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*By dehloptoxic at 1:27 pm, Jun 28, 2006*



December 14, 2005

The Bank of New York Trust Company, N.A. as Corporate Co-Trustee for  
Carpenters Pension Trust Fund for Northern California; Northern California Carpenters PTF, LLC  
c/o Ms. Mary Schroeder, McMorgan & Company LLC  
One Bush Street, Suite 800  
San Francisco, California 94104

RE: Fourth Quarter 2005 Groundwater Monitoring Report  
444 Hegenberger Loop, Oakland, California  
*ACC Project No. 6748-017-00*

Dear Ms. Schroeder:

Enclosed is the fourth quarter report describing the groundwater monitoring activities conducted for all monitoring wells at 444 Hegenberger Loop, Oakland, California. ACC recommends that you submit a copy of the report directly to the Alameda County Health Care Services Agency with your cover letter.

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, California 94502

If you have any questions regarding the report, please contact me at (510) 638-8400, ext. 109.

Sincerely,

A handwritten signature in black ink that reads 'David R. DeMent'.

David R. DeMent, PG, REA II  
Environmental Division Manager

/trb:drd

Enclosures

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**FOURTH QUARTER 2005 GROUNDWATER MONITORING REPORT**

**Subject Property  
444 Hegenberger Loop  
Oakland, California**

*ACC Project Number 6748-017-00*

Prepared for:

The Bank of New York Trust Company, N.A. as Corporate Co-Trustee for  
Carpenters Pension Trust Fund for Northern California; Northern California Carpenters PTF, LLC  
c/o Ms. Mary Schroeder, McMorgan & Company LLC  
One Bush Street, Suite 800  
San Francisco, California 94104

December 14, 2005

Prepared By: \_\_\_\_\_

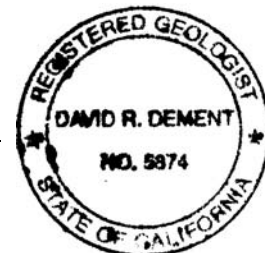
A handwritten signature in black ink that reads 'Trevor Bausman'.

Trevor Bausman  
Project Administrator

Reviewed By: \_\_\_\_\_

A handwritten signature in black ink that reads 'David DeMent'.

David DeMent, PG, REA II  
Environmental Division Manager



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# FOURTH QUARTER 2005 GROUNDWATER MONITORING REPORT

444 Hegenberger Loop  
Oakland, California

## 1.0 INTRODUCTION

This Fourth Quarter 2005 Groundwater Monitoring Report was prepared by ACC Environmental Consultants, Inc., (ACC) at the request of McMorgan & Company LLC on behalf of The Bank of New York Trust Company, N.A. as Corporate Co-Trustee for Carpenters Pension Trust Fund for Northern California; Northern California Carpenters PTF. Work was performed at the subject property located at 444 Hegenberger Loop, Oakland, California (Site). The project objectives were to: 1) measure the groundwater levels in each well and calculate the groundwater elevation, gradient, and flow direction; 2) obtain representative water samples from the seven existing groundwater monitoring wells and analyze the water samples for petroleum hydrocarbon constituents as gasoline and/or diesel; and 3) report the findings.

The general goal of this groundwater monitoring and sampling event was to determine current groundwater conditions, evaluate the changes in concentrations of constituents of concern, and obtain current groundwater quality data to further develop a Conceptual Site Model (CSM).

## 2.0 BACKGROUND

The Site is located at 444 Hegenberger Loop in the southeast corner of the intersection of Hegenberger Road and Hegenberger Loop. The rectangular lot is approximately 250 feet long by 200 feet wide and is approximately 9 feet above mean sea level.

The available data indicate that a series of subsurface investigations have been conducted at the Site since 1997. A site assessment in April 1997 indicated the presence of petroleum hydrocarbons in soils and groundwater beneath the Site but no reportable concentrations of methyl tertiary butyl ether (MTBE). A subsequent investigation conducted in July and October 1997 confirmed previous investigation findings and that no underground storage tanks (USTs) remained at the Site.

Tetra Tech EM Inc. (Tetra Tech) installed five 2-inch-diameter groundwater monitoring wells in November 1998. The five monitoring wells were screened from 5 to 20 feet below ground surface (bgs). Well MW-1 was subsequently destroyed in December 1999 and well MW-6 was installed in the estimated downgradient direction of the former waste oil tank. Well MW-6 was screened from 10 to 20 feet bgs. In December 2000, Tetra Tech installed offsite wells MW-7 and MW-8 estimated to be in the downgradient direction of the Site. Wells MW-7 and MW-8 were screened from 5 to 20 feet bgs. Groundwater monitoring was performed periodically from December 1998 to October 2001 in the existing wells.

Tetra Tech reported the findings of a Sensitive Receptor Survey in its March 8, 2001 *Fourth Quarter Groundwater Monitoring Report, December 2000*. According to the California Department of Water resources, 40 monitoring wells and two irrigation wells were located at 11

sites within the search distance. One irrigation well is reportedly located approximately 500 feet cross gradient from the Site and a second irrigation well is located approximately 2,800 feet crossgradient of the Site.

