	**10/30/13 11:10**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 17:50**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	68	1.37	
Benzene	ND	1.4	1.37	
Bromobenzene	ND	1.4	1.37	
Bromochloromethane	ND	2.7	1.37	
Bromodichloromethane	ND	1.4	1.37	
Bromoform	ND	6.8	1.37	
Bromomethane	ND	27	1.37	
2-Butanone	ND	27	1.37	
n-Butylbenzene	ND	1.4	1.37	
sec-Butylbenzene	ND	1.4	1.37	
tert-Butylbenzene	ND	1.4	1.37	
Carbon Disulfide	ND	14	1.37	
Carbon Tetrachloride	ND	1.4	1.37	
Chlorobenzene	ND	1.4	1.37	
Chloroethane	ND	2.7	1.37	
Chloroform	ND	1.4	1.37	
Chloromethane	ND	27	1.37	
2-Chlorotoluene	ND	1.4	1.37	
4-Chlorotoluene	ND	1.4	1.37	
Dibromochloromethane	ND	2.7	1.37	
1,2-Dibromo-3-Chloropropane	ND	6.8	1.37	
1,2-Dibromoethane	ND	1.4	1.37	
Dibromomethane	ND	1.4	1.37	
1,2-Dichlorobenzene	ND	1.4	1.37	
1,3-Dichlorobenzene	ND	1.4	1.37	
1,4-Dichlorobenzene	ND	1.4	1.37	
Dichlorodifluoromethane	ND	2.7	1.37	
1,1-Dichloroethane	ND	1.4	1.37	
1,2-Dichloroethane	ND	1.4	1.37	
1,1-Dichloroethene	ND	1.4	1.37	
c-1,2-Dichloroethene	ND	1.4	1.37	
t-1,2-Dichloroethene	ND	1.4	1.37	
1,2-Dichloropropane	ND	1.4	1.37	
1,3-Dichloropropane	ND	1.4	1.37	
2,2-Dichloropropane	ND	6.8	1.37	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 14 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.7	1.37	
c-1,3-Dichloropropene	ND	1.4	1.37	
t-1,3-Dichloropropene	ND	2.7	1.37	
Ethylbenzene	ND	1.4	1.37	
2-Hexanone	ND	27	1.37	
Isopropylbenzene	ND	1.4	1.37	
p-Isopropyltoluene	ND	1.4	1.37	
Methylene Chloride	ND	14	1.37	
4-Methyl-2-Pentanone	ND	27	1.37	
Naphthalene	ND	14	1.37	
n-Propylbenzene	ND	2.7	1.37	
Styrene	ND	1.4	1.37	
1,1,1,2-Tetrachloroethane	ND	1.4	1.37	
1,1,2,2-Tetrachloroethane	ND	2.7	1.37	
Tetrachloroethene	ND	1.4	1.37	
Toluene	ND	1.4	1.37	
1,2,3-Trichlorobenzene	ND	2.7	1.37	
1,2,4-Trichlorobenzene	ND	2.7	1.37	
1,1,1-Trichloroethane	ND	1.4	1.37	
1,1,2-Trichloroethane	ND	1.4	1.37	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	14	1.37	
Trichloroethene	ND	2.7	1.37	
Trichlorofluoromethane	ND	14	1.37	
1,2,3-Trichloropropane	ND	2.7	1.37	
1,2,4-Trimethylbenzene	ND	2.7	1.37	
1,3,5-Trimethylbenzene	ND	2.7	1.37	
Vinyl Acetate	ND	14	1.37	
Vinyl Chloride	ND	1.4	1.37	
p/m-Xylene	ND	2.7	1.37	
o-Xylene	ND	1.4	1.37	
Methyl-t-Butyl Ether (MTBE)	ND	2.7	1.37	
Tert-Butyl Alcohol (TBA)	ND	27	1.37	
Diisopropyl Ether (DIPE)	ND	1.4	1.37	
Ethyl-t-Butyl Ether (ETBE)	ND	1.4	1.37	
Tert-Amyl-Methyl Ether (TAME)	ND	1.4	1.37	
Ethanol	ND	680	1.37	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 15 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 16 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP4-10	**13-10-2288-6-D**	**10/30/13 11:15**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 18:16**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.11	
Benzene	ND	1.1	1.11	
Bromobenzene	ND	1.1	1.11	
Bromochloromethane	ND	2.2	1.11	
Bromodichloromethane	ND	1.1	1.11	
Bromoform	ND	5.6	1.11	
Bromomethane	ND	22	1.11	
2-Butanone	ND	22	1.11	
n-Butylbenzene	ND	1.1	1.11	
sec-Butylbenzene	ND	1.1	1.11	
tert-Butylbenzene	ND	1.1	1.11	
Carbon Disulfide	ND	11	1.11	
Carbon Tetrachloride	ND	1.1	1.11	
Chlorobenzene	ND	1.1	1.11	
Chloroethane	ND	2.2	1.11	
Chloroform	ND	1.1	1.11	
Chloromethane	ND	22	1.11	
2-Chlorotoluene	ND	1.1	1.11	
4-Chlorotoluene	ND	1.1	1.11	
Dibromochloromethane	ND	2.2	1.11	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.11	
1,2-Dibromoethane	ND	1.1	1.11	
Dibromomethane	ND	1.1	1.11	
1,2-Dichlorobenzene	ND	1.1	1.11	
1,3-Dichlorobenzene	ND	1.1	1.11	
1,4-Dichlorobenzene	ND	1.1	1.11	
Dichlorodifluoromethane	ND	2.2	1.11	
1,1-Dichloroethane	ND	1.1	1.11	
1,2-Dichloroethane	ND	1.1	1.11	
1,1-Dichloroethene	ND	1.1	1.11	
c-1,2-Dichloroethene	ND	1.1	1.11	
t-1,2-Dichloroethene	ND	1.1	1.11	
1,2-Dichloropropane	ND	1.1	1.11	
1,3-Dichloropropane	ND	1.1	1.11	
2,2-Dichloropropane	ND	5.6	1.11	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 17 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.11	
c-1,3-Dichloropropene	ND	1.1	1.11	
t-1,3-Dichloropropene	ND	2.2	1.11	
Ethylbenzene	ND	1.1	1.11	
2-Hexanone	ND	22	1.11	
Isopropylbenzene	ND	1.1	1.11	
p-Isopropyltoluene	ND	1.1	1.11	
Methylene Chloride	ND	11	1.11	
4-Methyl-2-Pentanone	ND	22	1.11	
Naphthalene	ND	11	1.11	
n-Propylbenzene	ND	2.2	1.11	
Styrene	ND	1.1	1.11	
1,1,1,2-Tetrachloroethane	ND	1.1	1.11	
1,1,2,2-Tetrachloroethane	ND	2.2	1.11	
Tetrachloroethene	ND	1.1	1.11	
Toluene	ND	1.1	1.11	
1,2,3-Trichlorobenzene	ND	2.2	1.11	
1,2,4-Trichlorobenzene	ND	2.2	1.11	
1,1,1-Trichloroethane	ND	1.1	1.11	
1,1,2-Trichloroethane	ND	1.1	1.11	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.11	
Trichloroethene	ND	2.2	1.11	
Trichlorofluoromethane	ND	11	1.11	
1,2,3-Trichloropropane	ND	2.2	1.11	
1,2,4-Trimethylbenzene	ND	2.2	1.11	
1,3,5-Trimethylbenzene	ND	2.2	1.11	
Vinyl Acetate	ND	11	1.11	
Vinyl Chloride	ND	1.1	1.11	
p/m-Xylene	ND	2.2	1.11	
o-Xylene	ND	1.1	1.11	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.11	
Tert-Butyl Alcohol (TBA)	ND	22	1.11	
Diisopropyl Ether (DIPE)	ND	1.1	1.11	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.11	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.11	
Ethanol	ND	560	1.11	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 18 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 19 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-0.5	**13-10-2288-7-D**	**10/30/13 14:10**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 18:42**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	68	54	1.07	
Benzene	ND	1.1	1.07	
Bromobenzene	ND	1.1	1.07	
Bromochloromethane	ND	2.1	1.07	
Bromodichloromethane	ND	1.1	1.07	
Bromoform	ND	5.4	1.07	
Bromomethane	ND	21	1.07	
2-Butanone	ND	21	1.07	
n-Butylbenzene	ND	1.1	1.07	
sec-Butylbenzene	ND	1.1	1.07	
tert-Butylbenzene	ND	1.1	1.07	
Carbon Disulfide	ND	11	1.07	
Carbon Tetrachloride	ND	1.1	1.07	
Chlorobenzene	ND	1.1	1.07	
Chloroethane	ND	2.1	1.07	
Chloroform	ND	1.1	1.07	
Chloromethane	ND	21	1.07	
2-Chlorotoluene	ND	1.1	1.07	
4-Chlorotoluene	ND	1.1	1.07	
Dibromochloromethane	ND	2.1	1.07	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.07	
1,2-Dibromoethane	ND	1.1	1.07	
Dibromomethane	ND	1.1	1.07	
1,2-Dichlorobenzene	ND	1.1	1.07	
1,3-Dichlorobenzene	ND	1.1	1.07	
1,4-Dichlorobenzene	ND	1.1	1.07	
Dichlorodifluoromethane	ND	2.1	1.07	
1,1-Dichloroethane	ND	1.1	1.07	
1,2-Dichloroethane	ND	1.1	1.07	
1,1-Dichloroethene	ND	1.1	1.07	
c-1,2-Dichloroethene	ND	1.1	1.07	
t-1,2-Dichloroethene	ND	1.1	1.07	
1,2-Dichloropropane	ND	1.1	1.07	
1,3-Dichloropropane	ND	1.1	1.07	
2,2-Dichloropropane	ND	5.4	1.07	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 20 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.07	
c-1,3-Dichloropropene	ND	1.1	1.07	
t-1,3-Dichloropropene	ND	2.1	1.07	
Ethylbenzene	ND	1.1	1.07	
2-Hexanone	ND	21	1.07	
Isopropylbenzene	ND	1.1	1.07	
p-Isopropyltoluene	ND	1.1	1.07	
Methylene Chloride	ND	11	1.07	
4-Methyl-2-Pentanone	ND	21	1.07	
Naphthalene	ND	11	1.07	
n-Propylbenzene	ND	2.1	1.07	
Styrene	ND	1.1	1.07	
1,1,1,2-Tetrachloroethane	ND	1.1	1.07	
1,1,2,2-Tetrachloroethane	ND	2.1	1.07	
Tetrachloroethene	ND	1.1	1.07	
Toluene	1.4	1.1	1.07	
1,2,3-Trichlorobenzene	ND	2.1	1.07	
1,2,4-Trichlorobenzene	ND	2.1	1.07	
1,1,1-Trichloroethane	ND	1.1	1.07	
1,1,2-Trichloroethane	ND	1.1	1.07	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.07	
Trichloroethene	ND	2.1	1.07	
Trichlorofluoromethane	ND	11	1.07	
1,2,3-Trichloropropane	ND	2.1	1.07	
1,2,4-Trimethylbenzene	ND	2.1	1.07	
1,3,5-Trimethylbenzene	ND	2.1	1.07	
Vinyl Acetate	ND	11	1.07	
Vinyl Chloride	ND	1.1	1.07	
p/m-Xylene	ND	2.1	1.07	
o-Xylene	ND	1.1	1.07	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.07	
Tert-Butyl Alcohol (TBA)	28	21	1.07	
Diisopropyl Ether (DIPE)	ND	1.1	1.07	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.07	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.07	
Ethanol	ND	540	1.07	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 21 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 22 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-5	**13-10-2288-8-D**	**10/30/13 14:14**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 19:08**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	44	0.888	
Benzene	1.0	0.89	0.888	
Bromobenzene	ND	0.89	0.888	
Bromochloromethane	ND	1.8	0.888	
Bromodichloromethane	ND	0.89	0.888	
Bromoform	ND	4.4	0.888	
Bromomethane	ND	18	0.888	
2-Butanone	ND	18	0.888	
n-Butylbenzene	ND	0.89	0.888	
sec-Butylbenzene	ND	0.89	0.888	
tert-Butylbenzene	ND	0.89	0.888	
Carbon Disulfide	ND	8.9	0.888	
Carbon Tetrachloride	ND	0.89	0.888	
Chlorobenzene	ND	0.89	0.888	
Chloroethane	ND	1.8	0.888	
Chloroform	ND	0.89	0.888	
Chloromethane	ND	18	0.888	
2-Chlorotoluene	ND	0.89	0.888	
4-Chlorotoluene	ND	0.89	0.888	
Dibromochloromethane	ND	1.8	0.888	
1,2-Dibromo-3-Chloropropane	ND	4.4	0.888	
1,2-Dibromoethane	ND	0.89	0.888	
Dibromomethane	ND	0.89	0.888	
1,2-Dichlorobenzene	ND	0.89	0.888	
1,3-Dichlorobenzene	ND	0.89	0.888	
1,4-Dichlorobenzene	ND	0.89	0.888	
Dichlorodifluoromethane	ND	1.8	0.888	
1,1-Dichloroethane	ND	0.89	0.888	
1,2-Dichloroethane	ND	0.89	0.888	
1,1-Dichloroethene	ND	0.89	0.888	
c-1,2-Dichloroethene	ND	0.89	0.888	
t-1,2-Dichloroethene	ND	0.89	0.888	
1,2-Dichloropropane	ND	0.89	0.888	
1,3-Dichloropropane	ND	0.89	0.888	
2,2-Dichloropropane	ND	4.4	0.888	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 23 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	0.888	
c-1,3-Dichloropropene	ND	0.89	0.888	
t-1,3-Dichloropropene	ND	1.8	0.888	
Ethylbenzene	ND	0.89	0.888	
2-Hexanone	ND	18	0.888	
Isopropylbenzene	ND	0.89	0.888	
p-Isopropyltoluene	ND	0.89	0.888	
Methylene Chloride	ND	8.9	0.888	
4-Methyl-2-Pentanone	ND	18	0.888	
Naphthalene	ND	8.9	0.888	
n-Propylbenzene	ND	1.8	0.888	
Styrene	ND	0.89	0.888	
1,1,1,2-Tetrachloroethane	ND	0.89	0.888	
1,1,2,2-Tetrachloroethane	ND	1.8	0.888	
Tetrachloroethene	ND	0.89	0.888	
Toluene	ND	0.89	0.888	
1,2,3-Trichlorobenzene	ND	1.8	0.888	
1,2,4-Trichlorobenzene	ND	1.8	0.888	
1,1,1-Trichloroethane	ND	0.89	0.888	
1,1,2-Trichloroethane	ND	0.89	0.888	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.9	0.888	
Trichloroethene	ND	1.8	0.888	
Trichlorofluoromethane	ND	8.9	0.888	
1,2,3-Trichloropropane	ND	1.8	0.888	
1,2,4-Trimethylbenzene	ND	1.8	0.888	
1,3,5-Trimethylbenzene	ND	1.8	0.888	
Vinyl Acetate	ND	8.9	0.888	
Vinyl Chloride	ND	0.89	0.888	
p/m-Xylene	ND	1.8	0.888	
o-Xylene	ND	0.89	0.888	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	0.888	
Tert-Butyl Alcohol (TBA)	ND	18	0.888	
Diisopropyl Ether (DIPE)	ND	0.89	0.888	
Ethyl-t-Butyl Ether (ETBE)	ND	0.89	0.888	
Tert-Amyl-Methyl Ether (TAME)	ND	0.89	0.888	
Ethanol	ND	440	0.888	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 24 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	113	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 25 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP6-10	**13-10-2288-9-D**	**10/30/13 14:30**	**Solid**	**GC/MS Q**	**10/30/13**	**11/04/13 19:35**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	76	49	0.977	
Benzene	ND	0.98	0.977	
Bromobenzene	ND	0.98	0.977	
Bromochloromethane	ND	2.0	0.977	
Bromodichloromethane	ND	0.98	0.977	
Bromoform	ND	4.9	0.977	
Bromomethane	ND	20	0.977	
2-Butanone	ND	20	0.977	
n-Butylbenzene	ND	0.98	0.977	
sec-Butylbenzene	ND	0.98	0.977	
tert-Butylbenzene	ND	0.98	0.977	
Carbon Disulfide	ND	9.8	0.977	
Carbon Tetrachloride	ND	0.98	0.977	
Chlorobenzene	ND	0.98	0.977	
Chloroethane	ND	2.0	0.977	
Chloroform	ND	0.98	0.977	
Chloromethane	ND	20	0.977	
2-Chlorotoluene	ND	0.98	0.977	
4-Chlorotoluene	ND	0.98	0.977	
Dibromochloromethane	ND	2.0	0.977	
1,2-Dibromo-3-Chloropropane	ND	4.9	0.977	
1,2-Dibromoethane	ND	0.98	0.977	
Dibromomethane	ND	0.98	0.977	
1,2-Dichlorobenzene	ND	0.98	0.977	
1,3-Dichlorobenzene	ND	0.98	0.977	
1,4-Dichlorobenzene	ND	0.98	0.977	
Dichlorodifluoromethane	ND	2.0	0.977	
1,1-Dichloroethane	ND	0.98	0.977	
1,2-Dichloroethane	ND	0.98	0.977	
1,1-Dichloroethene	ND	0.98	0.977	
c-1,2-Dichloroethene	ND	0.98	0.977	
t-1,2-Dichloroethene	ND	0.98	0.977	
1,2-Dichloropropane	ND	0.98	0.977	
1,3-Dichloropropane	ND	0.98	0.977	
2,2-Dichloropropane	ND	4.9	0.977	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 26 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	0.977	
c-1,3-Dichloropropene	ND	0.98	0.977	
t-1,3-Dichloropropene	ND	2.0	0.977	
Ethylbenzene	ND	0.98	0.977	
2-Hexanone	ND	20	0.977	
Isopropylbenzene	ND	0.98	0.977	
p-Isopropyltoluene	ND	0.98	0.977	
Methylene Chloride	ND	9.8	0.977	
4-Methyl-2-Pentanone	ND	20	0.977	
Naphthalene	ND	9.8	0.977	
n-Propylbenzene	ND	2.0	0.977	
Styrene	ND	0.98	0.977	
1,1,1,2-Tetrachloroethane	ND	0.98	0.977	
1,1,2,2-Tetrachloroethane	ND	2.0	0.977	
Tetrachloroethene	ND	0.98	0.977	
Toluene	1.1	0.98	0.977	
1,2,3-Trichlorobenzene	ND	2.0	0.977	
1,2,4-Trichlorobenzene	ND	2.0	0.977	
1,1,1-Trichloroethane	ND	0.98	0.977	
1,1,2-Trichloroethane	ND	0.98	0.977	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.8	0.977	
Trichloroethene	ND	2.0	0.977	
Trichlorofluoromethane	ND	9.8	0.977	
1,2,3-Trichloropropane	ND	2.0	0.977	
1,2,4-Trimethylbenzene	ND	2.0	0.977	
1,3,5-Trimethylbenzene	ND	2.0	0.977	
Vinyl Acetate	ND	9.8	0.977	
Vinyl Chloride	ND	0.98	0.977	
p/m-Xylene	ND	2.0	0.977	
o-Xylene	ND	0.98	0.977	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	0.977	
Tert-Butyl Alcohol (TBA)	40	20	0.977	
Diisopropyl Ether (DIPE)	ND	0.98	0.977	
Ethyl-t-Butyl Ether (ETBE)	ND	0.98	0.977	
Tert-Amyl-Methyl Ether (TAME)	ND	0.98	0.977	
Ethanol	ND	490	0.977	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 27 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 28 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-312-307**	**N/A**	**Solid**	**GC/MS Q**	**11/04/13**	**11/04/13 12:33**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1	
Benzene	ND	1.0	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	2.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	5.0	1	
Bromomethane	ND	20	1	
2-Butanone	ND	20	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	1.0	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	2.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	20	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	2.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	2.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	5.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 29 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1	
c-1,3-Dichloropropene	ND	1.0	1	
t-1,3-Dichloropropene	ND	2.0	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	20	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	20	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	2.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	2.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	2.0	1	
1,2,4-Trichlorobenzene	ND	2.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Trichloroethene	ND	2.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	2.0	1	
1,2,4-Trimethylbenzene	ND	2.0	1	
1,3,5-Trimethylbenzene	ND	2.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	1.0	1	
p/m-Xylene	ND	2.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1	
Tert-Butyl Alcohol (TBA)	ND	20	1	
Diisopropyl Ether (DIPE)	ND	1.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1	
Ethanol	ND	500	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674.03			Page 30 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103013	**13-10-2288-10-A**	**10/30/13 15:15**	**Aqueous**	**GC/MS GGG**	**10/31/13**	**10/31/13 15:57**	**131031L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 2 of 9

