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HEALTH CARE SERVICES
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March 7, 2014

Mr. David E. Murray
PCC Flow Technologies Holdings, Inc.
4600 SE Harney Drive
Portland, OR 97206-0898
(sent via electronic mail to: DMurray@pccstructurals.com)

Mr. Harold Mark Vignoles
9201 San Leandro LLC
9201 San Leandro Street
Oakland, CA 94603
(sent via electronic mail to: mark@servicewest.com)

Mr. Dallas Nelson
GP Holdings LLC
5977 Keith Avenue
Oakland, CA 94618-1545

Mr. David Murray
PCC Precision Castparts Corp.
4650 SW Macadam Avenue, #400
Portland, OR 97239
(sent via electronic mail to: DMurray@pccstructurals.com)

Subject: Request for a Focused SCM and Data Gap Investigation Work Plan; Fuel Leak Case No. RO0000320 and Geotracker Global ID T0600101592, PACO Pumps Inc, 9201 San Leandro Street, Oakland, CA 94603

Dear Messrs. Murray, Vignoles, and Nelson:

Alameda County Environmental Health (ACEH) has reviewed the case file, including the July 25, 2013 *Remedial Investigation Activities and Groundwater Monitoring Report* (uploaded to the ACEH ftp site on August 6, 2013 and the State Geotracker site on January 8, 2014). The reports were prepared and submitted on your behalf by The Source Group (SGI) of Signal Hill, California. Thank you for submitting the report. The report recommended site closure under the Low-Threat Closure Policy (LTCP).

ACEH has evaluated the data and recommendations presented in the above-mentioned report, in conjunction with the case files, to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACEH staff review, we have determined that the site fails to meet the LTCP General Criteria b (consists only of petroleum), d (Free Product), e (Site Conceptual Model), f (Secondary Source Removal), and the Media-Specific Criteria for Groundwater, the Media-Specific Criteria for Vapor Intrusion to Indoor Air, and the Media-Specific Criteria for Direct Contact (see Geotracker for a copy of the LTCP checklist).

The following discussions of site contamination are divided up into five Areas of Interest. Area of Interests 1, 2, and 3, appear to be surface releases located near the southern or western property boundaries. Area of Interest 4 and 5 are associated with separate underground storage tank (UST) locations.

At this juncture ACEH requests that you prepare a Data Gap Investigation Work Plan that is supported by a focused Site Conceptual Model (SCM) to address the Technical Comments provided below. Prior to submitting the work plan, ACEH would like to invite you to a meeting to discuss the site and strategize about the most efficient path towards closure. ACEH requests notification of suitable dates and times for the meeting.

TECHNICAL COMMENTS

1. **LTCP General Criteria b (Unauthorized Release Consists Only of Petroleum) –** For purposes of this policy, petroleum is defined as crude oil, or any fraction thereof, which is liquid at standard conditions and temperature and pressure, which means 60 degrees Fahrenheit and 14.7 pounds per square inch absolute including the following substances: motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents and used oils, including any additives and blending agents such as oxygenates contained in the formulation of the substances.

   Area of Interest 1 – This area (surface release(s) southwest of workshop) was overexcavated in March 2009; however, the nature of the spill (generating or source process) for the TPHd and TPHmo contamination is uncertain. Because poly-chlorinated biphenyls (PCBs) contamination has been a concern in Areas of Interest 2 and 3, it is uncertain if PCB contamination may also have been associated with the heavy end petroleum contamination in this area of interest.

   Area of Interest 2 – The potential for PCB contamination in Area of Interest 2 (along railroad tracks on western side of property) has also been previously investigated. Previous analytical sampling for PCBs in Area of Interest 2 was associated with deeper samples (3.5 feet below grade surface [bgs]) with non-detectable hydrocarbon concentrations. The detection of elevated diesel- and motor oil-range hydrocarbons in shallow soil (2.5 feet bgs) in recently installed wells MW-9, MW-10, and MW-11 in Area of Interest 2 at locations that have not previously documented elevated heavier hydrocarbon concentrations, indicates that additional sampling effort is required to determine the potential for hydrocarbon associated PCB contamination in this area of interest. This area may have been contaminated by similar historic disposal practices as Area of Interest 3.

