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September 23, 2014

**RECEIVED**

By Alameda County Environmental Health at 9:47 am, Sep 24, 2014

**SUBMITTED ELECTRONICALLY**

Mr. Mark E. Detterman, P.G., CEG  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94502

Re: August 29, 2014 Meeting Summary and Work Plan for Supplemental Investigation Activities, Former Petroleum Underground Storage Tank (UST) Site RO #167  
David D. Bohannon Organization Property Located at 575 Paseo Grande, San Lorenzo, CA

Dear Mr. Detterman:

Enclosed for your review is the *August 29, 2014 Meeting Summary and Work Plan for Supplemental Investigation Activities (Work Plan)* prepared by Stantec Consulting Services Inc. (Stantec) on behalf of David D. Bohannon Organization (Bohannon) for the site located at 575 Paseo Grande in San Lorenzo, California (the Site).

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. If you have any questions regarding the enclosed report, please contact me at (650) 345-8222.

Sincerely,

A handwritten signature in blue ink that reads 'Scott E. Bohannon'.

Scott E. Bohannon, Senior Vice President

cc: Mr. Chris Maxwell, Stantec Consulting Services Inc.  
Mr. Andrew A. Bassak, Manatt, Phelps, and Phillips LLP



**Stantec Consulting Services Inc.**  
1340 Treat Boulevard, Suite 300, Walnut Creek CA 94597-7966

September 23, 2014  
File: 185702848

Mr. Mark E. Detterman, P.G., CEG  
Hazardous Materials Specialist  
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1131 Harbor Bay Parkway  
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**Reference: August 29, 2014 Meeting Summary and Work Plan for Supplemental Investigation Activities, RO#167, 575 Paseo Grande, San Lorenzo, California**

Dear Mr. Detterman,

Stantec Consulting Services Inc. (Stantec), on behalf of the David D. Bohannon Organization (Bohannon), is submitting this letter to document the meeting held at the Alameda County Health Care Service Agency (ACHCSA) offices on August 29, 2014 regarding on-going investigation activities at the above-referenced Site. During the meeting the results of recent field work was presented and an approach for supplemental investigation activities was discussed. The objective of the supplemental investigation is to address a few remaining data gaps as part of the overall Site closure process. A Work Plan for the supplemental investigations is included as part of this letter.

### **Meeting Summary**

On July 30, 2014 Stantec on behalf of Bohannon submitted to the ACHCSA draft tables and figures presenting the results of groundwater, soil, and soil vapor sampling conducted in May 2014. The July 30<sup>th</sup> submittal included a brief text summary of the data and results. The purpose of the August 29<sup>th</sup> meeting was to discuss the draft results and appropriate path forward. The meeting was attended by Mr. Mark Detterman and Ms. Dilan Roe representing ACHSA, Eva Hey and Chris Maxwell representing Stantec, and Robert Webster and Andrew Bassak representing Bohannon.

Based upon review of the draft information and discussions during the meeting, two (2) potential data gaps were identified which need to be addressed to facilitate consideration of closure under the Low Threat Closure Policy. The data gaps are:

**Down-Gradient Groundwater Conditions** – The May 2014 investigation results confirm the area of petroleum hydrocarbons affected groundwater does not extend to the southwest of the Site along Paseo Grande. Two monitoring wells (MW-6 and MW-7) are currently located down-gradient (west) of the Site along Via Del Sol. The two wells are approximately 150 feet apart and do not contain detectable hydrocarbons. The ACHCSA has requested additional sampling between the two well locations to confirm the area of hydrocarbon groundwater does not extend west to Via Del Sol between these two wells. Data collection methods were discussed during the meeting, and the collection of one-



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time grab Hydropunch™ groundwater samples at multiple locations between the two wells is proposed below.

**Soil Vapor Concentrations** - Elevated concentrations of hydrocarbons, including benzene, were detected in grab groundwater samples immediately west of the Site along Paseo Largo Vista during the May 2014 investigations. The hydrocarbons are present in relatively thin saturated silt and sandy silt lenses beneath a laterally consistent silt-clay zone. The ACHCSA has requested soil vapor sampling along Paseo Largo Vista to quantify the hydrocarbon concentrations in soil vapor associated with the observed groundwater conditions. The collection of soil vapor samples at multiple locations along Paseo Largo Vista is proposed below.

### **Work Plan**

Hydropunch™ groundwater sample collection is proposed at three locations (HP-14, HP-15, and HP-16) between MW-6 and MW-7 as shown on Figure 1. Soil vapor sample collection is proposed at five locations (SV-15 through SV-19) along Paseo Largo Vista, as shown on Figure 1. Four of the proposed soil vapor sample locations (SV-15 through SV-18) are adjacent to the four locations with elevated soil and/or groundwater samples and an additional location (SV-19) is proposed adjacent to MW-4.

The procedures for soil, groundwater, and soil vapor sampling are similar to the December 21, 2012 *Site Conceptual Model and Work Plan to Evaluate Post-Remediation Site Conditions* and the January 17, 2013 *Updated Work Plan to Evaluate Site Conditions*. The detailed scope of work for the offsite investigation to address data gaps identified during the August 29, 2014 meeting is presented below.

