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

March 28, 2011

Mr. Jerry Wickham
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

SUBJECT: OZONE-SPARGING REMEDIATION SYSTEM START-UP AND FIRST WEEK'S OBSERVATIONS
Lim Property, RO #0000479
250 8th Street
Oakland, California

Dear Mr. Wickham:

On behalf of our clients, Alice Ng and May Lee Lim, Aqua Science Engineers, Inc. (ASE) is pleased to submit this letter detailing the initial start-up of the ozone-sparging remediation equipment at the subject site. This letter is a pre-requisite of the remediation system installation report that is forthcoming once all remediation equipment is installed at the site. To date, all of the remediation wells have been installed, the underground piping has been installed and attached to all remediation wells, and the ozone-sparging system has been installed and is operational. The remaining remediation equipment to be installed is the vapor-extraction system, which is on-hold while awaiting the Bay Area Air Quality Management District (BAAQMD) permit. ASE anticipates receipt of the BAAQMD permit by mid-April 2011, and the vapor-extraction equipment will then be installed and brought on-line. Once all of the remediation equipment is fully operational, ASE will prepare the remediation system installation report, along with data regarding the systems' performance to date.

1.0 VAPOR MONITORING POINT (VMP) WELL INSTALLATION

In November and December 2010, all of the underground piping was installed both on and off-site connecting the remediation wells (ozone-sparging wells OS-1 thru OS-12 and vapor-extraction wells VE-1 through VE-5, MW-3 and MW-4) to the area of the remediation equipment. Vapor monitoring points VMP-1 and VMP-2 were installed on January 10, 2011, see Figure 1.

The VMPs were drilled with a hand auger by ASE personnel. The VMPs were constructed with 1-inch diameter schedule 40 PVC solid well casing and slotted screen casing. The slotted screen material was placed from 3-feet to 4-feet below bgs. Lonestar #2/16 sand was placed between the screened casing and the boring from the bottom of the boring to 1/4-foot above the top of the well screen. A Portland cement sanitary seal was placed above the sand layer to prevent surface water from infiltrating into the well. The VMP's were installed within traffic-rated well boxes that allow for access into the VMP for periodic scanning of the well's interior air with a PID as well as an ozone meter. The VMP's were secured with a threaded cap.

2.0 REMEDIATION EQUIPMENT INSTALLATION & START-UP

In January 2011, the remediation equipment pad and security fencing was installed at the site, and the H20 Engineering ozone-sparging system was installed and hooked up to the underground piping and the electrical service as described in the RAP. Although ASE planned to operate both the ozone-sparging and vapor-extraction remediation systems simultaneously, the delayed BAAQMD permit forced ASE to only operate the ozone-sparging remediation equipment in a limited capacity. On January 18, 2011, the ozone-sparging remediation system was turned on. Due to the presence of free-floating hydrocarbons in monitoring wells MW-3 and MW-4, the ozone-sparging wells in these areas were to be used only after the vapor-extraction system was operational. However, to ensure the ozone-sparging system and wells were operating as designed, all twelve ozone-sparging wells were allowed to operate for the first week to evaluate for leaks, and ozone/hydrocarbon detections within the VMPs.

Beginning on January 19, 2011, ASE visited the site daily to evaluate the remediation equipment and to test the air space within VMP-1 and VMP-2. During active ozone-sparging, the VMP's were scanned with a photoionization detector (PID) and ozone meter daily, and a field log sheet was used to record hydrocarbon and/or ozone detections, see Appendix A. After the third day of ozone-sparging, ASE began to notice detectable PID readings in both VMP-1 and VMP-2 as well as faint hydrocarbon odors within the well box that contained the VMP's. ASE immediately modified the well sequence program within the ozone-sparging remediation equipment to shut down all ozone-sparging wells located across 8th Street, OS-8 through OS-12. ASE then reduced the remediation equipment's operating flow and pressure to the remaining ozone-sparging wells. No odors, PID readings or ozone readings have been detected within or near any of the ozone-sparging wells on-site. ASE believes the presence of free-floating hydrocarbons within monitoring well MW-4 are the cause for the build-up of hydrocarbon vapors within the subsurface soil across 8th Street. Operation of the vapor-extraction equipment in conjunction with ozone-sparging will likely eliminate future hydrocarbon vapor build-up in the vadose zone.

