

November 2, 2001

Mr. Barney Chan  
ACHCSA  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

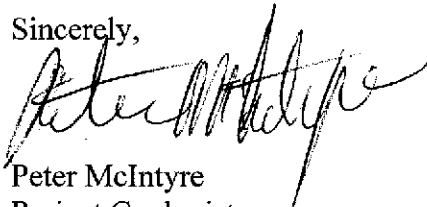
**Subject:** 245 8<sup>th</sup> Street  
Oakland, California  
AEI Project No. 4332

Dear Mr. Chan:

Enclosed is a copy of our recent monitoring and progress report for the above referenced property. A workplan has been submitted to you, under separate cover, on October 29, 2001, for additional off-site groundwater characterization.

Please call me at (925) 283-6000 if you have any questions.

Sincerely,



Peter McIntyre  
Project Geologist

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Corporate Headquarters

Los Angeles  
(310) 798-4255

Phoenix  
(602) 240-5990

San Francisco  
(800) 801-3224

Seattle  
(425) 401-8500

New York  
(212) 279-7770

November 1, 2001

**QUARTERLY GROUNDWATER MONITORING  
AND  
PRODUCT REMOVAL PROGRESS  
REPORT**

245 8<sup>th</sup> Street  
Oakland, California

AEI Project No. 4332

Prepared For

Mr. Victor Lum  
Vic's Automotive  
245 8<sup>th</sup> Street  
Oakland, CA 94607

Prepared By

**AEI Consultants**  
3210 Old Tunnel Road, Suite B  
Lafayette, CA 94549  
(925) 283-6000

**AEI**

November 1, 2001

Mr. Vic Lum  
Vic's Automotive  
245 8<sup>th</sup> Street  
Oakland, CA 94607

**RE: Quarterly Groundwater Monitoring Report  
Second Episode  
245 8<sup>th</sup> Street  
Oakland, California  
Project No. 4332**

Dear Mr. Lum:

AEI Consultants (AEI) has prepared this report on your behalf to document the continued groundwater investigation at the above referenced site (Figure 1: Site Location Map). This work is being performed in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA) to document the groundwater quality and free product recovery associated with the release of fuel hydrocarbons from the former underground storage tank system. This report presents the findings of the second episode of groundwater monitoring and sampling for the four onsite wells conducted on October 10, 2001.

### **Site Description and Background**

The property (hereafter referred to as the "site") is located in a commercial and residential area of Oakland. The site is a lot on the south corner of Alice Street and 8<sup>th</sup> Street and is currently developed with a gasoline station and auto repair facility. Refer to Figure 2 for a visual description of the site.

Between June 1993 and August 1994, AEI removed a total of seven (7) underground storage tanks (UST) from the property. The tanks consisted of four (4) 1,000 gallon and two (2) 6,000 gallon gasoline tanks and one (1) 250 gallon waste oil tank. The former locations of the tanks are shown on Figure 2. Impacted soil was removed from beneath the former tank area. Groundwater was encountered beneath the former 6,000 gallon tanks. Non-aqueous phase liquid (NAPL) was observed on the water table beneath the southern tank. The excavated soil was transported to an appropriate disposal facility and the excavation was backfilled with clean fill material. A new tank system was installed just west of the dispenser island.

Two groundwater monitoring wells (MW-1 and MW-2) were installed in July 1995. The first two episodes of monitoring revealed total petroleum hydrocarbons (TPH) as gasoline and benzene up to

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210,000 µg/l and 720 µg/l, respectively, in MW-2. Floating gasoline product, a NAPL, was discovered in MW-1, which ranged from 1.20 to 4.39 feet thick between December 1995 and March 1996.

Three soil borings (SB-1 through SB-3) were advanced in August 1996. Groundwater samples collected from each of the borings contained TPH as gasoline and benzene ranging from 120,000 to 140,000 µg/l and from 12,000 to 19,000 µg/l, respectively. Methyl tertiary butyl ether (MTBE) was also present in all three samples, up to 27,000 µg/l. Although NAPL was not observed in the field, qualitative laboratory observations indicated immiscible sheen. Manual bailing and pumping of NAPL from MW-1 and monitoring of MW-2 occurred intermittently through 1997.

Two additional groundwater monitoring wells (MW-3 and MW-4) were installed in May 2001. Refer to Tables 1 and 2 for data collected from these wells.

This report documents the results of the second episode of groundwater monitoring and sample collection of the four wells performed at the site.

### **Summary of Monitoring Activities**

Monitoring of water and product levels and sample collection occurred on October 10, 2001. The well locations are shown in Figure 2. The depth to static groundwater from the top of the well casings was measured prior to sampling with an electric water level indicator. A floating product interface meter was used in MW-1. The three wells with no measurable thickness of floating product (MW-2 through MW-4) were purged using a battery powered submersible pump and groundwater samples were collected from the wells using clean, disposable Teflon bailers.

