Aqua Science Engineers, Inc. 208 West El Pintado, Suite C, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

February 22, 2007

Mr. Jerry Wickham
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: REPORT OF DPE EVENT

SITE: Fuel Leak Case RO0000479
Lim Property
250 8th Street
Oakland, CA 94607

Dear Mr. Wickham:

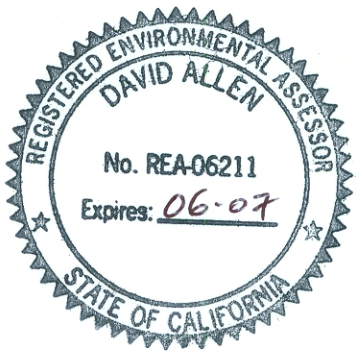
Attached is Aqua Science Engineers, Inc.'s (ASE) report of the methods and findings of our initial dual-phase extraction (DPE) event conducted at the subject site.

Should you have any questions or comments, please feel free to contact us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

David Allen
Vice President, R.E.A.



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February 22, 2007

REPORT
OF
DUAL-PHASE EXTRACTION (DPE) EVENT
PERFORMED AT THE
LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA
FUEL LEAK CASE RO0000479
(ASE JOB NO. 2808)

for

Mr. Russell Lim
3111 Diablo Road
Lafayette, CA 94549

Submitted by:

Aqua Science Engineers
208 West El Pintado Road, Suite C
Danville, CA 94526
(925) 820-9391

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Aqua Science Engineers, Inc. 208 West El Pintado, Suite C, Danville, CA 94526
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1.0 INTRODUCTION

This report presents Aqua Science Engineers, Inc.'s (ASEs) methods and findings of a dual-phase extraction (DPE) event conducted for remediation of free-phase hydrocarbons and dissolved hydrocarbons in the shallow groundwater at the Lim Property located at 250 8th Street in Oakland, California, Figures 1 and 2.

2.0 SITE HISTORY AND BACKGROUND INFORMATION

2.1 May 1992 Underground Storage Tank Removal

A gasoline service station previously occupied the site. In May 1992, ASE removed ten underground fuel storage tanks (USTs) from the site. The USTs consisted of one (1) 10,000-gallon gasoline tank, one (1) 5,000-gallon diesel tank, three (3) 2,000-gallon gasoline tanks, one (1) 2,000-gallon diesel tank, three (3) 500-gallon gasoline tanks and one (1) 250-gallon waste oil tank. Up to 10,000 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G) and 5,900 ppm total petroleum hydrocarbons as diesel (TPH-D) were detected in soil samples collected during the tank removal.

2.2 December 1992 through March 1993 Soil Overexcavation

Between December 1992 and March 1993, All Environmental of San Ramon, California overexcavated 1,762 cubic yards of soil from the site and off-hauled the soil to the BFI Landfill in Livermore, California for disposal. Analytical results show that all on-site soil with hydrocarbon concentrations greater than 10 ppm was removed from the site with the exception of soil along the 8th Street shoring. Up to 1,800 ppm TPH-G and 120 ppm TPH-D were detected in soil samples collected along the shoring indicating that contamination likely extends below 8th Street. This contamination left in place may still be a source for groundwater contamination.

2.3 January 1995 Monitoring Well Installation

In January 1995, ASE installed monitoring wells MW-1 and MW-2 at the site. High hydrocarbon concentrations were detected in monitoring well MW-2, downgradient of the site. Moderate hydrocarbon concentrations were detected in on-site monitoring well MW-1.

2.4 January 1996 Borings and Groundwater Sampling

In July 1996, ASE collected groundwater samples from each monitoring well and drilled borings BH-C and BH-D to further define the width of the hydrocarbon plume downgradient of the site. Relatively high hydrocarbon concentrations were detected in groundwater samples collected from monitoring well MW-2, downgradient of the site. Slightly lower but still very high hydrocarbon concentrations were detected in groundwater samples collected from boring BH-D, west of monitoring well MW-2. Very low hydrocarbon concentrations were detected in groundwater samples collected from monitoring well MW-1, located on the site, and boring

BH-C, east of monitoring well MW-2. Based on these findings, the plume appears to be moving to the south of Excavation I.

2.5 Quarterly Groundwater Monitoring

In April 1995, ASE began a quarterly groundwater monitoring program for the site. Since that time, the site has been on either a quarterly or semi-annual sampling schedule.

2.6 June 1997 Remedial Action Plan

On June 5, 1997, ASE prepared a remedial action plan (RAP) addressing the need for groundwater remediation at the site, describing the appropriateness of several remedial options and choosing an option. Low flow hydrogen peroxide injection was chosen as the groundwater remediation option of choice for the site in order to raise dissolved oxygen (DO) concentrations in the groundwater to stimulate in-situ bioremediation.

2.7 February 1999 Hydrogen Peroxide Remediation System Installation

On February 2 and 3, 1999, five (5) injection wells were installed at the site. On February 18, 1999, the injection system began operation. It delivered a water and hydrogen peroxide solution to each injection well on a constant basis. DO concentrations within the injection wells rose to above 20 ppm. Groundwater in downgradient monitoring well MW-2 never showed a measurable increase in DO.

2.8 June 1999 Discovery of Free-Floating Hydrocarbons

On June 22, 1999, while measuring the DO content within the injection wells, ASE discovered that the DO probe had a very strong gasoline odor when removed from injection well IW-5. A clear bailer was inserted into IW-5 to check for the presence of free-floating hydrocarbons. The bailer contained approximately 18-inches of what appeared to be aged gasoline. On June 24, 1999, ASE returned to the site with an interface probe to accurately measure the thickness of the free-floating hydrocarbons. On that day, 1.75-feet of free-floating hydrocarbons was measured on the water surface in IW-5. Injection well IW-4 (15-feet east of IW-5) was measured with the interface probe and did not contain a measurable thickness of floating hydrocarbons. On June 24, 1999, ASE bailed the free-floating hydrocarbons from IW-5 until only a sheen was present on the water surface. Approximately 3 gallons of product was removed from IW-5. ASE continued to measure and bail the floating product within well IW-5 on a bi-weekly basis.

