Alameda County Health Care Services Agency

1131 Harbor Bay Pkwy, Suite 250

Alameda, CA 94502

Subject: RO#0000262

Albany Hill Mini Mart

800 San Pablo Avenue

Albany, CA

Attached please find a copy of the most recent groundwater sampling report for the above referenced 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.

Sincerely,

Jasminder Sikand

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

March 17, 2015

WORKPLAN
For a
SOIL VAPOR ASSESSMENT AND POST REMEDIATION MONITORING
RO262_WP_R_2015-03-17
at
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, CA 94706

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
55 Oak Court, Suite 220
Danville, CA 94526
(925) 820-9391

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

1.0 INTRODUCTION

This submittal presents Aqua Science Engineer's, Inc. (ASE) a response and workplan for soil vapor assessment at the Albany Hill Mini Mart located at 800 San Pablo Avenue in Albany, California (Figures 1 and 2). The proposed site assessment activities were initiated by Jasminder and Sonia Sikand, owner of the property, as requested by the Alameda County Health Care Services Agency (ACHCSA) in their directive letter dated January 14, 2015.

2.0 BACKGROUND

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

2.1 LTCP Media Criteria for Vapor Intrusion to Indoor Air

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 System Shutdown and Remediation Monitoring Workplan

The remediation system was shut down on February 27, 2015. Groundwater monitoring will revert to a quarterly monitoring schedule for the next two quarters. At that point, based on the results from these monitoring events, a recommendation will be made as appropriate to either (a) close the case, or (b) modify the sampling plan if appropriate.

The soil vapor monitoring points that will be installed for the assessment described in Section 3.0 of this workplan will be sampled again 6 months after their initial sampling, along with the currently existing vapor monitoring well. The data will be evaluated at that time, and if case closure is not appropriate, then additional monitoring will be proposed if appropriate.

2.3 Groundwater Monitoring

The most recent groundwater sampling took place on December 18, 2014. The site will be placed on a quarterly groundwater sampling plan, and the next sampling event scheduled for late March 2015, with a report submittal in late April or early May. Naphthalene will be added to the analytical suite during future sampling events.

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. The specific proposed scope of work is as follows:

1) Obtain a drilling permit from the Alameda County Public Works Agency and an encroachment permit from the City of Albany.

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) Drill four soil borings in locations on and off-site using a Geoprobe and install vapor monitoring wells.

4) Collect soil vapor samples from all site vapor monitoring wells.

5) Analyze the soil vapor sample from each boring at a CAL-EPA certified analytical laboratory for total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene, and total xylenes (collectively known as BTEX), and naphthalene by EPA Method TO-15, and carbon dioxide, oxygen, nitrogen, methane and helium by ASTM D1946.

6) If groundwater is encountered prior to the target depth for the vapor monitoring wells, collect groundwater samples from the borings.

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

Details of the assessment are presented below.

TASK 1 OBTAIN NECESSARY PERMITS AND ACCESS AGREEMENTS

Prior to drilling, ASE will obtain a drilling permit from the Alameda County Public Works Agency. ASE will also obtain an encroachment permit from the City of Albany to allow for drilling within their right-of-way.

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. It is currently known that extensive underground utility lines are present in the proposed drilling location area on the north side of Washington Avenue.

TASK 3 DRILL FOUR SOIL BORINGS IN ON-SITE AND OFF-SITE LOCATIONS AND INSTALL VAPOR MONITORING WELLS

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. Nearby on-site irrigation systems will also be shut off for 5 days prior to the sampling.

ASE will push three vapor points (SVW-2, SVW-3 and SVW-4) to 5-feet bgs using drilling rods driven with a Geoprobe (Figure 2). One additional point (SVW-5) will be pushed to 10-feet bgs. In areas inaccessible to a Geoprobe, the vapor points will be driven to depth with either a limited-access drilling rig or with hand tools if necessary. 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 neat cement to the surface to prevent ambient air and water intrusion into the borehole. A traffic rated wellbox will be installed to protect the vapor well.

TASK 4 COLLECT SOIL VAPOR SAMPLES FROM EACH SOIL VAPOR MONITORING WELL

ASE will collect soil vapor samples from each of the four new vapor monitoring wells, as well as previous soil vapor well SVW-1. The borehole will be allowed to equilibrate 20 minutes 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 in a shroud consisting of a plastic box with glove entry. Helium will then be added to the shroud as a tracer gas at a minimum concentration of 10% 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 Summa canister that is to be used specifically for purging. Once the required volume is purged, the sample will be collected in a 1-liter Summa canister with a rate between 100 to 200-ml per minute. 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, as well as the initial and final vacuum of the Summa canister. The samples will then be delivered under chain of custody to a CAL-EPA certified analytical laboratory for analysis.