Temperature and pH were measured during the purging of the wells. At least three well volumes of water were purged from each well prior to sample collection. Once the above parameters had stabilized, and the wells were allowed to recharge to a minimum of 90% of their original water volume, a water sample was collected.

Water was poured from the bailers into 40 ml VOA vials and capped so no head space or air bubbles were visible within the sample containers. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (DOHS Certification #1644).

The three groundwater samples were analyzed for TPH as gasoline and BTEX with MTBE by EPA methods 5030/8015 & 8020.

## Field Results

Floating free product was measured at 0.08 feet thick in MW-1. Groundwater levels for the current monitoring episode ranged from 11.38 to 12.29 feet above mean sea level (msl) in the other three wells (MW-2 through MW-4). These groundwater elevations were an average of 0.30 feet lower than the previous monitoring episode. The groundwater flow direction at the time of measurement was to the south/southeast, essentially unchanged from the previous episode. The water table hydraulic gradient was 0.0071 foot per foot, essentially unchanged from the previous episode.

Groundwater elevation data are summarized in Table 1. The water table contours and the groundwater flow direction are depicted in Figure 2. Refer to Appendix A for the Groundwater Monitoring Well Field Sampling Forms.

## Groundwater Quality

Concentrations of TPH as gasoline, BTEX, and MTBE were highest in MW-2, with benzene at 22,000 µg/l and MTBE at 14,000 µg/l. No hydrocarbons were detected in MW-4 and only minor concentrations of TPH as gasoline and BTEX were detected in MW-3. A summary of groundwater quality data is presented in Table 2. Laboratory results and chain of custody documents are included in Appendix B.

## Product Recovery

The depth of the recovery port on the pump was adjusted over the first several weeks of operation to eliminate water removal. Once an optimum depth was found, water recovery appears to be less than 10% of total liquid. **As of October 10, 2001, approximately 45 to 50 gallons of product had been removed from MW-1 since July.** The system has been periodically shut down for a period of a time when no measurable thickness of product existed.

### Exhibit 1:

| Date     | Floating Product Thickness (feet) | Comments  |
|----------|-----------------------------------|---|
| 6/29/01  | 1.63                              | System installed, and adjusted over 2-3 weeks, high water recovery. |
| 8/22/01  | 0.00                              | Compressor turned off.  |
| 9/4/01   | 0.12                              | Drained compressor tanks, replace conduit.                          |
| 9/6/01   | 0.16                              | Compressor turned on, adjusted depth.                               |
| 10/10/01 | 0.08                              | Drained compressor tanks.   |

Liquids removed from the well are pumped into a 55-gallon drum, equipped with a high-level shut-off switch. The liquids are removed on a "milk-run" basis by a licensed waste hauler. Disposal manifests can be provided upon request.

Product thickness in the well has been reduced, and, when the pump is off, appears to recharge into the well to a lower thickness than before pumping began. The system will continue to operate for the foreseeable future, with short periods of shut-down to allow for product to recharge to removable quantities.

### **Conclusions and Recommendations**

Based on the significantly high dissolved hydrocarbon concentrations detected in MW-2 and presence of free product in MW-1, it is likely that the free phase product and dissolved phase plume have migrated to the south, beneath the adjacent residential buildings.

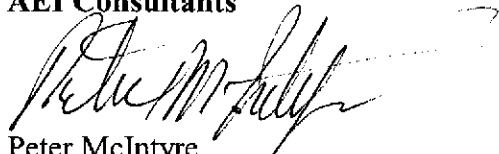
AEI has recently presented a scope of work to the ACHCSA, under separate cover, to investigate the extent of the plume. Groundwater monitoring and sampling of the existing wells will continue, as will the operation of the product recovery pump system. Once the results of the proposed investigation are available, additional monitoring and/or product recovery wells will likely be recommended, along with a formal corrective action plan (CAP) or remedial feasibility study (RFS). The next episode of monitoring is scheduled for January 2002.

## Report Limitations and Signatures

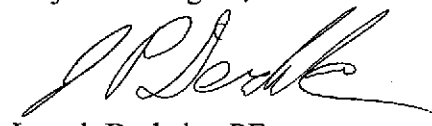
This report presents a summary of work completed by AEI Consultants, including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices in the environmental engineering and construction field that existed at the time and location of the work.