2.9 January 2000 Monitoring Well Installation

In January 2000, ASE installed groundwater monitoring wells MW-3 and MW-4, east of injection well IW-5 and monitoring well MW-2. High hydrocarbon concentrations were detected in groundwater samples collected from both of these wells, including up to 140,000 parts per billion (ppb) TPH-G, 13,000 ppb TPH-D and 22,000 ppb benzene.

2.10 April 2000 Groundwater Sampling

In April 2000, ASE collected groundwater samples from all four monitoring wells. Elevated hydrocarbon concentrations were detected in groundwater samples collected from monitoring wells MW-2, MW-3 and MW-4, including up to 240,000 ppb TPH-G, 700,000 ppb TPH-D and 35,000 ppb benzene. Monitoring well MW-3 contained free-floating hydrocarbons.

2.11 Hydrogen Peroxide System Discontinuation

On November 27, 2000, with the approval of the Alameda County Health Care Services Agency, ASE turned off the hydrogen peroxide injection system since there was no noticeable DO increase in downgradient monitoring wells MW-2 and MW-4 on the west side of 8th Street.

2.12 May 2002 Monitoring Well Installation

In May 2002, ASE installed groundwater monitoring wells MW-5 and MW-7 south of the site, across 8th Street, and MW-6 northwest of the site approximately 70 feet west of existing monitoring well MW-3. Low concentrations of MTBE were identified in groundwater samples collected from wells MW-5 and MW-6. High concentrations of petroleum hydrocarbons were identified in well MW-7, including up to 38,000 ppb TPH-G and 890 ppb benzene.

2.13 October 2004 DPE Event

In October 2004, CalClean mobilized to the site with a truck-mounted DPE system to perform both a DPE pilot test and a 14-day DPE interim remediation event at the site. At the completion of the DPE interim remediation event, a total of 94,470 gallons of free-product and groundwater were removed from three extraction wells. The average TPH-G concentration in the extracted groundwater was 13,900 ppb; the average benzene concentration of that extracted groundwater was 780 ppb. The extracted groundwater was treated on-site with activated carbon vessels, and then discharged, under permit, to the East Bay Municipal Utilities District (EBMUD) sanitary sewer system on-site.

A total of 2.3 million cubic feet of hydrocarbon-laden vapors were extracted from three extraction wells during the 15 day event. Based on field measurements and laboratory analytical data, over 7,000 pounds of petroleum hydrocarbons were extracted from three extraction wells during the 15-day event. This equates to approximately 1,150 gallons of petroleum hydrocarbons. The extracted vapors were treated on-site by CalClean's thermal oxidizer. Based on the success of this DPE event, ASE recommended a second DPE event for the site prior to designing and installing a long-term remediation system.

2.14 Current Quarterly Groundwater Monitoring Program

The site is currently on a quarterly groundwater monitoring program.

3.0 SCOPE OF WORK

The following is the ASE's scope of work completed during the February 2007 DPE event.

1) Secure permits from the City of Oakland for encroachment on a city street, closure of a sidewalk, and closure of parking spaces.

2) Prepare a health and safety plan.

3) Mobilize to the site with ASE personnel and equipment to perform the DPE event.

4) Connect the ASE DPE equipment to monitoring well MW-3 located within the parking strip of 8th Street.

5) Extract free-product, groundwater and vadose-zone vapors from monitoring well MW-3 for a period of 10 hours.

6) Remediate the petroleum-hydrocarbon laden vapors with the trailer-mounted granulated activated carbon (GAC) units, two by two plumbed in parallel.

7) Store the extracted free-phase product and hydrocarbon-laden groundwater in an on-site, 4,000 gallon, temporary holding tank.

8) Collect data to determine system operating parameters and a radius of influence of the DPE system.

9) Using a hand-held photoionization detector (PID), measure the influent vapor concentrations of the extracted hydrocarbons removed from the vadose-zone.

10) Collect groundwater and vapor samples from the influent water and vapor stream at the beginning and end of the DPE event.

11) Measure the depth to water in the extraction well and observation wells at the completion of the DPE event.

12) Analyze water and vapor samples at a State of California Department of Health Services (CA DHS) certified analytical laboratory for TPH-G, benzene toluene, ethylbenzene and xylenes (collectively known as BTEX), MTBE and oxygenates, and lead scavengers by EPA Method 8260B. Analyze the water samples also for TPH-D by EPA Method 8015M.

13) Profile the extracted water within the holding tank. Using a subcontracted vacuum-truck service, dispose of the water/product mixture at a licensed disposal facility.

4.0 DETAILS OF THE SCOPE OF WORK COMPLETED

Below is a detailed description of each task completed during the February 13, 2007 DPE event.

4.1 Permitting

After discussions with the City of Oakland, ASE determined that permits for encroachment on a city street, closure of a sidewalk, and closure of parking spaces was not necessary. ASE has obtained a Permit to Operate the DPE system from the Bay Area Air Quality Management District (BAAQMD).

4.2 Health & Safety Plan

A Health and Safety Plan was prepared outlining all field activities performed at the site during the DPE activities. A copy of the Health and Safety Plan was available on-site during all field activities.

4.3 Mobilization

On February 13, 2007, ASE arrived at the subject site with the DPE system trailer (Figure 3). A 4,000 gallon black poly tank was previously delivered to the site by Baker Tank. This rented tank was used to store the extracted groundwater and free-product (Figure 4).

4.4 Depth to Groundwater/Product

The groundwater/free-product depth within monitoring well MW-3 and injections wells IW-5 and IW-4 well were measured using an electric interface probe.

