Alameda County Health Care Services Agency

1131 Harbor Bay Pkwy, Suite 250

Alameda, CA 94502

Subject: RO#00003159

Roofing Facility

745 Kevin Court

Oakland, CA 94621

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,

Robert A Elliott Jr

Robert A. Elliott

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

October 27, 2015

WORKPLAN
For a
SOIL, GROUNDWATER and SOIL VAPOR ASSESSMENT
RO3159_WP_R_2015-10-27
at
Roofing Facility
745 Kevin Court
Oakland, CA 94621

ASE Job Number 4641

Submitted by:
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1.0 INTRODUCTION

This submittal presents Aqua Science Engineer's, Inc. (ASE) workplan for a soil, groundwater and soil vapor assessment at 745 Kevin Court in Oakland, California (Figures 1 and 2). The proposed site assessment activities were initiated by Mr. Robert Elliott c/o Mr. Mark Elliott, the owner of the property and responsible party, as requested by the Alameda County Health Care Services Agency (ACHCSA) in their directive letter dated April 14, 2015.

2.0 BACKGROUND

The subject property has been owned by our clients, the Elliotts, since the mid 1970's and used by their family as a roofing company warehouse and yard. At the time of the property purchase, the buildings along the western property line and a 1,000 gallon underground storage tank (UST) already existed at the site. The Elliotts built the building on the eastern side of the property some time later.

A Phase I Environmental Site Assessement was completed for the subject site by ERAS Environmental in October 2014. During the Phase I, files from the ACHCSA and the Oakland Fire Department (OFD) were reviewed, and records were noted that a 1,000 gallon UST that held motor-vehicle fuel (gasoline) was located at the site, and removed in 1991 (by the Elliotts). The files were not complete – items regarding UST use permits and the UST removal report were missing. No files indicating soil or water sampling at the time of the UST's removal were found in the files.

In November 2014, AEI Consultants performed a Phase II Site Assessment at the subject site that included the installation of four shallow soil borings within and surrounding the former UST location for the collection of grab groundwater samples. Total petroleum hydrocarbons as gasoline (TPH-G), benzene, and toluene were identified in groundwater samples collected from three of the four grab water samples. The highest concentrations were identified in soil boring HP-2, located just north of the former UST, and included 6,200 parts per billion (ppb) TPH-G, 73 ppb benzene, and 12 ppb toluene. AEI concluded that the findings of their 2014 investigation indicated that gasoline-impacted soil exists in the area of the former UST, which appears to be acting as the source of groundwater impacts.

The April 14, 2015 directive letter from the ACHCSA makes three requests. These requests are as follows:

2.1 Request for a Site Investigation Workplan and Site Conceptual Model (SCM)

ASE is currently working on a SCM which will be delivered to the ACHCSA ftp site and GeoTracker once completed. ASE has prepared this workplan to satisfy the requirement of the ACHCSA's directive letter. Please see the proposed scope of work described in Section 3.0 below for details regarding additional assessment activities to satisfy this request.

2.2 GeoTracker Compliance

ASE has requested to become the Authorized RP Agent for the site within GeoTracker. We are awaiting a response from GeoTracker. The Phase I, Phase II and this workplan will be uploaded as soon as ASE is granted access to do so.

2.3 Preparation of a List of Landowners Form

The requested form has been uploaded to the ACHCSA ftp site.

3.0 PROPOSED SCOPE OF WORK

The purpose of this assessment is to provide additional data to be used to determine whether the site may be closed as a low threat case under the new California Regional Water Quality Control Board, San Francisco Bay Region Low-Threat Closure Policy. This workplan has been designed to fill in data and fulfill requirements set forth in the ACHCSA directive letter. The specific proposed scope of work is as follows:

1) Obtain a drilling permit from the Alameda County Public Works Agency.

2) Notify Underground Service Alert (USA) of the drilling and have drilling locations cleared of subsurface utility lines by a private subsurface utility line locating company.

3) Using a limited-access hollow-stem auger drill rig, drill three soil borings for the collection of soil samples, and construct groundwater monitoring wells in the borings.

4) Develop the new monitoring wells using surge block agitation and pump and/or bailer evacuation.

5) Collect groundwater samples from the three monitoring wells.

6) Analyze one soil and one groundwater sample from each boring/well at a CAL-EPA certified analytical laboratory for total petroleum hydrocarbons as diesel (TPH-D) by modified Method 8015 (both with and without a silica-gel cleanup) and total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene, and total xylenes (collectively known as BTEX), plus naphthalene and fuel oxygenates by EPA Method 8260B.