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Tert-Butyl Alcohol (TBA)	ND	10	1	
Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Ethanol	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 3 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	107	80-126	
1,2-Dichloroethane-d4	109	80-134	
Toluene-d8	102	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCTB-103013	**13-10-2288-11-A**	**10/30/13 00:00**	**Aqueous**	**GC/MS GGG**	**10/31/13**	**10/31/13 16:32**	**131031L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 5 of 9

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Tert-Butyl Alcohol (TBA)	ND	10	1	
Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Ethanol	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 6 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	80-126	
1,2-Dichloroethane-d4	108	80-134	
Toluene-d8	102	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-316-1186**	**N/A**	**Aqueous**	**GC/MS GGG**	**10/31/13**	**10/31/13 14:12**	**131031L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 8 of 9

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Tert-Butyl Alcohol (TBA)	ND	10	1	
Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Ethanol	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674.03			Page 9 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-126	
1,2-Dichloroethane-d4	106	80-134	
Toluene-d8	101	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: Brookfield / SB0674.03			Page 1 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2184-2	**Solid**	**GC 46**	**10/31/13**	**11/04/13 20:25**	**131031S20**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	235.7	59	243.6	61	64-130	3	0-15	3

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: Brookfield / SB0674.03			Page 2 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
VP6-5	**Solid**	**ICP 7300**	**10/31/13**	**11/01/13 17:33**	**131031S04**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	6.168	25	6.278	25	50-115	2	0-20	3
Arsenic	7.395	25.00	34.37	108	35.08	111	75-125	2	0-20	
Barium	218.3	25.00	263.2	4X	231.1	4X	75-125	4X	0-20	Q
Beryllium	0.5432	25.00	27.31	107	27.59	108	75-125	1	0-20	
Cadmium	1.114	25.00	27.05	104	27.11	104	75-125	0	0-20	
Chromium	25.72	25.00	53.75	112	55.20	118	75-125	3	0-20	
Cobalt	11.64	25.00	39.19	110	39.05	110	75-125	0	0-20	
Copper	25.49	25.00	50.59	100	50.45	100	75-125	0	0-20	
Lead	11.01	25.00	32.39	86	32.39	86	75-125	0	0-20	
Molybdenum	2.246	25.00	23.08	83	22.63	82	75-125	2	0-20	
Nickel	30.12	25.00	59.02	116	57.03	108	75-125	3	0-20	
Selenium	ND	25.00	22.32	89	21.50	86	75-125	4	0-20	
Silver	ND	12.50	13.78	110	13.80	110	75-125	0	0-20	
Thallium	ND	25.00	22.45	90	23.54	94	75-125	5	0-20	
Vanadium	51.09	25.00	74.65	94	75.67	98	75-125	1	0-20	
Zinc	67.43	25.00	87.90	82	88.21	83	75-125	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
Project: Brookfield / SB0674.03			Page 3 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2260-1	**Aqueous**	**ICP 7300**	**10/31/13**	**10/31/13 18:44**	**131031SA1**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	0.5000	0.5617	112	0.6000	120	72-132	7	0-10	
Arsenic	0.01374	0.5000	0.5360	104	0.5662	110	80-140	5	0-11	
Barium	0.1266	0.5000	0.6098	97	0.6421	103	87-123	5	0-6	
Beryllium	ND	0.5000	0.4872	97	0.5242	105	89-119	7	0-8	
Cadmium	ND	0.5000	0.4826	97	0.5214	104	82-124	8	0-7	4
Chromium	0.01484	0.5000	0.5290	103	0.5667	110	86-122	7	0-8	
Cobalt	ND	0.5000	0.5313	106	0.5668	113	83-125	6	0-7	
Copper	0.01973	0.5000	0.5781	112	0.6188	120	78-126	7	0-7	
Lead	ND	0.5000	0.5013	100	0.5325	106	84-120	6	0-7	
Molybdenum	0.01213	0.5000	0.5008	98	0.5342	104	78-126	6	0-7	
Nickel	0.01817	0.5000	0.5613	109	0.5957	115	84-120	6	0-7	
Selenium	0.1060	0.5000	0.6017	99	0.6302	105	79-127	5	0-9	
Silver	ND	0.2500	0.2588	104	0.2790	112	86-128	7	0-7	
Thallium	ND	0.5000	0.4641	93	0.5009	100	79-121	8	0-8	
Vanadium	0.2385	0.5000	0.7426	101	0.7739	107	88-118	4	0-7	
Zinc	0.3975	0.5000	0.9686	114	0.9845	117	89-131	2	0-8	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7470A Total
		Method:	EPA 7470A
Project: Brookfield / SB0674.03			Page 4 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2294-1	**Aqueous**	**Mercury**	**10/31/13**	**10/31/13 12:38**	**131031S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.01000	0.01009	101	0.009832	98	57-141	3	0-10	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: Brookfield / SB0674.03			Page 5 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
VP6-5	**Solid**	**Mercury**	**10/31/13**	**10/31/13 18:21**	**131031S06**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.6564	79	0.6136	73	71-137	7	0-14	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674.03			Page 6 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2283-1	**Solid**	**GC/MS AAA**	**10/31/13**	**10/31/13 18:04**	**131031S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	ND	0.2000	0.1688	84	0.1870	93	15-171	10	0-44	
2-Methylnaphthalene	ND	0.2000	0.1661	83	0.2123	106	28-160	24	0-39	
1-Methylnaphthalene	ND	0.2000	0.1775	89	0.2106	105	28-154	17	0-40	
Acenaphthylene	ND	0.2000	0.1478	74	0.1667	83	27-153	12	0-41	
Acenaphthene	ND	0.2000	0.1454	73	0.1618	81	33-147	11	0-38	
Fluorene	ND	0.2000	0.1535	77	0.1707	85	12-180	11	0-33	
Phenanthrene	ND	0.2000	0.1418	71	0.1637	82	26-152	14	0-29	
Anthracene	ND	0.2000	0.1482	74	0.1650	83	10-145	11	0-25	
Fluoranthene	ND	0.2000	0.1641	82	0.1960	98	20-158	18	0-31	
Pyrene	ND	0.2000	0.1486	74	0.1775	89	11-191	18	0-31	
Benzo (a) Anthracene	ND	0.2000	0.1540	77	0.1753	88	36-150	13	0-32	
Chrysene	ND	0.2000	0.1371	69	0.1551	78	21-189	12	0-29	
Benzo (k) Fluoranthene	ND	0.2000	0.1533	77	0.1648	82	40-148	7	0-32	
Benzo (b) Fluoranthene	ND	0.2000	0.1514	76	0.1624	81	39-147	7	0-28	
Benzo (a) Pyrene	ND	0.2000	0.1667	83	0.1891	95	36-168	13	0-26	
Indeno (1,2,3-c,d) Pyrene	ND	0.2000	0.1515	76	0.1710	85	22-160	12	0-26	
Dibenz (a,h) Anthracene	ND	0.2000	0.1288	64	0.1427	71	27-147	10	0-30	
Benzo (g,h,i) Perylene	ND	0.2000	0.1106	55	0.1254	63	10-152	12	0-28	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674.03			Page 7 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-11-0239-7	**Solid**	**GC/MS AAA**	**11/05/13**	**11/05/13 13:34**	**131105S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	ND	0.2000	0.1448	72	0.1428	71	15-171	1	0-44	
2-Methylnaphthalene	ND	0.2000	0.1542	77	0.1526	76	28-160	1	0-39	
1-Methylnaphthalene	ND	0.2000	0.1496	75	0.1470	74	28-154	2	0-40	
Acenaphthylene	ND	0.2000	0.1242	62	0.1232	62	27-153	1	0-41	
Acenaphthene	ND	0.2000	0.1285	64	0.1257	63	33-147	2	0-38	
Fluorene	ND	0.2000	0.1367	68	0.1300	65	12-180	5	0-33	
Phenanthrene	ND	0.2000	0.1377	69	0.1255	63	26-152	9	0-29	
Anthracene	ND	0.2000	0.1286	64	0.1199	60	10-145	7	0-25	
Fluoranthene	ND	0.2000	0.1504	75	0.1383	69	20-158	8	0-31	
Pyrene	ND	0.2000	0.1319	66	0.1222	61	11-191	8	0-31	
Benzo (a) Anthracene	ND	0.2000	0.1394	70	0.1287	64	36-150	8	0-32	
Chrysene	ND	0.2000	0.1282	64	0.1172	59	21-189	9	0-29	
Benzo (k) Fluoranthene	ND	0.2000	0.1446	72	0.1327	66	40-148	9	0-32	
Benzo (b) Fluoranthene	ND	0.2000	0.1381	69	0.1257	63	39-147	9	0-28	
Benzo (a) Pyrene	ND	0.2000	0.1503	75	0.1373	69	36-168	9	0-26	
Indeno (1,2,3-c,d) Pyrene	ND	0.2000	0.1533	77	0.1403	70	22-160	9	0-26	
Dibenz (a,h) Anthracene	ND	0.2000	0.1245	62	0.1144	57	27-147	8	0-30	
Benzo (g,h,i) Perylene	ND	0.2000	0.1087	54	0.09970	50	10-152	9	0-28	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Brookfield / SB0674.03			Page 8 of 8

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2194-1	**Aqueous**	**GC/MS GGG**	**10/31/13**	**10/31/13 17:43**	**131031S01**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	49.45	99	46.36	93	78-120	6	0-20	
Carbon Tetrachloride	ND	50.00	47.26	95	44.48	89	67-139	6	0-20	
Chlorobenzene	ND	50.00	45.84	92	43.59	87	80-120	5	0-20	
1,2-Dibromoethane	ND	50.00	47.10	94	46.16	92	80-123	2	0-20	
1,2-Dichlorobenzene	ND	50.00	46.90	94	44.66	89	76-120	5	0-20	
1,2-Dichloroethane	ND	50.00	50.66	101	49.01	98	76-130	3	0-20	
1,1-Dichloroethene	ND	50.00	45.92	92	42.96	86	70-130	7	0-27	
Ethylbenzene	ND	50.00	47.63	95	44.78	90	73-127	6	0-20	
Toluene	ND	50.00	50.18	100	47.01	94	72-126	7	0-20	
Trichloroethene	ND	50.00	48.50	97	44.71	89	74-122	8	0-20	
Vinyl Chloride	ND	50.00	49.85	100	46.96	94	65-131	6	0-24	
p/m-Xylene	ND	100.0	92.63	93	87.95	88	70-130	5	0-30	
o-Xylene	ND	50.00	44.91	90	42.54	85	70-130	5	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	47.08	94	47.18	94	69-123	0	0-20	
Tert-Butyl Alcohol (TBA)	ND	250.0	185.0	74	190.0	76	65-131	3	0-22	
Diisopropyl Ether (DIPE)	ND	50.00	51.00	102	48.97	98	68-128	4	0-22	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	42.52	85	43.43	87	69-123	2	0-21	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	42.76	86	43.80	88	70-124	2	0-20	
Ethanol	ND	500.0	509.4	102	438.6	88	41-155	15	0-35	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - PDS/PDSD

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: Brookfield / SB0674.03			Page 1 of 1

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS/PDSD Batch Number
VP6-5	**Solid**	**ICP 7300**	**10/31/13 00:00**	**11/04/13 13:12**	**131031S04**

Parameter	Sample Conc.	Spike Added	PDS Conc.	PDS %Rec.	PDSD Conc.	PDSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	21.97	88	21.97	88	75-125	0	0-20	
Arsenic	7.395	25.00	31.19	95	31.58	97	75-125	1	0-20	
Barium	218.3	25.00	220.0	4X	221.6	4X	75-125	4X	0-20	Q
Beryllium	0.5432	25.00	24.95	98	25.38	99	75-125	2	0-20	
Cadmium	1.114	25.00	25.42	97	25.43	97	75-125	0	0-20	
Chromium	25.72	25.00	48.22	90	48.83	92	75-125	1	0-20	
Cobalt	11.64	25.00	37.37	103	37.33	103	75-125	0	0-20	
Copper	25.49	25.00	54.81	117	55.12	119	75-125	1	0-20	
Lead	11.01	25.00	35.26	97	35.29	97	75-125	0	0-20	
Molybdenum	2.246	25.00	26.36	96	26.34	96	75-125	0	0-20	
Nickel	30.12	25.00	54.07	96	53.60	94	75-125	1	0-20	
Selenium	ND	25.00	20.76	83	20.50	82	75-125	1	0-20	
Silver	ND	12.50	12.25	98	12.14	97	75-125	1	0-20	
Thallium	ND	25.00	20.23	81	20.26	81	75-125	0	0-20	
Vanadium	51.09	25.00	71.19	80	71.90	83	75-125	1	0-20	
Zinc	67.43	25.00	92.08	99	91.44	96	75-125	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: Brookfield / SB0674.03			Page 1 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-15-490-611	**Solid**	**GC 46**	**11/04/13 20:09**	**131031B20A**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	369.1	92	75-123	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
Project: Brookfield / SB0674.03			Page 2 of 14

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-498-114	**Aqueous**	**GC 47**	**10/31/13**	**10/31/13 20:24**	**131031B13A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	4000	4137	103	4236	106	75-117	2	0-13	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: Brookfield / SB0674.03			Page 3 of 14

