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By Alameda County Environmental Health 9:14 am, Nov 04, 2016

Via Email: anne.jurek@acgov.org

November 2, 2016

Ms. Anne Jurek
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

**Re: Additional Subsurface Investigation Work Plan
3820 Penniman Avenue
Oakland, Alameda County, California
ACEH Case No. RO0003231**

Dear Ms. Jurek:

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.

Sincerely,


Pat Kwan



1438 Webster Street, Suite 302, Oakland, California 94612

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Via Email: anne.jurek@acgov.org

November 1, 2016

Ms. Anne Jurek
Alameda County Department of Environmental Health
1131 Harbor Bay Pkwy
Alameda, California 94502

**Re: Additional Subsurface Investigation Work Plan
3820 Penniman Avenue
Oakland, Alameda County, California**

Dear Ms. Jurek:

On behalf of Pat Kwan, RPS Iris Environmental is submitting this *Additional Subsurface Investigation Work Plan* (Work Plan) to the Alameda County Department of Environmental Health (ACEH) regarding the property located at 3820 Penniman Avenue in Oakland, California (the "Site") as shown in Figure 1. This Work Plan documents the activities that will be conducted to collect additional Site environmental data associated with open ACEH leaking underground fuel tank (LUFT) Case Number RO0003231. Following completion of the investigation the data will be evaluated to determine if the criteria under the Low-Threat Underground Storage Tank (UST) Case Closure Policy (LTCP, State Water Resources Control Board 2012) have been met. The data will be provided to ACEH and if LTCP criteria are met, Case Closure will be requested.

BACKGROUND

The Site is currently a commercial warehouse located primarily in a residential area. The Site operated as a wholesale herb distributor for approximately 26 years. The majority of the Site is comprised of an approximate 7,000 square foot warehouse with small loading yard located on the southeast side of the building. A *Phase I Environmental Site Assessment* (Phase I ESA) dated July 9, 2015 and prepared by Basics Environmental (Basics), documents the Site's history as an automobile repair garage that stored and handled hazardous material and contained a gas and oil station in the southwest side of the Site from the late 1930s to the 1960s. Details are presented in the Phase I ESA, which recommended a utility search be performed to confirm the existence or non-existence of potential USTs commonly associated with service stations. Subsequently, Golden Gate Tank Removal, Inc. (GGTR), a licensed hazardous waste removal contractor located in San Francisco, California, inspected the Site and identified two USTs. The locations of these USTs were below the sidewalk southwest of the warehouse (Figure 2).

In November 2015, RPS Iris Environmental oversaw GGTR excavate the overburden and remove the tanks. The UST removal activities, confirmation sample results, and a request for Site closure were presented to ACEH in the January 14 2016 *Case Closure Report Former Underground Storage Tanks* (Closure Report, RPS Iris Environmental). The ACEH reviewed the report and responded with comment in a letter dated October 7 2016 (Letter). In the Letter, ACEH requested this Work Plan to further investigate the environmental conditions in the vicinity of the former USTs. Details are presented in the Letter.

OBJECTIVES

The objectives of this additional subsurface investigation are to:

1. Evaluate whether groundwater beneath the former tank pit has been impacted as a result of the former USTs;
2. Delineate the lateral and vertical extent of petroleum impacted soils associated with the former USTs;
3. Install a soil gas probe and collect one soil gas sample for chemical analysis at the northeast step-out location to evaluate the potential for vapor intrusion, if necessitated.
4. Prepare a Report summarizing activities and results of the limited subsurface investigation (LSI) including a discussion of groundwater flow and identification of sensitive receptors.

The current and historical environmental data will be presented to the ACEH to demonstrate that the Site qualifies for Case Closure under the LTCP guidelines, if applicable.

INVESTIGATION SCOPE OF WORK

To meet the investigation objectives outlined above, RPS Iris Environmental proposes the following scopes of work.

Pre-Field Activities

The following pre-field activities will be conducted prior to the field work.