Sincerely,  
AEI Consultants



Peter McIntyre  
Project Geologist



Joseph Derhake, PE  
Principal



Figure 1 Site Location Map  
Figure 2 Site Plan with Water Table Contours  
Figure 3 Site Plan with Dissolved Hydrocarbons

Appendix A Well Field Sampling Forms  
Appendix B Laboratory Reports

cc: Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94501



TN\* MN  
15%

0 1000 FEET 0 500 1000 METERS  
Printed from TOPOI ©2001 National Geographic Holdings (www.topo.com)

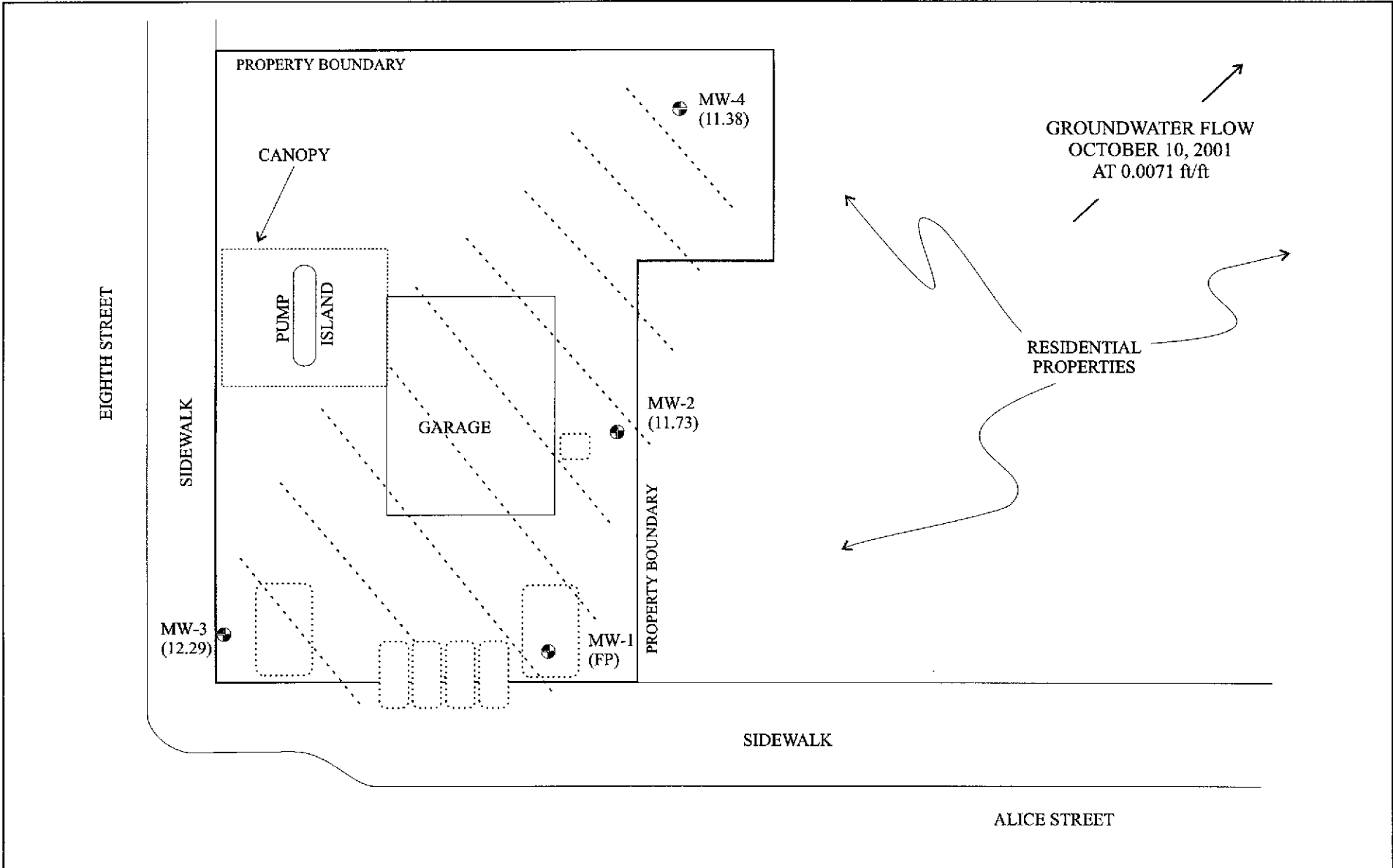
**AEI CONSULTANTS**  
3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA