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-17571	**Solid**	**ICP 7300**	**10/31/13**	**10/31/13 21:52**	**131031L04**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	25.00	24.18	97	26.14	105	80-120	73-127	8	0-20	
Arsenic	25.00	23.50	94	25.14	101	80-120	73-127	7	0-20	
Barium	25.00	25.89	104	25.34	101	80-120	73-127	2	0-20	
Beryllium	25.00	25.59	102	25.82	103	80-120	73-127	1	0-20	
Cadmium	25.00	26.35	105	26.61	106	80-120	73-127	1	0-20	
Chromium	25.00	27.89	112	28.00	112	80-120	73-127	0	0-20	
Cobalt	25.00	28.42	114	28.91	116	80-120	73-127	2	0-20	
Copper	25.00	25.78	103	27.55	110	80-120	73-127	7	0-20	
Lead	25.00	25.97	104	25.75	103	80-120	73-127	1	0-20	
Molybdenum	25.00	24.88	100	25.83	103	80-120	73-127	4	0-20	
Nickel	25.00	28.47	114	28.28	113	80-120	73-127	1	0-20	
Selenium	25.00	24.55	98	24.59	98	80-120	73-127	0	0-20	
Silver	12.50	12.63	101	12.66	101	80-120	73-127	0	0-20	
Thallium	25.00	26.29	105	25.69	103	80-120	73-127	2	0-20	
Vanadium	25.00	25.15	101	25.24	101	80-120	73-127	0	0-20	
Zinc	25.00	27.29	109	28.66	115	80-120	73-127	5	0-20	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
Project: Brookfield / SB0674.03			Page 4 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
097-01-003-13784	**Aqueous**	**ICP 7300**	**10/31/13 18:16**	**131031LA1**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	0.5000	0.5554	111	80-120	73-127	
Arsenic	0.5000	0.5095	102	80-120	73-127	
Barium	0.5000	0.5220	104	80-120	73-127	
Beryllium	0.5000	0.5074	101	80-120	73-127	
Cadmium	0.5000	0.5259	105	80-120	73-127	
Chromium	0.5000	0.5730	115	80-120	73-127	
Cobalt	0.5000	0.5718	114	80-120	73-127	
Copper	0.5000	0.5248	105	80-120	73-127	
Lead	0.5000	0.5213	104	80-120	73-127	
Molybdenum	0.5000	0.4998	100	80-120	73-127	
Nickel	0.5000	0.5735	115	80-120	73-127	
Selenium	0.5000	0.4861	97	80-120	73-127	
Silver	0.2500	0.2561	102	80-120	73-127	
Thallium	0.5000	0.5122	102	80-120	73-127	
Vanadium	0.5000	0.5089	102	80-120	73-127	
Zinc	0.5000	0.5420	108	80-120	73-127	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7470A Total
		Method:	EPA 7470A
Project: Brookfield / SB0674.03			Page 5 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-04-008-6701	**Aqueous**	**Mercury**	**10/31/13 12:34**	**131031L02**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.01000	0.01122	112	85-121	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: Brookfield / SB0674.03			Page 6 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-04-007-9793	**Solid**	**Mercury**	**10/31/13 17:56**	**131031L06**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.8350	0.7247	87	85-121	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674.03			Page 7 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-06-010-1889	**Solid**	**GC/MS AAA**	**10/31/13 19:14**	**131031L05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Naphthalene	0.2000	0.1756	88	64-118	55-127	
2-Methylnaphthalene	0.2000	0.1674	84	55-127	43-139	
1-Methylnaphthalene	0.2000	0.1882	94	57-129	45-141	
Acenaphthylene	0.2000	0.1523	76	36-132	20-148	
Acenaphthene	0.2000	0.1515	76	61-121	51-131	
Fluorene	0.2000	0.1564	78	56-128	44-140	
Phenanthrene	0.2000	0.1444	72	56-122	45-133	
Anthracene	0.2000	0.1551	78	11-119	0-137	
Fluoranthene	0.2000	0.1649	82	56-122	45-133	
Pyrene	0.2000	0.1450	72	57-129	45-141	
Benzo (a) Anthracene	0.2000	0.1520	76	49-127	36-140	
Chrysene	0.2000	0.1389	69	60-126	49-137	
Benzo (k) Fluoranthene	0.2000	0.1740	87	54-138	40-152	
Benzo (b) Fluoranthene	0.2000	0.1390	69	46-136	31-151	
Benzo (a) Pyrene	0.2000	0.1693	85	40-148	22-166	
Indeno (1,2,3-c,d) Pyrene	0.2000	0.1438	72	43-163	23-183	
Dibenz (a,h) Anthracene	0.2000	0.1275	64	45-153	27-171	
Benzo (g,h,i) Perylene	0.2000	0.1066	53	38-140	21-157	

Total number of LCS compounds: 18
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674.03			Page 8 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-06-010-1893	**Solid**	**GC/MS AAA**	**11/05/13 12:24**	**131105L02**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Naphthalene	0.2000	0.2142	107	64-118	55-127	
2-Methylnaphthalene	0.2000	0.2261	113	55-127	43-139	
1-Methylnaphthalene	0.2000	0.2222	111	57-129	45-141	
Acenaphthylene	0.2000	0.1788	89	36-132	20-148	
Acenaphthene	0.2000	0.1905	95	61-121	51-131	
Fluorene	0.2000	0.1948	97	56-128	44-140	
Phenanthrene	0.2000	0.1909	95	56-122	45-133	
Anthracene	0.2000	0.1631	82	11-119	0-137	
Fluoranthene	0.2000	0.2000	100	56-122	45-133	
Pyrene	0.2000	0.1746	87	57-129	45-141	
Benzo (a) Anthracene	0.2000	0.1755	88	49-127	36-140	
Chrysene	0.2000	0.1740	87	60-126	49-137	
Benzo (k) Fluoranthene	0.2000	0.2002	100	54-138	40-152	
Benzo (b) Fluoranthene	0.2000	0.1860	93	46-136	31-151	
Benzo (a) Pyrene	0.2000	0.1879	94	40-148	22-166	
Indeno (1,2,3-c,d) Pyrene	0.2000	0.2084	104	43-163	23-183	
Dibenz (a,h) Anthracene	0.2000	0.1746	87	45-153	27-171	
Benzo (g,h,i) Perylene	0.2000	0.1539	77	38-140	21-157	

Total number of LCS compounds: 18
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674.03			Page 9 of 14

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-06-008-641	**Aqueous**	**GC/MS AAA**	**10/31/13**	**11/04/13 16:30**	**131031L06**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Naphthalene	2.000	1.225	61	1.218	61	21-133	2-152	1	0-25	
2-Methylnaphthalene	2.000	1.252	63	1.251	63	21-140	1-160	0	0-25	
1-Methylnaphthalene	2.000	1.236	62	1.194	60	20-140	0-160	3	0-25	
Acenaphthylene	2.000	1.086	54	1.065	53	33-145	14-164	2	0-25	
Acenaphthene	2.000	1.133	57	1.125	56	55-121	44-132	1	0-25	
Fluorene	2.000	1.150	58	1.146	57	59-121	49-131	0	0-25	ME
Phenanthrene	2.000	1.171	59	1.162	58	54-120	43-131	1	0-25	
Anthracene	2.000	1.028	51	1.011	51	27-133	9-151	2	0-25	
Fluoranthene	2.000	1.241	62	1.240	62	26-137	8-156	0	0-25	
Pyrene	2.000	1.083	54	1.073	54	45-129	31-143	1	0-25	
Benzo (a) Anthracene	2.000	1.206	60	1.199	60	33-143	15-161	1	0-25	
Chrysene	2.000	1.107	55	1.092	55	17-168	0-193	1	0-25	
Benzo (k) Fluoranthene	2.000	1.290	64	1.268	63	24-159	2-182	2	0-25	
Benzo (b) Fluoranthene	2.000	1.196	60	1.195	60	24-159	2-182	0	0-25	
Benzo (a) Pyrene	2.000	1.209	60	1.195	60	17-163	0-187	1	0-25	
Indeno (1,2,3-c,d) Pyrene	2.000	1.290	64	1.279	64	25-175	0-200	1	0-25	
Dibenz (a,h) Anthracene	2.000	1.052	53	1.034	52	25-175	0-200	2	0-25	
Benzo (g,h,i) Perylene	2.000	0.9220	46	0.9082	45	25-157	3-179	2	0-25	

Total number of LCS compounds: 18
Total number of ME compounds: 1
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Brookfield / SB0674.03			Page 10 of 14

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-312-307	**Solid**	**GC/MS Q**	**11/04/13**	**11/04/13 11:01**	**131104L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	88.72	177	85.24	170	80-120	73-127	4	0-20	X
Benzene	50.00	44.46	89	45.04	90	80-120	73-127	1	0-20	
Bromobenzene	50.00	45.49	91	46.80	94	80-120	73-127	3	0-20	
Bromochloromethane	50.00	44.22	88	44.89	90	80-120	73-127	2	0-20	
Bromodichloromethane	50.00	43.53	87	43.96	88	80-120	73-127	1	0-20	
Bromoform	50.00	48.01	96	46.42	93	80-120	73-127	3	0-20	
Bromomethane	50.00	82.11	164	84.17	168	80-120	73-127	2	0-20	X
2-Butanone	50.00	68.99	138	72.42	145	80-120	73-127	5	0-20	X
n-Butylbenzene	50.00	44.75	89	45.10	90	77-123	69-131	1	0-25	
sec-Butylbenzene	50.00	42.68	85	42.55	85	80-120	73-127	0	0-20	
tert-Butylbenzene	50.00	43.95	88	43.50	87	80-120	73-127	1	0-20	
Carbon Disulfide	50.00	44.82	90	44.69	89	80-120	73-127	0	0-20	
Carbon Tetrachloride	50.00	41.21	82	40.16	80	65-137	53-149	3	0-20	
Chlorobenzene	50.00	42.46	85	43.16	86	80-120	73-127	2	0-20	
Chloroethane	50.00	44.04	88	42.75	85	80-120	73-127	3	0-20	
Chloroform	50.00	44.26	89	43.82	88	80-120	73-127	1	0-20	
Chloromethane	50.00	43.16	86	45.03	90	80-120	73-127	4	0-20	
2-Chlorotoluene	50.00	41.43	83	42.47	85	80-120	73-127	2	0-20	
4-Chlorotoluene	50.00	41.53	83	41.59	83	80-120	73-127	0	0-20	
Dibromochloromethane	50.00	44.21	88	43.59	87	80-120	73-127	1	0-20	
1,2-Dibromo-3-Chloropropane	50.00	40.93	82	41.19	82	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	46.26	93	46.70	93	80-120	73-127	1	0-20	
Dibromomethane	50.00	45.00	90	45.42	91	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	43.93	88	44.49	89	80-120	73-127	1	0-20	
1,3-Dichlorobenzene	50.00	44.19	88	43.96	88	80-120	73-127	1	0-20	
1,4-Dichlorobenzene	50.00	47.28	95	47.00	94	80-120	73-127	1	0-20	
Dichlorodifluoromethane	50.00	49.25	98	47.22	94	80-120	73-127	4	0-20	
1,1-Dichloroethane	50.00	43.85	88	43.73	87	80-120	73-127	0	0-20	
1,2-Dichloroethane	50.00	44.25	88	44.45	89	80-120	73-127	0	0-20	
1,1-Dichloroethene	50.00	42.64	85	42.24	84	68-128	58-138	1	0-20	
c-1,2-Dichloroethene	50.00	46.30	93	46.04	92	80-120	73-127	1	0-20	
t-1,2-Dichloroethene	50.00	47.04	94	46.88	94	80-120	73-127	0	0-20	
1,2-Dichloropropane	50.00	47.32	95	47.54	95	79-115	73-121	0	0-25	
1,3-Dichloropropane	50.00	45.64	91	45.87	92	80-120	73-127	0	0-20	
2,2-Dichloropropane	50.00	42.23	84	41.26	83	80-120	73-127	2	0-20	
1,1-Dichloropropene	50.00	45.68	91	45.44	91	80-120	73-127	1	0-20	
c-1,3-Dichloropropene	50.00	47.91	96	48.80	98	80-120	73-127	2	0-20	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Brookfield / SB0674.03			Page 11 of 14

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
t-1,3-Dichloropropene	50.00	42.96	86	43.77	88	80-120	73-127	2	0-20	
Ethylbenzene	50.00	44.62	89	45.15	90	80-120	73-127	1	0-20	
2-Hexanone	50.00	58.51	117	63.95	128	80-120	73-127	9	0-20	X
Isopropylbenzene	50.00	41.11	82	42.26	85	80-120	73-127	3	0-20	
p-Isopropyltoluene	50.00	42.62	85	42.96	86	80-120	73-127	1	0-20	
Methylene Chloride	50.00	47.38	95	48.19	96	80-120	73-127	2	0-20	
4-Methyl-2-Pentanone	50.00	48.65	97	49.93	100	80-120	73-127	3	0-20	
Naphthalene	50.00	45.99	92	47.51	95	80-120	73-127	3	0-20	
n-Propylbenzene	50.00	40.25	81	41.32	83	80-120	73-127	3	0-20	
Styrene	50.00	44.90	90	45.82	92	80-120	73-127	2	0-20	
1,1,1,2-Tetrachloroethane	50.00	46.17	92	46.19	92	80-120	73-127	0	0-20	
1,1,2,2-Tetrachloroethane	50.00	46.31	93	46.28	93	80-120	73-127	0	0-20	
Tetrachloroethene	50.00	46.11	92	46.65	93	80-120	73-127	1	0-20	
Toluene	50.00	44.61	89	45.40	91	80-120	73-127	2	0-20	
1,2,3-Trichlorobenzene	50.00	47.06	94	48.58	97	80-120	73-127	3	0-20	
1,2,4-Trichlorobenzene	50.00	47.13	94	48.49	97	80-120	73-127	3	0-20	
1,1,1-Trichloroethane	50.00	43.11	86	42.50	85	80-120	73-127	1	0-20	
1,1,2-Trichloroethane	50.00	46.40	93	47.11	94	80-120	73-127	2	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	44.30	89	43.75	87	80-120	73-127	1	0-20	
Trichloroethene	50.00	45.34	91	45.22	90	80-120	73-127	0	0-20	
Trichlorofluoromethane	50.00	47.79	96	45.48	91	80-120	73-127	5	0-20	
1,2,3-Trichloropropane	50.00	39.39	79	40.24	80	80-120	73-127	2	0-20	ME
1,2,4-Trimethylbenzene	50.00	46.29	93	46.80	94	80-120	73-127	1	0-20	
1,3,5-Trimethylbenzene	50.00	45.72	91	47.85	96	80-120	73-127	5	0-20	
Vinyl Acetate	50.00	57.21	114	56.68	113	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	44.70	89	43.57	87	67-127	57-137	3	0-20	
p/m-Xylene	100.0	86.37	86	87.64	88	80-120	73-127	1	0-20	
o-Xylene	50.00	42.22	84	42.67	85	80-120	73-127	1	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	46.67	93	46.40	93	70-124	61-133	1	0-20	
Tert-Butyl Alcohol (TBA)	250.0	248.5	99	229.0	92	73-121	65-129	8	0-20	
Diisopropyl Ether (DIPE)	50.00	45.71	91	45.42	91	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	47.54	95	47.52	95	70-124	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	47.73	95	47.70	95	74-122	66-130	0	0-20	
Ethanol	500.0	467.2	93	438.8	88	51-135	37-149	6	0-27	

Total number of LCS compounds: 71
Total number of ME compounds: 1
Total number of ME compounds allowed: 4

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants	Date Received:	10/30/13
924 Anacapa Street, Suite 4A	Work Order:	13-10-2288
Santa Barbara, CA 93101-2177	Preparation:	EPA 5035
	Method:	EPA 8260B
Project: Brookfield / SB0674.03		Page 12 of 14

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Brookfield / SB0674.03			Page 13 of 14

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-14-316-1186	**Aqueous**	**GC/MS GGG**	**10/31/13 11:59**	**131031L01**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Acetone	50.00	58.10	116	70-130	60-140	
Benzene	50.00	50.61	101	70-130	60-140	
Bromobenzene	50.00	49.84	100	70-130	60-140	
Bromochloromethane	50.00	47.37	95	70-130	60-140	
Bromodichloromethane	50.00	48.32	97	70-130	60-140	
Bromoform	50.00	47.41	95	70-130	60-140	
Bromomethane	50.00	69.76	140	70-130	60-140	ME
2-Butanone	50.00	41.30	83	70-130	60-140	
n-Butylbenzene	50.00	64.85	130	77-123	69-131	ME
sec-Butylbenzene	50.00	58.38	117	70-130	60-140	
tert-Butylbenzene	50.00	59.22	118	70-130	60-140	
Carbon Disulfide	50.00	54.08	108	70-130	60-140	
Carbon Tetrachloride	50.00	53.27	107	66-138	54-150	
Chlorobenzene	50.00	51.03	102	70-130	60-140	
Chloroethane	50.00	49.53	99	70-130	60-140	
Chloroform	50.00	49.38	99	70-130	60-140	
Chloromethane	50.00	46.57	93	70-130	60-140	
2-Chlorotoluene	50.00	52.57	105	70-130	60-140	
4-Chlorotoluene	50.00	55.71	111	70-130	60-140	
Dibromochloromethane	50.00	45.26	91	70-130	60-140	
1,2-Dibromo-3-Chloropropane	50.00	44.90	90	70-130	60-140	
1,2-Dibromoethane	50.00	44.06	88	70-130	60-140	
Dibromomethane	50.00	46.72	93	70-130	60-140	
1,2-Dichlorobenzene	50.00	51.13	102	70-130	60-140	
1,3-Dichlorobenzene	50.00	54.37	109	70-130	60-140	
1,4-Dichlorobenzene	50.00	53.82	108	70-130	60-140	
Dichlorodifluoromethane	50.00	68.93	138	70-130	60-140	ME
1,1-Dichloroethane	50.00	49.77	100	70-130	60-140	
1,2-Dichloroethane	50.00	46.81	94	80-129	72-137	
1,1-Dichloroethene	50.00	53.54	107	71-131	61-141	
c-1,2-Dichloroethene	50.00	48.80	98	70-130	60-140	
t-1,2-Dichloroethene	50.00	48.15	96	70-130	60-140	
1,2-Dichloropropane	50.00	47.55	95	79-115	73-121	
1,3-Dichloropropane	50.00	45.60	91	70-130	60-140	
2,2-Dichloropropane	50.00	58.25	116	70-130	60-140	
1,1-Dichloropropene	50.00	54.57	109	70-130	60-140	
c-1,3-Dichloropropene	50.00	49.22	98	70-130	60-140	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/30/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2288
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Brookfield / SB0674.03			Page 14 of 14