## **2.1 Subsurface Conditions**

Soil boring logs from wells MW-7 and MW-8, included in the March 8, 2001 *Fourth Quarter Groundwater Monitoring Report, December 2000*, indicate that clay and silty clay is present from the surface to the minimum depth of 11.5 feet bgs and sandy gravels and sands are present from approximately 12 to 15 feet bgs to 20.5 feet bgs, the total depth of the soil borings. Silty clays logged at 10 to 10.5 feet bgs are described as dry to moist, medium plasticity, and medium stiff. Sandy gravels logged from 15 to 16 feet bgs are described as saturated, coarse to fine grained sand, and fine to medium grained gravel.

The data summarized in the soil boring logs directly contradicts other conclusions presented in the March 8, 2001 *Fourth Quarter Groundwater Monitoring Report, December 2000*. In the *Subsurface Soil Conditions and Hydrology* section of the report, Tetra Tech states that “Groundwater is usually encountered within five feet bgs,” and in the *Preferential Pathways* section “the utility trenches may act as preferential pathways and could allow for movement of petroleum hydrocarbons to the north and west beyond the site.” Saturated permeable soils are not logged shallower than 12 feet bgs. Utility trenches in the vicinity of the Site likely exist no deeper than seven feet bgs, therefore, interception or preferential movement of groundwater along utility trenches is highly unlikely. Groundwater elevations are typically measured approximately 5 feet bgs in the monitoring wells due to semi-confined aquifer conditions.

## **3.0 GROUNDWATER MONITORING AND SAMPLING**

ACC conducted groundwater monitoring on November 16, 2005. Work at the Site included measuring depth to water, subjectively evaluating groundwater in the wells, purging and sampling the wells, and submitting the samples to a state-certified laboratory for analysis.

### **3.1 Groundwater Monitoring**

Before groundwater sampling, the depth to the surface of the water table was measured from the top of the polyvinyl chloride well casing using a Solinst water level meter. Based on well elevation data reported by Tetra Tech, the groundwater monitoring wells were surveyed relative to mean sea level in December 2000. ACC measured depth to water using an electronic Solinst meter and the water level measurements were recorded to the nearest 0.01 foot. Information regarding well elevations and groundwater depths is summarized in Table 1.

**TABLE 1 - GROUNDWATER DEPTH INFORMATION**

Well No.	Date Sampled	Well Elevation <sup>(1)</sup> (above MSL)	Depth to Groundwater	Groundwater Elevation	
MW-1	12/02/98	100.74	2.90	97.84	
	03/08/99		3.43	97.31	
	07/01/99		3.81	96.93	
	08/18/99		3.62	97.12	
	09/15/99		3.69	97.05	
	12/27/99		3.81	96.93	
	12/99		Well Destroyed	Well Destroyed	
	MW-2		12/02/98	102.44	4.61
03/08/99		5.16	97.28		
07/01/99		5.91	96.53		
08/18/99		5.53	96.91		
09/15/99		5.55	96.89		
12/27/99		5.55	96.89		
03/24/00		5.44	97.00		
06/09/00		9.05 <sup>(2)</sup>	---		FP
12/14/00		5.00	4.05		
05/07/01		5.69	3.36		
10/04/01		5.60	3.45		
02/09/05		5.00	4.05		
05/16/05		3.98	5.07		
11/16/05		5.23	3.82		
MW-3	12/02/98	102.00	4.24	97.76	
	03/08/99		4.90	97.10	
	07/01/99		5.35	96.65	
	08/18/99		5.21	96.79	
	09/15/99		5.26	96.74	
	12/27/99		5.42	96.58	
	03/24/00		5.81	96.19	
	06/09/00		5.43	96.57	
	12/14/00		8.60 <sup>(2)</sup>	4.85	3.75
	05/07/01		5.37	3.23	
	10/04/01		5.27	3.33	
	02/09/05		4.45	4.15	
	05/16/05		3.81	4.79	
	11/16/05	4.90	3.70		
MW-4	12/02/98	100.00	2.20	97.80	
	03/08/99		2.80	97.20	
	07/01/99		5.23	64.77	
	08/18/99		5.00	95.00	
	09/15/99		4.99	95.01	
	12/27/99		5.23	94.77	
	03/24/00		5.39	94.61	
	06/09/00		5.24	94.76	
	12/14/00		8.50 <sup>(2)</sup>	4.60	3.90