TASK 5 ANALYZE THE SOIL VAPOR SAMPLES

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

TASK 6 IF GROUNDWATER IS ENCOUNTERED PRIOR TO THE TARGET DEPTH, COLLECT A GROUNDWATER SAMPLE

If groundwater is encountered prior to reaching the target depth of any of the soil vapor monitoring wells, a groundwater sample will be collected with a bailer. The water sample will be decanted into 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and sealed without headspace. The samples will then be chilled in an ice chest with wet ice for transport to the analytical laboratory under chain of custody.

Each water sample will be analyzed by the laboratory for TPH-G, BTEX and naphthalene by EPA Method 8260.

Following collection of the water samples, the borehole will be backfilled with neat cement placed by tremie pipe.

TASK 7 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 Alameda County Health Care Services Agency. Depending on how quickly an encroachment permit can be obtained from the City of Albany, ASE could complete this project in approximately 90-days of the workplan approval.

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

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

Respectfully submitted,

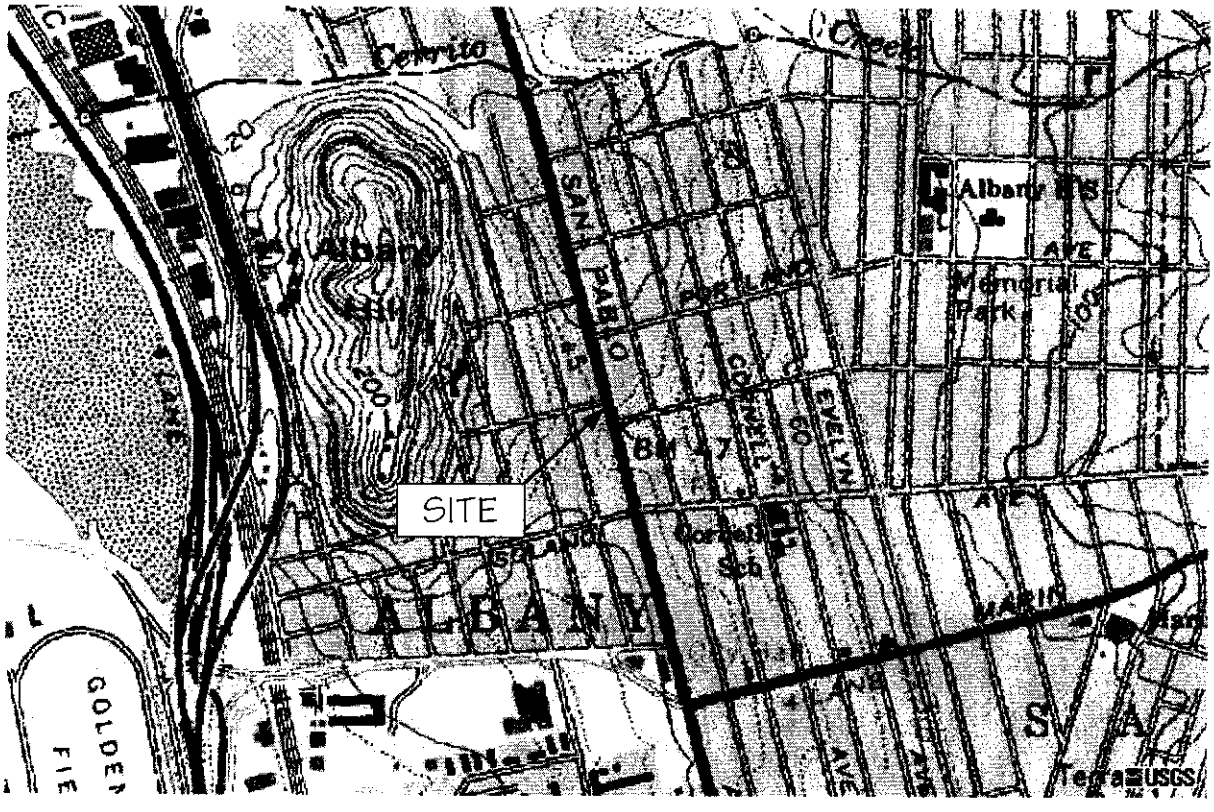
AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, P.G.
Senior Geologist