   Available soil analytical data also documents an elevated arsenic concentration of 14 milligrams per kilogram (mg/kg) at either 1.5 or 3 feet bgs in Area of Interest 2. Only one soil sample appears to have been analyzed for arsenic. No further analytical testing appears to have been conducted at the time to define this elevated concentration; however, a later series of samples of composite samples (0.5 and 1.5 foot depth composite interval) along the perimeter of the site were submitted for metals analysis and generally did not detect significant concentrations of arsenic. This location may thus represent a hot spot as the concentration is above generally accepted regional arsenic concentration of 11 mg/kg. The data indicates that additional sampling effort is required in order to determine the potential for additional areas of arsenic contamination in the vicinity of the sample (Pit 3 at 1.5 or 3 feet bgs; the data indicates both and may be in disagreement).

   Area of Interest 3 – This area (north of Area of Interest 2, along railroad tracks on western side of property) has been documented to contain PCBs in shallow soil (0.5 feet) that appear to decrease with depth (2 – 2.75 feet bgs). Analytical data is relatively sparse; however, concentrations appear to be below commercial Environmental Screening Levels (ESLs) promulgated by the San Francisco Regional Water Quality Control Board (RWQCB).

   Please present a strategy in the Data Gap Work Plan (described in Technical Comment 8 below) to address the data gaps identified above. Please identify any additional data gaps that are encountered. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 8 below.

   Conversely, because Areas of Interest 1, 2, and 3 do not appear to be associated with an underground storage tank (UST), the Areas may be separated from the UST investigations and closed under another case number in the Site Cleanup Program (SCP; a non-leaking UST). In order to use this mechanism, ACEH will require sufficient funds to oversee the concurrent investigation. Once sufficiently characterized and if appropriate remediated, the use of a land use restriction may allow these areas of interest to be managed with residual contamination in place.

2. **LTCP General Criteria d (Free Product) –** The LTCP requires free product to be removed to the extent practicable at release sites where investigations indicate the presence of free product by removing in a manner that minimizes the spread of the unauthorized release into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges, or disposes of recovery byproducts in compliance with applicable laws.

Additionally, the LTCP requires that abatement of free product migration be used as a minimum objective for the design of any free product removal system.

Area of Interest 4 - ACEH's review of the case files indicates that insufficient data and analysis has been presented to assess free product at the site. Specifically, total petroleum hydrocarbons as gasoline (TPHg) have been detected in site wells at concentrations above levels that technical support documents for the LTCP consider to be indirect evidence of Light-Non-Aqueous Phase Liquid (LNAPL). Technical support documents consider Total Petroleum Hydrocarbons (TPH) as gasoline (TPHg) or BTEX concentrations greater than 20,000 micrograms per liter [µg/l]; TPHd concentrations greater than 5,000 µg/l to be indirect evidence of LNAPL). Concentrations ranging from 30,000 to 35,100 µg/l TPHg have been detected in wells AS-1S, E9, and E10 over the last two monitoring events in each well. Benzene concentrations ranging from 2,440 to 4,810 µg/l have been detected in wells AS-1S, E-9, and E-10 over the last two monitoring events in the wells. Wells MW-3 and E11 contained TPHg concentrations only slightly lower than this. Additionally, in the most recent monitoring event, wells E2 and E3 contained concentrations of Total Petroleum Hydrocarbons as diesel or motor oil (TPHd or TPHmo, respectively) up to 62,000 µg/l TPHd and 357,000 µg/l TPHmo.

Additionally, ACEH's review of well screens indicates the potential for submerged conditions in wells MW-8, MW-9, MW-10, and MW-11. Please evaluate the effectiveness of the monitoring well network to detect LNAPL and present your analysis in the focused SCM described in Technical Comment 8.

Please present a strategy in the Data Gap Work Plan (described in Technical Comment 8 below) to address the data gaps identified above. Please identify any additional data gaps that are encountered. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 8 below.

3. **LTCP General Criteria e (Site Conceptual Model) –** According to the LTCP, the SCM is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

   Our review of the case files indicates that insufficient data collection and analysis has not been presented to assess the nature, extent, and mobility of the release and to support compliance with General Criteria b and d as discussed in Technical Comments 1 and 2 respectively above, and General Criteria f, and Media Specific Criteria for Groundwater, Vapor Intrusion to Indoor Air, and Direct Contact and Outdoor Air Exposure as described in Technical Comments 4, 5, 6, and 7 below, respectively.