Well No.	Date Sampled	Well Elevation <sup>(1)</sup> (above MSL)	Depth to Groundwater	Groundwater Elevation
	05/07/01		5.20	3.30
	10/04/01		5.08	3.42
	02/09/05		4.45	4.05
	05/16/05		3.98	4.52
	11/16/05		4.72	3.78
MW-5	12/02/98	102.22	4.59	97.63
	03/08/99		5.20	97.02
	07/01/99		5.59	96.63
	08/18/99		5.37	96.85
	09/15/99		5.55	96.67
	12/27/99		5.48	96.74
	03/24/00		6.02	96.20
	06/09/00		5.59	96.63
	12/14/00	8.84 <sup>(2)</sup>	5.10	3.74
	05/07/01		5.52	3.32
	10/04/01		5.45	3.39
	02/09/05		4.90	3.94
	05/16/05		3.92	4.92
	11/16/05		5.10	3.74
MW-6	03/24/00	102.58	5.49	97.09
	06/09/00		5.87	96.71
	12/14/00	9.19 <sup>(2)</sup>	5.13	4.06
	05/07/01		5.89	3.30
	10/04/01		5.71	3.48
	02/09/05		5.20	3.99
	05/16/05		3.98	5.21
	11/16/05		5.34	3.85
MW-7	12/14/00	8.10 <sup>(2)</sup>	3.48	4.62
	05/07/01		5.13	2.97
	10/04/01		4.87	3.23
	02/09/05		4.15	3.95
	05/16/05		3.79	4.31
	11/16/05		4.55	3.55
MW-8	12/14/00	8.68 <sup>(2)</sup>	5.10	3.58
	05/07/01		5.74	2.94
	10/04/01		5.52	3.16
	02/09/05		4.80	3.88
	05/16/05		3.41	5.27
	11/16/05		5.28	3.40

Notes: All measurements in feet

<sup>(1)</sup>Well elevation measured to top of casing

<sup>(2)</sup>Well elevation relative to established City of Oakland Benchmark (feet above sea level)

### 3.2 Groundwater Gradient

The calculated groundwater flow direction and gradient, as determined from monitoring well data obtained on November 16, 2005, is illustrated on Figure 3. Generally, revised groundwater piezometric surface contours approximate historic values and groundwater flow direction trends west-northwest. The calculated groundwater gradient averaged 0.002 foot per foot to the northwest. Historical groundwater gradients and calculated flow directions are summarized in Table 2.

**TABLE 2 – GROUNDWATER GRADIENT AND FLOW DIRECTION**

Date Monitored	Gradient (foot/foot)	Direction
12/02/98	0.00091	West
03/08/99	0.00086	Southwest
07/01/99	0.0011	Southwest
08/18/99	0.0013	West
09/15/99	0.04089 <sup>(1)</sup> 0.00125 <sup>(5)</sup>	North <sup>(1)</sup> West
12/27/99	0.0010 <sup>(5)</sup> 0.0489 <sup>(1)</sup>	West <sup>(5)</sup> North <sup>(1)</sup>
03/29/00	0.0469 <sup>(1)</sup> 0.0131 <sup>(2)</sup>	Northwest West-Southwest
06/09/00	0.03 <sup>(3)</sup> 0.0011 <sup>(2)</sup>	North South-southwest
12/14/00	0.003 <sup>(1)</sup> 0.006 <sup>(4)</sup>	North North
05/07/01	0.0014 0.0025 <sup>(6)</sup>	Northwest Northwest
10/04/01	0.0013 0.001 <sup>(6)</sup>	Northwest Northwest
02/09/05	0.001	Southwest
05/16/05	0.004	West-Northwest
11/16/05	0.002	Northwest

- Notes:
- (1) Flow component from MW-2 to MW-4
  - (2) Flow component from MW-6 to area of MW-5
  - (3) Flow component from MW-2, MW-3, and MW-4 and from MW-6 to MW-4
  - (4) Flow component from MW-7 to MW-8
  - (5) Flow component among wells MW-2, MW-3, and MW-5
  - (6) Flow component from MW-3 to MW-7

### 3.3 Groundwater Sampling

Before groundwater sampling, each well was purged using a disposable polyethylene bailer. Groundwater samples were collected after four well casing volumes of water were measured for temperature and dissolved oxygen (DO), and removed. Following purging, each well was allowed to recharge before sampling. When recovery to 80 percent of the static water level was observed, a sample was collected for analysis. Groundwater conditions monitored during purging and sampling were recorded on monitoring well worksheets, included as Appendix 1.



Wells were sampled using disposable polyethylene bailers attached to a new rope for each well. From each monitoring well, approved, laboratory-supplied sample vials were filled to overflowing and sealed to eliminate trapped air in the vial. Once filled, sample vials were inverted and tapped to test for air bubbles. Sample containers were labeled with self adhesive, preprinted tags. The samples were stored in a pre-chilled, insulated container pending delivery to Curtis & Tompkins, a state-certified analytical laboratory, for analysis.

Water purged during the development and sampling of the monitoring wells was temporarily stored onsite in Department of Transportation approved 55-gallon drums pending laboratory analysis and proper disposal.