**SITE LOCATION MAP**

245 8<sup>th</sup> STREET  
OAKLAND, CALIFORNIA

**FIGURE 1**  
PROJECT No. 4332





**AEI CONSULTANTS**  
 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

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**WATER TABLE CONTOURS**

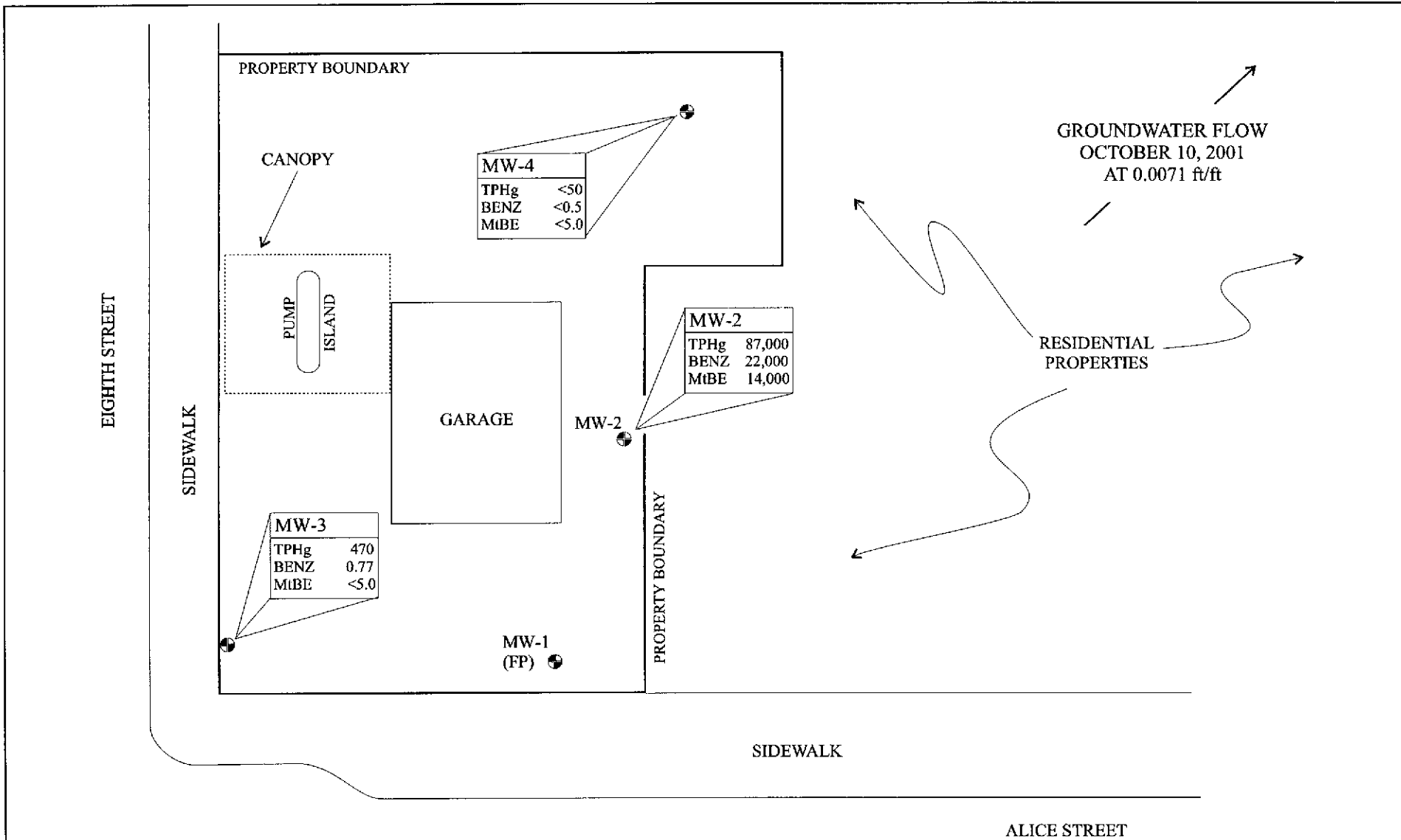
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|                                       |                                     |
|---------------------------------------|-------------------------------------|
| 245 8th STREET<br>OAKLAND, CALIFORNIA | <b>FIGURE 2</b><br>PROJECT NO. 4332 |
|---------------------------------------|-------------------------------------|



● MONITORING WELLS WITH WATER  
 TABLE ELEVATIONS EXPRESSED IN  
 FEET ABOVE MEAN SEA LEVEL  
 (FP = Floating Product)

SCALE: 1 in = 25 ft



**AEI CONSULTANTS**  
3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

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**DISSOLVED HYDROCARBONS**

---

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| 245 8th STREET<br>OAKLAND, CALIFORNIA | <b>FIGURE 3</b><br>PROJECT NO. 4332 |
|---------------------------------------|-------------------------------------|



● MONITORING WELLS:  
HYDROCARBON CONCENTRATION  
EXPRESSED IN ug/l IN WATER

SCALE: 1 in = 25 ft

TPHg = Total Petroleum Hydrocarbons  
as gasoline  
BENZ = Benzene  
MtBE = Methyl tert-Butyl Ether  
FP = Floating Product (NAPL)