7) Survey the top of casing elevation of each well relative to the mean sea level (msl) and determine longitude and latitude of each well to Geotracker standards.

8) Collect soil vapor samples from two locations west of the former UST.

9) Analyze the soil vapor sample from each boring at a CAL-EPA certified analytical laboratory for TPH-G and BTEX by EPA Method TO-15, and carbon dioxide, oxygen, methane, and helium by ASTM D1946.

10) Backfill each vapor boring with neat cement.

11) Properly dispose of drummed drill cuttings and waste-water produced during well purging and steam-cleaning of drilling equipment in an off-site facility.

12) Prepare a report presenting the methods and findings of this assessment.

Details of the assessment are presented below.

TASK 1 OBTAIN NECESSARY PERMITS

Prior to drilling, ASE will obtain a drilling permit from the Alameda County Public Works Agency.

TASK 2 NOTIFY USA TO CLEAR DRILLING LOCATIONS OF UNDERGROUND UTILITY LINES

ASE will mark the proposed boring locations with white paint and will notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity at least 48-hours prior to drilling. ASE will also contract with a private underground utility locating company to clear each drilling locations of underground lines prior to drilling.

TASK 3 DRILL THREE SOIL BORINGS, COLLECT SOIL SAMPLES AND CONSTRUCT GROUNDWATER MONITORING WELLS IN THE BORINGS

ASE will drill three borings at the site using a limited-access drill rig equipped with 8-inch diameter hollow-stem augers (Figure 2) for the installation of groundwater monitoring wells. The purpose of these wells is to (a) obtain current hydrocarbon concentrations in soil and groundwater in the former UST area within a properly screened and developed monitoring well, and (b) determine the horizontal extent of hydrocarbons in potential downgradient locations. A westerly groundwater flow direction is assumed based on data reviewed on GeoTracker from nearby sites that have monitoring wells. A qualified ASE geologist will direct this drilling.

Undisturbed soil samples will be collected at least every 5-feet, at lithographic changes, and from just above the water table for subsurface hydrogeologic description and possible chemical analysis. The geologist will describe the soil according to the unified soil classification system (USCS). Samples to be retained for analysis will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples will be placed into an ice chest containing wet ice for delivery under chain

of custody to a CAL-DHS certified analytical laboratory. Samples will be retained for analysis at the capillary zone, in areas of obvious soil contamination and at each lithologic contact.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with a photoionization detector (PID). The soil will be screened by emptying soil from one of the tubes into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the PID will measure the vapor through a small hole, punched in the bag. These PID readings will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

All sampling equipment will be cleaned in buckets with brushes an Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums and stored on-site until off-site disposal can be arranged.

ASE will complete the borings as groundwater monitoring wells. The monitoring wells will be constructed with 2-inch diameter, flush-threaded, schedule 40, 0.010-inch factory slotted PVC well screen and blank casing. The well casing in each well will be lowered through the augers and #2/12 Monterey sand will be placed in the annular space between the well casing and the borehole to approximately 2-feet above the screened interval. Approximately 1-foot of bentonite pellets will be placed on top of the sand pack and hydrated with water. This bentonite layer will prevent the cement sanitary seal from infiltrating into the sand pack. Cement mixed with 3 to 5 percent bentonite powder by volume will be used to fill the annular space between the bentonite layer and the surface to prevent surface water from infiltrating into the well. The well head will be protected by a locking well plug and an at-grade, traffic-rated well box (See Figure 3 - Typical Monitoring Well).

The wells will be screened to monitor the first water-bearing zone encountered. ASE anticipates that the wells will be screened from 5-feet above the water table and 15-feet below the water table. The exact screen interval will be determined in the field based on site specific lithology.

TASK 4 - DEVELOP THE MONITORING WELLS

The new monitoring wells will be developed after waiting at least 72 hours after well construction. The wells will be developed using at least two episodes of surge block agitation and bailer and/or pump evacuation. At least ten well casing volumes of water will be removed during the development, and development will continue until the water appears to be reasonably clear. The well development purge water will be stored temporarily on-site in sealed and labeled 55-gallon steel drums until off-site disposal can be arranged.