#### 4.0 RESULTS OF GROUNDWATER SAMPLING

Groundwater samples collected from each well were submitted to Curtis & Tompkins following chain of custody protocol. All groundwater samples were analyzed for total petroleum hydrocarbons as diesel (TPHd) by EPA Method 3510/8015M, TPH as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE by EPA Method 8260B. A copy of the chain of custody record and laboratory analytical reports is included as Appendix 2. A summary of the groundwater results obtained from each monitoring well is presented in Table 3.

**TABLE 3 - GROUNDWATER SAMPLE ANALYTICAL RESULTS**

Well No.	Date Sampled	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW-1	12/02/98	< 50	< 50	---	<0.05	<0.05	<0.05	<0.05
	03/08/99	190	< 50	---	<0.3	<0.3	<0.3	<0.3
	07/01/99	< 50	< 50	---	<0.5	<0.5	<0.5	<0.5
	08/18/99	< 50	3,100	---	<0.5	9.6	12	12
	09/15/99	< 50	< 50	---	<0.5	<0.5	<0.5	<0.5
	12/27/99	---	---	---	---	---	---	---
	Destroyed	---	---	---	---	---	---	---
MW-2	12/02/98	99	< 50	---	4.6	0.85	0.57	5
	03/08/99	210	180	---	200 <sup>(9)</sup>	0.74	1.3	2.3
	07/01/99	< 50	1,100	---	190	13	33	36
	08/18/99	---	---	---	---	---	---	---
	09/15/99	100	990	---	330	9.7	11	19
	12/27/99	< 50	1,000	---	260	7.2	1.3	10
	03/24/00	31,000	1,900	---	110	4.8	9.5	12
	06/09/00	---	---	---	---	---	---	---
	12/14/00	470	1,600	< 2	450	18	61	26
	05/07/01	300	950	---	120	5.8	8.5	32
	10/04/01	170	370	---	55	2.8	17	4.2
	02/09/05	< 50	160	< 0.50	69	1.2	1.3	< 1.0
	05/16/05	140	650	< 0.50	96	4.7	15	7.5
11/16/05	160 <sup>(1)</sup>	54 <sup>(1)</sup>	< 0.50	19	< 0.5	< 0.5	< 0.5	

Well No.	Date Sampled	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW-3	12/02/98	300	970	---	160	6.5	16	9
	03/08/99	1,400	2,600	---	1,800	30	67	26
	07/01/99	150	3,000	---	1	<0.5	32	36
	08/18/99	---	---	---	---	---	---	---
	09/15/99	110	1,100	---	350	8.3	5.4	10
	12/27/99	70	560	---	170	2.1	7.6	3.1
	03/24/00	1,000	8,400	---	4100	71	190	75
	06/09/00	320	2,700	---	1,100	17	18	<10
	12/14/00	<100	710	<0.5	140	2.2	3.3	1.2
	05/07/01	<400	1,500	---	270	7.9	11	5.6
	10/04/01	<50	140	---	45	<0.3	1.3	<0.6
	02/09/05	---	7,700	<5.0	670	16	83	36
	05/16/05	---	7,100	<5.0	1,200	20	110	49
11/16/05	55 <sup>(1)</sup>	270 <sup>(1)</sup>	<0.5	30	0.61	<0.5	<0.5	
MW-4	12/02/98	620	<50	---	1.1	0.37	<0.3	2
	03/08/99	<50	1,300	---	1,900	9.4	1.2	11
	07/01/99	<50	610	---	120	<0.5	<0.5	<0.5
	08/18/99	---	---	---	---	---	---	---
	09/15/99	59	830	---	320	6.5	1.7	<2.0
	12/27/99	<50	55	---	5.8	<0.5	<0.5	<0.5
	03/24/00	77	430	---	240	3.3	0.98	1.5
	06/09/00	<50	220	---	91	0.93	<0.5	<0.5
	12/14/00	<50	96	<0.5	15	<0.5	<0.5	<0.5
	05/07/01	<100	380	---	130	2.5	1.7	2.5
	10/04/01	<50	76	---	21	<0.3	<0.3	<0.6
	02/09/05	---	2,000	<2.5	440	12	9.3	7.6
	05/16/05	---	2,400	<2.5	610	16	11	8.0
11/16/05	520 <sup>(1)</sup>	490 <sup>(1)</sup>	<1.0	170	4.5	3.3	2.3	
MW-5	12/02/98	620	<50	---	1.1	0.37	<0.3	2
	03/08/99	<50	58	---	23	0.31	<0.3	1.8
	07/01/99	64	1,900	---	160	10	13	22
	08/18/99	---	---	---	---	---	---	---
	09/15/99	<50	410	---	64	2.1	1.3	2.7
	12/27/99	<50	130	---	15	0.73	<0.5	<0.5
	03/24/00	460	2,500	---	560	57	18	87
	06/09/00	140	2,600	---	770	63	15	71
	12/14/00	<50	220	<0.5	17	0.63	1.7	1.1
	05/07/01	<200	3,200	---	450	44	54	66
	10/04/01	<50	<50	---	3.6	<0.3	<0.3	<0.6
	02/09/05	57	1,100	0.58	160	14	50	9.6
	05/16/05	340	4,700	<10	730	79	340	36
11/16/05	<50	120 <sup>(1)</sup>	0.57	18	<0.5	<0.5	<0.5	