3.0 UPCOMING REMEDIATION ACTIVITIES

ASE's plan for future remediation activities both on and off-site will proceed as follows:

3.1 Vapor Extraction Remediation System Start-Up

The vapor-extraction remediation equipment is scheduled for delivery to the site during the week of April 11, 2011. Once the catalytic oxidizer vapor-extraction system is wired and plumbed to the vapor-extraction well manifold, the vapor-extraction system will be put on-line. Initially, only vapor-extraction wells MW-3 and MW-4 will be turned on, since these wells contain a measurable thickness of free-floating hydrocarbons. If the vapor-extraction system can handle additional flow (based on the inlet concentrations and system's operating temperature), additional on-site vapor-extraction wells will be brought on-line as well. ASE's main focus will be to eliminate the free-floating hydrocarbons first, then concentrate on the remaining vapor-extraction wells subsequently.

3.2 Ozone-Sparging Remediation System

Ozone-sparging will continue to occur in all of the on-site ozone-sparging wells (OS-1 through OS-7) in a low flow and low pressure operation. Ozone-sparging wells OS-8 through OS-12 will remain off-line until the vapor-extraction equipment is fully operational on monitoring wells MW-3 and MW-4 and the free-floating hydrocarbons are no longer present. ASE believes that once the vapor-extraction system has had several months to operate, then the ozone-sparging system can be ramped up to operate in a normal flow and pressure manner.

3.3 Installation of Additional Vapor-Extraction Wells

As a precautionary measure, ASE will install four (4) additional vapor-extraction wells on the opposite side of 8th Street, adjacent to and within the traffic-rated well boxes of ozone-sparging wells OS-8, OS-9, OS-10 and OS-12 (see Figure 2). These additional vapor-extraction wells will be installed and used in an effort to eliminate the possibility of built-up hydrocarbons in the vadose-zone resulting from the ozone-sparging. The use of these additional vapor-extraction wells will be based on readings from daily and weekly VMP monitoring by ASE.

ASE will secure a drilling permit from the Alameda County Public Works Agency. The borings for the four additional vapor-extraction wells will be drilled with a hand auger by ASE personnel. The vapor-extraction wells will be constructed with 1-inch diameter schedule 40 PVC solid well casing and slotted screen casing. The slotted screen material will be placed from 7-feet below bgs to 15-feet bgs. Lonestar #2/16 sand will be placed around the screened casing from the bottom of the boring to 1/2-foot above the top of the well screen. A 0.5-foot thick bentonite layer will be placed between the sandpack and the overlying cement sanitary seal. A Portland cement sanitary seal will be placed above the bentonite layer to prevent surface water from infiltrating into the well.

The top of each vapor-extraction well will be connected to the 1-inch diameter schedule 40 secondary containment piping within the traffic-rated well box used to house the existing ozone-sparging tubing. This piping will be fitted with a PVC “wye” fitting that will allow for the ozone tubing to exit one side of the wye, while the other side can be hooked up to the newly installed vapor-extraction well using vacuum semi-rigid hose. The exit point of the ozone tubing will be sealed to eliminate the potential for vacuum short circuiting. The secondary containment piping will then be acting as a “dual-purpose” pipe, see Figure 3. The hydrocarbon vapors will be removed from the newly installed vapor-extraction wells and plumbed into the vapor-extraction well manifold within the remediation system compound. Each newly installed well will be valved individually so that certain wells can be turned on or off as desired. These vapor-extraction wells will be on-line whenever ozone-sparging activities occur; this will prevent any further release of hydrocarbons into the vadose zone where they could vent to the atmosphere.

These four additional vapor-extraction wells are planned for installation in mid April 2011.