4. **General Criteria f – Secondary Source Has Been Removed to the Extent Practicable –** "Secondary source" is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described in the policy. "To the extent practicable" means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy.

   Area of Interest 4 - Removal of a 550-gallon gasoline UST was attempted in August 1992; however, only product piping was encountered. Confirmation samples from the presumed location of the UST were all collected at a depth of 6 feet bgs and indicate low levels of TPHg (maximum of 15 mg/kg

TPHg maximum of 2.1 mg/kg benzene) suggesting contaminated soil had been removed. The presumed overexcavation of the UST pit is reported to have structurally impinged on the building immediately to the north of the overexcavation. That building has subsequently been removed. All subsequent soil analytical data that is reported for the UST vicinity has been collected below a depth of 9.5 feet bgs. However, groundwater concentrations in the vicinity of the former UST location suggest significant residual contamination is present in the vicinity of the presumed location of former UST location. Multiple groundwater samples in excess of 30,000 µg/l TPHg are documented in wells AS-1S, E-9, and E-10 as described above, and concentrations up to 62,500 µg/l TPHd and 357,000 µg/l TPHmo are also documented in down- or lateral gradient well E3. The adequacy of the removal of the secondary source does not appear to have been determined. Additionally, the analytical results for soil vapor samples support the potential presence of unidentified source areas (for example analytical results for SV-1 of 340,000 µg/l TPHg, and 490 µg/l benzene at 80 feet distance from the presumed release area).

Additionally, residual concentrations in soil at or below 9.5 feet in depth are above concentrations the LTCP technical support documents indicate are indirect evidence of LNAPL (TPHg greater than 100 – 200 mg/kg, and TPHd greater than 10 to 50 mg/kg).

The source of dissolved-phase TPHd and TPHmo in groundwater has not been accounted for. While a single small 550-gallon gasoline UST is reported to have been located at the site, the extent of the reported overexcavation suggests either a large release, or a more extensive UST tank-hold that may have included additional unreported USTs, or both.

Finally, the presence of TPHmo can suggest the presence of a waste oil UST in the former excavation, or elsewhere at the site. Concentrations of naphthalene, polycyclic aromatic hydrocarbons (PAHs), other Semi Volatile Organic Compounds (SVOCs), other Volatile Organic Compounds (VOCs), and wear metals have not been accessed in soil or groundwater at the site at appropriate locations

Area of Interest 5 – Other than generally, the location of the (former?) UST associated with Area of Interest 5 has not been identified, and the status of tank backfill (secondary source) has not been determined. Consequently, the status of the removal of the secondary source in this area cannot be determined. Previous soil analytical data for the area detected a maximum of 32 mg/kg TPHg and 0.700 mg/kg benzene at 10 and 5 feet bgs, respectively. Vapor probe SV-6 has detected in the highest soil analytical concentration (920 mg/kg TPHg, less than 4.0 mg/kg benzene, and 20 mg/kg ethylbenzene) to date for the area, but based on the depth of the contamination does not appear to have detected the source. The detection of significant soil vapor at VP-6 (1,000,000 µg/l TPHg, 23,000 µg/l benzene, and 45,000 µg/l ethylbenzene) further indicates a residual source and is in conflict with previous low soil analytical data.

Please present a strategy in the Data Gap Work Plan (described in Technical Comment 8 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 8 below.

5. **LTCP Media Specific Criteria for Groundwater –** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

   Our review of the case files indicates that insufficient data collection and analysis has been presented to support the requisite characteristics of plume length, plume stability (LTCP plume classification), distance to a surface water body, or that the property owner may be willing to accept a land use restriction as follows:

   Area of Interest 4 -

   a. **Plume Length –** Depending on the date of the groundwater monitoring event and the number of wells available for use in determining the groundwater flow direction, the flow direction appears to rotate between a westerly and a southwesterly flow direction. The wells MW-9 to MW-11 were installed in March 2013 appear to define the groundwater dissolved-phased plume to the west of the known release area.

However, the extent of the dissolved-phase plume does not appear to have been defined to the south of well MW-9, and "west" of wells E-7 and E-8. Existing contaminant distribution maps indicate it is appropriate to define this direction.