- In monitoring well MW-3, the depth to product was measured at 16.06-feet below the top of well casing; the groundwater depth was measured at 16.35 feet below the top of the casing. The free-product thickness was therefore 0.29-feet.

- In injection well IW-5, the depth to product was measured at 15.74-feet below the top of well casing; the groundwater depth was measured at 16.30 feet below the top of the casing. The free-product thickness was therefore 0.56-feet.

- In injection well IW-4, the groundwater depth was measured at 15.51 feet below the top of the casing. Free-product was not present in this well.

4.5 Vacuum Influence Measurements

The top of monitoring well MW-6 and injection well IW-5 were fitted with Minihelic vacuum gauges to determine area of influence of the vapor extraction. The gauges were zeroed prior to start-up of the DPE system.

During the course of the DPE event, negative pressure was obvious in injection well IW-5, approximately 32-feet from the extraction well, MW-3.

4.6 System Start-Up and Duration

Monitoring well MW-3 was fitted with a manifold that would allow for simultaneous groundwater extraction and vapor extraction. The groundwater extraction pump was lowered into the well to the depth near the interface of free-product and groundwater. The extracted liquids were then pumped via ¾-inch tubing directly into the Baker Tank. The vacuum hose was then connected to the well. The DPE system was then turned on.

The system was operated from 0830 hours to 1930 hours (see the field log attached in Appendix A). In that time, the following conditions were met:

4.7 Groundwater Extraction, Sample Collection and Analysis

An estimated 1,880 gallons of groundwater were removed by the groundwater extraction pump (based on measurement of water line in poly tank). A grab groundwater sample was collected directly from the extraction pump tubing while the pump was operating (sample name Tank Water) at 1900 hours. The sample was analyzed by McCampbell Analytical of Pittsburg, California (ELAP # 1644) for TPH-G, BTEX and MTBE by EPA Method 8260, and TPH-D by EPA Method 8015.

- Sample Tank Water contained 47,000 ug/l TPH-G, 3,000 ug/l TPH-D, 10,000 ug/l benzene, 1,300 ug/l ethylbenzene, 7,400 ug/l toluene, and 4,900 ug/l xylenes. No other compounds were identified above laboratory reporting limits.

A copy of the certified analytical report from McCampbell is attached in Appendix B.

4.8 Vapor Extraction and Sample Collection and Analysis

Due to the porosity of the subsurface soil at the site, the vapor-extraction blower required a percentage of ambient air to be incorporated with the air removed from the vadose zone. A negative pressure of 50 to 60 inches of water column is the optimum vacuum for the blower. Higher negative pressure could lead to malfunction of the blower. In order to maintain this negative pressure, the ambient air by-pass valve was opened. Thus, the extracted air was a combination of vadose-zone air and ambient air. The vapor extraction blower operated at 135 standard cubic feet per minute (SCFM) for the majority of the DPE event. This is based on

blower curves supplied by the manufacturer of the blower. PID readings were taken at the start and end of the DPE event from the effluent side of the activated carbon treatment units, and at the exit point to the atmosphere. The PID readings were zero at all effluent points measured.

Hourly PID readings, taken from a sample point on top of the extraction well, resulted in a range of 580 to 1,258 parts per million by volume (ppmv). These readings represent undiluted (no ambient air) vapor stream readings.

Influent air bag samples were collected on the positive side of the extraction blower, after the injection of ambient air. Two influent air bag samples were collected at 1105 hours (sample name INF-VE-1105) and 1930 hours (sample name INF-VE-1930). These samples were collected in new 1-liter Tedlar bags using a hand pump. The samples were analyzed by McCampbell for TPH-G, BTEX and MTBE by EPA Method 8260B.

- Sample INF-VE-1105 contained 2,500 ug/l TPH-G, 19 ug/l benzene, 6.3 ug/l ethylbenzene, 32 ug/l toluene, and 18 ug/l xylenes. No other compounds were identified above laboratory reporting limits.

- Sample INF-VE-1930 contained 26,000 ug/l TPH-G, 380 ug/l benzene, 89 ug/l ethylbenzene, 580 ug/l toluene, and 250 ug/l xylenes. No other compounds were identified above laboratory reporting limits.

A copy of the certified analytical report from McCampbell is attached in Appendix B.

5.0 POST DPE EVENT MEASUREMENTS

The groundwater/free-product depth within monitoring well MW-3 and injection well IW-5 were measured using an electric interface probe immediately after the DPE equipment was turned off and removed from the extraction well.

- In monitoring well MW-3, the post remediation groundwater depth was measured at 18.35-feet below the top of the casing. Free-product was not present in this well. The groundwater depth dropped 2-feet as a result of the groundwater extraction.

- In injection well IW-5, the post remediation depth to product was measured at 16.46-feet below the top of well casing; the groundwater depth was measured at 17.60-feet below the top of the casing. The free-product thickness increased to 1.14-feet.

6.0 EXTRACTION CALCULATIONS

6.1 Groundwater and Liquid Free-Product

The DPE system extracted an estimated 1,880 gallons of hydrocarbon-laden groundwater during the 11 hour DPE event. No measurable product was identified floating on the water within the tank on the day following the DPE event.

6.2 Vapor Phase Hydrocarbons

Using the average concentration of TPH-G in the two influent air bag samples, ASE calculated the volume of hydrocarbons removed during the DPE event (see Appendix C for the calculation sheet). Based on an extraction rate of 135 SCFM and an average TPH-G concentration of 14,250 ug/l, the DPE system recovered approximately 12.66 gallons of gasoline.

7.0 CONCLUSIONS OF INITIAL DPE EVENT

The DPE system recovered approximately 12 gallons of hydrocarbons as gasoline during the 11-hour DPE event test. Free product within the extraction well was no longer present after the DPE event.

An influence of negative pressure was measured within well IW-5, approximately 32-feet away from extraction well MW-3. No influence of negative pressure was realized in monitoring well MW-6.