TASK 5 - COLLECT GROUNDWATER SAMPLES FROM THE MONITORING WELLS

After waiting 72 hours after the development of the new wells, ASE will collect groundwater samples from the monitoring wells. Prior to purging and sampling, the groundwater surface in

each well will be checked for sheen or free-floating hydrocarbons. The thickness of any free-floating hydrocarbons will be measured with an oil/water interface probe and an acrylic bailer lowered slowly to the groundwater surface and filled approximately half full for direct observation. ASE will also measure the depth to groundwater in all site wells prior to purging water from any well. Prior to sampling, each well will be purged of at least three well casing volumes of groundwater. The temperature, pH and electrical conductivity of evacuated water will be monitored during the well purging, and purging will continue beyond three well casing volumes if these parameters have not stabilized. Groundwater samples will be collected from each well using disposable polyethylene bailers. Groundwater samples will be decanted from the bailers into 40-ml glass volatile organic analysis (VOA) vials, preserved with hydrochloric acid, and sealed without headspace. The samples will then be labeled with the site location, sample designation, date and time the samples were collected, and the initials of the person collecting the samples. The samples will be placed into an ice chest with wet ice for transport to the analytical laboratory under chain of custody. Purged groundwater will be stored temporarily on-site in sealed and labeled 55-gallon steel drums until off-site disposal can be arranged.

TASK 6 ANALYZE SOIL AND GROUNDWATER SAMPLES

At least one soil sample from each boring, as well as each groundwater sample, will be analyzed at a CAL-EPA certified analytical laboratory for TPH-D by modified Method 8015 (both with and without a silica-gel cleanup), and TPH-G, BTEX, plus naphthalene and fuel oxygenates by EPA Method 8260B. Soil samples analyzed will include a sample collected from the capillary zone, as well as additional samples if there is any indication of contamination based on odors, staining or PID readings.

TASK 7 SURVEY THE TOP OF CASING ELEVATION AND HORIZONTAL LOCATION OF EACH WELL

ASE will contract with a California licensed surveyor to survey the top of casing elevation of each well relative to mean sea level (msl). The longitude and latitude of each well location will also be surveyed to Geotracker standards

TASK 8 COLLECT SOIL VAPOR SAMPLES FROM TWO LOCATIONS

Prior to conducting the project, ASE will verify that there has been no significant rainfall (no more than 1/2-inch) for 5 days prior to the soil vapor sampling.

ASE will push two vapor points to 5-feet bgs using drilling rods driven with a Geoprobe in locations shown of Figure 2. The bottom of each rod will contain an expendable point. Once at depth, ¼" Teflon tubing with a 1-inch screen will be inserted inside the drive rod. The drive rod will be retracted approximately 6-inches separating the expendable point and the rods and creating the desired void for the sample collection Membrane. Sand will be added to fill the void to 6-inches above the sample point. Above the sand, 6-inches of dry granulated bentonite will be

added followed by hydrated bentonite to the surface to prevent ambient air intrusion into the borehole.

The borehole will then be allowed to equilibrate 2 hours prior to purging and sampling. A "vacuum shut in test" will then be conducted to verify there are no leaks in the sample train system. A minimum vacuum of 100-inches of water column will be applied to the sampling manifold and valves system between the Summa canister and the probe for at least 5 minutes with all valves closed. If a vacuum of 100-inches of water is not maintained, then the tubing and valves will be adjusted or changed until the vacuum holds for the length of the test.

For the sampling, the sampling probe and Summa canister will be placed into a shroud consisting of a plastic shroud. Helium will then be added to the shroud as a tracer gas at a minimum concentration of 20% by volume. The tubing will then be purged of at least three volumes to insure that all ambient air is removed from the tubing using a 5-litre Summa canister.

The sample will be collected in a 1-liter Summa canister with a rate between 100 to 200-ml per minute and at a vacuum of less than 100-inches of water. The samples will be labeled with the site location, sample designation, date and time the samples are collected, and the initials of the person collecting the sample. The samples will then be delivered under chain of custody to a CAL-EPA certified analytical laboratory for analysis.

All disposable equipment and supplies will be discarded and non-disposable equipment will be cleaned with an Alconox solution and triple rinsed between sampling locations.

TASK 9 ANALYZE THE SOIL VAPOR SAMPLES

Each vapor sample will be analyzed at a CAL-EPA certified analytical laboratory for TPH-G and BTEX by EPA Method TO-15, and carbon dioxide, oxygen, methane and helium by ASTM D1946.

TASK 10 BACKFILL THE VAPOR BORINGS WITH NEAT CEMENT

Following collection of the vapor samples, the boreholes will be re-drilled to the total depth and then backfilled with neat cement placed by tremie pipe.