Finally, the extents of the TPHd or TPHmo dissolved-phase plumes do not appear to have been evaluated.

b. **Plume Stability –** The requisite characteristics of plume stability have not been demonstrated at the site. For example dissolved-phase concentrations in downgradient well E-8 have fluctuated between 1,380 and 4,750 µg/l TPHg, 2.0 and 707 µg/l benzene, less than 5.0 and 118 µg/l ethylbenzene, 64 and 1,420 µg/l TPHd, and less than 190 and 1,010 µg/l TPHmo in an approximately 13 month period. (March 2012 and April 2013). During the most recent sampling event of April 2013 well E-8 contained the highest detected concentration of TPHd, TPHmo, benzene, toluene, ethylbenzene, and total xylenes recorded for the well location. However, ACEH notes that silica gel cleanup (SGC) was not used in the most recent monitoring event and this likely affected the detected concentrations of extractable ranged hydrocarbons. Regardless, the lack of SGC did not affect the gasoline-ranged hydrocarbons (TPHg and BTEX).

ACEH notes that multiple wells at the site have not demonstrated plume concentration stability (MW-3, MW-6, AS-1S, ASMW-2S, E1, and E7). Wells MW-7, E2, E3, and E6 do not exhibit stability of extractable range hydrocarbons; however, this may be due to the lack of SGC analysis.

ACEH further notes that groundwater benzene concentrations were above 3,000 µg/l during the most recent sampling event at well E10, located approximately 25 feet downgradient of the source excavation area.

c. **Vicinity Water Supply Wells –** A private water supply well is reported to be located at an approximate distance of 620 feet to the southwest of the subject site at 711 Louisiana. The total depth is not reported. As discussed above, the plume is not delineated in this direction.

d. **Closest Surface Water Body –** The closest water body is an unnamed unlined highly modified water way / creek that is located approximately 465 feet to the southwest of the release area and approximately 360 feet from the downgradient site property line. As discussed above, the plume is not delineated in this direction.

e. **Acceptability of a Land Use Restriction –** The acceptability of a land use restriction to the property owner has not been discussed or reported. It may be useful to determine if a use restriction would be acceptable, should it be useful in meeting the Groundwater Media Specific Criteria.

Area of Interest 5 –

a. **Plume Length –** Although the monitoring well network for Area of Interest 4 might be capable of defining the downgradient extent of a plume associated with Area of Interest 5, elevated concentrations in wells associated with Area 4 eliminate the ability of the wells to do so. Two grab groundwater samples (GP-3 and GP-7) have been collected in the area at widely spaced locations and partially assist in plume delineation; however, do not sufficiently define the plume at an appropriate level of confidence for an unlocated source area. Elevated vapor concentrations at VP-6 indicate substantial residual soil contamination is present in the vicinity of the unknown location of the (former?) UST.

b. **Plume Stability –** Because the source area remains essentially unlocated, and may be further east than suggested by the location of well MW-4, it cannot be determined if well MW-4 can effectively determine plume stability for this area of interest.

Please present a strategy in the Revised Data Gap Work Plan (described in Technical Comment 8 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Groundwater in the focused SCM described in Technical Comment 8 below.

6. **LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air –** The LTCP describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

   Area of Interest 4 – Our review of the case files indicates that the site data collection and analysis fail to support the requisite characteristics of one of the four scenarios in Area of Interest 4 as follows:

   - **Bioattenuation Thickness –** Data do not support the requisite bioattenuation thickness for any scenario:
     - LNAPL requires a bioattenuation zone greater than 30 feet in depth to the groundwater / LNAPL interface.
     - A five foot bioattenuation zone requires greater than 100 µg/l benzene in groundwater.
     - A ten foot bioattenuation zone requires greater than 1,000 µg/l benzene in groundwater.
   - **TPH Concentrations in Bioattenuation Zone -** Very limited soil analytical data has been collected within the 0 to 5 foot depth interval outside the presumed source area; however, available data from a number of recently installed vapor points at locations up to approximately 80 feet down- or lateral-gradient to the known release indicate concentrations of TPH over 100 mg/kg in this depth interval (SV-1). Limited data also indicates TPH greater than 100 mg/kg in the 5 to 10 foot depth interval in the vicinity of the presumed release area (SV-1).
   - **Benzene Concentrations in Groundwater –** The LTCP requires benzene concentrations to be less than 100 or less than 1,000 µg/l depending on the thickness of the bioattenuation zone. During a recent groundwater sampling event, benzene concentrations at the site were up to 3,090 µg/l in the source area, and were 707 µg/l at downgradient well E8.
   - **Vapor Samples -** The percentage of oxygen in the vapor analytical data ranged between 2.8 and 12 percent. Vapor point SV-1, located furthest (80 feet) from the source area, contained the lowest percentage of oxygen, and may suggest an additional undocumented and unevaluated source area. Elevated TPHg and benzene vapor concentrations at SV-1 further support this consideration. Closer to the presumed source area, benzene concentrations range up to 560,000 µg/m^3 at a depth of 5.5 feet bgs. All vapor benzene concentrations do not meet the LTCP in this area of interest