Well No.	Date Sampled	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW-6	03/24/00	470	2,400	---	430	16	340	73
	06/09/00	< 50	540	---	190	1.2	3.7	4.5
	12/14/00	< 50	< 50	< 0.5	0.51	< 0.5	< 0.5	0.94
	05/07/01	< 50	< 50	---	4.4	< 0.5	< 0.5	< 0.5
	10/04/01	< 50	< 50	---	< 0.3	< 0.3	< 0.3	< 0.6
	02/09/05	< 50	< 50	< 0.50	0.94	< 0.50	< 0.50	< 1.0
	05/16/05	< 50	< 50	< 0.50	0.55	< 0.50	< 0.50	< 1.0
	11/16/05	270	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW-7	12/14/00	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	05/07/01	< 50	< 50	---	< 0.5	< 0.5	< 0.5	< 0.5
	10/04/01	< 50	< 50	---	< 0.3	< 0.3	< 0.3	< 0.6
	02/09/05	---	< 50	0.55	< 0.50	< 0.50	< 0.50	< 1.0
	05/16/05	---	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
	11/16/05	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW-8	12/14/00	< 50	< 50	0.52	< 0.5	< 0.5	< 0.5	< 0.5
	05/07/01	< 50	< 50	---	< 0.5	< 0.5	< 0.5	< 0.5
	10/04/01	< 50	< 50	---	< 0.3	< 0.3	< 0.3	< 0.6
	02/09/05	---	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
	05/16/05	---	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
	11/16/05	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Notes: µg/L = micrograms per liter (approximately equivalent to ppb)

--- = analysis not performed

Select data flags have been removed from the previously reported data table

<sup>(1)</sup> Chromatographic pattern does not resemble standard

## 5.0 DISCUSSION

Periodic groundwater monitoring and sampling was conducted from December 2000 to October 2001, and from February through November 2005. Measured groundwater elevations decreased from the May 2005 event from 0.74 to 1.87 feet in the seven groundwater monitoring wells. During this event, and including data from all seven wells, the calculated groundwater flow direction was northwest at an average gradient of 0.002 foot per foot. These values are generally consistent with historical trends and should be expected based on local topography and surface water drainage pathways. ACC believes that tidal fluctuations, apparent in San Leandro Creek located approximately 200 feet west and northwest of the Site, are responsible for the variation in calculated groundwater flow direction and gradient based on groundwater elevations measured in the monitoring wells.

TPHd concentrations increased in wells MW-2, MW-4, and MW-6 and decreased in well MW-5. Reported TPHd ranged from 55 micrograms per Liter (µg/L) in well MW-3 to 520 µg/L in well MW-4, and was not detected above its laboratory reporting limit in wells MW-5, MW-7, and MW-8. TPHg concentrations decreased significantly in wells MW-2 through MW-5 and remained below laboratory reporting limits in wells MW-6 through MW-8. Reported TPHg ranged from 54 µg/L in well MW-2 to 490 µg/L in well MW-4, and was not detected above its laboratory reporting limit in wells MW-6 through MW-8.

BTEX concentrations also decreased significantly in wells MW-2 through MW-5 and were not reported in wells MW-6 through MW-8. When reported, BTEX concentrations were generally present at relatively low concentrations. Benzene was reported at concentrations ranging from 18  $\mu\text{g/L}$  in well MW-5 to 170  $\mu\text{g/L}$  in well MW-4. MTBE was only detected above its laboratory reporting limit in well MW-5 at 0.57  $\mu\text{g/L}$  and does not appear to be a constituent of concern.

In comparison to the May 2005 sampling event, TPHg, and BTEX concentrations decreased significantly and TPHd increased slightly. As in previous groundwater sampling events, these changes in dissolved petroleum hydrocarbon concentrations appear to be due to changes in seasonal contact between groundwater and residual TPH sources in soil above the water table. Anticipated increased contact between groundwater and soil containing residual TPH during the upcoming winter season may result in increased TPH concentrations reported in groundwater samples collected during subsequent monitoring events.

## 6.0 CONCLUSIONS

Based on findings of this well monitoring and sampling event, and comparison to historical well monitoring and sampling data, ACC concludes the following:

- The calculated groundwater flow direction and gradient is generally consistent with historical trends, topography, and surface drainage;
- TPHd concentrations generally increased slightly but were consistent with the analytical results of previous sampling events and reported concentrations do not indicate a significant source of TPHd;
- TPHg and BTEX concentrations decreased significantly and no detectable TPHg, BTEX, or MTBE concentrations were reported in monitoring wells MW-6, MW-7, and MW-8;
- Wells MW-3, MW-4, and MW-5 reported slight increases in TPHg or BTEX and these monitoring wells are located in proximity of the former UST and product dispensers;
- Groundwater is semi-confined and rose six to seven feet in the well casings;
- Natural attenuation processes are preferentially degrading BTEX and reported TPHg and BTEX concentrations indicate that no significant source of gasoline impact to groundwater is present; and
- TPHg and BTEX are the primary constituents of concern and any additional investigation or groundwater monitoring should target these analytes.