The thickness of free-product in injection well IW-5 increased from 0.56-feet to 1.14-feet after the DPE event.

8.0 RECOMMENDATIONS

Based on the effectiveness of the ASE DPE event, and the fact that the product thickness has increased in well IW-5, ASE recommends that a second DPE event be conducted immediately, using injection well IW-5 as the extraction well.

9.0 SCHEDULE

ASE plans on returning to the Lim Property site within the next 3 weeks to perform the second DPE event. At the completion of the second DPE event, the extracted groundwater within the rented poly tank will be removed and disposed of, allowing for an additional DPE event likely in April 2007.

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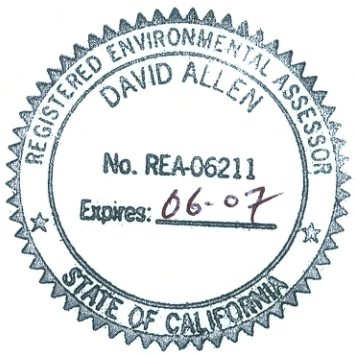
10.0 REPORT LIMITATIONS

The results presented in this report represent conditions at the time of the air and water sampling, at the specific locations at where the samples were collected, and for the specific parameters analyzed by the laboratory.

This report does not fully characterize the site for contamination resulting from unknown sources or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent state certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Aqua Science Engineers appreciates the opportunity provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Aqua Science Engineers, Inc.



David Allen, R.E.A.
Vice President

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

cc: Responsible Party Representative, Mr. Russell Lim, 3111 Diablo Road, Lafayette, CA 94549

Mr. Jerry Wickham, ACHCSA

Aqua Science Engineers, Inc. 208 West El Pintado, Suite C, Danville, CA 94526
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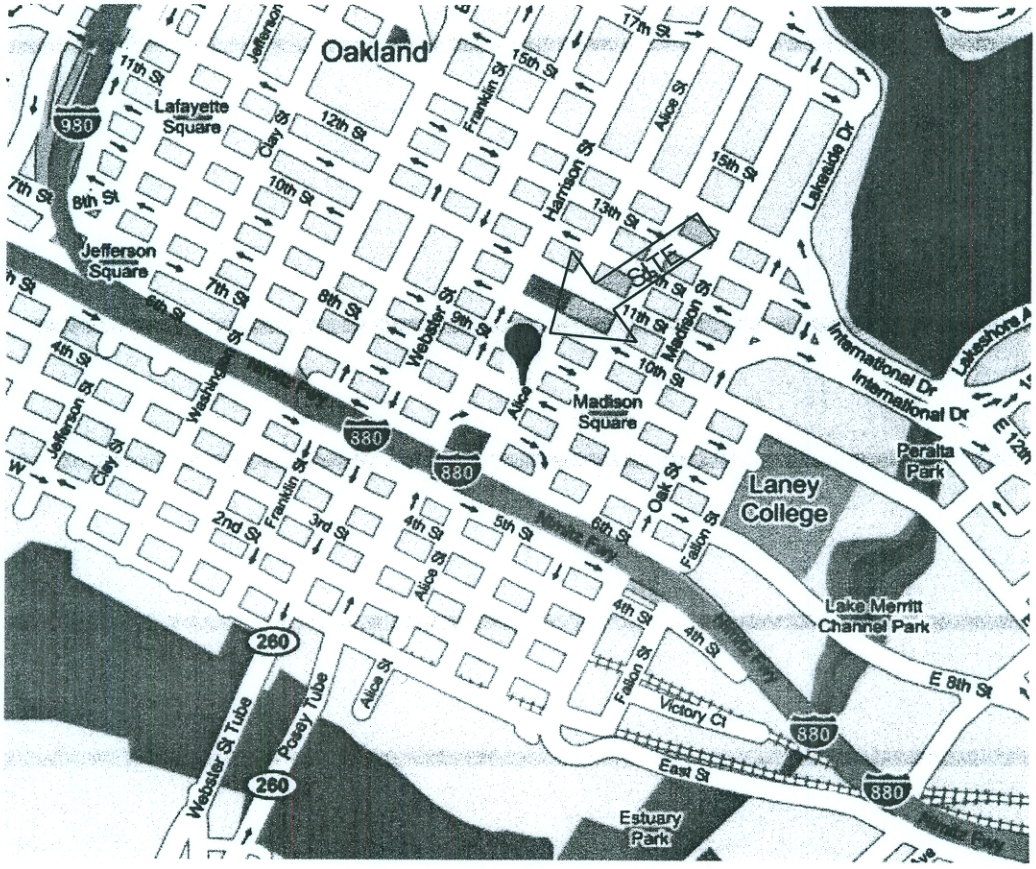
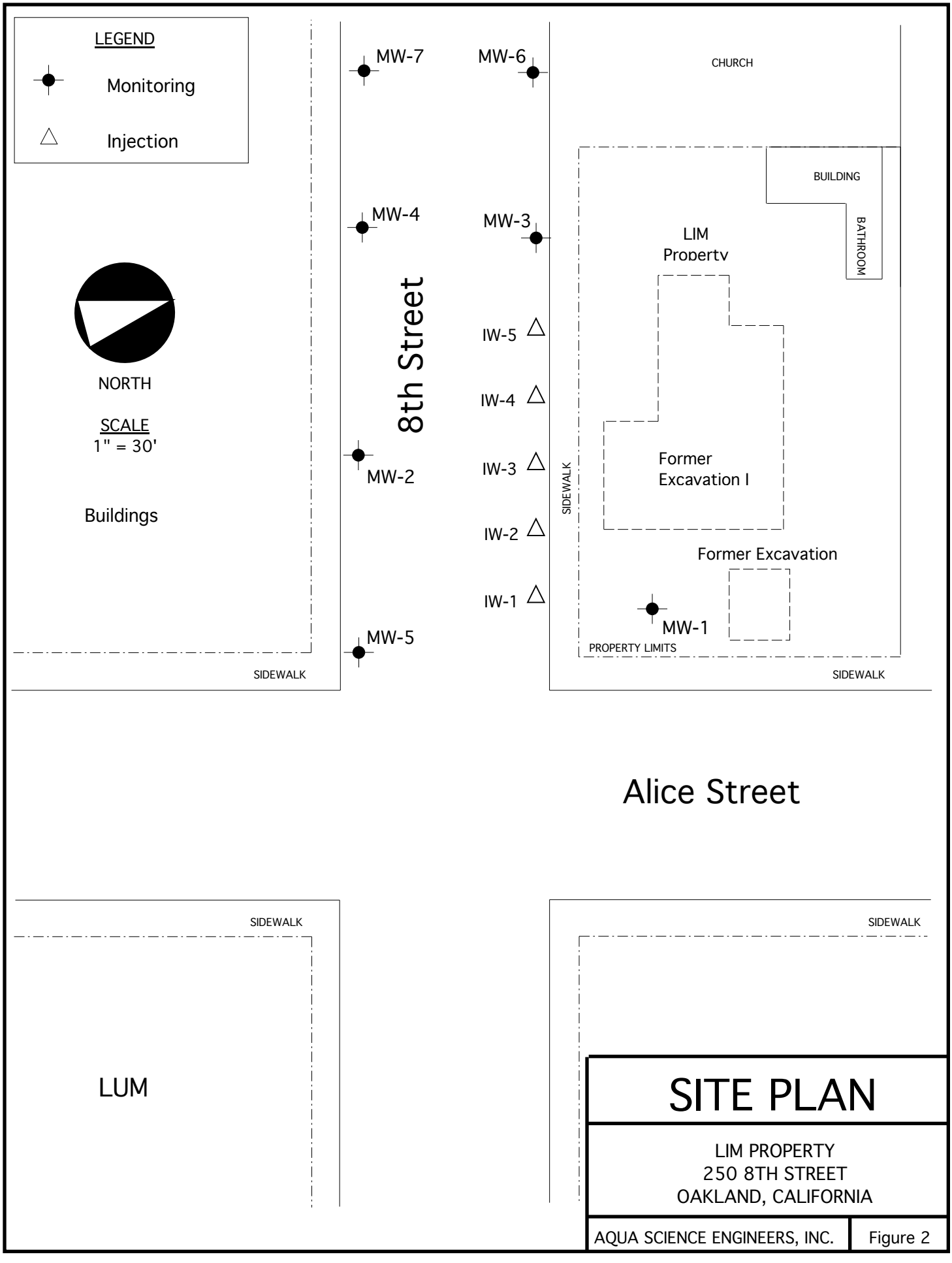
FIGURES