     A site-specific human health risk-assessment was conducted for Area of Interest 4 using available data from the site. The human health risk assessment states that no significant human health risk is posed at the site. ACEH is concerned that model assumptions and calculations do not accurately represent risk at the site. As discussed above ACEH does not agree that the site has been adequately characterized and that all sources documented. Additionally, multiple lines of evidence based on existing data indicate that the potential for vapor intrusion is significant and cannot be risked away until sufficient data is collected. Included in this concern is the use of parameters derived from bulk soil sample B1 that is classified as clay. Because the nature of the excavation fill is not sufficiently characterized, and reported to be gravel (see bore E1), the use of a different bulk density appears appropriate. Additionally, review of the vapor bore logs VP-1 to VP-5 also indicates that shallow soil was classified as poorly graded sand with gravel (1.5 to 3 feet of the material).

   Area of Interest 5 - Based on a one-time sampling event, although soil vapor appears to meet Scenario 4, Part 2 for this source area, due to the unknown location and removal status of the former (?) UST, and the unknown status of tank backfill characterization, it is difficult to evaluate the appropriateness of the vapor sampling locations. Therefore it appears appropriate to request an additional vapor sampling event and potentially additional vapor points.

Conversely, please provide justification of why existing data for Area 5 satisfies the Media-Specific Criteria for Vapor Intrusion to Indoor Air in a SCM that assures that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to future buildings at the site.

Please note, that if direct measurement of soil gas is proposed, ensure that your strategy is consistent with the field sampling protocols described in the Department of Toxic Substances Control's Final Vapor Intrusion Guidance (April 2012). Consistent with the guidance, ACEH requires installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations.

General Vapor Intrusion Comment – Please be aware that while ACEH recognizes that a tracer was used during recent soil vapor sampling at the site (and resulted in elevated non-detectable tracer concentrations), shroud concentrations were not collected. DTSC guidelines allow a limited percentage of the tracer in the soil vapor sample concentration, and without a shroud concentration the acceptability of the vapor sample cannot be demonstrated.

7. **LTCP Media Specific Criteria for Direct Contact and Outdoor Air Criteria** – The LTCP describes conditions where direct contact with contaminated soil or inhalation of contaminants volatized to outdoor air poses a low threat to human health. According to the policy, release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if the maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth bgs. Alternatively, the policy allows for a site specific risk assessment that demonstrates that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health, or controlling exposure through the use of mitigation measures, or institutional or engineering controls.

   Area of Interest 4 - Our review of the case files indicates that insufficient data collection and analysis has been presented to satisfy the media-specific criteria for direct contact and outdoor air exposure. Specifically, the source of extractable ranged hydrocarbons (TPHd and TPHmo) has not been disclosed or located, nor have soil or groundwater been characterized for required contaminants (wear metals, SVOCs, chlorinated VOCs, and other waste oil related compounds including naphthalene and PAHs). Additionally, shallow near source soil samples have not been collected near the presumed gasoline source, including tank backfill characterization samples, to sufficiently address this criterion.

   Area of Interest 5 – Our review of the case files indicates that insufficient data collection and analysis has been presented to satisfy the media-specific criteria for direct contact and outdoor air exposure. Specifically, due to the unknown source location, the unknown removal status of the former (?) UST, and the unknown status of tank backfill characterization, it is difficult to evaluate if sufficient characterization for this criterion has occurred in this area of interest.