- Update the Site-specific health and safety plan (HASP) incorporating the scope of work proposed herein. A copy of the HASP will be kept on-Site during field activities. The HASP will detail work to be performed, safety precautions, emergency response procedures, nearest hospital information, and on-Site personnel responsible for managing emergencies.
- Mark each proposed soil boring location in white paint and contact Underground Service Alert (USA) at least 48 hours prior to drilling, as required by law.
- Subcontract a private utility locating contractor to ensure boring locations are not in conflict with subsurface utilities prior to subsurface disturbance.
- Obtain the required drilling permit from the Alameda County Public Works Agency (ACPWA) and an encroachment permit from the City of Oakland.

Soil Boring Installation and Soil and Groundwater Sampling

RPS Iris Environmental proposes to advance five soil borings (IE-1 to IE-5) to further evaluate subsurface conditions at the Site. The borings are proposed to be advanced using a direct-push drill rig to facilitate collection of a continuous soil core for lithological description, and discrete samples for laboratory analysis.

One boring (IE-1) is proposed to be advanced within the footprint of the UST excavation for the collection of one grab-groundwater sample. Groundwater is anticipated to be encountered at depths ranging approximately 15 to 20 feet bgs and the grab-groundwater sample will be collected using a Hydropunch® or similar technology from this depth interval. Soil boring locations IE-2, IE-3, and IE-4 will be advanced approximately 15 feet northwest, northeast, and southeast from the perimeter of the former UST excavation (Figure 2) to a maximum depth of 20 feet bgs for the purpose of defining the lateral and vertical extents of soil impacts adjacent to the former USTs. Also, at the northeast boring location IE-3, an adjacent step-out boring (IE-5) will be advanced to approximately five feet bgs for the collection of a soil gas sample for potential analysis. Exact locations will be based on the outcome of our Site reconnaissance and utility clearance.

At each location, soil cores will be collected in acetate liners, and lithology will be described by an RPS Iris Environmental geologist under the direction of an RPS Iris Environmental California Professional Geologist using the visual-manual procedures of American Society for Testing Materials (ASTM) Standard D2488-09a for guidance (ASTM 2009), which is based on the Unified Soil Classification System. Organic vapor measurements of the soil cores will be taken using an organic vapor meter equipped with a photoionization detector (PID) calibrated with 100 parts per million isobutylene standard gas.

Two soil samples from approximate depths of three and eight feet bgs will be collected from each of the following borings: IE-2, IE-3 and IE-4. Soil samples will be cut from the recovered acetate liners, covered with Teflon tape and plastic end caps, labeled and placed in a chilled cooler for transport to the analytical laboratory. For samples collected for volatile organic compounds (VOCs), TerraCore® sampling containers or similar will be employed in accordance with the requirements of USEPA Method 5035. Chain of custody documentation will accompany the samples to the California-certified laboratory.

A grab-groundwater sample will be collected from the boring advanced through the former UST cavity (IE-1). Borings will be advanced to the target groundwater depth interval (approximately 15 to 20 feet bgs) with a sacrificial tip. Once total depth has been reached the drilling rod will be retracted exposing a section of screen approximately five feet in length. The borehole will be permitted to stabilize for approximately 15 minutes prior to sampling. The grab-groundwater sampling will be conducted using a check ball valve and Teflon tubing lowered down the drilling rod. The sample will be collected in containers appropriate for the given analysis and shipped to a California-certified laboratory under chain of custody protocols.

Soil Vapor Probe Installation and Sample Collection

One soil gas sample is proposed to be collected from a step-out boring location (IE-5) adjacent to IE-3 in accordance with California Department of Toxic Substances

(DTSC's) *Advisory—Active Soil gas Investigations* (Advisory) dated July 2015, utilizing helium shrouds as the leak check protocol during sampling. The soil gas sample will be collected into a batch-certified stainless steel Summa air canister following a 2-hour equilibrium period after the soil gas well construction. The sample will be placed on hold, pending review of the initial results of the soil boring results.