NORTH



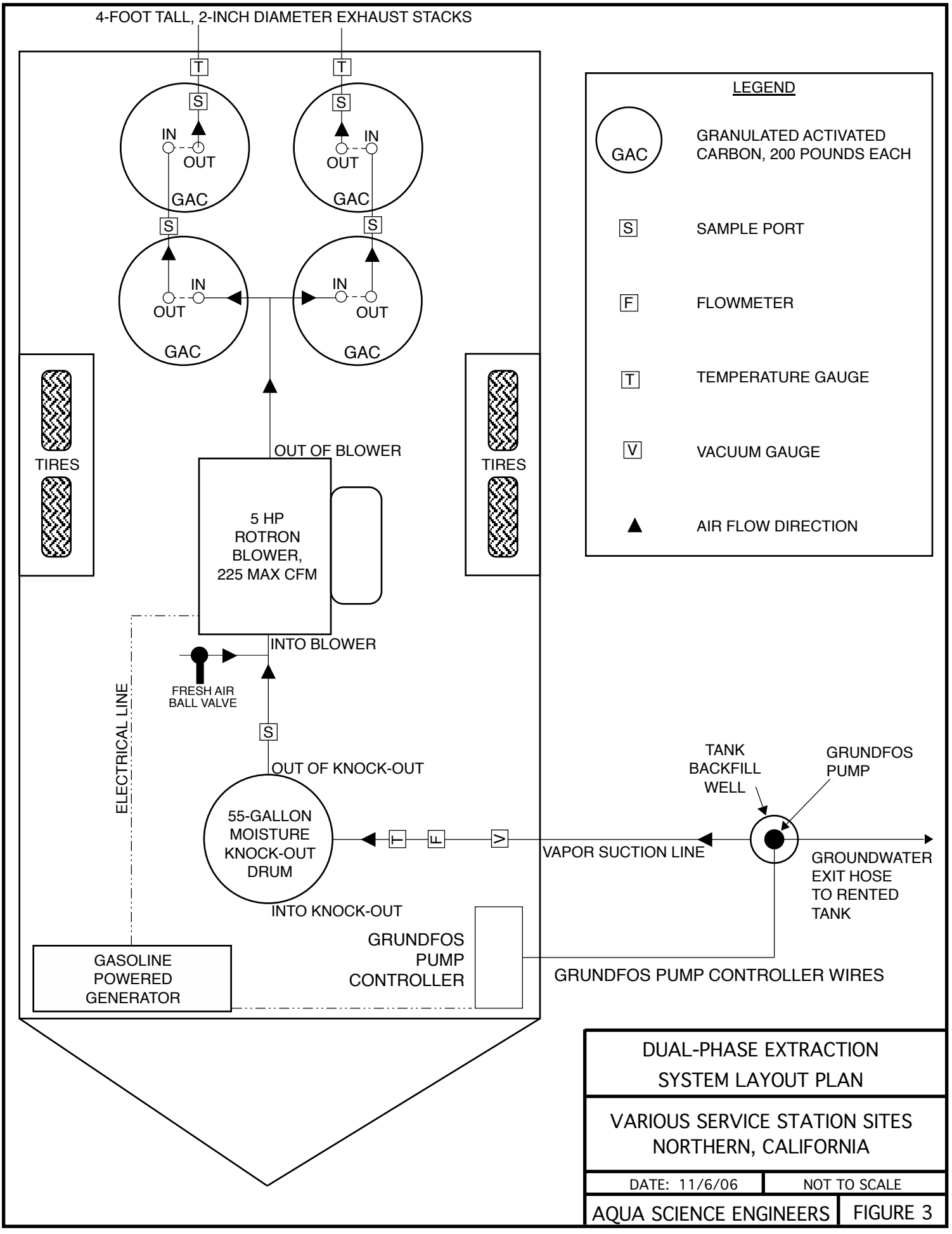
LOCATION MAP	
LIM PROPERTY 250 8TH STREET OAKLAND, CALIFORNIA	
AQUA SCIENCE ENGINEERS	FIGURE 1