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
t-1,3-Dichloropropene	50.00	48.75	97	70-130	60-140	
Ethylbenzene	50.00	53.08	106	80-123	73-130	
2-Hexanone	50.00	39.83	80	70-130	60-140	
Isopropylbenzene	50.00	54.63	109	70-130	60-140	
p-Isopropyltoluene	50.00	59.61	119	70-130	60-140	
Methylene Chloride	50.00	48.63	97	70-130	60-140	
4-Methyl-2-Pentanone	50.00	40.01	80	70-130	60-140	
Naphthalene	50.00	44.43	89	70-130	60-140	
n-Propylbenzene	50.00	57.26	115	70-130	60-140	
Styrene	50.00	51.36	103	70-130	60-140	
1,1,1,2-Tetrachloroethane	50.00	48.99	98	70-130	60-140	
1,1,2,2-Tetrachloroethane	50.00	46.73	93	70-130	60-140	
Tetrachloroethene	50.00	37.21	74	70-130	60-140	
Toluene	50.00	52.01	104	79-121	72-128	
1,2,3-Trichlorobenzene	50.00	50.68	101	70-130	60-140	
1,2,4-Trichlorobenzene	50.00	55.65	111	70-130	60-140	
1,1,1-Trichloroethane	50.00	52.70	105	70-130	60-140	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	65.92	132	70-130	60-140	ME
1,1,2-Trichloroethane	50.00	45.86	92	70-130	60-140	
Trichloroethene	50.00	51.74	103	70-130	60-140	
Trichlorofluoromethane	50.00	61.61	123	70-130	60-140	
1,2,3-Trichloropropane	50.00	44.70	89	70-130	60-140	
1,2,4-Trimethylbenzene	50.00	54.76	110	70-130	60-140	
1,3,5-Trimethylbenzene	50.00	55.08	110	70-130	60-140	
Vinyl Acetate	50.00	50.86	102	70-130	60-140	
Vinyl Chloride	50.00	56.33	113	70-136	59-147	
p/m-Xylene	100.0	107.6	108	70-130	60-140	
o-Xylene	50.00	51.65	103	70-130	60-140	
Methyl-t-Butyl Ether (MTBE)	50.00	36.21	72	72-126	63-135	
Tert-Butyl Alcohol (TBA)	250.0	230.0	92	71-125	62-134	
Diisopropyl Ether (DIPE)	50.00	46.19	92	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	35.03	70	69-129	59-139	
Tert-Amyl-Methyl Ether (TAME)	50.00	35.65	71	67-133	56-144	
Ethanol	500.0	687.3	137	47-155	29-173	

Total number of LCS compounds: 71
Total number of ME compounds: 4
Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 13-10-2288

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3010A Total	469	ICP 7300	1
EPA 6010B	EPA 3050B	469	ICP 7300	1
EPA 7470A	EPA 7470A Total	769	Mercury	1
EPA 7471A	EPA 7471A Total	769	Mercury	1
EPA 8015B (M)	EPA 3510C	628	GC 47	1
EPA 8015B (M)	EPA 3550B	847	GC 46	1
EPA 8260B	EPA 5035	316	GC/MS Q	2
EPA 8260B	EPA 5030C	626	GC/MS GGG	2
EPA 8270C SIM PAHs	EPA 3545	773	GC/MS AAA	1
EPA 8270C SIM PAHs	EPA 3510C	773	GC/MS AAA	1

Return to Contents

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order: 13-10-2288

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

Calscience Environmental Laboratories, Inc.

☐ 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

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 13-10-2288

Date: 10/30/2013

Page 1 of 2

LABORATORY CLIENT: Geosyntec Consultants

ADDRESS: 924 Anacapa St, Suite 4A

CITY: Santa Barbara STATE: CA ZIP: 93101

TEL: (805) 897 3800 E-MAIL: GFRIEMAN@GEOSYNTEC.COM

CLIENT PROJECT NAME / NUMBER: Brookfield SB0674.03

P.O. NO.:

PROJECT CONTACT: Geoff Frieman

SAMPLER(S): (PRINT) R. KOVACS

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	PAHs				
1	VP2-0.5	10/30	855	S	5	2	3			X			X							X		X				
2	VP-2-10		900	S	5	2	3			X			X							X		X				
3	VP2-5		857	S	5	2	3			X			X							X		X				
4	VP4-0.5		1105	S	5	2	3			X			X							X		X				
5	VP4-5		1110	S	5	2	3			X			X							X		X				
6	VP4-10		1115	S	5	2	3			X			X							X		X				
7	VP6-0.5		1410	S	5	2	3			X			X							X		X				
8	VP6-5		1414	S	5	2	3			X			X							X		X				
9	VP6-10		1430	S	5	2	3			X			X							X		X				
10	QCEB-103013		1515	W	6	4	2			X			X							X		X				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Robert Kovacs	[illegible]	10.30.13	1528
[illegible]	[illegible] CEL	10.30.13	1630
[illegible]	Danny le CEL	10/30/13	17:55

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.

09/01/13 Revision

Return to Contents

Calscience Environmental Laboratories, Inc.

☐ 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

CHAIN OF CUSTODY RECORD

Date 10/30/2013

Page 2 of 2

WO # / LAB USE ONLY: 10-2288

LABORATORY CLIENT: Geosyntec Consultants

ADDRESS: 924 Anacapa St., Suite 4A

CITY: Santa Barbara STATE ZIP

TEL: (805) 817 3800 E-MAIL: GFRIEMAN@GEOSYNTEC.COM

CLIENT PROJECT NAME / NUMBER: Brookfield SB0674.03

P.O. NO.:

PROJECT CONTACT: Geoffrey Frieman

SAMPLER(S): (PRINT) R. KOVACS

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]					
11	QCTB-103013	10/30	—	W	2		2						X													

RK

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Robert Kovacs	[signature]	10.30.13	1528
[signature]	[signature] CEL	10.30.13	1630
[signature]	Bannyle CEL	10/30/13	17:55

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.

09/01/13 Revision

Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-10-2288

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Geosyntec

DATE: 10/30/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.3 °C - 0.2 °C (CF) = 2.1 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Checked by: 802

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Checked by: 802

☐ Sample ☐ _____ ☐ No (Not Intact) ☑ Not Present Checked by: 802

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☑ Collection date/time, matrix, and/or # of containers logged in based on sample labels. (-2) to (-10) **			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers* and sufficient volume for analyses requested	☑ (-2)	☑	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☑Sleeve (P) ☐EnCores® ☑TerraCores® (3) ☑ Z*

Aqueous: ☐VOA ☑VOAh (3) ☐VOANa$_2$ ☐125AGB ☐125AGBh ☐125AGBp ☑1AGB ☐1AGBna$_2$ ☐1AGBs

☐500AGB ☑500AGJ ☐500AGJs ☐250AGB ☐250CGB ☐250CGBs ☐1PB ☐1PBna ☐500PB

☐250PB ☑250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna$_2$ ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister ~~Other~~ Solid: ☑ 2oz PB Trip Blank Lot#: 131017B Labeled/Checked by: 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 659

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered Scanned by: 659

*(-1) (-4) (-7) ** (-2) to (-10) Collection date per Label is 10/30/13

Return to Contents

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 13-10-2392

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Geosyntec Consultants

Client Project Name: Brookfield / SB0674

Attention: Geoff Frieman
924 Anacapa Street
Suite 4A
Santa Barbara, CA 93101-2177

Approved for release on 11/08/2013 by:
Stephen Nowak
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: Brookfield / SB0674
Work Order Number: 13-10-2392

1 Work Order Narrative. 3

2 Sample Summary. 4

3 Detections Summary. 5

4 Client Sample Data. 8
- 4.1 EPA 8015B (M) C6-C44 (Solid). 8
- 4.2 EPA 8015B (M) C6-C44 (Aqueous). 15
- 4.3 EPA 6010B/7471A CAC Title 22 Metals (Solid). 17
- 4.4 EPA 6010B/7470A CAC Title 22 Metals (Aqueous). 24
- 4.5 EPA 7470A Mercury (Aqueous). 26
- 4.6 EPA 7471A Mercury (Solid). 27
- 4.7 EPA 8270C SIM PAHs (Solid). 28
- 4.8 EPA 8270C SIM PAHs (Aqueous). 35
- 4.9 EPA 8260B Volatile Organics + Oxygenates Prep 5035 (Solid). 37
- 4.10 EPA 8260B Volatile Organics + Oxygenates (Aqueous). 58

5 Quality Control Sample Data. 67
- 5.1 MS/MSD. 67
- 5.2 PDS/PDSD. 74
- 5.3 LCS/LCSD. 75

6 Sample Analysis Summary. 88

7 Glossary of Terms and Qualifiers. 89

8 Chain of Custody/Sample Receipt Form. 90

Calscience Environmental Laboratories, Inc.

Work Order Narrative

Work Order: 13-10-2392

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 10/31/13. They were assigned to Work Order 13-10-2392.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Return to Contents

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	Geosyntec Consultants 924 Anacapa Street, Suite 4A Santa Barbara, CA 93101-2177	Work Order:	13-10-2392
		Project Name:	Brookfield / SB0674
		PO Number:	
		Date/Time Received:	10/31/13 17:30
		Number of Containers:	38
Attn:	Geoff Frieman		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
VP7-0.5	13-10-2392-1	10/31/13 07:55	5	Solid
VP7-5	13-10-2392-2	10/31/13 08:00	5	Solid
VP7-10	13-10-2392-3	10/31/13 08:05	5	Solid
VP10-0.5	13-10-2392-4	10/31/13 11:05	5	Solid
VP10-5	13-10-2392-5	10/31/13 11:10	5	Solid
VP10-10	13-10-2392-6	10/31/13 11:15	5	Solid
QCTB-103113	13-10-2392-7	10/31/13 00:00	2	Aqueous
QCEB-103113	13-10-2392-8	10/31/13 14:45	6	Aqueous

Return to Contents

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2392
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674
	Santa Barbara, CA 93101-2177	Received:	10/31/13
Attn:	Geoff Frieman		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP7-0.5 (13-10-2392-1)						
Arsenic	5.36		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	158		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.313		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.838		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	12.9		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	7.74		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	19.0		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	127		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	1.57		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	16.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	29.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	83.2		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.160		0.0835	mg/kg	EPA 7471A	EPA 7471A Total
VP7-5 (13-10-2392-2)						
Arsenic	3.76		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	195		0.500	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.716		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.96		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	19.4		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	1100		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.961		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	11.8		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	20.0		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	248		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.184		0.0835	mg/kg	EPA 7471A	EPA 7471A Total
C6-C44 Total	11		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2392
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674
	Santa Barbara, CA 93101-2177	Received:	10/31/13
Attn:	Geoff Frieman		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP7-10 (13-10-2392-3)						
Arsenic	4.61		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	157		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.389		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.893		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	16.2		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	8.60		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	18.5		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	4.43		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	1.64		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	21.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	35.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	47.9		1.00	mg/kg	EPA 6010B	EPA 3050B
VP10-0.5 (13-10-2392-4)						
Arsenic	6.36		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	187		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.443		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.22		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	17.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	10.2		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	27.2		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	79.8		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.16		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	25.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	37.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	85.8		1.00	mg/kg	EPA 6010B	EPA 3050B
Mercury	13.5		0.834	mg/kg	EPA 7471A	EPA 7471A Total
Acenaphthene	0.025		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Phenanthrene	0.21		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Anthracene	0.047		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Fluoranthene	0.31		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Pyrene	0.30		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Benzo (a) Anthracene	0.11		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Chrysene	0.12		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Benzo (k) Fluoranthene	0.088		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Benzo (b) Fluoranthene	0.075		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Benzo (a) Pyrene	0.12		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Indeno (1,2,3-c,d) Pyrene	0.083		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545
Benzo (g,h,i) Perylene	0.080		0.020	mg/kg	EPA 8270C SIM PAHs	EPA 3545

* MDL is shown

Return to Contents

Calscience Environmental Laboratories, Inc.

Detections Summary

Client:	Geosyntec Consultants	Work Order:	13-10-2392
	924 Anacapa Street, Suite 4A	Project Name:	Brookfield / SB0674
	Santa Barbara, CA 93101-2177	Received:	10/31/13
Attn:	Geoff Frieman		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VP10-5 (13-10-2392-5)						
Arsenic	7.12		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	188		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.519		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.43		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	21.0		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	11.6		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	25.5		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	6.88		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	2.37		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	29.8		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	44.2		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	63.8		1.00	mg/kg	EPA 6010B	EPA 3050B
VP10-10 (13-10-2392-6)						
Arsenic	7.43		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	178		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.548		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.14		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	23.1		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	11.2		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	26.2		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	5.06		0.500	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	1.93		0.250	mg/kg	EPA 6010B	EPA 3050B
Nickel	29.5		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	48.3		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	61.0		1.00	mg/kg	EPA 6010B	EPA 3050B

Subcontracted analyses, if any, are not included in this summary.

Return to Contents

* MDL is shown

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 1 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-0.5	**13-10-2392-1-A**	**10/31/13 07:55**	**Solid**	**GC 46**	**11/01/13**	**11/01/13 23:34**	**131101B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	89	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 2 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-5	**13-10-2392-2-A**	**10/31/13 08:00**	**Solid**	**GC 46**	**11/01/13**	**11/01/13 23:50**	**131101B05**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	11	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	96	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 3 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-10	**13-10-2392-3-A**	**10/31/13 08:05**	**Solid**	**GC 46**	**11/01/13**	**11/02/13 00:07**	**131101B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	86	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 4 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-0.5	**13-10-2392-4-A**	**10/31/13 11:05**	**Solid**	**GC 46**	**11/01/13**	**11/02/13 00:40**	**131101B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	82	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-5	**13-10-2392-5-A**	**10/31/13 11:10**	**Solid**	**GC 46**	**11/01/13**	**11/02/13 00:57**	**131101B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	78	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 6 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-10	**13-10-2392-6-A**	**10/31/13 11:15**	**Solid**	**GC 46**	**11/01/13**	**11/02/13 01:13**	**131101B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	77	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: Brookfield / SB0674			Page 7 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-490-612**	**N/A**	**Solid**	**GC 46**	**11/01/13**	**11/01/13 20:33**	**131101B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1	
C7	ND	5.0	1	
C8	ND	5.0	1	
C9-C10	ND	5.0	1	
C11-C12	ND	5.0	1	
C13-C14	ND	5.0	1	
C15-C16	ND	5.0	1	
C17-C18	ND	5.0	1	
C19-C20	ND	5.0	1	
C21-C22	ND	5.0	1	
C23-C24	ND	5.0	1	
C25-C28	ND	5.0	1	
C29-C32	ND	5.0	1	
C33-C36	ND	5.0	1	
C37-C40	ND	5.0	1	
C41-C44	ND	5.0	1	
C6-C44 Total	ND	5.0	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	88	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
		Units:	ug/L
Project: Brookfield / SB0674			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103113	**13-10-2392-8-E**	**10/31/13 14:45**	**Aqueous**	**GC 46**	**11/04/13**	**11/06/13 06:51**	**131104B11A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	100	1	
C7	ND	100	1	
C8	ND	100	1	
C9-C10	ND	100	1	
C11-C12	ND	100	1	
C13-C14	ND	100	1	
C15-C16	ND	100	1	
C17-C18	ND	100	1	
C19-C20	ND	100	1	
C21-C22	ND	100	1	
C23-C24	ND	100	1	
C25-C28	ND	100	1	
C29-C32	ND	100	1	
C33-C36	ND	100	1	
C37-C40	ND	100	1	
C41-C44	ND	100	1	
C6-C44 Total	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	68	68-140	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
		Units:	ug/L
Project: Brookfield / SB0674			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-498-115**	**N/A**	**Aqueous**	**GC 46**	**11/04/13**	**11/06/13 04:08**	**131104B11A**