   Therefore, please present a strategy in the Data Gap Work Plan described in Technical Comment 8 below to collect sufficient data to satisfy the direct contact and outdoor air exposure criteria in known and presumed source areas. Sample and analyze soil at the five and ten foot intervals, at the groundwater interface, lithologic changes, and at areas of obvious impact. Also, collect a groundwater sample from each boring and propose the requisite analysis including naphthalene and PAH polycyclic aromatic hydrocarbons (PAH) analysis.

   Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Direct Contact and Outdoor Air Exposure in the focused SCM described in Technical Comment 8 below that assures that exposure to petroleum constituents in soil will have no significant risk of adversely affecting human health.

8. **Data Gap Investigation Work Plan and Focused Site Conceptual Model –** Please prepare a Data Gap Investigation Work Plan to address the technical comments listed above. Please support the scope of work in the Data Gap Investigation Work Plan with a focused SCM and Data Quality Objectives (DQOs) that relate the data collection to each LTCP criteria. For example please clarify which scenario within each Media-Specific Criteria a sampling strategy is intended to apply to.

In order to expedite review, ACEH requests the focused SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please tabulate all soil, groundwater, and soil vapor analytical data, and group by Area of Interest. Additionally, provide a figure by area with all historic sample locations. Please see Attachment A "Site Conceptual Model Requisite Elements". Please sequence activities in the proposed revised data gap investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

9. **Groundwater Monitoring –** Please resume semi-annual groundwater monitoring at the site. Groundwater monitoring has been sporadic at the site, and the most recent groundwater monitoring event appears to be April 2013. Please sample all wells during the next monitoring event, use SGC for extractable range hydrocarbon analysis, and submit a sampling plan for future monitoring events. Please submit groundwater monitoring reports by the dates identified below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Barbara Jakub), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **March 31, 2014** – Notification of Acceptable Meeting Dates
  (File to be named: RO320_CORRES_L_yyyy-mm-dd)
- **May 16, 2014** – Semi-Annual Groundwater Monitoring Report
  (File to be named: RO320_GWM_R_yyyy-mm-dd)
- **60 Days After Meeting** – Data Gap Investigation Plan and Focused Site Conceptual Model
  (File to be named: RO320_WP_SCM_R_yyyy-mm-dd)
- **October 31, 2014** – Semi-Annual Groundwater Monitoring Report
  (File to be named: RO320_WP_SCM_R_yyyy-mm-dd)

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2014.03.07 16:52:04 -08'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

Attachment A - Site Conceptual Model Requisite Elements

cc: Paul Parmentier, The Source Group, 1962 Freeman Avenue, Signal Hill, CA 90755
(sent via electronic mail to pparmentier@thesourcegroup.net)

Rob Bilotti, Service West, Inc; 9201 San Leandro Street, Oakland, CA 94603
(sent via electronic mail to: Rob@servicewest.com

Marc Zeppetello, Barg Coffin Lewis & Trapp, LLP, 350 California Street, 22nd Floor, San Francisco, CA 94104-1435; (sent via electronic mail to MAZ@bcltlaw.com)

Scott Kaplan, Stoel Rives, LLP, 900 S.W. Fifth Avenue, Suite 2600, Portland, OR, 97204
(sent via electronic mail to SJKaplan@stoel.com)

Leroy Griffin, Oakland Fire Department 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (sent via electronic mail to lgriffin@oaklandnet.com)

Dilan Roe, ACEH (sent via electronic to: dilan.roe@acgov.org)
Mark Detterman, ACEH (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements: (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** July 25, 2012
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single Portable Document Format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT A

Site Conceptual Model Requisite Elements

ATTACHMENT A

Site Conceptual Model

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 2 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.

b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.

c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.

e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.

f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.

g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).

h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).

i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate.