**Table 1**  
**Groundwater Elevation Data**

| <b>Well ID</b> | <b>Date Collected</b> | <b>Well Elevation (ft msl)</b> | <b>Depth to Water (ft)</b> | <b>Groundwater Elevation (ft amsl)</b> | <b>Depth to LNAPL (ft)</b> | <b>LNAPL Thickness (ft)</b> |
|----------------|-----------------------|--------------------------------|----------------------------|--|----------------------------|-----------------------------|
| MW-1           | 6/29/01               | 27.73                          | 16.52                      | *                                      | 14.89                      | 1.63                        |
|                | 10/10/01              | 27.73                          | 15.45                      | *                                      | 15.37                      | 0.08                        |
| MW-2           | 6/29/01               | 28.16                          | 16.14                      | 12.02                                  | -                          | -                           |
|                | 10/10/01              | 28.16                          | 16.43                      | 11.73                                  | -                          | -                           |
| MW-3           | 6/29/01               | 29.21                          | 16.60                      | 12.61                                  | -                          | -                           |
|                | 10/10/01              | 29.21                          | 16.92                      | 12.29                                  | -                          | -                           |
| MW-4           | 6/29/01               | 29.38                          | 17.71                      | 11.67                                  | -                          | -                           |
|                | 10/10/01              | 29.38                          | 18.00                      | 11.38                                  | -                          | -                           |

\* = Measured groundwater level effected by LNAPL presence, not used to calculated water table elevation

All well elevations are measured from the top of the casing

- = not applicable

ft msl = feet above mean sea level

LNAPL = light non-aqueous phase liquid (floating free product)

Note = Historical Groundwater elevation and quality data for wells MW-1 and MW-2 was not available

**Table 2**  
**Groundwater Sample Analytical Data**

| Well/Sample ID | Date Collected | NAPL thickness (ft) | TPHg $\mu\text{g/L}$ | MTBE $\mu\text{g/L}$ | Benzene $\mu\text{g/L}$ | Toluene $\mu\text{g/L}$ | Ethylbenzene $\mu\text{g/L}$ | Xylenes $\mu\text{g/L}$ |
|----------------|----------------|---------------------|----------------------|----------------------|-------------------------|-------------------------|------------------------------|-------------------------|
| MW-1           | 6/29/01        | 1.63                | ns/fp                | ns/fp                | ns/fp                   | ns/fp                   | ns/fp                        | ns/fp                   |
|                | 10/10/01       | 0.08                | ns/fp                | ns/fp                | ns/fp                   | ns/fp                   | ns/fp                        | ns/fp                   |
| MW-2           | 6/29/01        | 0.0                 | 69,000               | 4100/4400*           | 7,200                   | 6,100                   | 1,500                        | 7,000                   |
|                | 10/10/01       | 0.0                 | 87,000               | 14,000               | 22,000                  | 12,000                  | 2,700                        | 9,100                   |
| MW-3           | 6/29/01        | 0.0                 | 550                  | <5.0                 | <0.5                    | 3.1                     | 3.2                          | 1.2                     |
|                | 10/10/01       | 0.0                 | 470                  | <5.0                 | 0.77                    | 5.3                     | 3.3                          | 5.9                     |
| MW-4           | 6/29/01        | 0.0                 | <50                  | <5.0                 | <0.5                    | <0.5                    | <0.5                         | <0.5                    |
|                | 10/10/01       | 0.0                 | <50                  | <5.0                 | <0.5                    | <0.5                    | <0.5                         | <0.5                    |
| MDL            |                |                     | 50                   | 5.0                  | 0.5                     | 0.5                     | 0.5                          | 0.5                     |

$\mu\text{g/L}$  micrograms per liter

TPHg total petroleum hydrocarbons as gasoline

MTBE methyl tertiary butyl ether

\* samples re-analyzed by EPA Method 8260 (expressed as EPA 8020 / EPA 8260)

MDL = method detection limit

ns/fp = not sampled / free product

Note = Historical Groundwater elevation and quality data for wells MW-1 and MW-2 was not available

**AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD  
SAMPLING FORM**

**Monitoring Well Number: MW-1**

|  |                            |
|--|----------------------------|
| Project Name: LUM                        | Date of Sampling: 10/10/01 |
| Job Number: 4332                         | Name of Sampler: D ROY     |
| Project Address: 245 8th Street, Oakland |                            |

**MONITORING WELL DATA**

|                                     |       |
|-------------------------------------|-------|
| Well Casing Diameter (2"/4"/6")     | 4"    |
| Seal at Grade -- Type and Condition | Good  |
| Well Cap & Lock -- OK/Replace       | OK    |
| Elevation of Top of Casing          | 27.63 |
| Depth of Well                       | 25    |
| Depth to LNAPL                      | 15.37 |
| Depth to water                      | 15.45 |