#### **Task 1 – Utility Clearance and Permitting**

The locations of proposed boring locations will be marked with white paint and Underground Service Alert (USA) will be notified at least 72 hours prior to beginning field work. Additionally, Stantec will contract with a subsurface utility locator to clear the individual boring locations of obstructions. Stantec will obtain applicable permits, including soil boring and encroachment permits from the Alameda County Public Works Agency (ACPWA).

#### **Task 2 - Soil Vapor Installation and Sampling**

Six shallow soil vapor wells (SV-15 through SV-19 and SV-18D) will be constructed at the proposed locations shown in Figure 1. Borings for the five shallow vapor wells (SV-15 to -19) will be advanced manually using a hand auger to a maximum depth of 5 feet below ground surface (bgs). One 6-inch soil sample will be collected from approximately 2.5 -to-3 feet bgs from each boring location with a slide hammer. The soil samples will be submitted to PTS Laboratories of Santa Fe Springs, California under chain-of-custody procedures to be analyzed for physical parameters in the Cal-EPA/DTSC soil vapor intrusion package. A second soil sample will be collected from between 4 and 5 feet bgs at each location with a TerraCore sampler.



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The soil vapor wells will be constructed by adding a 6-inch-long stainless steel screen to the borehole attached to ¼-inch-diameter Teflon® tubing which will extend above the ground surface at each boring. The screen will be placed on top of approximately 3 inches of No. 2/12 sand at the bottom of each boring. Sand will be filled to approximately 6 inches above the screen, followed by approximately 4 inches of dry granular bentonite, and hydrated granular bentonite to the ground surface. The Teflon® tubing will be closed off at the surface in each well for at least 48 hours to allow subsurface conditions to equilibrate prior to vapor sampling.

An additional deeper soil vapor well (SV-18D) will be installed at the location of SV-18 and prior grab groundwater sample HP-3. This deeper soil vapor well will be constructed using the equipment and methods described above, with a total depth of approximately 8 feet bgs. The objective of SV-18D is to assess whether there is a vertical profile to the soil vapor concentrations associated with hydrocarbon affected groundwater, which is present in the silt and sandy silt lenses below 12 feet bgs (i.e., the soil vapor concentrations should be higher in the deeper well). If the soil vapor concentrations are elevated in the deeper well and relatively low in the shallow well(s), the data would suggest the silt-clay layer is minimizing the movement of soil vapor from the impacted groundwater towards the ground surface. The concept of installing shallow and deep soil vapor probes was discussed during the August 29<sup>th</sup> meeting as a means to refine the conceptual site model.

One soil vapor sample will be collected from each of the six new vapor wells (SV-15 through SV-19 and SV-18D). Prior to sampling, a helium shroud will be placed over the sampling train above each sampling location and sealed at the ground in a layer of hydrated bentonite. A vacuum shut-in test will be conducted at each location by applying a vacuum of 5- to-10 inches mercury (in Hg) to the sample train for one minute and observing any loss of vacuum. After a successful shut-in test is completed at each sampling location, the shroud will be filled with helium and maintained at a concentration of at least 30 percent helium. Helium concentration inside the shroud will be measured with a helium detector (Dielectric® MGD-2002 or equivalent).

After filling the shroud with helium, well purging will be conducted to remove three well volumes using a lung box, Tedlar® bag, and a vacuum pump. During purging, the Tedlar® bag will be measured for helium with the helium detector as a field leak check.

Soil vapor samples will be collected in laboratory-supplied and batch-certified 1-liter Summa canisters equipped with flow regulators. Sample flow rates will be set at approximately 200 milliliters per minute (mL/min) using a regulator that is pre-calibrated in the laboratory. Start and stop times and initial and final vacuum pressures will be recorded on field sheets and the chain-of-custody. The 1-liter Summa canisters will be shipped under chain-of-custody procedures to Eurofins Air Toxics in Folsom, California, a California-certified analytical laboratory. Samples will be submitted for analysis of VOCs and naphthalene using modified Method TO-15 (a gas chromatograph/mass spectrometer [GC/MS] analytical method), and for the leak check compound, helium, using modified American Society for Testing and Materials (ASTM) D-1946. Analysis of soil vapor samples will also include oxygen, nitrogen, methane, and carbon dioxide by ASTM D-1946. Samples will also be collected for naphthalene by Method TO-17.



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The soil samples collected with the Terra Core preservation vials in accordance with the United States Environmental Protection Agency (US EPA) 5035 preparation method will be analyzed for gasoline range organics, BTEX and naphthalene by EPA Method 8260B.

Samples will be labeled to indicate job number, boring number, sample depth, sample number, time and date collected, and then stored in a cooler containing ice. Soil samples will be delivered to TestAmerica of Pleasanton, California under chain-of-custody documentation.

**Task 3 – Soil Boring and HydroPunch™ Sampling**

Soil samples will be collected from direct-push borings at the three locations (HP-14, HP-15, and HP-16) between MW-6 and MW-7 along Via del Sol as shown on Figure 1. The purpose of the soil boring is to evaluate the geologic conditions for collection of discrete depth groundwater samples using HydroPunch™.