j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

TABLE 1

INITIAL SITE CONCEPTUAL MODEL

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	The site is in the northwest portion of the Livermore Valley, which consists of a structural trough within the Diablo Range and contains the Livermore Valley Groundwater Basin (referred to as "the Basin") (DWR, 2006). Several faults traverse the Basin, which act as barriers to groundwater flow, as evidenced by large differences in water levels between the upgradient and downgradient sides of these faults (DWR, 2006). The Basin is divided into 12 groundwater basins, which are defined by faults and non-water-bearing geologic units (DWR, 1974). The hydrogeology of the Basin consists of a thick sequence of fresh-water-bearing continental deposits from alluvial fans, outwash plains, and lacustrine environments to up to approximately 5,000 feet bgs (DWR, 2006). Three defined fresh-water bearing geologic units exist within the Basin: Holocene Valley Fill (up to approximately 400 feet bgs in the central portion of the Basin), the Plio-Pleistocene Livermore Formation (generally between approximately 400 and 4,000 feet bgs in the central portion of the Basin), and the Pliocene Tassajara Formation (generally between approximately 250 and 5,000 or more feet bgs) (DWR, 1974). The Valley Fill units in the western portion of the Basin are capped by up to 40 feet of clay (DWR, 2006).	None	NA
	Site	***Geology:*** Borings advanced at the site indicate that subsurface materials consist primarily of finer-grained deposits (clay, sandy clay, silt and sandy silt) with interbedded sand lenses to 20 feet below ground surface (bgs), the approximate depth to which these borings were advanced. The documented lithology for one on-site boring that was logged to approximately 45 feet bgs indicates that beyond approximately 20 feet bgs, fine-grained soils are present to approximately 45 feet bgs. A cone penetrometer technology test indicated the presence of sandier lenses from approximately 45 to 58 feet bgs and even coarser materials (interbedded with finer-grained materials) from approximately 58 feet to 75 feet bgs, the total depth drilled. The lithology documented at the site is similar to that reported at other nearby sites, specifically the Montgomery Ward site (7575 Dublin Boulevard), the Quest laboratory site (6511 Golden Gate Drive), the Shell-branded Service Station site (11989 Dublin Boulevard), and the Chevron site (7007 San Ramon Road). ***Hydrogeology:*** Shallow groundwater has been encountered at depths of approximately 9 to 15 feet bgs. The hydraulic gradient and groundwater flow direction have not been specifically evaluated at the site.	As noted, most borings at the site have been advanced to approximately 20 feet bgs, and one boring has been advanced and logged to 45 feet bgs; CPT data was collected to 75 feet bgs at one location. Lithologic data will be obtained from additional borings that will be advanced on site to further the understanding of the subsurface, especially with respect to deeper lithology. The on-site shallow groundwater horizontal gradient has not been confirmed. Additionally, it is not known if there may be a vertical component to the hydraulic gradient.	Two direct push borings and four multi-port wells will be advanced to depth (up to approximately 75 feet bgs) and soil lithology will be logged. See items 4 and 5 on Table 2. Shallow and deeper groundwater monitoring wells will be installed to provide information on lateral and vertical gradients. See Items 2 and 5 on Table 2.
Surface Water Bodies		The closest surface water bodies are culverted creeks. Martin Canyon Creek flows from a gully west of the site, enters a culvert north of the site, and then bends to the south, passing approximately 1,000 feet east of the site before flowing into the Alamo Canal. Dublin Creek flows from a gully west of the site, enters a culvert approximately 750 feet south of the site, and then joins Martin Canyon Creek approximately 750 feet southeast of the site.	None	NA
Nearby Wells		The State Water Resources Control Board's GeoTracker GAMA website includes information regarding the approximate locations of water supply wells in California. In the vicinity of the site, the closest water supply wells presented on this website are depicted approximately 2 miles southeast of the site; the locations shown are approximate (within 1 mile of actual location for California Department of Public Health supply wells and 0.5 mile for other supply wells). No water-producing wells were identified within 1/4 mile of the site in the well survey conducted for the Quest Laboratory site (6511 Golden Gate Drive; documented in 2009); information documented in a 2005 report for the Chevron site at 7007 San Ramon Road indicates that a water-producing well may exist within 1/2 mile of the site.	A formal well survey is needed to identify water-producing, monitoring, cathodic protection, and dewatering wells.	Obtain data regarding nearby, permitted wells from the California Department of Water Resources and Zone 7 Water Agency (Item 11 on Table 2).