SITE PLAN

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 2

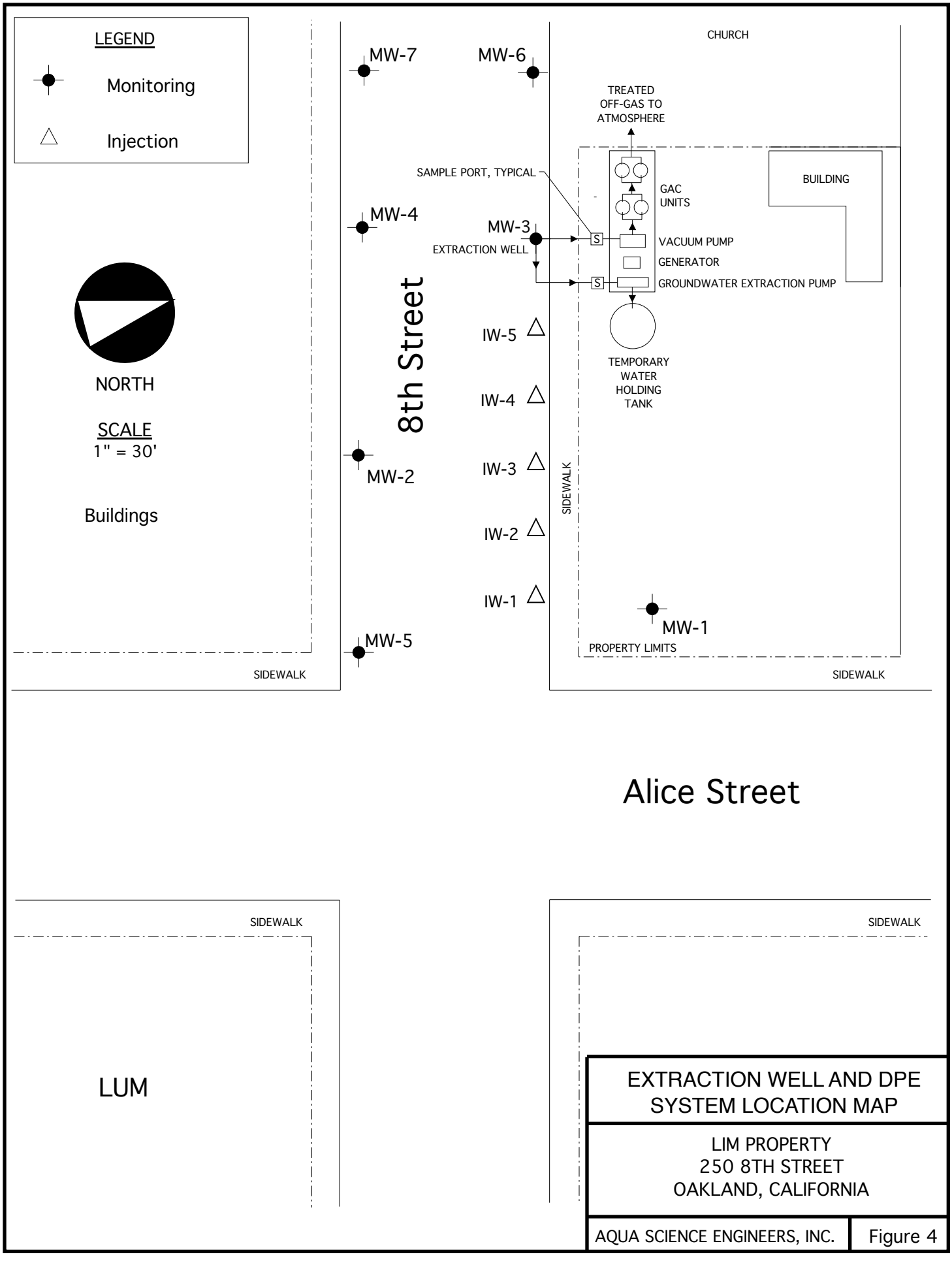


DUAL-PHASE EXTRACTION
SYSTEM LAYOUT PLAN

VARIOUS SERVICE STATION SITES
NORTHERN, CALIFORNIA

DATE: 11/6/06 | NOT TO SCALE

AQUA SCIENCE ENGINEERS | FIGURE 3



EXTRACTION WELL AND DPE SYSTEM LOCATION MAP

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 4

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APPENDIX A

Field Form

LIM PROPERTY DUAL-PHASE EXTRACTION TEST DATA
PERFORMED ON MONITORING WELL MW-3

DATE 02.13.07

TIME TEST BEGAN 0830

TIME TEST ENDED 1930

NEGATIVE PRESSURE (VACUUM) READINGS

OBSERV. POINT	INITIAL READING	TIME 0945	TIME 1025	TIME 1130	TIME 1300	TIME 1430	TIME 1600	TIME 1730	TIME 1900	TIME 1930	TIME	TIME	TIME
MW-6	0	0	0	0	0	0	0	0	0	0			
IW-5	0	0.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75			