Soil borings will be advanced using a dual-wall direct-push soil coring system under the supervision of a Stantec geologist. Boring locations will be hand augered to a depth of 5 feet bgs prior to direct-push sampling. The soil borings will be advanced and continuously cored to a total depth of approximately 15 feet bgs as described below. The liners containing the soil samples will be removed from the sampler and retained for lithologic description. A Stantec geologist will log the soils encountered from the continuous core to total depth according to the Unified Soil Classification System (USCS) and will maintain a soil boring log of these descriptions. Odor or staining is not anticipated but will be noted if present, and soils will be screened for organic vapors using a PID. Upon completion, each soil boring will be backfilled to the surface with neat cement grout.

The HydroPunch™ sample location will be located adjacent to the direct-push soil boring. One HydroPunch™ groundwater sample will be collected from the depth interval identified during the evaluation of the soil boring; the most transmissive zone(s) will be targeted for sampling unless field observations such as elevated PID reading or staining/odors suggest another zone(s) should be sampled. Upon penetration of the selected groundwater zone, the sampling rod will be retracted to expose a stainless-steel screen to the formation. Groundwater samples will be collected using a stainless-steel bailer, a disposable bailer, or a peristaltic pump fitted with disposable tubing. Following sample collection, the sampling rods and screen will be removed from the borehole and decontaminated using a pressure-washing system. Upon completion, each soil boring will be backfilled to the surface with neat cement grout.

Groundwater samples will be placed in laboratory-supplied sample containers, labeled, and stored on ice pending delivery under chain-of-custody documentation to TestAmerica. Groundwater samples will be analyzed for gasoline range organics and BTEX by EPA Method 8260B/CA LUFT MS.

**Task 4 – Management of Investigation Derived Waste**

Waste generated during this investigation will be stored on-site in sealed 55-gallon drums and labeled with the generation date and nature of contents. Waste will be disposed of



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appropriately, based on analytical results. Disposal of wastes will be conducted in accordance with federal, state and local regulations. Following receipt of the laboratory results, Stantec will contract an approved waste vendor for appropriate characterization and disposal.

#### **Task 5 - Preliminary Agency Reporting**

Following receipt of analytical results, Stantec will prepare draft tables and figures summarizing the analytical results and subsurface conditions. The data will include tabulated laboratory sample analytical results, and scaled site plans showing sampling locations and chemical results, and soil boring logs.

As requested by the ACHCSA, these draft data tables and figures will be presented to and discussed with the ACHCSA at a meeting in their offices prior to development and submittal of a technical report. Based on discussions during that meeting, the scope and nature of a final report can be determined at that time.

Field work is tentatively scheduled to start October 16, 2014. Your prompt response to this submittal would be appreciated.

If you have any questions, please contact the undersigned.

Regards,

**STANTEC CONSULTING SERVICES INC.**

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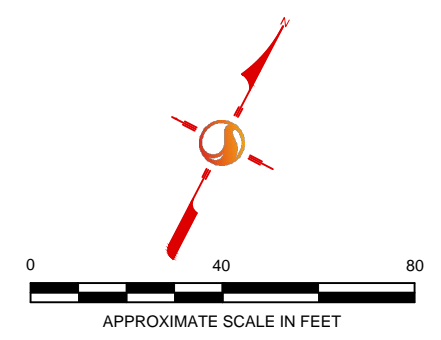
Attachments: Figure 1 – Proposed Soil Vapor and Grab Groundwater Sampling Locations

c. Mr. Andrew A. Bassak, Manatt, Phelps, and Phillips LLP  
Mr. Robert L. Webster, David D. Bohannon Organization

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- LEGEND**
- HP-15 PROPOSED GRAB GROUNDWATER SAMPLE LOCATION
  - SV-5 PROPOSED SOIL VAPOR SAMPLE LOCATION
  - MW-1 MONITORING WELL
  - PIW-B3 INJECTION WELL
  - DP-1 DUAL-PHASE EXTRACTION WELL (8" PVC - BY SECOR, 2005)
  - NOBS-B1 OBSERVATION WELL
  - SV-1 SOIL VAPOR SAMPLE LOCATION (STANTEC, 2011)
  - SV-5 SOIL VAPOR SAMPLE LOCATION AND SOIL BORING LOCATION
  - HP-1 SOIL BORING/ HYDROPUNCH SAMPLE LOCATION
  - FENCE LINE
- WELL DESIGNATION**
- A = INDICATES WELL IN THE A-ZONE
  - B = INDICATES WELL IN THE B-ZONE



	FOR: DAVID D. BOHANNON ORGANIZATION 575 PASEO GRANDE SAN LORENZO, CALIFORNIA		<b>PROPOSED SOIL VAPOR          AND GRAB GROUNDWATER          SAMPLING LOCATIONS</b>		FIGURE: <b>1</b>
	JOB NUMBER: 185702534.200.0003	DRAWN BY: RRR/STA	CHECKED BY: EH	APPROVED BY: CRM	DATE: 09/11/14