## 7.0 RECOMMENDATIONS

Based on our review of historical site investigation findings and the results of recently completed groundwater monitoring, ACC recommends the following:

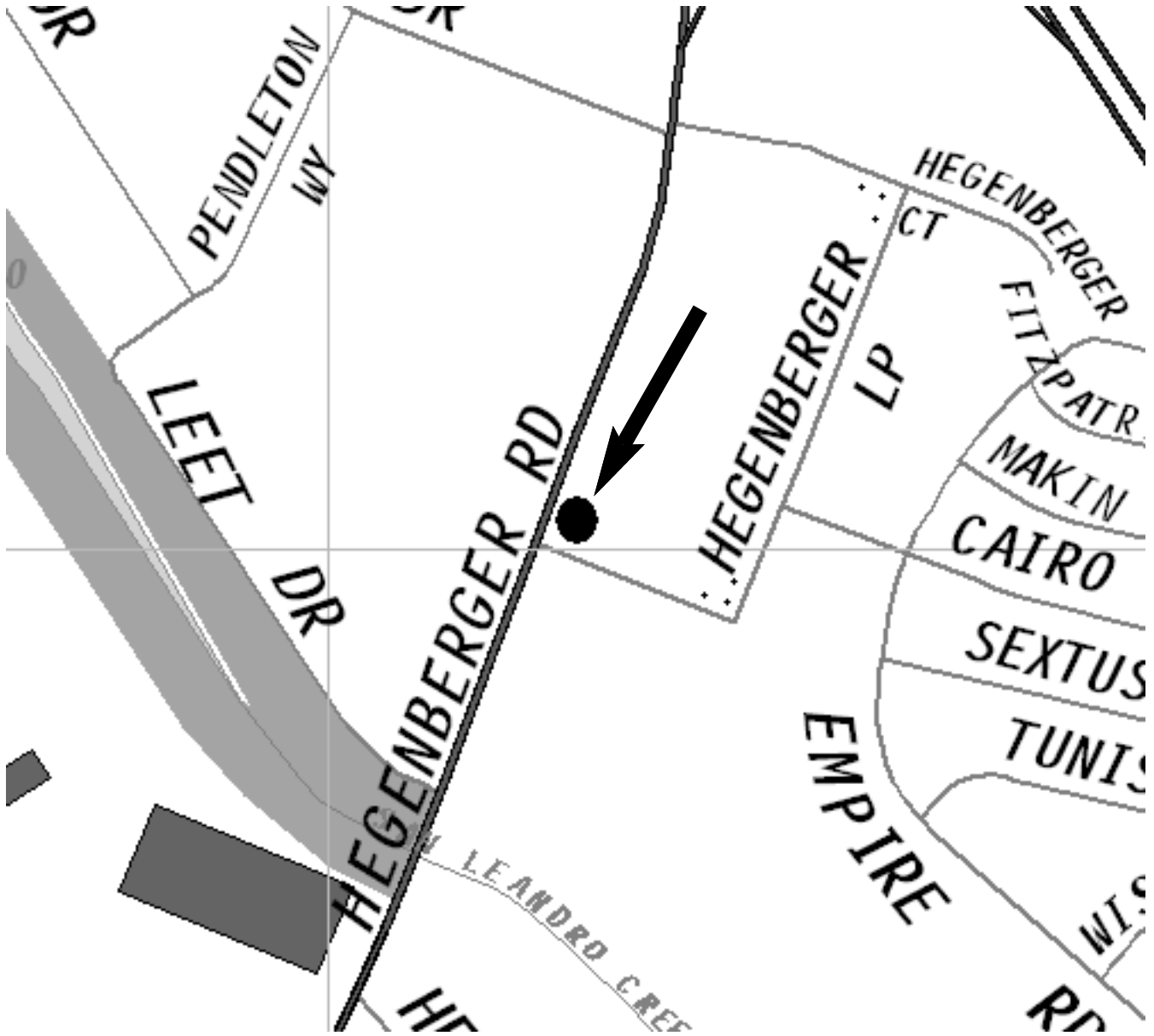
- Removing TPHd analysis from the well monitoring protocols;
- Preparing and submitting a Work Plan to the lead regulatory agency to further define the Conceptual Site Model, fill apparent data gaps with focused additional subsurface investigation, and obtain current data about residual TPH concentrations in soil and groundwater to assess potential human health risk based on proposed Site use; and
- As required by the lead regulatory agency, obtaining the data necessary to make the Site Geotracker compliant in anticipation of eventual regulatory site closure.

## 8.0 LIMITATIONS

The service performed by ACC has been conducted in a manner consistent with the levels of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area. No other warranty, expressed or implied, is made.