TREATMENT SYSTEM OPERATING PARAMETERS

TIME	VACUUM ON MW-3 IN INCHES OF WATER	AIRFLOW FROM AMBIENT & MW-3 IN CFM	INFLUENT PID READING (PPMV)	EFFLUENT PID READING (PPMV)
0830	50 BY PASS 75% OPEN	135	1258	GAC 1&2 0
1000	60	125	750	" 0
1130	60	125	1141	STACK 1 0
1300	50	135	950	STACK 2 0
1430	50	135	740	" 0
1600	50	135	690	" 0
1730	50	135	580	STACK 1 0
1900	50	135	620	" 0
1930	50	135	620	STACK 2 0

PRODUCT & WATER ELEVATION IN MW-3 AT START (BAILED ON 2/12/07)
PRODUCT: 16.06' WATER: 16.35'

PRODUCT & WATER ELEVATION IN MW-3 AT END
PRODUCT: 0 WATER: 18.35'

PRODUCT & WATER ELEVATION IN IW-5 AT START
PRODUCT: 15.74' WATER: 16.30'

PRODUCT & WATER ELEVATION IN IW-5 AT END
PRODUCT: 16.46' WATER: 17.60'

PRODUCT & WATER ELEVATION IN IW-4 AT START
PRODUCT: 0 WATER: 15.51

PRODUCT & WATER ELEVATION IN IW-4 AT END
PRODUCT: N.M. WATER: N.M.

TIME AIRBAG SAMPLES WERE COLLECTED
BEGINNING: 1105

END: 1930

POSITIVE SIDE OF BLOWER, AFTER AMBIENT AIR INJECTION

ESTIMATE OF GROUNDWATER REMOVED: 1800 GAL.

NO F.P. ON TANK SURFACE

Aqua Science Engineers, Inc. 208 West El Pintado, Suite C, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

APPENDIX B

Certified Analytical Report

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Aqua Science Engineers, Inc. 208 West El Pintado Road Danville, CA 94526	Client Project ID: #2808; LIM	Date Sampled: 02/13/07
		Date Received: 02/13/07
	Client Contact: Mike Rauser	Date Reported: 02/15/07
	Client P.O.:	Date Completed: 02/15/07

WorkOrder: 0702305

February 15, 2007

Dear Mike:

Enclosed are:

1). the results of **3** analyzed samples from your **#2808; LIM project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

ASED 0702305.

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526
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FAX (925) 837-4853

Chain of RUSH dy

PAGE 1 OF 1

SAMPLER (SIGNATURE) M. Rauser

PROJECT NAME LIM JOB NO. 2808

ADDRESS 250 8th Street, Oakland, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX ~~(EPA 5030/8015/8020)~~ 8260	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)	MULTI-RANGE HYDROCARBONS	SILICA-GEL CLEANUP		HOLD	EDF
~~INF-VE - 0955~~	~~2-13-07~~	~~0955~~	~~A~~	~~1~~	~~X~~																	
~~INF-V~~			Air	1	X																	
Tank Water - 1	2-13-07	1900	W	4	X	X				X												
INF-VE - 1105	↓	1105	A	1	X																	
INF-VE - 1930	↓	1930	A	1	X																	

RELINQUISHED BY: (signature) (time)	RECEIVED BY: (signature) (time)	RELINQUISHED BY: (signature) (time)	RECEIVED BY LABORATORY: (signature) (time)
M. Rauser 2-13-07	N-WHITE 2-13-07		
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)
Company-ASE, INC.	Company- MAI	Company-	Company-

COMMENTS: HL = VOA's

TURN AROUND TIME

STANDARD 24Hr 48Hr 72Hr

OTHER:

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0702305 **ClientID: ASED**

☐ EDF ☐ Fax ☑ Email ☐ HardCop ☐ ThirdPart

Report to:
Mike Rauser
Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526

Email: mrauser@aquascienceengineers.com
TEL: (925) 820-939 FAX: (925) 837-485
ProjectNo: #2808; LIM
PO:

Bill t
Accounts Payable
Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526
deezthng2@hotmail.com

Requested TAT: 3 days

Date Received **02/13/2007**
Date Printed: **02/14/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0702305-001	Tank Water	Water	02/13/07 7:00:00	☐		A		B								
0702305-002	INF-VE-1105	Air	02/13/07 11:05:00	☐	A		A									
0702305-003	INF-VE-1930	Air	02/13/07 7:30:00	☐	A		A									

Test Legend:

1	G-MBTEX_AIR	2	G-MBTEX_W	3	MBTEX-8260B_A	4	MBTEX-8260B_W	5	
6		7		8		9		10	
11		12							

The following SampID: 0702305-001A contains testgroup. Please make sure all relevant testcodes are reported. Many thanks.

Prepared by: Nickole White

Comments: TAT changed to 24hr 2/14/07- per M.R. TAT change for 24 to 72hr with diesel and 5520 not enough for 5520

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

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Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 02/13/07
208 West El Pintado Road		Date Received: 02/13/07
Danville, CA 94526	Client Contact: Mike Rauser	Date Extracted: 02/14/07
	Client P.O.:	Date Analyzed 02/14/07

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method SW5030B Analytical methods SW8015Cm Work Order: 0702305

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
002A	INF-VE-1105	A	2500,a	2	98
003A	INF-VE-1930	A	26,000,a	20	86

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	µg/L
	S	NA	NA

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method SW5030B Analytical methods SW8015Cm Work Order: 0702305

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
001A	Tank Water	W	47,000,a	100	98

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; p) see attached narrative.

