ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH DEPARTMENT
ENVIRONMENTAL PROTECTION
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November 1, 2011

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

Subject: Request for Sub-Slab Vapor Survey and Remedial 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) staff has reviewed the fuel leak case file for the referenced site including the *Remediation Workplan – Area 4,* dated October 30, 2009 (received November 16, 2009), the *Investigation / Remediation (Area 4), Post Remediation Sampling and First Semi-Annual Monitoring Report,* dated October 8, 2010 (received December 14, 2010), and subsequent semi-annual groundwater monitoring reports, including the *First Semi-Annual 2011 Groundwater Monitoring Report,* dated July 6, 2011. The reports were prepared and submitted on your behalf by The Source Group (Source Group) of Signal Hill, California. Thank you for submitting the reports.

The previous directive letter issued by ACEH (dated July 2, 2009), consisted of the approval of a proposed Air Sparge / Soil Vapor Extraction (AS /SVE) pilot test with supplemental ozone injection. Subsequent to that approval, and after a change in consultants, another work plan (referenced above) was submitted to ACEH. The new work plan proposed an alternative technology, High-Vacuum Dual Phase Extraction (HVDPE), and proposed a one-day pilot test with subsequent full-scale implementation for a three-week period thereafter. A three week rebound period was proposed to follow implementation. Full-scale implementation occurred in June 2010, and was run for 10 days. After implementation, the investigation report referenced above, recommended that no additional remediation work be undertaken, and that two years of semi-annual groundwater monitoring be conducted.

The pilot test and report did not provide a relatively standard set of post-test analysis that evaluates the effectiveness of a pilot test to determine if it is an appropriate remedial method at a site. The pilot test does not appear to have employed step tests to determine the optimal operating condition of extraction wells. The report stated that approximately 1,590 pounds of hydrocarbons and 40,920 gallons of contaminated groundwater had been extracted during the pilot test, but did not provide the validating calculations (were the results inclusive of both vapor and groundwater?, which media was most effective in removing contaminants?). The report did not determine the radius of influence (ROI) at each tested well (both groundwater and vapor ROIs), did not state what constituted ROI determination in both medias, did not attempt to determine the best stinger depth for contaminant reduction or dewatering purposes, did not determine air flow rates vs. applied vacuum at a test well, did not determine the effectiveness of

contaminant volatilization, did not tabulate mass removal rates with time, or graph influent vapor concentrations with time or cumulative mass removal to convey the data. In short the test was not a pilot test, but was an applied remedial effort, and did not attempt to determine if the remedial effort was cost effective.

Review of Table 4 does indicate that in all monitored wells, for essentially all contaminants, vapor concentrations were higher at the end of the pilot test period than at the beginning. A review of Table 5 indicates that groundwater contaminant concentrations were reduced as of August 10, 2010, approximately 3 weeks after the pilot test was terminated. However, since August 2010 (generally documenting the lowest achieved analytical concentrations in groundwater) contaminant concentrations in groundwater in well AS-1S have increased from 1,200 µg/l TPHg to 30,000 µg/l TPHg, and from 370 µg/l benzene to 4,530 µg/l, up to an order of magnitude above pre-test concentrations. In short, the work appears to have been effective at mobilizing contaminants in the subsurface, but not effective in determining appropriate, cost effective, remedial measures. Of concern is the source of the higher groundwater concentrations; the data available appears to indicate significant residual mass remains at the site that has not been encountered in previous site investigations. This appears further substantiated by bore logs GP-4 and E-12 that characterize subsurface soil as silty clay or clay, but which are within the reported overexcavation area for the former UST at this location, in comparison to bore log E-1 which is located outside the area of excavation but that characterizes the upper 10 feet as fill (unfortunately unspecified as to fill soil type, permeability, or porosity; a less than successful communication effort).

The report also conducted a human health risk evaluation (HHRE) on petroleum vapors derived off groundwater and calculated an excess cancer risk of 6×10^{-6} and a Hazard Index of 0.09, both reported to be within risk ranges acceptable to USEPA of one-in-one-million (1×6^{-6}) and one-in-ten thousand ($1X\ 10^{-4}$), however, critically, those calculations were based on August 2010 groundwater concentrations rather than current concentrations, and do not consider residual soil concentrations which appear to be present based on the data discussed above. Existing soil vapor sampling results are significantly above San Francisco RWQCB Environmental Screening Levels (ESLs; TPHg was detected up to 13,300,00 µg/m^3 and benzene up to 192,000 µg/m^3, in comparison to 29,000 µg/m^3 and 280 µg/m^3, respectively, for commercial properties). Additionally, recent vapor intrusion research appears to suggest that oxygenated soil is a requisite to preventing petroleum hydrocarbon vapor intrusion at a site and that adequate oxygenation becomes difficult beneath larger buildings (greater than an approximately 60 foot width) such as exist at the site. Thus it is unclear that existing groundwater concentrations or soil vapor concentrations are protective at the site.