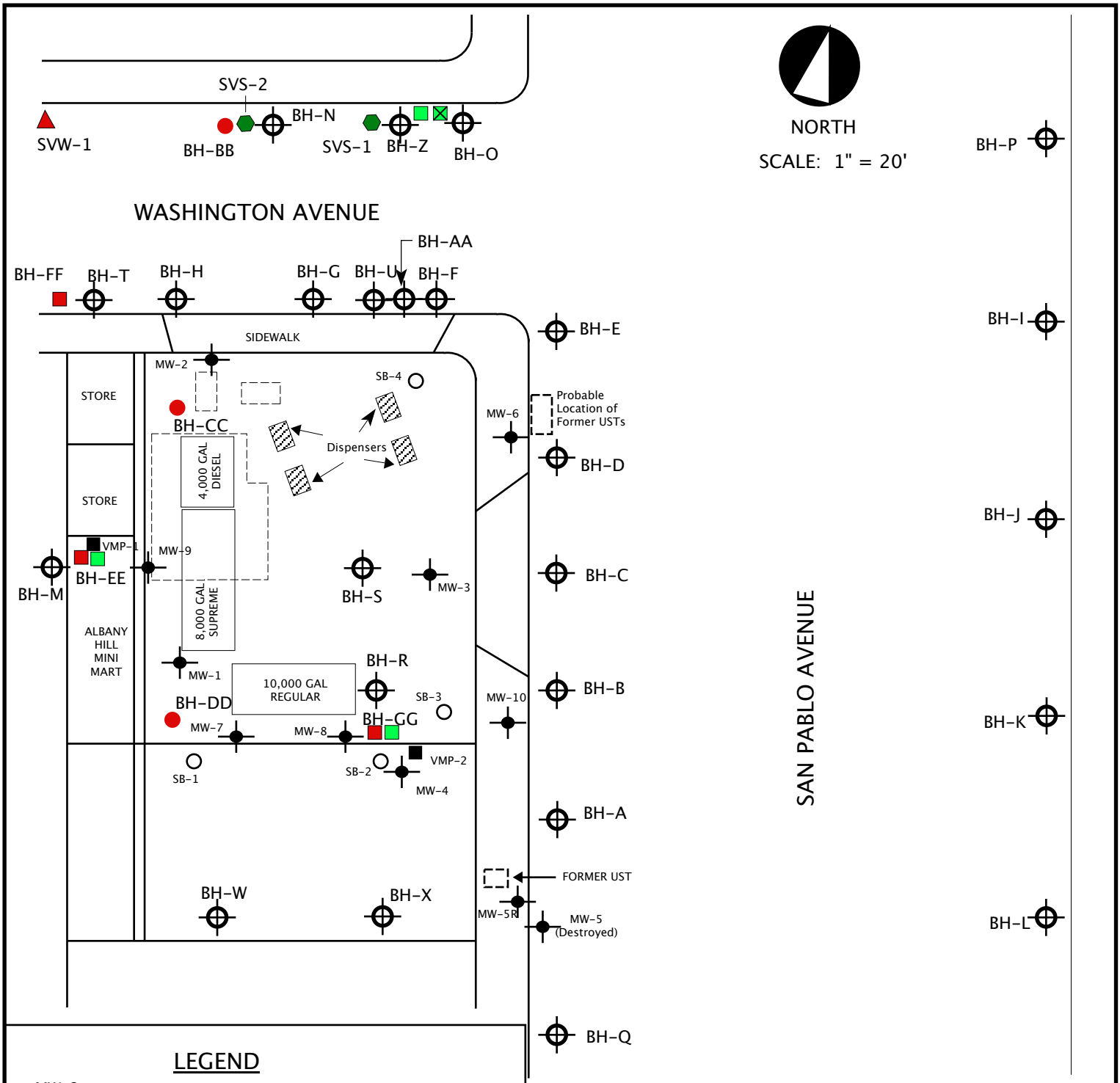
Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

FIGURES

NORTH



LOCATION MAP	
ALBANY HILL MINI MART 800 SAN PABLO AVENUE ALBANY, CALIFORNIA	
AQUA SCIENCE ENGINEERS, INC.	Figure 1



LEGEND

- MW-2 — MONITORING WELL
- SB-2 — AARS SOIL BORING
- BH-A — ASE ADVANCED SOIL BORING
- SOIL VAPOR SURVEY LOCATION
- SOIL VAPOR MONITORING WELL (2/14)
- SOIL BORING/ATTEMPTED VAPOR SAMPLE (2/14)
- SOIL BORING (2/14)
- PROPOSED SOIL VAPOR MONITORING WELL (5-FEET)
- PROPOSED SOIL VAPOR MONITORING WELL (10-FEET)

PROPOSED SOIL VAPOR WELL LOCATION MAP

ALBANY HILL MINI MART
800 SAN PABLO AVENUE
ALBANY, CALIFORNIA

AQUA SCIENCE ENGINEERS | Figure 2