**LNAPL thickness – 0.08 feet**

|                           |                 |
|---------------------------|-----------------|
| Appearance of Purge Water | Well not purged |
|---------------------------|-----------------|

**GROUNDWATER SAMPLES**

Number of Samples/Container Size

| Time | Vol Remvd (gal) | Temp (deg C) | pH | Cond (mS) | Comments |
|------|-----------------|--------------|----|-----------|----------|
|      |                 |              |    |           |          |
|      |                 |              |    |           |          |
|      |                 |              |    |           |          |
|      |                 |              |    |           |          |
|      |                 |              |    |           |          |
|      |                 |              |    |           |          |
|      |                 |              |    |           |          |

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Product recovery (Spoiler™) system installed

LNAPL – light non-aqueous phase liquid (floating product)  
 TD - Total Depth of Well  
 DTW - Depth To Water

**AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD  
SAMPLING FORM**

**Monitoring Well Number: MW-2**

|  |                            |
|--|----------------------------|
| Project Name: LUM                        | Date of Sampling: 10/10/01 |
| Job Number: 4332                         | Name of Sampler: D ROY     |
| Project Address: 245 8th Street, Oakland |                            |

**MONITORING WELL DATA**

|                                     |                       |
|-------------------------------------|-----------------------|
| Well Casing Diameter (2"/4"/6")     | 2"                    |
| Seal at Grade -- Type and Condition | Good                  |
| Well Cap & Lock -- OK/Replace       | OK                    |
| Elevation of Top of Casing          | 28.16                 |
| Depth of Well                       | 25                    |
| Depth to Water                      | 16.43                 |
| Water Elevation                     | 11.73                 |
| Three Well Volumes (gallons)*       |                       |
| 2" casing: (TD - DTW)(0.16)(3)      | 4.11                  |
| 4" casing: (TD - DTW)(0.65)(3)      |                       |
| 6" casing: (TD - DTW)(1.44)(3)      |                       |
| Actual Volume Purged (gallons)      | 6                     |
| Appearance of Purge Water           | Greyish green (murky) |

**GROUNDWATER SAMPLES**

| Number of Samples/Container Size |                 | (2)-40 ml VOAs |      |           |          |
|----------------------------------|-----------------|----------------|------|-----------|----------|
| Time                             | Vol Remvd (gal) | Temp (deg C)   | pH   | Cond (mS) | Comments |
|                                  | 2               | 19.4           | 6.50 |           |          |
|                                  | 4               | 18.6           | 6.49 |           |          |
|                                  | 6               | 18.4           | 6.46 |           |          |
|                                  |                 |                |      |           |          |
|                                  |                 |                |      |           |          |
|                                  |                 |                |      |           |          |

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Strong hydrocarbon odor, thick sheen present (no measurable product with interface meter)

TD - Total Depth of Well  
DTW - Depth To Water

**AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD  
SAMPLING FORM**

**Monitoring Well Number: MW-3**

|  |                            |
|--|----------------------------|
| Project Name: LUM                        | Date of Sampling: 10/10/01 |
| Job Number: 4332                         | Name of Sampler: D ROY     |
| Project Address: 245 8th Street, Oakland |                            |

**MONITORING WELL DATA**

|                                     |       |
|-------------------------------------|-------|
| Well Casing Diameter (2"/4"/6")     | 4"    |
| Seal at Grade -- Type and Condition | Good  |
| Well Cap & Lock -- OK/Replace       | OK    |
| Elevation of Top of Casing          | 29.21 |
| Depth of Well                       | 25    |
| Depth to Water                      | 16.92 |
| Water Elevation                     | 12.29 |
| Three Well Volumes (gallons)*       |       |
| 2" casing: (TD - DTW)(0.16)(3)      |       |
| 4" casing: (TD - DTW)(0.65)(3)      | 15.76 |
| 6" casing: (TD - DTW)(1.44)(3)      |       |
| Actual Volume Purged (gallons)      | 16    |
| Appearance of Purge Water           | Clear |

**GROUNDWATER SAMPLES**

|                                  |                |
|----------------------------------|----------------|
| Number of Samples/Container Size | (2)-40 ml VOAs |
|----------------------------------|----------------|

| Time | Vol Remvd (gal) | Temp (deg C) | pH   | Cond (mS) | Comments |
|------|-----------------|--------------|------|-----------|----------|
|      | 3               | 21.0         | 6.96 |           |          |
|      | 6               | 20.6         | 6.81 |           |          |
|      | 9               | 20.0         | 6.77 |           |          |
|      | 13              | 19.5         | 6.80 |           |          |
|      |                 |              |      |           |          |
|      |                 |              |      |           |          |