Parameter	Result	RL	DF	Qualifiers
C6	ND	100	1	
C7	ND	100	1	
C8	ND	100	1	
C9-C10	ND	100	1	
C11-C12	ND	100	1	
C13-C14	ND	100	1	
C15-C16	ND	100	1	
C17-C18	ND	100	1	
C19-C20	ND	100	1	
C21-C22	ND	100	1	
C23-C24	ND	100	1	
C25-C28	ND	100	1	
C29-C32	ND	100	1	
C33-C36	ND	100	1	
C37-C40	ND	100	1	
C41-C44	ND	100	1	
C6-C44 Total	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	86	68-140	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 1 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-0.5	**13-10-2392-1-A**	**10/31/13 07:55**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:10**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	5.36	0.750	1	
Barium	158	0.500	1	
Beryllium	0.313	0.250	1	
Cadmium	0.838	0.500	1	
Chromium	12.9	0.250	1	
Cobalt	7.74	0.250	1	
Copper	19.0	0.500	1	
Lead	127	0.500	1	
Molybdenum	1.57	0.250	1	
Nickel	16.6	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	29.3	0.250	1	
Zinc	83.2	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 2 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-5	**13-10-2392-2-A**	**10/31/13 08:00**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:11**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	3.76	0.750	1	
Barium	195	0.500	1	
Beryllium	ND	0.250	1	
Cadmium	0.716	0.500	1	
Chromium	10.7	0.250	1	
Cobalt	4.96	0.250	1	
Copper	19.4	0.500	1	
Lead	1100	0.500	1	
Molybdenum	0.961	0.250	1	
Nickel	11.8	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	20.0	0.250	1	
Zinc	248	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 3 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-10	**13-10-2392-3-A**	**10/31/13 08:05**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:12**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	4.61	0.750	1	
Barium	157	0.500	1	
Beryllium	0.389	0.250	1	
Cadmium	0.893	0.500	1	
Chromium	16.2	0.250	1	
Cobalt	8.60	0.250	1	
Copper	18.5	0.500	1	
Lead	4.43	0.500	1	
Molybdenum	1.64	0.250	1	
Nickel	21.7	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	35.3	0.250	1	
Zinc	47.9	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 4 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-0.5	**13-10-2392-4-A**	**10/31/13 11:05**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:17**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	6.36	0.750	1	
Barium	187	0.500	1	
Beryllium	0.443	0.250	1	
Cadmium	1.22	0.500	1	
Chromium	17.6	0.250	1	
Cobalt	10.2	0.250	1	
Copper	27.2	0.500	1	
Lead	79.8	0.500	1	
Molybdenum	2.16	0.250	1	
Nickel	25.6	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	37.6	0.250	1	
Zinc	85.8	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-5	**13-10-2392-5-A**	**10/31/13 11:10**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:19**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	7.12	0.750	1	
Barium	188	0.500	1	
Beryllium	0.519	0.250	1	
Cadmium	1.43	0.500	1	
Chromium	21.0	0.250	1	
Cobalt	11.6	0.250	1	
Copper	25.5	0.500	1	
Lead	6.88	0.500	1	
Molybdenum	2.37	0.250	1	
Nickel	29.8	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	44.2	0.250	1	
Zinc	63.8	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 6 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-10	**13-10-2392-6-A**	**10/31/13 11:15**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:20**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	7.43	0.750	1	
Barium	178	0.500	1	
Beryllium	0.548	0.250	1	
Cadmium	1.14	0.500	1	
Chromium	23.1	0.250	1	
Cobalt	11.2	0.250	1	
Copper	26.2	0.500	1	
Lead	5.06	0.500	1	
Molybdenum	1.93	0.250	1	
Nickel	29.5	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	48.3	0.250	1	
Zinc	61.0	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Brookfield / SB0674			Page 7 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-17580**	**N/A**	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:36**	**131101L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1	
Arsenic	ND	0.750	1	
Barium	ND	0.500	1	
Beryllium	ND	0.250	1	
Cadmium	ND	0.500	1	
Chromium	ND	0.250	1	
Cobalt	ND	0.250	1	
Copper	ND	0.500	1	
Lead	ND	0.500	1	
Molybdenum	ND	0.250	1	
Nickel	ND	0.250	1	
Selenium	ND	0.750	1	
Silver	ND	0.250	1	
Thallium	ND	0.750	1	
Vanadium	ND	0.250	1	
Zinc	ND	1.00	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
		Units:	mg/L
Project: Brookfield / SB0674			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103113	**13-10-2392-8-D**	**10/31/13 14:45**	**Aqueous**	**ICP 7300**	**11/01/13**	**11/04/13 15:20**	**131101LA2**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.0150	1	
Arsenic	ND	0.0100	1	
Barium	ND	0.0100	1	
Beryllium	ND	0.0100	1	
Cadmium	ND	0.0100	1	
Chromium	ND	0.0100	1	
Cobalt	ND	0.0100	1	
Copper	ND	0.0100	1	
Lead	ND	0.0100	1	
Molybdenum	ND	0.0100	1	
Nickel	ND	0.0100	1	
Selenium	ND	0.0150	1	
Silver	ND	0.00500	1	
Thallium	ND	0.0150	1	
Vanadium	ND	0.0100	1	
Zinc	ND	0.0100	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
		Units:	mg/L
Project: Brookfield / SB0674			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-13785**	**N/A**	**Aqueous**	**ICP 7300**	**11/01/13**	**11/04/13 12:19**	**131101LA2**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.0150	1	
Arsenic	ND	0.0100	1	
Barium	ND	0.0100	1	
Beryllium	ND	0.0100	1	
Cadmium	ND	0.0100	1	
Chromium	ND	0.0100	1	
Cobalt	ND	0.0100	1	
Copper	ND	0.0100	1	
Lead	ND	0.0100	1	
Molybdenum	ND	0.0100	1	
Nickel	ND	0.0100	1	
Selenium	ND	0.0150	1	
Silver	ND	0.00500	1	
Thallium	ND	0.0150	1	
Vanadium	ND	0.0100	1	
Zinc	ND	0.0100	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7470A Total
		Method:	EPA 7470A
		Units:	mg/L
Project: Brookfield / SB0674			Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103113	**13-10-2392-8-D**	**10/31/13 14:45**	**Aqueous**	**Mercury**	**11/01/13**	**11/01/13 14:15**	**131101L01**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.000500	1	

Method Blank	**099-04-008-6702**	**N/A**	**Aqueous**	**Mercury**	**11/01/13**	**11/01/13 12:55**	**131101L01**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.000500	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
		Units:	mg/kg
Project: Brookfield / SB0674			Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-0.5	**13-10-2392-1-A**	**10/31/13 07:55**	**Solid**	**Mercury**	**11/01/13**	**11/01/13 18:06**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.160	0.0835	1	

VP7-5	**13-10-2392-2-A**	**10/31/13 08:00**	**Solid**	**Mercury**	**11/01/13**	**11/01/13 18:09**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.184	0.0835	1	

VP7-10	**13-10-2392-3-A**	**10/31/13 08:05**	**Solid**	**Mercury**	**11/01/13**	**11/01/13 18:11**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

VP10-0.5	**13-10-2392-4-A**	**10/31/13 11:05**	**Solid**	**Mercury**	**11/01/13**	**11/04/13 11:03**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	13.5	0.834	9.98	

VP10-5	**13-10-2392-5-A**	**10/31/13 11:10**	**Solid**	**Mercury**	**11/01/13**	**11/01/13 18:15**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

VP10-10	**13-10-2392-6-A**	**10/31/13 11:15**	**Solid**	**Mercury**	**11/01/13**	**11/01/13 18:17**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