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We look forward to your written response upon your review of the report. Should you require any additional information, please feel free to call me at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

David Allen
Vice President

Robert Kitay, P.G., R.E.A
Senior Geologist

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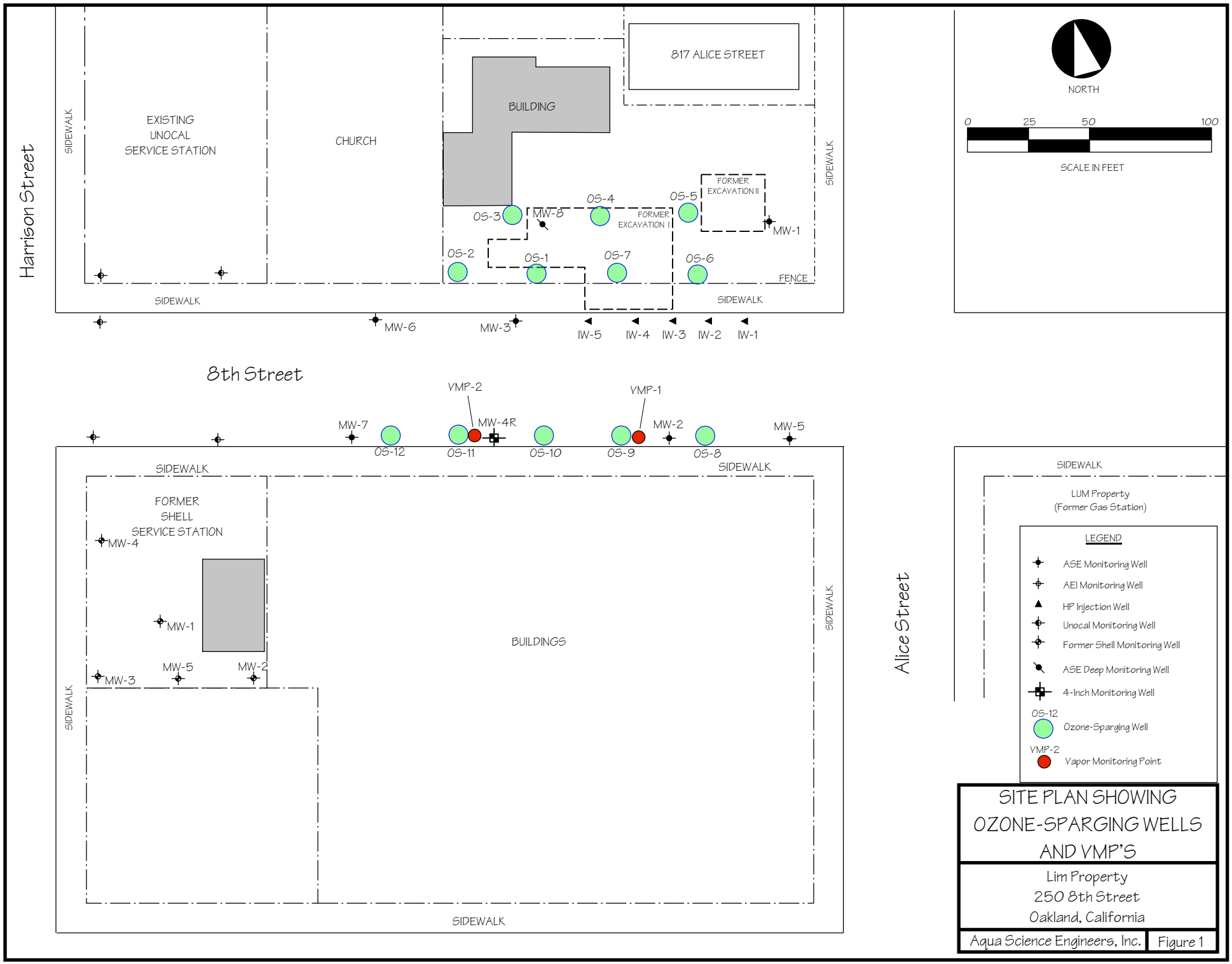
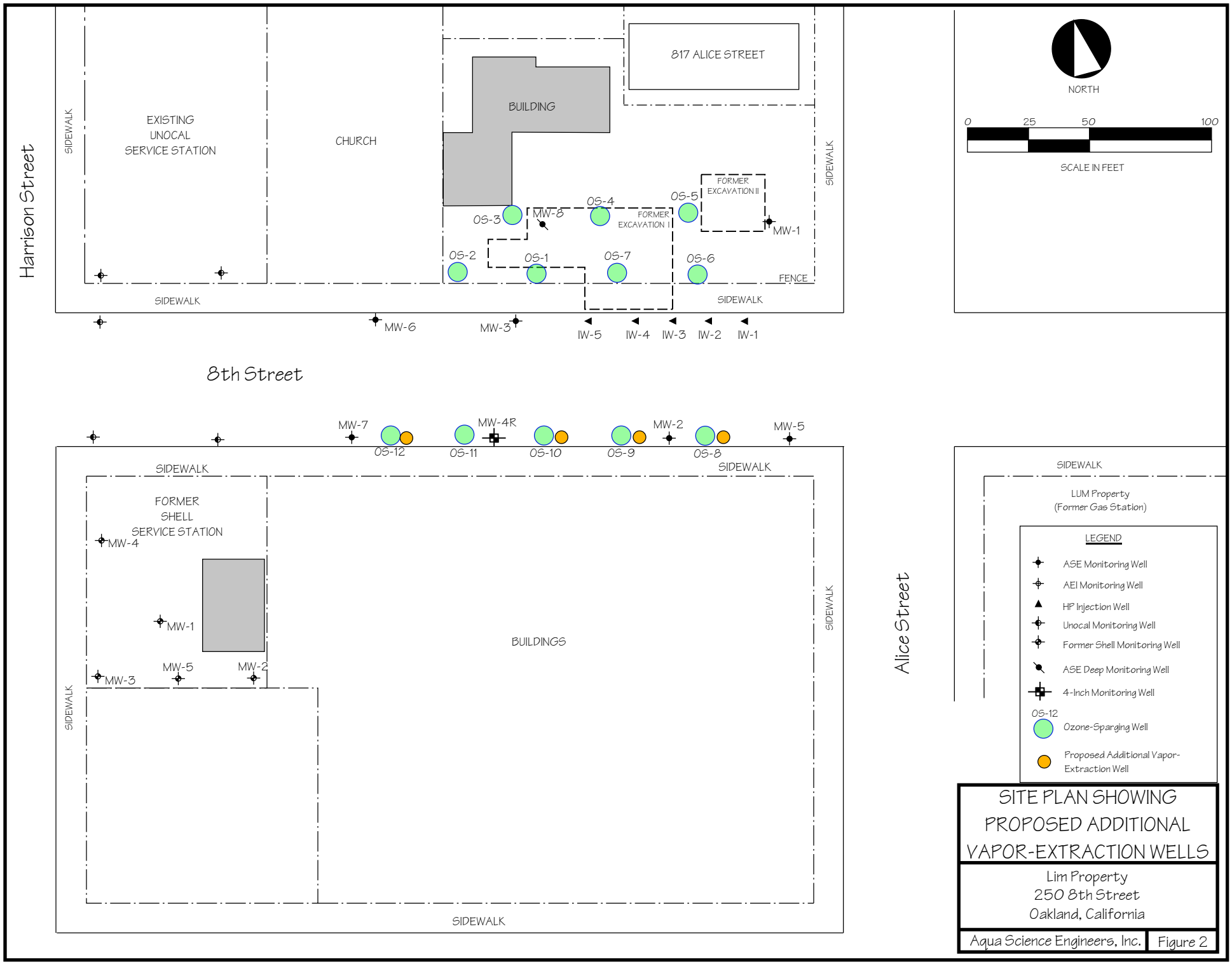
FIGURES