Upon completion of sampling, the borings will be backfilled to grade using neat cement grout in coordination with an ACPWA grout inspector. At the soil gas location, sample tubing will be withdrawn and the borehole will be over-drilled and grouted in accordance with ACPWA requirements. The borehole will be restored to match the surrounding surface to the practical extent. Drilling and sampling equipment will be decontaminated prior to use at each boring location using a combination of water, Alcon ox™ wash solution, and potable water rinse. Soil cuttings and decontamination rinsate will be placed into appropriate, sealed, and labeled waste containers for temporary on-Site storage pending receipt of the analytical results.

Analytical Program

A total of six soil samples (two each from borings IE-2 to IE-4), one grab-groundwater sample (IE-1), and one soil gas sample (IE-5) are proposed to be submitted to State-certified laboratories for potential chemical analysis by one or more of the following United States Environmental Protection Agency (USEPA) Methods:

- TPH-g and VOCs by Method 8260B – soil and grab-groundwater samples.
- Semi volatile organic compounds (SVOCs) by Method 8270 – soil and grab-groundwater samples.
- TPH as diesel (TPH-d) and motor oil (TPH-m) ranges by Method 8015M with and without a silica gel cleanup preparation method – soil and grab-groundwater samples.
- PCBs by Method 8082 – soil samples only.
- LUFT 5 Metals – soil samples only.
- VOCs by Method TO-15 – soil gas sample, if necessitated.
- Fixed gases by ASTM Method D1946 – soil gas sample, if necessitated.

The samples are proposed to be submitted on standard five business day turnaround time. The soil gas sample will be analyzed if there are detections of analytes that indicate a potential vapor intrusion concern in excess of applicable Environmental Screening Levels (ESLs) promulgated by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB).

Reporting

Upon completion of the field activities and receipt of the laboratory analytical data, RPS Iris Environmental will prepare a Report that will summarize the work performed at the Site and soil, soil gas, and grab-groundwater analytical results. The analytical results will be compared to applicable residential and commercial use SFBRWQCB ESLs or LTCP criteria for associated media (soil, groundwater, and soil gas). The results of this comparison will then be presented in the Report, and will form the basis of the Report's

conclusions and recommendation. The Report will include summary tables presenting the analytical results, a figure showing the boring locations, permits obtained, and official laboratory analytical reports. Reporting requirements to ACPWA will also be made as necessitated by the permit, which will include a cover letter, boring location map, boring logs and California Department of Water Resources forms.

SCHEDULE

The following tentative schedule is proposed:

- November 1, 2016 Submit Work Plan to ACEH for review and approval
- January 4, 2016 Obtain Work Plan approval from ACEH and permits
- January 15, 2016 Conduct Subsurface Soil Investigation
- March 1, 2016 Submit Report to ACEH for review and approval

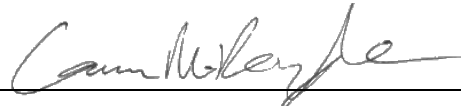
If you have any questions or comments regarding the information provided herein, please do not hesitate to contact us at 510.834.4747.