The conclusions presented in this report are professional opinions based on the indicated data described in this report and applicable regulations and guidelines currently in place. They are intended only for the purpose, site, and project indicated. Opinions and recommendations presented herein apply to site conditions existing at the time of our study.

ACC has included analytical results from a state-certified laboratory, which performs analyses according to procedures suggested by the U.S. Environmental Protection Agency and the State of California. ACC is not responsible for laboratory errors in procedure or result reporting.



Source: The Thomas Guide, Bay Area, 2004

Title: **Location Map**  
**444 Hegenberger Loop**  
**Oakland, California**

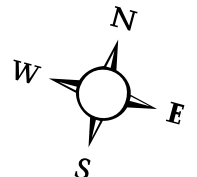
Figure Number: 1      Scale: None

Project Number: 6748-017.00      Drawn By: ANW

Date: 06/18/05



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 Oakland, California 94621  
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MW-8

HEGENBERGER ROAD

MW-7

HEGENBERGER LOOP

MW-3

MW-4

former dispenser islands

MW-2

MW-6

MW-5

former UST areas

MW-1  
(DESTROYED)

### Legend



Groundwater Monitoring Well Location

Title: **Site Plan**  
**444 Hegenberger Loop**  
**Oakland, California**

Figure Number: 2

Scale: 1" = 60'

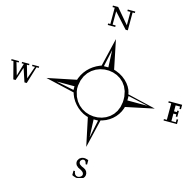
Project Number: 6748-017.00

Drawn By: ANW

Date: 8/18/05



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MW-8  
(3.40)

Calculated Site Groundwater Flow Direction  
Determined from measurements collected  
November 16, 2005

HEGENBERGER ROAD

MW-7  
(3.55)

3.50

3.60

3.70

3.60

HEGENBERGER LOOP

MW-3  
(3.70)

MW-4  
(3.78)

MW-2  
(3.82)




MW-5  
(3.74)

MW-6  
(3.85)

MW-1  
(DESTROYED)

LEGEND

MW-5

-  Groundwater Monitoring Well Location
-  Groundwater Elevation Contour
-  Groundwater Flow Direction

Title: **Gradient Map**  
**444 Hegenberger Loop**  
**Oakland, California**

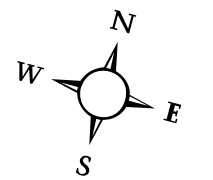
Figure Number: 3      Scale: 1" = 60'

Project Number: 6748-017.00      Drawn By: ANW

**A • C • C**  
ENVIRONMENTAL  
CONSULTANTS

Date: 11/16/05

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Oakland, California 94621  
(510) 638-8400 Fax: (510) 638-8404











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A N A L Y T I C A L   R E P O R T

Prepared for:

ACC Environmental Consultants  
7977 Capwell Drive  
Suite 100  
Oakland, CA 94621

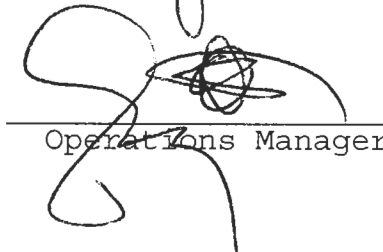
Date: 07-DEC-05  
Lab Job Number: 183276  
Project ID: 6748-014.00  
Location: 444 Hegenberger Road

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

  
Project Manager

Reviewed by:

  
Operations Manager

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Gasoline by GC/MS			
Lab #:	183276	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	11/16/05
Units:	ug/L	Received:	11/17/05
Batch#:	108185	Analyzed:	11/29/05

Field ID:           MW-2                              Lab ID:                 183276-001  
Type:              SAMPLE                        Diln Fac:              1.000

Analyte	Result	RL
Gasoline C7-C12	54 Y	50
MTBE	ND	0.50
Benzene	19	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	110	80-125
Toluene-d8	101	80-120
Bromofluorobenzene	105	80-124

Field ID:           MW-3                              Lab ID:                 183276-002  
Type:              SAMPLE                        Diln Fac:              1.000

Analyte	Result	RL
Gasoline C7-C12	270 Y	50
MTBE	ND	0.50
Benzene	30	0.50
Toluene	0.61	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	111	80-125
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-124

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Gasoline by GC/MS			
Lab #:	183276	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	11/16/05
Units:	ug/L	Received:	11/17/05
Batch#:	108185	Analyzed:	11/29/05

Field ID: MW-4                      Lab ID: 183276-003  
 Type: SAMPLE                      Diln Fac: 2.000

Analyte	Result	RL
Gasoline C7-C12	490 Y	100
MTBE	ND	1.0
Benzene	170	1.0
Toluene	4.5	1.0
Ethylbenzene	3.3	1.0
m,p-Xylenes	2.3	1.0
o-Xylene	ND	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-121
1,2-Dichloroethane-d4	109	80-125
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-124

Field ID: MW-5                      Lab ID: 183276-004  
 Type: SAMPLE                      Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	120 Y	50
MTBE	0.57	0.50
Benzene	18	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	110	80-125
Toluene-d8	101	80-120
Bromofluorobenzene	106	80-124