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

No sheen or odor

TD - Total Depth of Well  
DTW - Depth To Water

| AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM |                 |              |                            |           |          |
|---|-----------------|--------------|----------------------------|-----------|----------|
| <b>Monitoring Well Number: MW-4</b>                               |                 |              |                            |           |          |
| Project Name: LUM   |                 |              | Date of Sampling: 10/10/01 |           |          |
| Job Number: 4332  |                 |              | Name of Sampler: D ROY     |           |          |
| Project Address: 245 8th Street, Oakland                          |                 |              |                            |           |          |
| MONITORING WELL DATA  |                 |              |                            |           |          |
| Well Casing Diameter (2"/4"/6")                                   |                 |              | 4"                         |           |          |
| Seal at Grade -- Type and Condition                               |                 |              | Good                       |           |          |
| Well Cap & Lock -- OK/Replace                                     |                 |              | OK                         |           |          |
| Elevation of Top of Casing  |                 |              | 29.38                      |           |          |
| Depth of Well   |                 |              | 25                         |           |          |
| Depth to Water  |                 |              | 18.00                      |           |          |
| Water Elevation   |                 |              | 11.38                      |           |          |
| Three Well Volumes (gallons)*                                     |                 |              |                            |           |          |
| 2" casing: (TD - DTW)(0.16)(3)                                    |                 |              |                            |           |          |
| 4" casing: (TD - DTW)(0.65)(3)                                    |                 |              | 13.65                      |           |          |
| 6" casing: (TD - DTW)(1.44)(3)                                    |                 |              |                            |           |          |
| Actual Volume Purged (gallons)                                    |                 |              | 16 (ran dry at 12 gallons) |           |          |
| Appearance of Purge Water   |                 |              | Clear                      |           |          |
| GROUNDWATER SAMPLES   |                 |              |                            |           |          |
| Number of Samples/Container Size                                  |                 |              |                            |           |          |
| Time  | Vol Remvd (gal) | Temp (deg C) | pH                         | Cond (mS) | Comments |
|   | 2               | 19.9         | 6.96                       |           |          |
|   | 5               | 19.0         | 6.91                       |           |          |
|   | 8               | 18.9         | 6.86                       |           |          |
|   | 13              | 18.6         | 6.86                       |           |          |
|   |                 |              |                            |           |          |
|   |                 |              |                            |           |          |
| COMMENTS (i.e., sample odor, well recharge time & percent, etc.)  |                 |              |                            |           |          |
| No product sheen or HC odor                                       |                 |              |                            |           |          |

TD - Total Depth of Well

DTW - Depth To Water





McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

|  |                               |                          |
|--|-------------------------------|--------------------------|
| All Environmental, Inc.<br>3210 Old Tunnel Road, Suite B<br>Lafayette, CA 94549-4157 | Client Project ID: #4332; Lum | Date Sampled: 10/10/01   |
|  |                               | Date Received: 10/10/01  |
|  | Client Contact: Orion Alcalay | Date Extracted: 10/10/01 |
|  | Client P.O:                   | Date Analyzed: 10/10/01  |

10/17/01

Dear Orion:

Enclosed are:

- 1). the results of 3 samples from your #4332; Lum 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.

Yours truly,

Edward Hamilton, Lab Director



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

|  |                               |                          |
|--|-------------------------------|--------------------------|
| All Environmental, Inc.<br><br>3210 Old Tunnel Road, Suite B<br><br>Lafayette, CA 94549-4157 | Client Project ID: #4332; Lum | Date Sampled: 10/10/01   |
|  | Client Contact: Orion Alcalay | Date Received: 10/10/01  |
|  | Client P.O:                   | Date Extracted: 10/10/01 |
|  |                               | Date Analyzed: 10/10/01  |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with Methyl tert-Butyl Ether\* & BTEX\***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID   | Client ID | Matrix    | TPH(g) <sup>†</sup> | MTBE   | Benzene | Toluene | Ethyl-benzene | Xylenes | % Recovery Surrogate |
|--|-----------|-----------|---------------------|--------|---------|---------|---------------|---------|----------------------|
| 80524  | MW-2      | W         | 87,000,a            | 14,000 | 22,000  | 12,000  | 2700          | 9100    | 110                  |
| 80525  | MW-3      | W         | 470,a               | ND     | 0.77    | 5.3     | 3.3           | 5.9     | 119                  |
| 80526  | MW-4      | W         | ND                  | ND     | ND      | ND      | ND            | ND      | 103                  |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
|  |           |           |                     |        |         |         |               |         |                      |
| Reporting Limit unless otherwise stated; ND means not detected above the reporting limit | W         | 50 ug/L   | 5.0                 | 0.5    | 0.5     | 0.5     | 0.5           | 0.5     |                      |
|  | S         | 1.0 mg/kg | 0.05                | 0.005  | 0.005   | 0.005   | 0.005         | 0.005   |                      |

\* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



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# QC REPORT

## EPA 8015m + 8020

Date: 10/10/01

Extraction: EPA 5030

Matrix: Water

| Compound | Concentration: ug/L |    |     | %Recovery |     | RPD |
|----------|---------------------|----|-----|-----------|-----|-----|
|          | Sample              | MS | MSD | MS        | MSD |     |

SampleID: 101001

Instrument: GC-7

|              |    |       |       |        |     |     |     |
|--------------|----|-------|-------|--------|-----|-----|-----|
| Surrogate1   | ND | 109.0 | 107.0 | 100.00 | 109 | 107 | 1.9 |
| Xylenes      | ND | 32.9  | 33.3  | 30.00  | 110 | 111 | 1.2 |
| Ethylbenzene | ND | 11.2  | 11.3  | 10.00  | 112 | 113 | 0.9 |
| Toluene      | ND | 11.3  | 11.2  | 10.00  | 113 | 112 | 0.9 |
| Benzene      | ND | 10.7  | 10.7  | 10.00  | 107 | 107 | 0.0 |
| MTBE         | ND | 10.7  | 10.6  | 10.00  | 107 | 106 | 0.9 |
| TPH (gas)    | ND | 98.3  | 101.9 | 100.00 | 98  | 102 | 3.6 |

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation



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 (925) 283-6000 Fax: (925) 283-6121

28179  
 Zale 457

TAT: RUSH / 24 hr / 48 hr / 5 day / other

AEI PROJECT MANAGER ORION  
 PROJECT NAME Lum  
 PROJECT NUMBER 4332  
 TOTAL # OF CONTAINERS \_\_\_\_\_  
 RCVD. GOOD CONDITION/COLD  Y  N

**TPH(g), BTEX, MTBE**  
 SOIL: EPA 8080/8015M, 8020  
 WATER: EPA 8080/8015, 8020

**TPH(g)**  
 SOIL: EPA 8080/8015M  
 WATER: EPA 8080

**BTEX, MTBE**  
 SOIL: EPA 8080  
 WATER: EPA 8080

**TOTAL OIL & GREASE**  
 SOIL: EPA 8015, 8020  
 WATER: STD 8020 HSF

**VOLATILE HALO CARBONS**  
 SOIL: EPA 8010  
 WATER: EPA 801

**VOC's**  
 SOIL: EPA 8010  
 WATER: EPA 801

**SEMI-VOLATILE ORGANICS**  
 SOIL: EPA 8070/8580  
 WATER: EPA 8070/8510

**TOTAL LEAD (Pb)**  
 SOIL: 8010 (ICP)  
 WATER: 2812 (AN)

**AIR 5 METALS**  
 SOIL: EPA 7130, 7130A, 7130B, 7520, 7520A, 7520B  
 WATER: \_\_\_\_\_

HOLD  
 # OF CONTAINERS

| SAMPLE ID | DATE     | TIME | MATRIX | TPH(g), BTEX, MTBE | TPH(g) | BTEX, MTBE | TOTAL OIL & GREASE | VOLATILE HALO CARBONS | VOC's | SEMI-VOLATILE ORGANICS | TOTAL LEAD (Pb) | AIR 5 METALS | HOLD | # OF CONTAINERS |
|-----------|----------|------|--------|--------------------|--------|------------|--------------------|-----------------------|-------|------------------------|-----------------|--------------|------|-----------------|
| MW-2      | 10/10/01 |      | W      | X                  |        |            |                    |                       |       |                        |                 |              |      | 2               |
| MW-3      | "        |      | W      | X                  |        |            |                    |                       |       |                        |                 |              |      | 2               |
| MW-4      | "        |      | W      | X                  |        |            |                    |                       |       |                        |                 |              |      | 2               |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |
|           |          |      |        |                    |        |            |                    |                       |       |                        |                 |              |      |                 |

ICE   
 GOOD CONDITION   
 HEAD SPACE ABSENT   
 PRESERVATION APPROPRIATE   
 CONTAINERS   
 VOAS/ORGANICS

|                                  |  |  |                 |             |
|----------------------------------|--|--|-----------------|-------------|
| COMMENTS / INSTRUCTIONS          | RELINQUISHED BY<br><i>Dusty Roy</i><br>SIGNATURE | RECEIVED BY<br><i>Ed Hamilton</i><br>SIGNATURE | RELINQUISHED BY | RECEIVED BY |
|                                  | DUSTY ROY<br>PRINTED NAME                        | ED HAMILTON<br>PRINTED NAME                    |                 |             |
| ANALYTICAL LABORATORY<br>ADDRESS | AEI<br>COMPANY                                   | AEI<br>COMPANY                                 |                 |             |
|                                  | DATE 10/10/01 TIME 5:20                          | DATE 10/10/01 TIME 5:10                        | DATE            | TIME        |