TASK 11 DISPOSE OF DRILL CUTTINGS AND WASTE WATER PRODUCED DURING THIS ASSESSMENT

ASE will arrange for the proper disposal of drummed drill cuttings produced during the installation of the groundwater monitoring wells. In addition, drummed waste-water produced during well purging for development and sampling, was well as waste-water from the steam-cleaning of drilling equipment will be properly profiled and disposed of off-site.

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TASK 12 PREPARE A REPORT

ASE will prepare a report presenting the methods and findings of this assessment. The report will be submitted under the seal of state registered civil engineer or geologist. This report will include a summary of all work completed during this assessment including tabulated analytical results, conclusions and recommendations. Copies of the analytical report and chain of custody will be included as appendices. The report, analytical data, and boring logs will also be uploaded to the state Geotracker database.

4.0 SCHEDULE

ASE will schedule field activities immediately upon approval of this workplan by the ACHCSA and obtaining drilling permits from the ACPWA.

Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

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Senior Geologist

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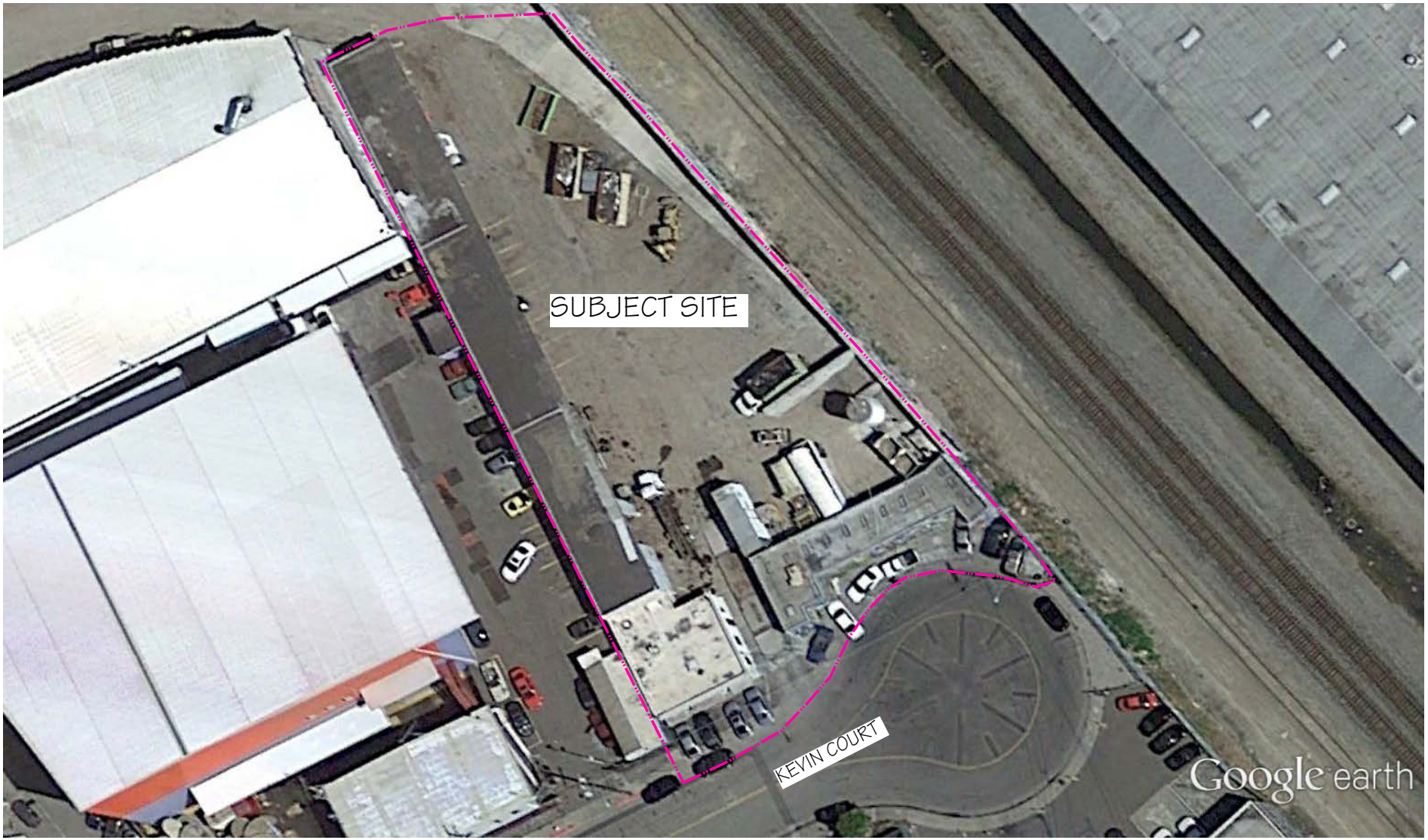
FIGURES