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Danville, CA 94526	Client Contact: Mike Rauser	Date Extracted: 02/14/07
	Client P.O.:	Date Analyzed: 02/14/07

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0702305

Lab ID	0702305-002A	0702305-003A			Reporting Limit for DF =1	
Client ID	INF-VE-1105	INF-VE-1930				
Matrix	A	A				
DF	2	40			S	A
Compound	**Concentration**				ug/kg	µg/L
Benzene	19	380			NA	0.25
Ethylbenzene	6.3	89			NA	0.25
Methyl-t-butyl ether (MTBE)	ND<0.50	ND<10			NA	0.25
Toluene	32	580			NA	0.25
Xylenes	18	250			NA	0.25
Surrogate Recoveries (%)						
%SS1:	96	95				
%SS2:	100	99				
%SS3:	92	94				
Comments						

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 02/13/07
208 West El Pintado Road		Date Received: 02/13/07
Danville, CA 94526	Client Contact: Mike Rauser	Date Extracted: 02/14/07
	Client P.O.:	Date Analyzed: 02/14/07

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0702305

					Reporting Limit for DF =1	
Lab ID	0702305-001B					
Client ID	Tank Water					
Matrix	W					
DF	500				S	W
Compound	**Concentration**				ug/kg	µg/L
Benzene	10,000				NA	0.5
Ethylbenzene	1300				NA	0.5
Methyl-t-butyl ether (MTBE)	ND<250				NA	0.5
Toluene	7400				NA	0.5
Xylenes	4900				NA	0.5
Surrogate Recoveries (%)						
%SS1:	97					
%SS2:	100					
%SS3:	83					
Comments						

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 02/13/07
208 West El Pintado Road		Date Received: 02/13/07
Danville, CA 94526	Client Contact: Mike Rauser	Date Extracted: 02/14/07
	Client P.O.:	Date Analyzed 02/14/07

Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method SW3510C/3630C Analytical methods SW8015C Work Order: 0702305

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0702305-001A	Tank Water	W	3000,d	1	102

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air/Water QC Matrix: Water WorkOrder 0702305

EPA Method SW8015Cm	Extraction SW5030B				BatchID: 26237				Spiked Sample ID: 0702287-002A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	101	102	0.922	103	101	2.32	70 - 130	30	70 - 130	30
MTBE	ND	10	97.5	108	9.78	90.5	97.2	7.13	70 - 130	30	70 - 130	30
Benzene	ND	10	101	104	3.06	98.6	101	2.80	70 - 130	30	70 - 130	30
Toluene	ND	10	99.5	103	3.69	98.1	102	3.42	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	99.9	95.7	4.28	96.3	102	5.65	70 - 130	30	70 - 130	30
Xylenes	ND	30	95.7	96.3	0.694	95.7	96.3	0.694	70 - 130	30	70 - 130	30
%SS:	117	10	103	106	2.50	97	101	4.42	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26237 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0702305-001	2/13/07 7:00 PM	2/14/07	2/14/07 2:00 PM	0702305-002	2/13/07 11:05 AM	2/14/07	2/14/07 3:26 PM
0702305-003	2/13/07 7:30 PM	2/14/07	2/14/07 3:05 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air/Water QC Matrix: Water WorkOrder: 0702305

EPA Method SW8260B	Extraction SW5030B				BatchID: 26236				Spiked Sample ID: 0702287-002B			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Benzene	ND	10	127	127	0	128	128	0	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	86	92.3	7.11	89.1	91.3	2.41	70 - 130	30	70 - 130	30
Toluene	ND	10	100	103	2.42	106	109	2.90	70 - 130	30	70 - 130	30
%SS1:	106	10	101	101	0	103	103	0	70 - 130	30	70 - 130	30
%SS2:	99	10	92	91	0.496	92	95	3.20	70 - 130	30	70 - 130	30
%SS3:	109	10	93	91	1.85	94	95	0.526	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26236 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0702305-001	2/13/07 7:00 PM	2/14/07	2/14/07 3:45 PM	0702305-002	2/13/07 11:05 AM	2/14/07	2/14/07 4:38 PM
0702305-003	2/13/07 7:30 PM	2/14/07	2/14/07 5:24 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0702305

EPA Method SW8015C	Extraction SW3510C/3630C	BatchID: 26234	Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	N/A	1000	N/A	N/A	N/A	117	115	2.03	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	106	104	1.75	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26234 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0702305-001	2/13/07 7:00 PM	2/14/07	2/14/07 3:44 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

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APPENDIX C

Vapor Extraction Calculations

MASS EXTRACTION CALCULATIONS
LIM PROPERTY DUAL-PHASE EXTRACTION SYSTEM
250 8th STREET
OAKLAND, CALIFORNIA
AIR BAG SAMPLES COLLECTED ON 02/13/07

AVERAGE VAPOR EXTRACTION FLOW RATE		VOLUME CONVERSION FACTOR		TEST DURATION		**TPH-G** CONCENTRATION IN ***INFLUENT*** SAMPLE		MASS CONVERSION FACTOR		MASS CONVERSION FACTOR		MASS **TPH-G** EXTRACTION RATE		MASS **TPH-G** EXTRACTION RATE
CFM	MULTPLY	l/cu. ft.	MULTPLY	minutes	MULTPLY	ug/l	DIVIDE	ugs/gm	DIVIDE	gms/lb	EQUALS	lbs/event	EQUALS	gallons/event
135		28.32		660		14,250		1,000,000		454		**79.20**		**12.66**

GALLONS OF GASOLINE EXTRACTED IN VAPOR PHASE DURING THE DPE EVENT ON FEBRUARY 13, 2007.	12.66

GALLONS OF GASOLINE EXTRACTED TO DATE, IN VAPORS	12.66

NOTE:

The TPH-G concentration used above (14,250 ug/l) is an average of the McCampbell Analytical Laboratory analytical results from the two air bag samples collected during the 10.5 hour dual-phase extraction event that occurred on February 13, 2007. The air bag sample collected at 1105 contained 2,500 ug/l TPH-G. The air bag sample collected at 1900 contained 26,000 ug/l TPH-G.