TABLE 2

DATA GAPS AND PROPOSED INVESTIGATION

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5	Evaluate the possible presence of impacts to deeper groundwater. Evaluate deeper groundwater concentration trends over time. Obtain data regarding the vertical groundwater gradient. Obtain more lithological data below 20 feet bgs.	Install four continuous multichannel tubing (CMT) groundwater monitoring wells (aka multi-port wells) to approximately 65 feet bgs in the northern parking lot with ports at three depths (monitoring well locations may be adjusted pending results of shallow grab groundwater samples; we will discuss any potential changes with ACEH before proceeding). Groundwater monitoring frequency to be determined. Soil samples will be collected only if there are field indications of impacts. Soil lithology will be logged. However, information regarding the moisture content of soil may not be reliable using sonic drilling technology (two borings will be logged using direct push technology; see Item 4, above).	One well is proposed at the western (upgradient) property boundary to confirm that there are no deeper groundwater impacts from upgradient. Two wells are proposed near the center of the northern parking lot to evaluate potential impacts in an area where deeper impacts, if any, would most likely to be found. One well is proposed at the eastern (downgradient) property boundary to confirm that there are no impacts extending off-site. Port depths will be chosen based on the locations of saturated soils (as logged in direct push borings; see Item 4, above), but are expected at approximately 15, 45, and 60 feet bgs.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
6	Evaluate possible off-site migration of impacted soil vapor in the downgradient direction (east). Evaluate concentration trends over time.	Install 4 temporary nested soil vapor probes at approximately 4 and 8 feet bgs along the eastern property boundary. Based on the results of the sampling, two sets of nested probes will be converted to vapor monitoring wells to allow for evaluation of VOC concentration trends over time.	Available data indicate that PCE and TCE are present in soil vapor in the eastern portion of the northern parking lot. Samples are proposed on approximately 50-foot intervals along the eastern property boundary to provide a transect of concentrations through the vapor plume. The depths of 4 and 8 feet bgs are chosen to provide data closest to the source (i.e., groundwater) while avoiding saturated soil, and also provide shallower data to help evaluate potential attenuation within the soil column. Two sets of nested vapor probes will be converted into vapor monitoring wells (by installing well boxes at ground surface); the locations of the permanent wells will be chosen based on the results of samples from the temporary probes.	*Soil vapor* : VOCs by EPA Method TO-15.
7	Evaluate potential for off-site migration of impacted groundwater in the downgradient direction (east).	Advance two borings to approximately 20 feet bgs in the parking lot of the property east of the Crown site for collection of grab groundwater samples.	Two borings are proposed off-site, on the property east of the Crown site, just east of the building in the expected area of highest potential VOC concentrations.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
8	Evaluate VOC concentrations just north of the highest concentration area.	Advance two borings to approximately 20 feet bgs north of Building A for collection of soil and grab groundwater samples. Soil samples will be collected at two depths in the vadose zone. Soil samples will be collected based on field indications of impacts (PID readings, odor, staining) or, in the absence of field indications of impacts, at 5 and 10 feet bgs.	The highest concentrations of PCE in groundwater were detected at boring NM-B-32, just north of Building A. The nearest available data to the north are approximately 75 feet away. One of the borings will be advanced approximately 20 feet north of NM-B-32 to provide data close to the highest concentration area. A second boring will be advanced approximately halfway between the first boring and former boring NM-B-33 to provide additional spatial data for contouring purposes. These borings will be part of a transect in the highest concentration area.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil:* VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
9	Evaluate VOC concentrations in soil vapor in the south parcel of the site.	Install four temporary soil vapor probes at approximately 5 feet bgs around boring SV-25, where PCE was detected in soil vapor at a low concentration.	PCE was detected in soil vapor sample SV-25 in the southern parcel, although was not detected in groundwater in that area. Three probes will be installed approximately 30 feet from of boring SV-25 to attempt to delineate the extent of impacts. A fourth probe is proposed west of the original sample, close to the property boundary and the location of mapped utility lines, which may be a potential conduit, to evaluate potential impacts from the west.	*Soil vapor* : VOCs by EPA Method TO-15.
10	Obtain additional information regarding subsurface structures and utilities to further evaluate migration pathways and sources.	Ground penetrating radar (GPR) and other utility locating methodologies will be used, as appropriate, to further evaluate the presence of unknown utilities and structures at the site.	Utilities have been identified at the site that include an on-site sewer lateral and drain line, and shallow water, electric, and gas lines. Given the current understanding of the distribution of PCE in groundwater at the site, it is possible that other subsurface utilities, and specifically sewer laterals, exist that may act as a source or migration pathway for distribution of VOCs in the subsurface.	NA