As a consequence, and based on the review of the case file and the referenced reports, ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **Request for Sub-Slab Vapor Survey Work Plan –** As noted above groundwater concentrations have rebounded and currently exceed pre-testing concentrations at the site. The concentrations currently exceed by up to an order of magnitude the values previously used to calculate risk at the site, and suggest undetected potentially significant residual sources in the vicinity of the former UST and warehouse building. A request for a sub-slab vapor survey is also a standing request from previous directive letters. Those requests had been held in abeyance at the time more active remedial efforts had been previously initiated. Because these efforts appear to have been delayed or abandoned, the request is again appropriate. As a consequence ACEH requests a work plan, by the date identified below, for a sub-slab vapor survey in the building. Please utilize published DTSC guidelines to conduct the survey and to inform the work plan requested. To better understand the subsurface environment, the study should additionally sample for methane, carbon dioxide, and atmospheric gases (oxygen and nitrogen). Please submit a work plan to undertake this task by the date identified below.

2. **Request for Preferential Pathway Study –** Prior to, and as a part of the Sub-Slab Vapor Survey Work Plan, ACEH requests that a Preferential Pathway Survey be conducted.

   The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of a NAPL and/or a groundwater plume encountering preferential pathways and conduits that could spread contamination. For this site, this must include on-site utility laterals such as sewer, water supply, electrical, or other that may be located directly beneath the warehouse building north of the former UST location. We request that you perform a preferential pathway study that details the potential migration pathways and potential conduits (wells, utilities, utility laterals, pipelines, and etc.) for vertical and lateral migration that may be present in the vicinity of the site.

   Please discuss results of the preferential pathway study (including the detailed well survey and utility survey requested below) and report your results in the report requested below. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

   i. **Utility Survey -** An evaluation of all utility lines, utility laterals, and trenches (including sewers, storm drains, pipelines, trench backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please reduce and synthesize available information and maps, and generate appropriate (vicinity and / or site specific) maps and cross-sections illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

   ii. **Well Survey -** The preferential pathway study shall include a detailed well survey of all wells (monitoring and production wells: active, inactive, standby, decommissioned (sealed with concrete), abandoned (improperly decommissioned or lost); and dewatering, drainage, and cathodic protection wells) within a ¼ mile radius of the subject site. Please use DWR as well as Alameda County Public Works Agency resources as the databases are sufficiently different to warrant a review of both. As part of your detailed well survey, please perform a background study of the historical land uses of the site and properties in the vicinity of the site. Use the results of your background study to determine the existence of unrecorded/unknown (abandoned) wells, which can act as contaminant migration pathways at or from your site.

   Please submit a preferential pathway study by the date identified below.

3. **Request for Remedial Investigation Work Plan –** In addition to the Sub-Slab Vapor Survey, additional outstanding site investigation data gaps appear to be present in Area 4 at the site. These include, but may not be limited to, the source location of residual contamination mobilized during the HVDPE effort in the vicinity of the former UST location, and the downgradient and lateral extent of the groundwater plume derived from this contamination. These do not appear to have been adequately defined. Notably, and contrary to several statements in the referenced report, the downgradient well contained detectable groundwater hydrocarbon concentrations (downgradient well E-7 contained up to 3,460 µg/l TPHg and 207 µg/l benzene in June 2010). The source and location of groundwater contaminants TPHd and TPHmo are also undetermined (see also Technical Comment 5 below).

   Additional concerns relative to data communicated in the referenced subsurface report also exist. Recently installed wells E-1 to E-12 do not appear to have utilized standard drilling protocols. Each bore does not appear to have been monitored for organic vapor monitoring with a Photoionization Detector (PID); thus the choice of the soil sample selection cannot be independently judged as appropriate. The bores additionally indicate that only a single clay soil unit is present beneath the site, contrary to the wealth of soil stratigraphy data currently available from other earlier soil bores installed at the site. Further, lateral wells E-3, E-4, E-5, E-6, and E-10, do not appear to be used to monitor the lateral or downgradient extent of the groundwater plume at those locations. It is understood that these wells may not need to be consistently monitored; however, newly installed wells require quarterly groundwater monitoring for a minimum period of one year after installation. As a consequence of the totality of these observations, ACEH requests that a Remedial Investigation

Work Plan be prepared to identify the residual gasoline sources, to identify the source location of the TPHd and TPHmo groundwater contamination (in soil), to undertake soil and groundwater plume delineation for each of these contaminants, and to identify effective and cost-effective corrective actions for the site, by the date identified below.