Method Blank	**099-04-007-9799**	**N/A**	**Solid**	**Mercury**	**11/01/13**	**11/01/13 17:38**	**131101L07**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0835	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 1 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-0.5	**13-10-2392-1-A**	**10/31/13 07:55**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 14:19**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	84	14-146	
Nitrobenzene-d5	45	18-162	
p-Terphenyl-d14	98	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 2 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-5	**13-10-2392-2-A**	**10/31/13 08:00**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 14:43**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	82	14-146	
Nitrobenzene-d5	48	18-162	
p-Terphenyl-d14	101	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 3 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-10	**13-10-2392-3-A**	**10/31/13 08:05**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 15:06**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	73	14-146	
Nitrobenzene-d5	39	18-162	
p-Terphenyl-d14	84	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 4 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-0.5	**13-10-2392-4-A**	**10/31/13 11:05**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 15:29**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	0.025	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	0.21	0.020	1	
Anthracene	0.047	0.020	1	
Fluoranthene	0.31	0.020	1	
Pyrene	0.30	0.020	1	
Benzo (a) Anthracene	0.11	0.020	1	
Chrysene	0.12	0.020	1	
Benzo (k) Fluoranthene	0.088	0.020	1	
Benzo (b) Fluoranthene	0.075	0.020	1	
Benzo (a) Pyrene	0.12	0.020	1	
Indeno (1,2,3-c,d) Pyrene	0.083	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	0.080	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	83	14-146	
Nitrobenzene-d5	50	18-162	
p-Terphenyl-d14	92	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-5	**13-10-2392-5-A**	**10/31/13 11:10**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 15:52**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	70	14-146	
Nitrobenzene-d5	65	18-162	
p-Terphenyl-d14	83	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 6 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-10	**13-10-2392-6-A**	**10/31/13 11:15**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 16:15**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	72	14-146	
Nitrobenzene-d5	82	18-162	
p-Terphenyl-d14	79	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: Brookfield / SB0674			Page 7 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-010-1894**	**N/A**	**Solid**	**GC/MS AAA**	**11/04/13**	**11/06/13 12:23**	**131104L15**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	70	14-146	
Nitrobenzene-d5	67	18-162	
p-Terphenyl-d14	87	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM PAHs
		Units:	ug/L
Project: Brookfield / SB0674			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103113	**13-10-2392-8-F**	**10/31/13 14:45**	**Aqueous**	**GC/MS AAA**	**11/06/13**	**11/07/13 12:59**	**131106L07**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.20	1	
2-Methylnaphthalene	ND	0.20	1	
1-Methylnaphthalene	ND	0.20	1	
Acenaphthylene	ND	0.20	1	
Acenaphthene	ND	0.20	1	
Fluorene	ND	0.20	1	
Phenanthrene	ND	0.20	1	
Anthracene	ND	0.20	1	
Fluoranthene	ND	0.20	1	
Pyrene	ND	0.20	1	
Benzo (a) Anthracene	ND	0.20	1	
Chrysene	ND	0.20	1	
Benzo (k) Fluoranthene	ND	0.20	1	
Benzo (b) Fluoranthene	ND	0.20	1	
Benzo (a) Pyrene	ND	0.20	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1	
Dibenz (a,h) Anthracene	ND	0.20	1	
Benzo (g,h,i) Perylene	ND	0.20	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	68	28-139	
2-Fluorobiphenyl	72	33-144	
p-Terphenyl-d14	82	23-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM PAHs
		Units:	ug/L
Project: Brookfield / SB0674			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-008-643**	**N/A**	**Aqueous**	**GC/MS AAA**	**11/06/13**	**11/07/13 11:50**	**131106L07**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.20	1	
2-Methylnaphthalene	ND	0.20	1	
1-Methylnaphthalene	ND	0.20	1	
Acenaphthylene	ND	0.20	1	
Acenaphthene	ND	0.20	1	
Fluorene	ND	0.20	1	
Phenanthrene	ND	0.20	1	
Anthracene	ND	0.20	1	
Fluoranthene	ND	0.20	1	
Pyrene	ND	0.20	1	
Benzo (a) Anthracene	ND	0.20	1	
Chrysene	ND	0.20	1	
Benzo (k) Fluoranthene	ND	0.20	1	
Benzo (b) Fluoranthene	ND	0.20	1	
Benzo (a) Pyrene	ND	0.20	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1	
Dibenz (a,h) Anthracene	ND	0.20	1	
Benzo (g,h,i) Perylene	ND	0.20	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	85	28-139	
2-Fluorobiphenyl	72	33-144	
p-Terphenyl-d14	93	23-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 1 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-0.5	**13-10-2392-1-D**	**10/31/13 07:55**	**Solid**	**GC/MS Q**	**10/31/13**	**11/04/13 13:25**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	42	0.846	
Benzene	ND	0.85	0.846	
Bromobenzene	ND	0.85	0.846	
Bromochloromethane	ND	1.7	0.846	
Bromodichloromethane	ND	0.85	0.846	
Bromoform	ND	4.2	0.846	
Bromomethane	ND	17	0.846	
2-Butanone	ND	17	0.846	
n-Butylbenzene	ND	0.85	0.846	
sec-Butylbenzene	ND	0.85	0.846	
tert-Butylbenzene	ND	0.85	0.846	
Carbon Disulfide	ND	8.5	0.846	
Carbon Tetrachloride	ND	0.85	0.846	
Chlorobenzene	ND	0.85	0.846	
Chloroethane	ND	1.7	0.846	
Chloroform	ND	0.85	0.846	
Chloromethane	ND	17	0.846	
2-Chlorotoluene	ND	0.85	0.846	
4-Chlorotoluene	ND	0.85	0.846	
Dibromochloromethane	ND	1.7	0.846	
1,2-Dibromo-3-Chloropropane	ND	4.2	0.846	
1,2-Dibromoethane	ND	0.85	0.846	
Dibromomethane	ND	0.85	0.846	
1,2-Dichlorobenzene	ND	0.85	0.846	
1,3-Dichlorobenzene	ND	0.85	0.846	
1,4-Dichlorobenzene	ND	0.85	0.846	
Dichlorodifluoromethane	ND	1.7	0.846	
1,1-Dichloroethane	ND	0.85	0.846	
1,2-Dichloroethane	ND	0.85	0.846	
1,1-Dichloroethene	ND	0.85	0.846	
c-1,2-Dichloroethene	ND	0.85	0.846	
t-1,2-Dichloroethene	ND	0.85	0.846	
1,2-Dichloropropane	ND	0.85	0.846	
1,3-Dichloropropane	ND	0.85	0.846	
2,2-Dichloropropane	ND	4.2	0.846	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.7	0.846	
c-1,3-Dichloropropene	ND	0.85	0.846	
t-1,3-Dichloropropene	ND	1.7	0.846	
Ethylbenzene	ND	0.85	0.846	
2-Hexanone	ND	17	0.846	
Isopropylbenzene	ND	0.85	0.846	
p-Isopropyltoluene	ND	0.85	0.846	
Methylene Chloride	ND	8.5	0.846	
4-Methyl-2-Pentanone	ND	17	0.846	
Naphthalene	ND	8.5	0.846	
n-Propylbenzene	ND	1.7	0.846	
Styrene	ND	0.85	0.846	
1,1,1,2-Tetrachloroethane	ND	0.85	0.846	
1,1,2,2-Tetrachloroethane	ND	1.7	0.846	
Tetrachloroethene	ND	0.85	0.846	
Toluene	ND	0.85	0.846	
1,2,3-Trichlorobenzene	ND	1.7	0.846	
1,2,4-Trichlorobenzene	ND	1.7	0.846	
1,1,1-Trichloroethane	ND	0.85	0.846	
1,1,2-Trichloroethane	ND	0.85	0.846	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.5	0.846	
Trichloroethene	ND	1.7	0.846	
Trichlorofluoromethane	ND	8.5	0.846	
1,2,3-Trichloropropane	ND	1.7	0.846	
1,2,4-Trimethylbenzene	ND	1.7	0.846	
1,3,5-Trimethylbenzene	ND	1.7	0.846	
Vinyl Acetate	ND	8.5	0.846	
Vinyl Chloride	ND	0.85	0.846	
p/m-Xylene	ND	1.7	0.846	
o-Xylene	ND	0.85	0.846	
Methyl-t-Butyl Ether (MTBE)	ND	1.7	0.846	
Tert-Butyl Alcohol (TBA)	ND	17	0.846	
Diisopropyl Ether (DIPE)	ND	0.85	0.846	
Ethyl-t-Butyl Ether (ETBE)	ND	0.85	0.846	
Tert-Amyl-Methyl Ether (TAME)	ND	0.85	0.846	
Ethanol	ND	420	0.846	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	97	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 4 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-5	**13-10-2392-2-D**	**10/31/13 08:00**	**Solid**	**GC/MS Q**	**10/31/13**	**11/04/13 13:52**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	49	0.98	
Benzene	ND	0.98	0.98	
Bromobenzene	ND	0.98	0.98	
Bromochloromethane	ND	2.0	0.98	
Bromodichloromethane	ND	0.98	0.98	
Bromoform	ND	4.9	0.98	
Bromomethane	ND	20	0.98	
2-Butanone	ND	20	0.98	
n-Butylbenzene	ND	0.98	0.98	
sec-Butylbenzene	ND	0.98	0.98	
tert-Butylbenzene	ND	0.98	0.98	
Carbon Disulfide	ND	9.8	0.98	
Carbon Tetrachloride	ND	0.98	0.98	
Chlorobenzene	ND	0.98	0.98	
Chloroethane	ND	2.0	0.98	
Chloroform	ND	0.98	0.98	
Chloromethane	ND	20	0.98	
2-Chlorotoluene	ND	0.98	0.98	
4-Chlorotoluene	ND	0.98	0.98	
Dibromochloromethane	ND	2.0	0.98	
1,2-Dibromo-3-Chloropropane	ND	4.9	0.98	
1,2-Dibromoethane	ND	0.98	0.98	
Dibromomethane	ND	0.98	0.98	
1,2-Dichlorobenzene	ND	0.98	0.98	
1,3-Dichlorobenzene	ND	0.98	0.98	
1,4-Dichlorobenzene	ND	0.98	0.98	
Dichlorodifluoromethane	ND	2.0	0.98	
1,1-Dichloroethane	ND	0.98	0.98	
1,2-Dichloroethane	ND	0.98	0.98	
1,1-Dichloroethene	ND	0.98	0.98	
c-1,2-Dichloroethene	ND	0.98	0.98	
t-1,2-Dichloroethene	ND	0.98	0.98	
1,2-Dichloropropane	ND	0.98	0.98	
1,3-Dichloropropane	ND	0.98	0.98	
2,2-Dichloropropane	ND	4.9	0.98	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	0.98	
c-1,3-Dichloropropene	ND	0.98	0.98	
t-1,3-Dichloropropene	ND	2.0	0.98	
Ethylbenzene	ND	0.98	0.98	
2-Hexanone	ND	20	0.98	
Isopropylbenzene	ND	0.98	0.98	
p-Isopropyltoluene	ND	0.98	0.98	
Methylene Chloride	ND	9.8	0.98	
4-Methyl-2-Pentanone	ND	20	0.98	
Naphthalene	ND	9.8	0.98	
n-Propylbenzene	ND	2.0	0.98	
Styrene	ND	0.98	0.98	
1,1,1,2-Tetrachloroethane	ND	0.98	0.98	
1,1,2,2-Tetrachloroethane	ND	2.0	0.98	
Tetrachloroethene	ND	0.98	0.98	
Toluene	ND	0.98	0.98	
1,2,3-Trichlorobenzene	ND	2.0	0.98	
1,2,4-Trichlorobenzene	ND	2.0	0.98	
1,1,1-Trichloroethane	ND	0.98	0.98	
1,1,2-Trichloroethane	ND	0.98	0.98	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.8	0.98	
Trichloroethene	ND	2.0	0.98	
Trichlorofluoromethane	ND	9.8	0.98	
1,2,3-Trichloropropane	ND	2.0	0.98	
1,2,4-Trimethylbenzene	ND	2.0	0.98	
1,3,5-Trimethylbenzene	ND	2.0	0.98	
Vinyl Acetate	ND	9.8	0.98	
Vinyl Chloride	ND	0.98	0.98	
p/m-Xylene	ND	2.0	0.98	
o-Xylene	ND	0.98	0.98	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	0.98	
Tert-Butyl Alcohol (TBA)	ND	20	0.98	
Diisopropyl Ether (DIPE)	ND	0.98	0.98	
Ethyl-t-Butyl Ether (ETBE)	ND	0.98	0.98	
Tert-Amyl-Methyl Ether (TAME)	ND	0.98	0.98	
Ethanol	ND	490	0.98	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	97	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 7 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP7-10	**13-10-2392-3-D**	**10/31/13 08:05**	**Solid**	**GC/MS Q**	**10/31/13**	**11/04/13 14:18**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	46	0.926	
Benzene	ND	0.93	0.926	
Bromobenzene	ND	0.93	0.926	
Bromochloromethane	ND	1.9	0.926	
Bromodichloromethane	ND	0.93	0.926	
Bromoform	ND	4.6	0.926	
Bromomethane	ND	19	0.926	
2-Butanone	ND	19	0.926	
n-Butylbenzene	ND	0.93	0.926	
sec-Butylbenzene	ND	0.93	0.926	
tert-Butylbenzene	ND	0.93	0.926	
Carbon Disulfide	ND	9.3	0.926	
Carbon Tetrachloride	ND	0.93	0.926	
Chlorobenzene	ND	0.93	0.926	
Chloroethane	ND	1.9	0.926	
Chloroform	ND	0.93	0.926	
Chloromethane	ND	19	0.926	
2-Chlorotoluene	ND	0.93	0.926	
4-Chlorotoluene	ND	0.93	0.926	
Dibromochloromethane	ND	1.9	0.926	
1,2-Dibromo-3-Chloropropane	ND	4.6	0.926	
1,2-Dibromoethane	ND	0.93	0.926	
Dibromomethane	ND	0.93	0.926	
1,2-Dichlorobenzene	ND	0.93	0.926	
1,3-Dichlorobenzene	ND	0.93	0.926	
1,4-Dichlorobenzene	ND	0.93	0.926	
Dichlorodifluoromethane	ND	1.9	0.926	
1,1-Dichloroethane	ND	0.93	0.926	
1,2-Dichloroethane	ND	0.93	0.926	
1,1-Dichloroethene	ND	0.93	0.926	
c-1,2-Dichloroethene	ND	0.93	0.926	
t-1,2-Dichloroethene	ND	0.93	0.926	
1,2-Dichloropropane	ND	0.93	0.926	
1,3-Dichloropropane	ND	0.93	0.926	
2,2-Dichloropropane	ND	4.6	0.926	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	0.926	
c-1,3-Dichloropropene	ND	0.93	0.926	
t-1,3-Dichloropropene	ND	1.9	0.926	
Ethylbenzene	ND	0.93	0.926	
2-Hexanone	ND	19	0.926	
Isopropylbenzene	ND	0.93	0.926	
p-Isopropyltoluene	ND	0.93	0.926	
Methylene Chloride	ND	9.3	0.926	
4-Methyl-2-Pentanone	ND	19	0.926	
Naphthalene	ND	9.3	0.926	
n-Propylbenzene	ND	1.9	0.926	
Styrene	ND	0.93	0.926	
1,1,1,2-Tetrachloroethane	ND	0.93	0.926	
1,1,2,2-Tetrachloroethane	ND	1.9	0.926	
Tetrachloroethene	ND	0.93	0.926	
Toluene	ND	0.93	0.926	
1,2,3-Trichlorobenzene	ND	1.9	0.926	
1,2,4-Trichlorobenzene	ND	1.9	0.926	
1,1,1-Trichloroethane	ND	0.93	0.926	
1,1,2-Trichloroethane	ND	0.93	0.926	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.3	0.926	
Trichloroethene	ND	1.9	0.926	
Trichlorofluoromethane	ND	9.3	0.926	
1,2,3-Trichloropropane	ND	1.9	0.926	
1,2,4-Trimethylbenzene	ND	1.9	0.926	
1,3,5-Trimethylbenzene	ND	1.9	0.926	
Vinyl Acetate	ND	9.3	0.926	
Vinyl Chloride	ND	0.93	0.926	
p/m-Xylene	ND	1.9	0.926	
o-Xylene	ND	0.93	0.926	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	0.926	
Tert-Butyl Alcohol (TBA)	ND	19	0.926	
Diisopropyl Ether (DIPE)	ND	0.93	0.926	
Ethyl-t-Butyl Ether (ETBE)	ND	0.93	0.926	
Tert-Amyl-Methyl Ether (TAME)	ND	0.93	0.926	
Ethanol	ND	460	0.926	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 10 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-0.5	**13-10-2392-4-D**	**10/31/13 11:05**	**Solid**	**GC/MS Q**	**10/31/13**	**11/04/13 14:45**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	48	0.952	
Benzene	ND	0.95	0.952	
Bromobenzene	ND	0.95	0.952	
Bromochloromethane	ND	1.9	0.952	
Bromodichloromethane	ND	0.95	0.952	
Bromoform	ND	4.8	0.952	
Bromomethane	ND	19	0.952	
2-Butanone	ND	19	0.952	
n-Butylbenzene	ND	0.95	0.952	
sec-Butylbenzene	ND	0.95	0.952	
tert-Butylbenzene	ND	0.95	0.952	
Carbon Disulfide	ND	9.5	0.952	
Carbon Tetrachloride	ND	0.95	0.952	
Chlorobenzene	ND	0.95	0.952	
Chloroethane	ND	1.9	0.952	
Chloroform	ND	0.95	0.952	
Chloromethane	ND	19	0.952	
2-Chlorotoluene	ND	0.95	0.952	
4-Chlorotoluene	ND	0.95	0.952	
Dibromochloromethane	ND	1.9	0.952	
1,2-Dibromo-3-Chloropropane	ND	4.8	0.952	
1,2-Dibromoethane	ND	0.95	0.952	
Dibromomethane	ND	0.95	0.952	
1,2-Dichlorobenzene	ND	0.95	0.952	
1,3-Dichlorobenzene	ND	0.95	0.952	
1,4-Dichlorobenzene	ND	0.95	0.952	
Dichlorodifluoromethane	ND	1.9	0.952	
1,1-Dichloroethane	ND	0.95	0.952	
1,2-Dichloroethane	ND	0.95	0.952	
1,1-Dichloroethene	ND	0.95	0.952	
c-1,2-Dichloroethene	ND	0.95	0.952	
t-1,2-Dichloroethene	ND	0.95	0.952	
1,2-Dichloropropane	ND	0.95	0.952	
1,3-Dichloropropane	ND	0.95	0.952	
2,2-Dichloropropane	ND	4.8	0.952	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	0.952	
c-1,3-Dichloropropene	ND	0.95	0.952	
t-1,3-Dichloropropene	ND	1.9	0.952	
Ethylbenzene	ND	0.95	0.952	
2-Hexanone	ND	19	0.952	
Isopropylbenzene	ND	0.95	0.952	
p-Isopropyltoluene	ND	0.95	0.952	
Methylene Chloride	ND	9.5	0.952	
4-Methyl-2-Pentanone	ND	19	0.952	
Naphthalene	ND	9.5	0.952	
n-Propylbenzene	ND	1.9	0.952	
Styrene	ND	0.95	0.952	
1,1,1,2-Tetrachloroethane	ND	0.95	0.952	
1,1,2,2-Tetrachloroethane	ND	1.9	0.952	
Tetrachloroethene	ND	0.95	0.952	
Toluene	ND	0.95	0.952	
1,2,3-Trichlorobenzene	ND	1.9	0.952	
1,2,4-Trichlorobenzene	ND	1.9	0.952	
1,1,1-Trichloroethane	ND	0.95	0.952	
1,1,2-Trichloroethane	ND	0.95	0.952	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.5	0.952	
Trichloroethene	ND	1.9	0.952	
Trichlorofluoromethane	ND	9.5	0.952	
1,2,3-Trichloropropane	ND	1.9	0.952	
1,2,4-Trimethylbenzene	ND	1.9	0.952	
1,3,5-Trimethylbenzene	ND	1.9	0.952	
Vinyl Acetate	ND	9.5	0.952	
Vinyl Chloride	ND	0.95	0.952	
p/m-Xylene	ND	1.9	0.952	
o-Xylene	ND	0.95	0.952	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	0.952	
Tert-Butyl Alcohol (TBA)	ND	19	0.952	
Diisopropyl Ether (DIPE)	ND	0.95	0.952	
Ethyl-t-Butyl Ether (ETBE)	ND	0.95	0.952	
Tert-Amyl-Methyl Ether (TAME)	ND	0.95	0.952	
Ethanol	ND	480	0.952	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 13 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-5	**13-10-2392-5-D**	**10/31/13 11:10**	**Solid**	**GC/MS Q**	**10/31/13**	**11/04/13 15:11**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	58	1.17	
Benzene	ND	1.2	1.17	
Bromobenzene	ND	1.2	1.17	
Bromochloromethane	ND	2.3	1.17	
Bromodichloromethane	ND	1.2	1.17	
Bromoform	ND	5.8	1.17	
Bromomethane	ND	23	1.17	
2-Butanone	ND	23	1.17	
n-Butylbenzene	ND	1.2	1.17	
sec-Butylbenzene	ND	1.2	1.17	
tert-Butylbenzene	ND	1.2	1.17	
Carbon Disulfide	ND	12	1.17	
Carbon Tetrachloride	ND	1.2	1.17	
Chlorobenzene	ND	1.2	1.17	
Chloroethane	ND	2.3	1.17	
Chloroform	ND	1.2	1.17	
Chloromethane	ND	23	1.17	
2-Chlorotoluene	ND	1.2	1.17	
4-Chlorotoluene	ND	1.2	1.17	
Dibromochloromethane	ND	2.3	1.17	
1,2-Dibromo-3-Chloropropane	ND	5.8	1.17	
1,2-Dibromoethane	ND	1.2	1.17	
Dibromomethane	ND	1.2	1.17	
1,2-Dichlorobenzene	ND	1.2	1.17	
1,3-Dichlorobenzene	ND	1.2	1.17	
1,4-Dichlorobenzene	ND	1.2	1.17	
Dichlorodifluoromethane	ND	2.3	1.17	
1,1-Dichloroethane	ND	1.2	1.17	
1,2-Dichloroethane	ND	1.2	1.17	
1,1-Dichloroethene	ND	1.2	1.17	
c-1,2-Dichloroethene	ND	1.2	1.17	
t-1,2-Dichloroethene	ND	1.2	1.17	
1,2-Dichloropropane	ND	1.2	1.17	
1,3-Dichloropropane	ND	1.2	1.17	
2,2-Dichloropropane	ND	5.8	1.17	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.17	
c-1,3-Dichloropropene	ND	1.2	1.17	
t-1,3-Dichloropropene	ND	2.3	1.17	
Ethylbenzene	ND	1.2	1.17	
2-Hexanone	ND	23	1.17	
Isopropylbenzene	ND	1.2	1.17	
p-Isopropyltoluene	ND	1.2	1.17	
Methylene Chloride	ND	12	1.17	
4-Methyl-2-Pentanone	ND	23	1.17	
Naphthalene	ND	12	1.17	
n-Propylbenzene	ND	2.3	1.17	
Styrene	ND	1.2	1.17	
1,1,1,2-Tetrachloroethane	ND	1.2	1.17	
1,1,2,2-Tetrachloroethane	ND	2.3	1.17	
Tetrachloroethene	ND	1.2	1.17	
Toluene	ND	1.2	1.17	
1,2,3-Trichlorobenzene	ND	2.3	1.17	
1,2,4-Trichlorobenzene	ND	2.3	1.17	
1,1,1-Trichloroethane	ND	1.2	1.17	
1,1,2-Trichloroethane	ND	1.2	1.17	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.17	
Trichloroethene	ND	2.3	1.17	
Trichlorofluoromethane	ND	12	1.17	
1,2,3-Trichloropropane	ND	2.3	1.17	
1,2,4-Trimethylbenzene	ND	2.3	1.17	
1,3,5-Trimethylbenzene	ND	2.3	1.17	
Vinyl Acetate	ND	12	1.17	
Vinyl Chloride	ND	1.2	1.17	
p/m-Xylene	ND	2.3	1.17	
o-Xylene	ND	1.2	1.17	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.17	
Tert-Butyl Alcohol (TBA)	ND	23	1.17	
Diisopropyl Ether (DIPE)	ND	1.2	1.17	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.17	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.17	
Ethanol	ND	580	1.17	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 16 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VP10-10	**13-10-2392-6-D**	**10/31/13 11:15**	**Solid**	**GC/MS Q**	**10/31/13**	**11/04/13 15:37**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	44	0.882	
Benzene	ND	0.88	0.882	
Bromobenzene	ND	0.88	0.882	
Bromochloromethane	ND	1.8	0.882	
Bromodichloromethane	ND	0.88	0.882	
Bromoform	ND	4.4	0.882	
Bromomethane	ND	18	0.882	
2-Butanone	ND	18	0.882	
n-Butylbenzene	ND	0.88	0.882	
sec-Butylbenzene	ND	0.88	0.882	
tert-Butylbenzene	ND	0.88	0.882	
Carbon Disulfide	ND	8.8	0.882	
Carbon Tetrachloride	ND	0.88	0.882	
Chlorobenzene	ND	0.88	0.882	
Chloroethane	ND	1.8	0.882	
Chloroform	ND	0.88	0.882	
Chloromethane	ND	18	0.882	
2-Chlorotoluene	ND	0.88	0.882	
4-Chlorotoluene	ND	0.88	0.882	
Dibromochloromethane	ND	1.8	0.882	
1,2-Dibromo-3-Chloropropane	ND	4.4	0.882	
1,2-Dibromoethane	ND	0.88	0.882	
Dibromomethane	ND	0.88	0.882	
1,2-Dichlorobenzene	ND	0.88	0.882	
1,3-Dichlorobenzene	ND	0.88	0.882	
1,4-Dichlorobenzene	ND	0.88	0.882	
Dichlorodifluoromethane	ND	1.8	0.882	
1,1-Dichloroethane	ND	0.88	0.882	
1,2-Dichloroethane	ND	0.88	0.882	
1,1-Dichloroethene	ND	0.88	0.882	
c-1,2-Dichloroethene	ND	0.88	0.882	
t-1,2-Dichloroethene	ND	0.88	0.882	
1,2-Dichloropropane	ND	0.88	0.882	
1,3-Dichloropropane	ND	0.88	0.882	
2,2-Dichloropropane	ND	4.4	0.882	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	0.882	
c-1,3-Dichloropropene	ND	0.88	0.882	
t-1,3-Dichloropropene	ND	1.8	0.882	
Ethylbenzene	ND	0.88	0.882	
2-Hexanone	ND	18	0.882	
Isopropylbenzene	ND	0.88	0.882	
p-Isopropyltoluene	ND	0.88	0.882	
Methylene Chloride	ND	8.8	0.882	
4-Methyl-2-Pentanone	ND	18	0.882	
Naphthalene	ND	8.8	0.882	
n-Propylbenzene	ND	1.8	0.882	
Styrene	ND	0.88	0.882	
1,1,1,2-Tetrachloroethane	ND	0.88	0.882	
1,1,2,2-Tetrachloroethane	ND	1.8	0.882	
Tetrachloroethene	ND	0.88	0.882	
Toluene	ND	0.88	0.882	
1,2,3-Trichlorobenzene	ND	1.8	0.882	
1,2,4-Trichlorobenzene	ND	1.8	0.882	
1,1,1-Trichloroethane	ND	0.88	0.882	
1,1,2-Trichloroethane	ND	0.88	0.882	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.8	0.882	
Trichloroethene	ND	1.8	0.882	
Trichlorofluoromethane	ND	8.8	0.882	
1,2,3-Trichloropropane	ND	1.8	0.882	
1,2,4-Trimethylbenzene	ND	1.8	0.882	
1,3,5-Trimethylbenzene	ND	1.8	0.882	
Vinyl Acetate	ND	8.8	0.882	
Vinyl Chloride	ND	0.88	0.882	
p/m-Xylene	ND	1.8	0.882	
o-Xylene	ND	0.88	0.882	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	0.882	
Tert-Butyl Alcohol (TBA)	ND	18	0.882	
Diisopropyl Ether (DIPE)	ND	0.88	0.882	
Ethyl-t-Butyl Ether (ETBE)	ND	0.88	0.882	
Tert-Amyl-Methyl Ether (TAME)	ND	0.88	0.882	
Ethanol	ND	440	0.882	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	98	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 19 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-312-307**	**N/A**	**Solid**	**GC/MS Q**	**11/04/13**	**11/04/13 12:33**	**131104L01**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1	
Benzene	ND	1.0	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	2.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	5.0	1	
Bromomethane	ND	20	1	
2-Butanone	ND	20	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	1.0	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	2.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	20	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	2.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	2.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	5.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1	
c-1,3-Dichloropropene	ND	1.0	1	
t-1,3-Dichloropropene	ND	2.0	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	20	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	20	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	2.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	2.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	2.0	1	
1,2,4-Trichlorobenzene	ND	2.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Trichloroethene	ND	2.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	2.0	1	
1,2,4-Trimethylbenzene	ND	2.0	1	
1,3,5-Trimethylbenzene	ND	2.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	1.0	1	
p/m-Xylene	ND	2.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1	
Tert-Butyl Alcohol (TBA)	ND	20	1	
Diisopropyl Ether (DIPE)	ND	1.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1	
Ethanol	ND	500	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Brookfield / SB0674			Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCTB-103113	**13-10-2392-7-A**	**10/31/13 00:00**	**Aqueous**	**GC/MS WW**	**11/06/13**	**11/07/13 03:18**	**131106L03**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 2 of 9