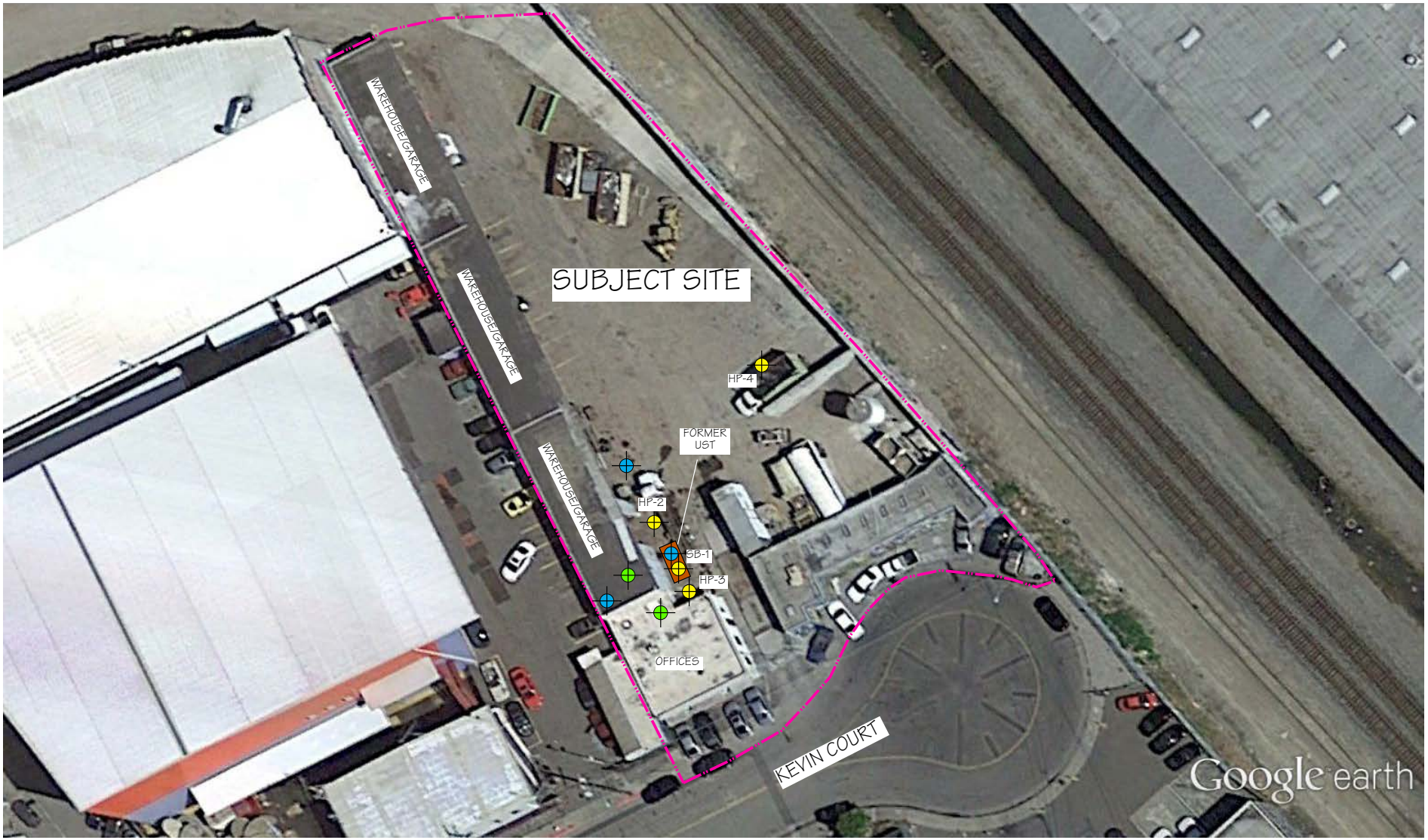
NORTH

NOT TO SCALE

SITE LOCATION MAP

Elliott Property
745 Kevin Court
Oakland, California

Aqua Science Engineers	Figure 1



NORTH

NOT TO SCALE

LEGEND

PREVIOUS SOIL BORING LOCATION, DRILLED BY AEI CONSULTANTS IN NOVEMBER 2014

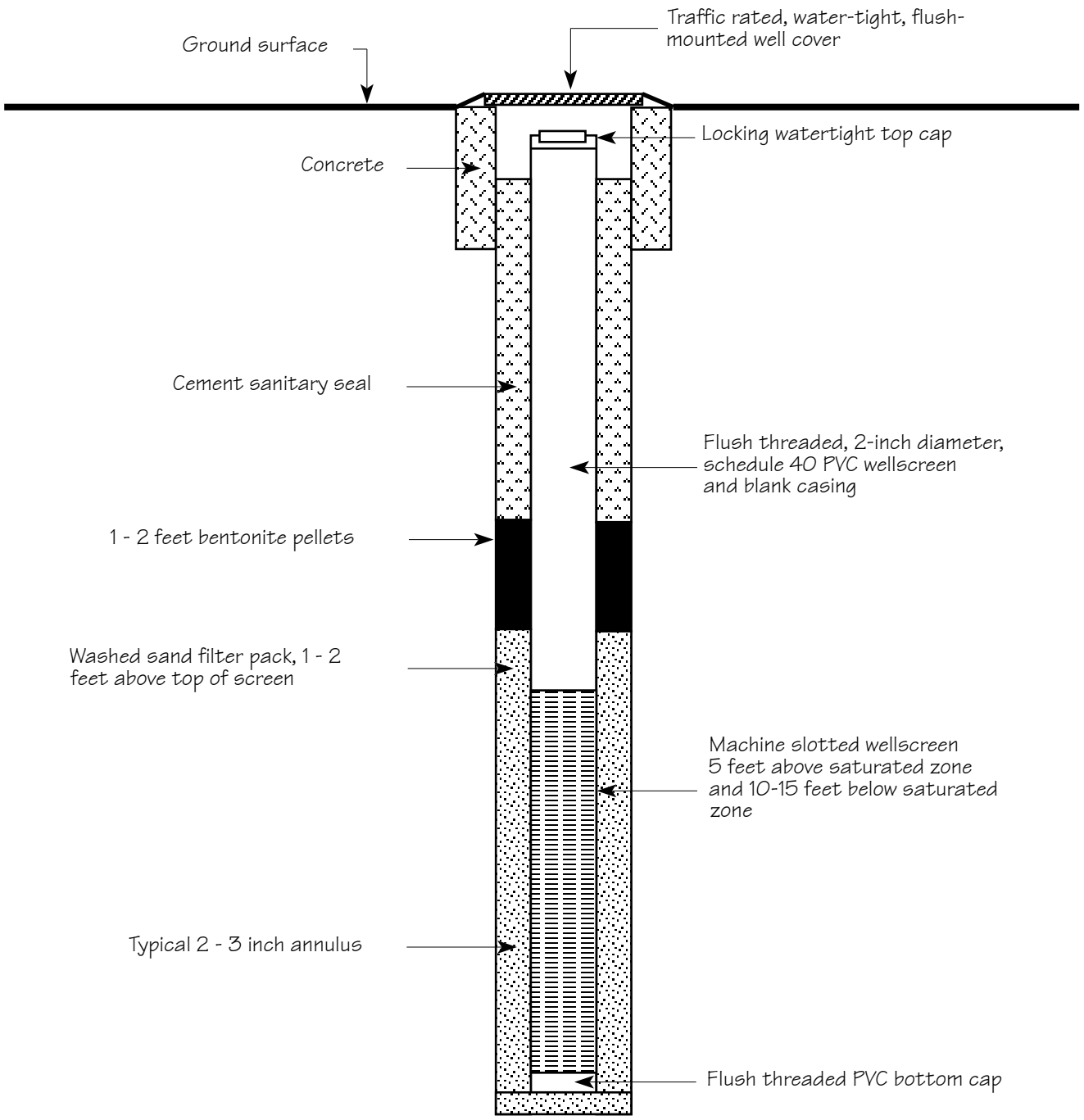
PROPOSED SOIL BORING LOCATION FOR THE COLLECTION OF SOIL AND GROUNDWATER SAMPLES, TO BE CONSTRUCTED AS A GROUNDWATER MONITORING WELL

PROPOSED SOIL VAPOR BORING LOCATION

SITE LOCATION AND SAMPLING MAP

Elliott Property
745 Kevin Court
Oakland, California

Aqua Science Engineers | Figure 2



TYPICAL
MONITORING WELL CONSTRUCTION
IN CROSS SECTION

AQUA SCIENCE ENGINEERS | FIGURE 3