4. **GeoTracker Compliance –** While some recent submittals have been uploaded to the state Geotracker site, this site continues to remain out of compliance with state GeoTracker requirements (However, thank you for what has been submitted). All required uploads have not been forthcoming and include at a minimum a majority of analytical EDFs, GEO_WELL data, up to date GEO_MAPs, and all GEO_BOREs. Please see Attachment 1 for limited additional details, and the state GeoTracker website for full details. Please submit all required data by the date identified below.

5. **Groundwater Monitoring –** As noted above, recently installed wells are required to complete one year of quarterly groundwater monitoring; ACEH requests this be initiated by the date identified below. Wells can be temporarily removed from groundwater monitoring efforts at an appropriate time, and the monitoring and sampling interval can be modified with reasonable justifications thereafter.

   In addition to standard analytical testing for gasoline releases, ACEH additionally requests inclusion of TPHd and TPHmo analysis. This is based on the detection of significant concentrations of these analytes in a number of wells at the site (MW-3 contained the highest concentrations - 36,500 µg/l TPHd and 3,900 µg/l TPHmo in December 2010). In addition to standard analysis for extractable hydrocarbons (TPHd and TPHmo), ACEH additionally requests that Silica Gel Cleanup (SGC) be conducted on a second TPHd and TPHmo analytical run, for a minimum of one monitoring and sampling event. This may assist in understanding the site and contamination beneath the site. Please incorporate the sampling of monitoring well MW-4 into this analytical request.

   Natural attenuation has been mentioned in reports for the subject site; however, ACEH is not aware of analytical testing to document the effectiveness of this process beneath the site. It may be appropriate to undertake standard Monitored Natural Attenuation (MNA) analytical parameters to document this process is underway beneath the subject site. Please include a discussion of this request in the requested remedial investigation work plan.

6. **Groundwater Goals –** ACEH appreciates and understands that this parcel and other vicinity parcels are classified as "M-40 Heavy Industrial"; however, please also be advised that at present all groundwater in the East Bay Plain Groundwater Basin that underlies Oakland is currently classified as 'MUN' (potentially suitable for municipal or domestic water supply). According to the RWQCB *Water Quality Control Plan (Basin Plan)*, dated January 18, 2007, for the San Francisco Bay Basin, "the term 'groundwater' includes all subsurface waters, whether or not these waters meet the classic definition of an aquifer or occur within identified groundwater basins.' The Basin Plan also states that 'all groundwaters are considered suitable, or potentially suitable, for municipal or domestic water supply (MUN)." Therefore, the groundwater beneath the subject site must be considered beneficial for these uses unless shown to be non-beneficial using criteria presented in the Basin Plan (The proposed "Zone B Berkeley / Albany Groundwater Management Zone" contained in the June 1999 *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* was ultimately not adopted in the 2007 Basin Plan). Please adjust your evaluation to reflect this in future reports. However, please also be aware that case closure does not necessarily require cleanup to MUN cleanup goals, only that those goals can be met within an identified reasonable timeframe.

TECHNICAL REPORT REQUEST

Please submit the following deliverables and technical reports to ACEH (Attention: Mark Detterman), according to the following schedule:

- **December 16, 2011 –** Geotracker Upload Compliance
- **January 13, 2012 –** Preferential Pathway Study, Sub-Slab Vapor Intrusion and Remedial Investigation Work Plan

- **February 10, 2012 –** Fourth Quarter 2011 Groundwater Monitoring and Sampling Report (with TPHd and TPHmo analysis included)
- **60 Days After Work Plan Approvals –** Vapor Intrusion & Soil and Groundwater Investigation Report
- **May 11, 2012 –** First Quarter 2012 Groundwater Monitoring and Sampling Report

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.

Should you have any questions, please contact 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: 2011.11.01 10:12:23 -07'00'

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

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

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)

Donna Drogos, ACEH, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman, ACEH, (sent via electronic mail to mark.detterman@acgov.org)
Geotracker, Electronic File

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). 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, 6835, 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, later 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 SLIC)	**REVISION DATE:** July 20, 2010
	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 (LOP and SLIC) 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.