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Tert-Butyl Alcohol (TBA)	ND	10	1	
Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Ethanol	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 3 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	114	80-126	
1,2-Dichloroethane-d4	116	80-134	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
QCEB-103113	**13-10-2392-8-A**	**10/31/13 14:45**	**Aqueous**	**GC/MS WW**	**11/06/13**	**11/07/13 03:52**	**131106L03**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 5 of 9

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Tert-Butyl Alcohol (TBA)	ND	10	1	
Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Ethanol	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 6 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	80-126	
1,2-Dichloroethane-d4	116	80-134	
Toluene-d8	99	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-316-1193**	**N/A**	**Aqueous**	**GC/MS WW**	**11/06/13**	**11/07/13 02:44**	**131106L03**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 8 of 9

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Tert-Butyl Alcohol (TBA)	ND	10	1	
Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Ethanol	ND	100	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Brookfield / SB0674			Page 9 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	80-126	
1,2-Dichloroethane-d4	114	80-134	
Toluene-d8	100	80-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: Brookfield / SB0674			Page 1 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2313-3	**Solid**	**GC 46**	**11/01/13**	**11/01/13 21:06**	**131101S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	356.1	89	346.2	87	64-130	3	0-15	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: Brookfield / SB0674			Page 2 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2312-1	**Solid**	**ICP 7300**	**11/01/13**	**11/04/13 16:40**	**131101S03**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	5.208	21	4.635	19	50-115	12	0-20	3
Arsenic	2.397	25.00	26.71	97	27.35	100	75-125	2	0-20	
Barium	108.0	25.00	125.5	4X	126.7	4X	75-125	4X	0-20	Q
Beryllium	0.2851	25.00	25.98	103	26.42	105	75-125	2	0-20	
Cadmium	ND	25.00	25.47	102	26.24	105	75-125	3	0-20	
Chromium	14.78	25.00	41.77	108	42.55	111	75-125	2	0-20	
Cobalt	8.370	25.00	34.28	104	35.96	110	75-125	5	0-20	
Copper	10.06	25.00	36.67	106	38.21	113	75-125	4	0-20	
Lead	17.14	25.00	40.90	95	45.25	112	75-125	10	0-20	
Molybdenum	ND	25.00	23.05	92	24.40	98	75-125	6	0-20	
Nickel	9.738	25.00	35.89	105	37.72	112	75-125	5	0-20	
Selenium	ND	25.00	22.07	88	22.82	91	75-125	3	0-20	
Silver	ND	12.50	12.88	103	13.14	105	75-125	2	0-20	
Thallium	ND	25.00	19.80	79	20.19	81	75-125	2	0-20	
Vanadium	32.83	25.00	55.92	92	57.14	97	75-125	2	0-20	
Zinc	37.92	25.00	63.02	100	65.68	111	75-125	4	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
Project: Brookfield / SB0674			Page 3 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2337-6	**Aqueous**	**ICP 7300**	**11/01/13**	**11/04/13 12:31**	**131101SA2**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	0.5000	0.5724	114	0.5633	113	72-132	2	0-10	
Arsenic	ND	0.5000	0.5556	111	0.5520	110	80-140	1	0-11	
Barium	0.01126	0.5000	0.5230	102	0.5199	102	87-123	1	0-6	
Beryllium	ND	0.5000	0.5214	104	0.5169	103	89-119	1	0-8	
Cadmium	ND	0.5000	0.5193	104	0.5153	103	82-124	1	0-7	
Chromium	ND	0.5000	0.5620	112	0.5571	111	86-122	1	0-8	
Cobalt	ND	0.5000	0.5641	113	0.5540	111	83-125	2	0-7	
Copper	ND	0.5000	0.6010	120	0.5961	119	78-126	1	0-7	
Lead	ND	0.5000	0.5439	109	0.5343	107	84-120	2	0-7	
Molybdenum	ND	0.5000	0.5342	107	0.5265	105	78-126	1	0-7	
Nickel	ND	0.5000	0.5633	113	0.5544	111	84-120	2	0-7	
Selenium	ND	0.5000	0.5477	110	0.5302	106	79-127	3	0-9	
Silver	ND	0.2500	0.2764	111	0.2753	110	86-128	0	0-7	
Thallium	ND	0.5000	0.5205	104	0.5072	101	79-121	3	0-8	
Vanadium	0.01783	0.5000	0.5473	106	0.5448	105	88-118	0	0-7	
Zinc	0.03858	0.5000	0.5957	111	0.5990	112	89-131	1	0-8	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7470A Filt.
		Method:	EPA 7470A
Project: Brookfield / SB0674			Page 4 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2317-2	**Aqueous**	**Mercury**	**11/01/13**	**11/01/13 13:04**	**131101S01**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.01000	0.009727	97	0.009782	98	57-141	1	0-10	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: Brookfield / SB0674			Page 5 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2404-1	**Solid**	**Mercury**	**11/01/13**	**11/01/13 17:46**	**131101S07**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.3201	0.8350	0.9251	72	1.049	87	80-120	13	0-15	3

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674			Page 6 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-11-0088-1	**Solid**	**GC/MS AAA**	**11/04/13**	**11/07/13 16:29**	**131104S15**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	ND	0.2000	0.1594	80	0.1585	79	15-171	1	0-44	
2-Methylnaphthalene	ND	0.2000	0.1794	90	0.1758	88	28-160	2	0-39	
1-Methylnaphthalene	ND	0.2000	0.1666	83	0.1626	81	28-154	2	0-40	
Acenaphthylene	ND	0.2000	0.1417	71	0.1391	70	27-153	2	0-41	
Acenaphthene	ND	0.2000	0.1406	70	0.1367	68	33-147	3	0-38	
Fluorene	ND	0.2000	0.1492	75	0.1455	73	12-180	3	0-33	
Phenanthrene	ND	0.2000	0.1613	81	0.1504	75	26-152	7	0-29	
Anthracene	ND	0.2000	0.1303	65	0.1269	63	10-145	3	0-25	
Fluoranthene	0.04438	0.2000	0.2061	81	0.1828	69	20-158	12	0-31	
Pyrene	0.04324	0.2000	0.1827	70	0.1665	62	11-191	9	0-31	
Benzo (a) Anthracene	0.02496	0.2000	0.1670	71	0.1608	68	36-150	4	0-32	
Chrysene	0.03048	0.2000	0.1579	64	0.1494	59	21-189	6	0-29	
Benzo (k) Fluoranthene	0.02728	0.2000	0.1581	65	0.1531	63	40-148	3	0-32	
Benzo (b) Fluoranthene	0.02516	0.2000	0.1655	70	0.1661	70	39-147	0	0-28	
Benzo (a) Pyrene	0.03088	0.2000	0.1760	73	0.1740	72	36-168	1	0-26	
Indeno (1,2,3-c,d) Pyrene	0.02784	0.2000	0.1804	76	0.1780	75	22-160	1	0-26	
Dibenz (a,h) Anthracene	ND	0.2000	0.1249	62	0.1303	65	27-147	4	0-30	
Benzo (g,h,i) Perylene	0.02714	0.2000	0.1275	50	0.1257	49	10-152	1	0-28	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Brookfield / SB0674			Page 7 of 7

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-2203-3	**Aqueous**	**GC/MS WW**	**11/06/13**	**11/06/13 16:27**	**131106S01**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	49.05	98	46.04	92	78-120	6	0-9	
Chloroform	ND	50.00	55.30	111	51.74	103	80-120	7	0-10	
1,1-Dichloroethane	ND	50.00	48.10	96	44.92	90	80-120	7	0-10	
1,2-Dichloroethane	ND	50.00	56.18	112	54.16	108	76-130	4	0-11	
1,1-Dichloroethene	ND	50.00	43.30	87	40.50	81	70-130	7	0-15	
Tetrachloroethene	ND	50.00	45.27	91	41.67	83	80-120	8	0-9	
Toluene	ND	50.00	48.36	97	45.52	91	72-126	6	0-10	
Trichloroethene	ND	50.00	52.21	104	49.06	98	74-122	6	0-10	
p/m-Xylene	ND	100.0	96.17	96	91.21	91	70-130	5	0-30	
o-Xylene	ND	50.00	46.60	93	44.52	89	70-130	5	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	52.78	106	50.96	102	69-123	4	0-17	
Ethanol	ND	500.0	506.7	101	452.1	90	41-155	11	0-40	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - PDS/PDSD

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: Brookfield / SB0674			Page 1 of 1

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS/PDSD Batch Number
13-10-2404-1	**Solid**	**Mercury**	**11/01/13 00:00**	**11/01/13 17:51**	**131101S07**

Parameter	Sample Conc.	Spike Added	PDS Conc.	PDS %Rec.	PDSD Conc.	PDSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	0.3201	0.8350	1.106	94	1.097	93	75-125	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: Brookfield / SB0674			Page 1 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-15-490-612	**Solid**	**GC 46**	**11/01/13 20:49**	**131101B05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	376.8	94	75-123	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
Project: Brookfield / SB0674			Page 2 of 13

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-498-115	**Aqueous**	**GC 46**	**11/04/13**	**11/06/13 04:24**	**131104B11A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	4000	3769	94	3709	93	75-117	2	0-13	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: Brookfield / SB0674			Page 3 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
097-01-002-17580	**Solid**	**ICP 7300**	**11/04/13 16:37**	**131101L03**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	25.00	26.29	105	80-120	73-127	
Arsenic	25.00	25.98	104	80-120	73-127	
Barium	25.00	26.61	106	80-120	73-127	
Beryllium	25.00	26.23	105	80-120	73-127	
Cadmium	25.00	27.31	109	80-120	73-127	
Chromium	25.00	29.46	118	80-120	73-127	
Cobalt	25.00	29.45	118	80-120	73-127	
Copper	25.00	26.84	107	80-120	73-127	
Lead	25.00	26.13	105	80-120	73-127	
Molybdenum	25.00	25.85	103	80-120	73-127	
Nickel	25.00	29.31	117	80-120	73-127	
Selenium	25.00	24.90	100	80-120	73-127	
Silver	12.50	13.05	104	80-120	73-127	
Thallium	25.00	26.59	106	80-120	73-127	
Vanadium	25.00	26.22	105	80-120	73-127	
Zinc	25.00	28.76	115	80-120	73-127	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3010A Total
		Method:	EPA 6010B
Project: Brookfield / SB0674			Page 4 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
097-01-003-13785	**Aqueous**	**ICP 7300**	**11/04/13 12:21**	**131101LA2**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	0.5000	0.5174	103	80-120	73-127	
Arsenic	0.5000	0.5305	106	80-120	73-127	
Barium	0.5000	0.5201	104	80-120	73-127	
Beryllium	0.5000	0.5188	104	80-120	73-127	
Cadmium	0.5000	0.5364	107	80-120	73-127	
Chromium	0.5000	0.5786	116	80-120	73-127	
Cobalt	0.5000	0.5817	116	80-120	73-127	
Copper	0.5000	0.5491	110	80-120	73-127	
Lead	0.5000	0.5350	107	80-120	73-127	
Molybdenum	0.5000	0.5194	104	80-120	73-127	
Nickel	0.5000	0.5819	116	80-120	73-127	
Selenium	0.5000	0.4962	99	80-120	73-127	
Silver	0.2500	0.2587	103	80-120	73-127	
Thallium	0.5000	0.5188	104	80-120	73-127	
Vanadium	0.5000	0.5174	103	80-120	73-127	
Zinc	0.5000	0.5597	112	80-120	73-127	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7470A Total
		Method:	EPA 7470A
Project: Brookfield / SB0674			Page 5 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-04-008-6702	**Aqueous**	**Mercury**	**11/01/13 12:57**	**131101L01**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.01000	0.01002	100	85-121	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: Brookfield / SB0674			Page 6 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-04-007-9799	**Solid**	**Mercury**	**11/01/13 17:40**	**131101L07**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.8350	0.8248	99	85-121	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674			Page 7 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-06-010-1894	**Solid**	**GC/MS AAA**	**11/06/13 12:46**	**131104L15**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Naphthalene	0.2000	0.1826	91	64-118	55-127	
2-Methylnaphthalene	0.2000	0.1899	95	55-127	43-139	
1-Methylnaphthalene	0.2000	0.1928	96	57-129	45-141	
Acenaphthylene	0.2000	0.1601	80	36-132	20-148	
Acenaphthene	0.2000	0.1610	81	61-121	51-131	
Fluorene	0.2000	0.1670	83	56-128	44-140	
Phenanthrene	0.2000	0.1603	80	56-122	45-133	
Anthracene	0.2000	0.1596	80	11-119	0-137	
Fluoranthene	0.2000	0.1804	90	56-122	45-133	
Pyrene	0.2000	0.1556	78	57-129	45-141	
Benzo (a) Anthracene	0.2000	0.1630	82	49-127	36-140	
Chrysene	0.2000	0.1513	76	60-126	49-137	
Benzo (k) Fluoranthene	0.2000	0.1669	83	54-138	40-152	
Benzo (b) Fluoranthene	0.2000	0.1661	83	46-136	31-151	
Benzo (a) Pyrene	0.2000	0.1816	91	40-148	22-166	
Indeno (1,2,3-c,d) Pyrene	0.2000	0.1734	87	43-163	23-183	
Dibenz (a,h) Anthracene	0.2000	0.1516	76	45-153	27-171	
Benzo (g,h,i) Perylene	0.2000	0.1286	64	38-140	21-157	

Total number of LCS compounds: 18
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM PAHs
Project: Brookfield / SB0674			Page 8 of 13