Sincerely,

RPS IRIS ENVIRONMENTAL



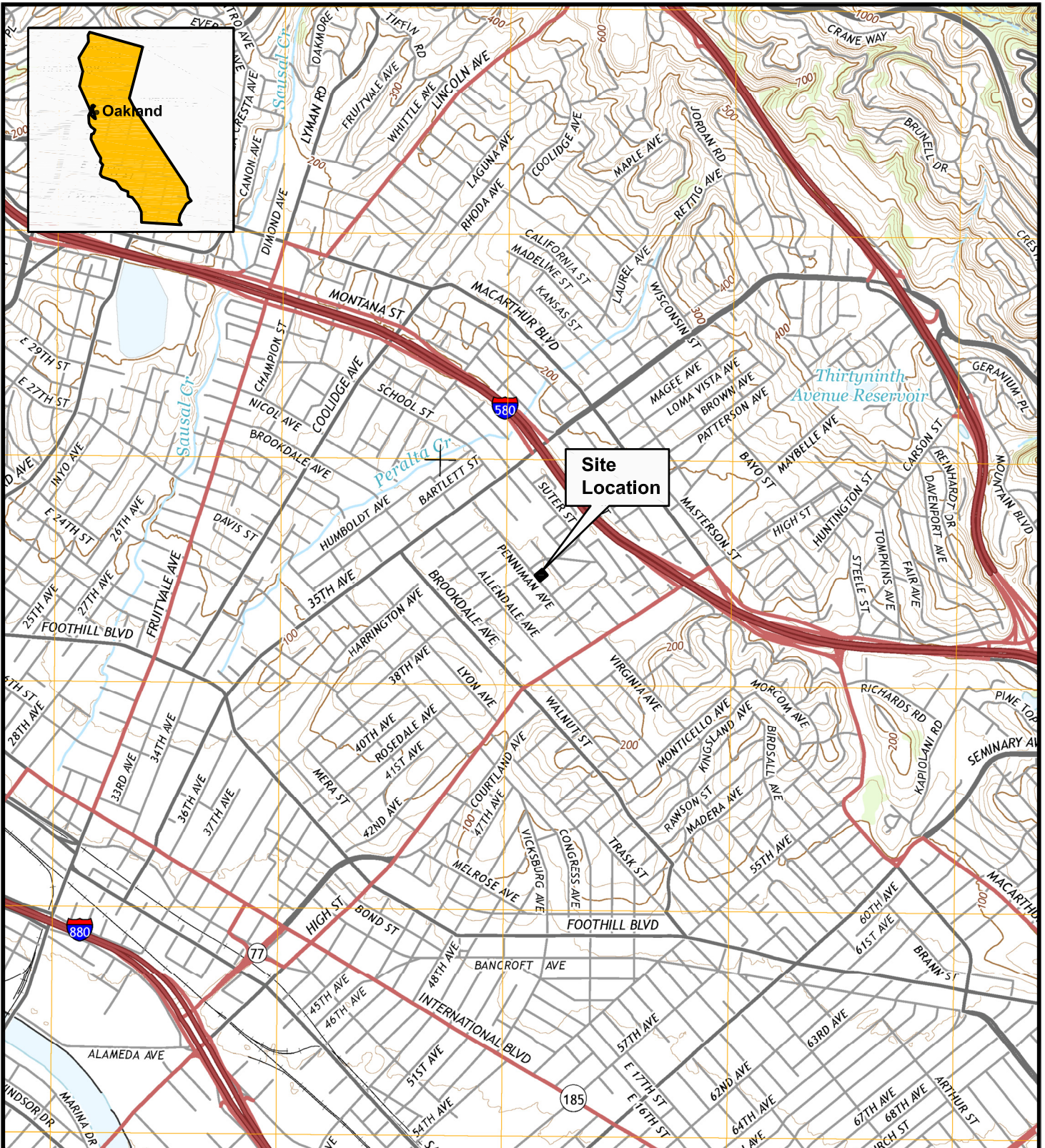
Craig Pelletier, PG
Principal



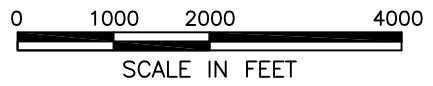
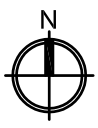
Conor McDonough, PG
Manager

cc: Mr. Wilson Lau, wilsonwclau@gmail.com
ACEH ftp website
State of California Geotracker website

FIGURES



Source: USGS 7.5' Quadrangle, Oakland East, California, 2015



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Site Location Map
 3820 Penniman Avenue
 Oakland, California





Figure
1

K:\CAD\15115-1311-B\Site Location.dwg



Basemap: Nearmap.com

LEGEND:

-  Approximate property boundary
-  Groundwater sample
-  Soil sample at 3 feet and 8 feet
-  Soil gas sample



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Site Layout and Boring Location Map
 3820 Penniman Avenue
 Oakland, California

Figure

2