SITE PLAN SHOWING OZONE-SPARGING WELLS AND VMP'S

Lim Property
250 8th Street
Oakland, California

Aqua Science Engineers, Inc. | Figure 1



SITE PLAN SHOWING PROPOSED ADDITIONAL VAPOR-EXTRACTION WELLS

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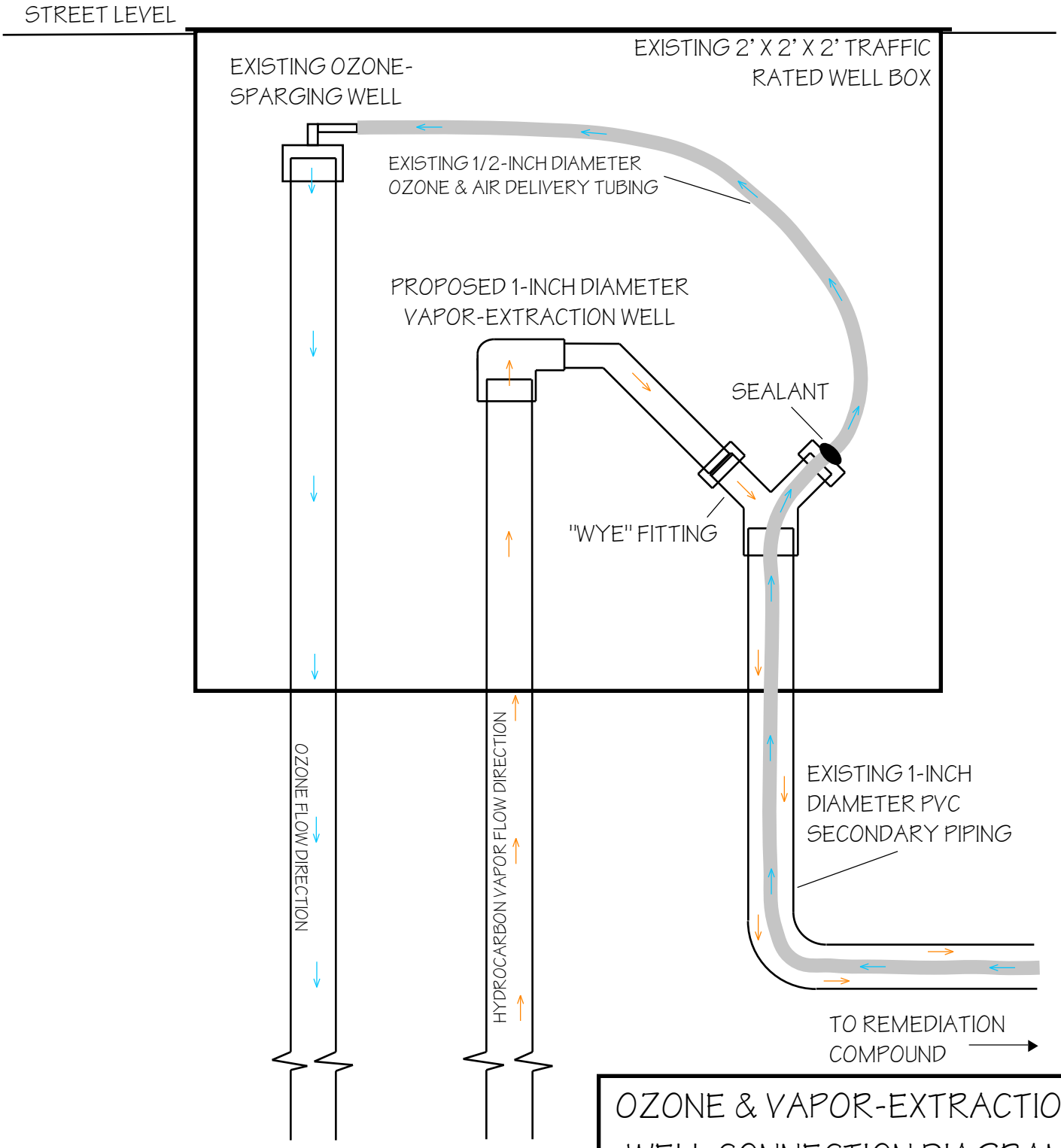
Aqua Science Engineers, Inc. | Figure 2



OZONE & VAPOR-EXTRACTION WELL CONNECTION DIAGRAM

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APPENDIX A

DAILY VMP ASSESSMENT LOG

DAILY VMP ASSESSMENT LOG

LIM FAMILY PROPERTY

250 8th Street, Oakland, California

DATE	VMP-1 OZONE CONCENTRATION	VMP-1 PID READING, PPMV	VMP-2 OZONE CONCENTRATION	VMP-2 PID READING, PPMV
1/18/11	0	0	0	0
1/19/11	0	0	0	0
1/20/11	0	0	0	0
1/21/11	0	11	0	21
1/22/11	0	3	0	7
1/23/11	0	0	0	0