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-06-008-643	**Aqueous**	**GC/MS AAA**	**11/06/13**	**11/07/13 12:13**	**131106L07**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Naphthalene	2.000	1.296	65	1.110	56	21-133	2-152	15	0-25	
2-Methylnaphthalene	2.000	1.260	63	1.056	53	21-140	1-160	18	0-25	
1-Methylnaphthalene	2.000	1.339	67	1.128	56	20-140	0-160	17	0-25	
Acenaphthylene	2.000	1.280	64	1.154	58	33-145	14-164	10	0-25	
Acenaphthene	2.000	1.239	62	1.102	55	55-121	44-132	12	0-25	
Fluorene	2.000	1.362	68	1.248	62	59-121	49-131	9	0-25	
Phenanthrene	2.000	1.363	68	1.317	66	54-120	43-131	3	0-25	
Anthracene	2.000	1.368	68	1.354	68	27-133	9-151	1	0-25	
Fluoranthene	2.000	1.534	77	1.551	78	26-137	8-156	1	0-25	
Pyrene	2.000	1.389	69	1.379	69	45-129	31-143	1	0-25	
Benzo (a) Anthracene	2.000	1.435	72	1.429	71	33-143	15-161	0	0-25	
Chrysene	2.000	1.356	68	1.368	68	17-168	0-193	1	0-25	
Benzo (k) Fluoranthene	2.000	1.508	75	1.534	77	24-159	2-182	2	0-25	
Benzo (b) Fluoranthene	2.000	1.414	71	1.431	72	24-159	2-182	1	0-25	
Benzo (a) Pyrene	2.000	1.563	78	1.550	78	17-163	0-187	1	0-25	
Indeno (1,2,3-c,d) Pyrene	2.000	1.471	74	1.463	73	25-175	0-200	1	0-25	
Dibenz (a,h) Anthracene	2.000	1.285	64	1.283	64	25-175	0-200	0	0-25	
Benzo (g,h,i) Perylene	2.000	1.107	55	1.117	56	25-157	3-179	1	0-25	

Total number of LCS compounds: 18
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Brookfield / SB0674			Page 9 of 13

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-312-307	**Solid**	**GC/MS Q**	**11/04/13**	**11/04/13 11:01**	**131104L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	88.72	177	85.24	170	80-120	73-127	4	0-20	X
Benzene	50.00	44.46	89	45.04	90	80-120	73-127	1	0-20	
Bromobenzene	50.00	45.49	91	46.80	94	80-120	73-127	3	0-20	
Bromochloromethane	50.00	44.22	88	44.89	90	80-120	73-127	2	0-20	
Bromodichloromethane	50.00	43.53	87	43.96	88	80-120	73-127	1	0-20	
Bromoform	50.00	48.01	96	46.42	93	80-120	73-127	3	0-20	
Bromomethane	50.00	82.11	164	84.17	168	80-120	73-127	2	0-20	X
2-Butanone	50.00	68.99	138	72.42	145	80-120	73-127	5	0-20	X
n-Butylbenzene	50.00	44.75	89	45.10	90	77-123	69-131	1	0-25	
sec-Butylbenzene	50.00	42.68	85	42.55	85	80-120	73-127	0	0-20	
tert-Butylbenzene	50.00	43.95	88	43.50	87	80-120	73-127	1	0-20	
Carbon Disulfide	50.00	44.82	90	44.69	89	80-120	73-127	0	0-20	
Carbon Tetrachloride	50.00	41.21	82	40.16	80	65-137	53-149	3	0-20	
Chlorobenzene	50.00	42.46	85	43.16	86	80-120	73-127	2	0-20	
Chloroethane	50.00	44.04	88	42.75	85	80-120	73-127	3	0-20	
Chloroform	50.00	44.26	89	43.82	88	80-120	73-127	1	0-20	
Chloromethane	50.00	43.16	86	45.03	90	80-120	73-127	4	0-20	
2-Chlorotoluene	50.00	41.43	83	42.47	85	80-120	73-127	2	0-20	
4-Chlorotoluene	50.00	41.53	83	41.59	83	80-120	73-127	0	0-20	
Dibromochloromethane	50.00	44.21	88	43.59	87	80-120	73-127	1	0-20	
1,2-Dibromo-3-Chloropropane	50.00	40.93	82	41.19	82	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	46.26	93	46.70	93	80-120	73-127	1	0-20	
Dibromomethane	50.00	45.00	90	45.42	91	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	43.93	88	44.49	89	80-120	73-127	1	0-20	
1,3-Dichlorobenzene	50.00	44.19	88	43.96	88	80-120	73-127	1	0-20	
1,4-Dichlorobenzene	50.00	47.28	95	47.00	94	80-120	73-127	1	0-20	
Dichlorodifluoromethane	50.00	49.25	98	47.22	94	80-120	73-127	4	0-20	
1,1-Dichloroethane	50.00	43.85	88	43.73	87	80-120	73-127	0	0-20	
1,2-Dichloroethane	50.00	44.25	88	44.45	89	80-120	73-127	0	0-20	
1,1-Dichloroethene	50.00	42.64	85	42.24	84	68-128	58-138	1	0-20	
c-1,2-Dichloroethene	50.00	46.30	93	46.04	92	80-120	73-127	1	0-20	
t-1,2-Dichloroethene	50.00	47.04	94	46.88	94	80-120	73-127	0	0-20	
1,2-Dichloropropane	50.00	47.32	95	47.54	95	79-115	73-121	0	0-25	
1,3-Dichloropropane	50.00	45.64	91	45.87	92	80-120	73-127	0	0-20	
2,2-Dichloropropane	50.00	42.23	84	41.26	83	80-120	73-127	2	0-20	
1,1-Dichloropropene	50.00	45.68	91	45.44	91	80-120	73-127	1	0-20	
c-1,3-Dichloropropene	50.00	47.91	96	48.80	98	80-120	73-127	2	0-20	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Brookfield / SB0674			Page 10 of 13

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
t-1,3-Dichloropropene	50.00	42.96	86	43.77	88	80-120	73-127	2	0-20	
Ethylbenzene	50.00	44.62	89	45.15	90	80-120	73-127	1	0-20	
2-Hexanone	50.00	58.51	117	63.95	128	80-120	73-127	9	0-20	X
Isopropylbenzene	50.00	41.11	82	42.26	85	80-120	73-127	3	0-20	
p-Isopropyltoluene	50.00	42.62	85	42.96	86	80-120	73-127	1	0-20	
Methylene Chloride	50.00	47.38	95	48.19	96	80-120	73-127	2	0-20	
4-Methyl-2-Pentanone	50.00	48.65	97	49.93	100	80-120	73-127	3	0-20	
Naphthalene	50.00	45.99	92	47.51	95	80-120	73-127	3	0-20	
n-Propylbenzene	50.00	40.25	81	41.32	83	80-120	73-127	3	0-20	
Styrene	50.00	44.90	90	45.82	92	80-120	73-127	2	0-20	
1,1,1,2-Tetrachloroethane	50.00	46.17	92	46.19	92	80-120	73-127	0	0-20	
1,1,2,2-Tetrachloroethane	50.00	46.31	93	46.28	93	80-120	73-127	0	0-20	
Tetrachloroethene	50.00	46.11	92	46.65	93	80-120	73-127	1	0-20	
Toluene	50.00	44.61	89	45.40	91	80-120	73-127	2	0-20	
1,2,3-Trichlorobenzene	50.00	47.06	94	48.58	97	80-120	73-127	3	0-20	
1,2,4-Trichlorobenzene	50.00	47.13	94	48.49	97	80-120	73-127	3	0-20	
1,1,1-Trichloroethane	50.00	43.11	86	42.50	85	80-120	73-127	1	0-20	
1,1,2-Trichloroethane	50.00	46.40	93	47.11	94	80-120	73-127	2	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	44.30	89	43.75	87	80-120	73-127	1	0-20	
Trichloroethene	50.00	45.34	91	45.22	90	80-120	73-127	0	0-20	
Trichlorofluoromethane	50.00	47.79	96	45.48	91	80-120	73-127	5	0-20	
1,2,3-Trichloropropane	50.00	39.39	79	40.24	80	80-120	73-127	2	0-20	ME
1,2,4-Trimethylbenzene	50.00	46.29	93	46.80	94	80-120	73-127	1	0-20	
1,3,5-Trimethylbenzene	50.00	45.72	91	47.85	96	80-120	73-127	5	0-20	
Vinyl Acetate	50.00	57.21	114	56.68	113	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	44.70	89	43.57	87	67-127	57-137	3	0-20	
p/m-Xylene	100.0	86.37	86	87.64	88	80-120	73-127	1	0-20	
o-Xylene	50.00	42.22	84	42.67	85	80-120	73-127	1	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	46.67	93	46.40	93	70-124	61-133	1	0-20	
Tert-Butyl Alcohol (TBA)	250.0	248.5	99	229.0	92	73-121	65-129	8	0-20	
Diisopropyl Ether (DIPE)	50.00	45.71	91	45.42	91	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	47.54	95	47.52	95	70-124	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	47.73	95	47.70	95	74-122	66-130	0	0-20	
Ethanol	500.0	467.2	93	438.8	88	51-135	37-149	6	0-27	

Total number of LCS compounds: 71
Total number of ME compounds: 1
Total number of ME compounds allowed: 4

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Geosyntec Consultants	Date Received:	10/31/13
924 Anacapa Street, Suite 4A	Work Order:	13-10-2392
Santa Barbara, CA 93101-2177	Preparation:	EPA 5035
	Method:	EPA 8260B
Project: Brookfield / SB0674		Page 11 of 13

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Brookfield / SB0674			Page 12 of 13

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-14-316-1193	**Aqueous**	**GC/MS WW**	**11/07/13 00:26**	**131106L03**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Acetone	50.00	57.90	116	70-130	60-140	
Benzene	50.00	50.20	100	70-130	60-140	
Bromobenzene	50.00	48.21	96	70-130	60-140	
Bromochloromethane	50.00	46.82	94	70-130	60-140	
Bromodichloromethane	50.00	51.95	104	70-130	60-140	
Bromoform	50.00	43.08	86	70-130	60-140	
Bromomethane	50.00	56.01	112	70-130	60-140	
2-Butanone	50.00	56.62	113	70-130	60-140	
n-Butylbenzene	50.00	52.81	106	77-123	69-131	
sec-Butylbenzene	50.00	53.94	108	70-130	60-140	
tert-Butylbenzene	50.00	50.78	102	70-130	60-140	
Carbon Disulfide	50.00	50.23	100	70-130	60-140	
Carbon Tetrachloride	50.00	40.12	80	66-138	54-150	
Chlorobenzene	50.00	51.40	103	70-130	60-140	
Chloroethane	50.00	51.89	104	70-130	60-140	
Chloroform	50.00	56.19	112	70-130	60-140	
Chloromethane	50.00	63.09	126	70-130	60-140	
2-Chlorotoluene	50.00	51.41	103	70-130	60-140	
4-Chlorotoluene	50.00	54.51	109	70-130	60-140	
Dibromochloromethane	50.00	48.82	98	70-130	60-140	
1,2-Dibromo-3-Chloropropane	50.00	50.28	101	70-130	60-140	
1,2-Dibromoethane	50.00	57.07	114	70-130	60-140	
Dibromomethane	50.00	57.46	115	70-130	60-140	
1,2-Dichlorobenzene	50.00	52.75	106	70-130	60-140	
1,3-Dichlorobenzene	50.00	51.91	104	70-130	60-140	
1,4-Dichlorobenzene	50.00	49.25	98	70-130	60-140	
Dichlorodifluoromethane	50.00	49.66	99	70-130	60-140	
1,1-Dichloroethane	50.00	51.60	103	70-130	60-140	
1,2-Dichloroethane	50.00	56.75	114	80-129	72-137	
1,1-Dichloroethene	50.00	51.19	102	71-131	61-141	
c-1,2-Dichloroethene	50.00	53.59	107	70-130	60-140	
t-1,2-Dichloroethene	50.00	53.52	107	70-130	60-140	
1,2-Dichloropropane	50.00	49.83	100	79-115	73-121	
1,3-Dichloropropane	50.00	56.67	113	70-130	60-140	
2,2-Dichloropropane	50.00	34.73	69	70-130	60-140	ME
1,1-Dichloropropene	50.00	52.65	105	70-130	60-140	
c-1,3-Dichloropropene	50.00	49.17	98	70-130	60-140	

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

Geosyntec Consultants		Date Received:	10/31/13
924 Anacapa Street, Suite 4A		Work Order:	13-10-2392
Santa Barbara, CA 93101-2177		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Brookfield / SB0674			Page 13 of 13

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
t-1,3-Dichloropropene	50.00	47.57	95	70-130	60-140	
Ethylbenzene	50.00	50.92	102	80-123	73-130	
2-Hexanone	50.00	54.94	110	70-130	60-140	
Isopropylbenzene	50.00	50.78	102	70-130	60-140	
p-Isopropyltoluene	50.00	49.66	99	70-130	60-140	
Methylene Chloride	50.00	52.02	104	70-130	60-140	
4-Methyl-2-Pentanone	50.00	42.51	85	70-130	60-140	
Naphthalene	50.00	49.21	98	70-130	60-140	
n-Propylbenzene	50.00	50.26	101	70-130	60-140	
Styrene	50.00	50.51	101	70-130	60-140	
1,1,1,2-Tetrachloroethane	50.00	47.20	94	70-130	60-140	
1,1,2,2-Tetrachloroethane	50.00	58.59	117	70-130	60-140	
Tetrachloroethene	50.00	56.92	114	70-130	60-140	
Toluene	50.00	49.59	99	79-121	72-128	
1,2,3-Trichlorobenzene	50.00	44.76	90	70-130	60-140	
1,2,4-Trichlorobenzene	50.00	44.29	89	70-130	60-140	
1,1,1-Trichloroethane	50.00	50.61	101	70-130	60-140	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	50.62	101	70-130	60-140	
1,1,2-Trichloroethane	50.00	57.18	114	70-130	60-140	
Trichloroethene	50.00	53.25	106	70-130	60-140	
Trichlorofluoromethane	50.00	52.52	105	70-130	60-140	
1,2,3-Trichloropropane	50.00	56.29	113	70-130	60-140	
1,2,4-Trimethylbenzene	50.00	52.86	106	70-130	60-140	
1,3,5-Trimethylbenzene	50.00	51.05	102	70-130	60-140	
Vinyl Acetate	50.00	43.05	86	70-130	60-140	
Vinyl Chloride	50.00	57.51	115	70-136	59-147	
p/m-Xylene	100.0	102.0	102	70-130	60-140	
o-Xylene	50.00	51.93	104	70-130	60-140	
Methyl-t-Butyl Ether (MTBE)	50.00	53.21	106	72-126	63-135	
Tert-Butyl Alcohol (TBA)	250.0	210.9	84	71-125	62-134	
Diisopropyl Ether (DIPE)	50.00	53.39	107	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	48.94	98	69-129	59-139	
Tert-Amyl-Methyl Ether (TAME)	50.00	48.47	97	67-133	56-144	
Ethanol	500.0	431.3	86	47-155	29-173	

Total number of LCS compounds: 71
Total number of ME compounds: 1
Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Return to Contents

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 13-10-2392

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3010A Total	469	ICP 7300	1
EPA 6010B	EPA 3050B	469	ICP 7300	1
EPA 7470A	EPA 7470A Total	769	Mercury	1
EPA 7471A	EPA 7471A Total	769	Mercury	1
EPA 8015B (M)	EPA 3510C	847	GC 46	1
EPA 8015B (M)	EPA 3550B	847	GC 46	1
EPA 8260B	EPA 5035	316	GC/MS Q	2
EPA 8260B	EPA 5030C	626	GC/MS WW	2
EPA 8270C SIM PAHs	EPA 3545	773	GC/MS AAA	1
EPA 8270C SIM PAHs	EPA 3510C	773	GC/MS AAA	1

Return to Contents

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order: 13-10-2392

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

Calscience Environmental Laboratories, Inc.

☐ 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

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY **13-10-2392**

Date 10.31.13

Page 1 of 1

LABORATORY CLIENT: Geosyntec Consultants

ADDRESS: 924 Anacapa St., Suite 4A

CITY: Santa Barbara STATE: ZIP:

TEL: (805) 897-3800 E-MAIL: GFrieman@Geosyntec.com

CLIENT PROJECT NAME / NUMBER: Brookfield/SB 0674

P.O. NO.:

PROJECT CONTACT: Geoff Frieman

SAMPLER(S): (PRINT) Derek Fisher

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved (RK)	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	PAHs			
1	VP7 - 0.5	10/31	755	S	5	3	2			X			X							X		X			
2	VP7 - 5		800	S	5	3	2			X			X							X		X			
3	VP7 - 10		805	S	5	3	2			X			X							X		X			
4	VP10 - 0.5		1105	S	5	3	2			X			X							X		X			
5	VP10 - 5		1110	S	5	3	2			X			X							X		X			
6	VP10 - 10		1115	S	5	3	2			X			X							X		X			
7	QCTB-103113		—	W	2	—	2						X												
8	QCEB-103113		1445	W	6	2	4			X			X							X		X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
[signature]	[signature] GEL	10/31/13	1454
[signature]	[signature]	10/31/13	1730

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.

09/01/13 Revision

Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-10-2392

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Geosyntec

DATE: 10/31/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.2 °C - 0.2 °C (CF) = 2.0 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter **Checked by:** 828

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Checked by:** 828

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Checked by:** 895

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☐	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☑~~16ozCGJ~~ 659 10/31/13 ☑Sleeve (P) ☐EnCores® ☑TerraCores® ☑2oz PJ

Aqueous: ☐VOA ☑VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☑500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:** 131017B **Labeled/Checked by:** 895

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** 659

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered **Scanned by:** 659

* Ziplog bag (-1), (-4)

Return to Contents