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

### Gasoline by GC/MS

Lab #: 183276	Location: 444 Hegenberger Road
Client: ACC Environmental Consultants	Prep: EPA 5030B
Project#: STANDARD	Analysis: EPA 8260B
Matrix: Water	Sampled: 11/16/05
Units: ug/L	Received: 11/17/05
Batch#: 108185	Analyzed: 11/29/05

Field ID: MW-6	Lab ID: 183276-005
Type: SAMPLE	Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	110	80-125
Toluene-d8	100	80-120
Bromofluorobenzene	106	80-124

Field ID: MW-7	Lab ID: 183276-006
Type: SAMPLE	Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	112	80-125
Toluene-d8	102	80-120
Bromofluorobenzene	106	80-124

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit



Gasoline by GC/MS			
Lab #:	183276	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	11/16/05
Units:	ug/L	Received:	11/17/05
Batch#:	108185	Analyzed:	11/29/05

Field ID: MW-8                      Lab ID: 183276-007  
 Type: SAMPLE                      Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-121
1,2-Dichloroethane-d4	112	80-125
Toluene-d8	100	80-120
Bromofluorobenzene	108	80-124

Type: BLANK                      Diln Fac: 1.000  
 Lab ID: QC318899

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-121
1,2-Dichloroethane-d4	103	80-125
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-124

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

Gasoline by GC/MS			
Lab #:	183276	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	108185
Units:	ug/L	Analyzed:	11/29/05
Diln Fac:	1.000		

Type: BS Lab ID: QC318895

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	25.91	104	72-120
Benzene	25.00	27.48	110	80-120
Toluene	25.00	26.52	106	80-120
Ethylbenzene	25.00	27.65	111	80-120
m,p-Xylenes	50.00	54.53	109	80-121
o-Xylene	25.00	27.78	111	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-121
1,2-Dichloroethane-d4	104	80-125
Toluene-d8	100	80-120
Bromofluorobenzene	96	80-124

Type: BSD Lab ID: QC318896

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	23.97	96	72-120	8	20
Benzene	25.00	25.44	102	80-120	8	20
Toluene	25.00	25.79	103	80-120	3	20
Ethylbenzene	25.00	26.36	105	80-120	5	20
m,p-Xylenes	50.00	52.24	104	80-121	4	20
o-Xylene	25.00	26.72	107	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-121
1,2-Dichloroethane-d4	103	80-125
Toluene-d8	99	80-120
Bromofluorobenzene	95	80-124

## Batch QC Report

Gasoline by GC/MS			
Lab #:	183276	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	108185
Units:	ug/L	Analyzed:	11/29/05
Diln Fac:	1.000		

Type: BS Lab ID: QC318897

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	992.7	99	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-121
1,2-Dichloroethane-d4	102	80-125
Toluene-d8	99	80-120
Bromofluorobenzene	95	80-124

Type: BSD Lab ID: QC318898

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,008	101	70-130	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-121
1,2-Dichloroethane-d4	101	80-125
Toluene-d8	98	80-120
Bromofluorobenzene	96	80-124



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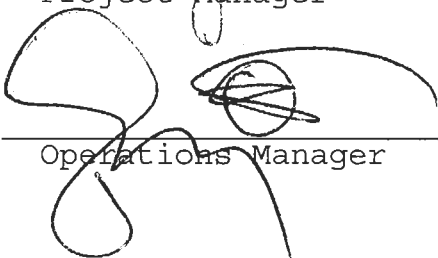
Prepared for:

ACC Environmental Consultants  
7977 Capwell Drive  
Suite 100  
Oakland, CA 94621

Date: 06-DEC-05  
Lab Job Number: 183339  
Project ID: 6748-014.00  
Location: 444 Hegenberger Road

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:   
Project Manager

Reviewed by:   
Operations Manager

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**Total Extractable Hydrocarbons**

Lab #:	183339	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	11/16/05
Units:	ug/L	Received:	11/21/05
Diln Fac:	1.000	Prepared:	11/21/05
Batch#:	107992		

Field ID: MW-2                      Lab ID: 183339-001  
Type: SAMPLE                      Analyzed: 11/23/05

<u>Analyte</u>	<u>Result</u>	<u>RL</u>
Diesel C10-C24	160 Y	50

<u>Surrogate</u>	<u>%REC</u>	<u>Limits</u>
Hexacosane	84	60-135

Field ID: MW-3                      Lab ID: 183339-002  
Type: SAMPLE                      Analyzed: 11/23/05

<u>Analyte</u>	<u>Result</u>	<u>RL</u>
Diesel C10-C24	55 Y	50

<u>Surrogate</u>	<u>%REC</u>	<u>Limits</u>
Hexacosane	76	60-135

Field ID: MW-4                      Lab ID: 183339-003  
Type: SAMPLE                      Analyzed: 11/23/05

<u>Analyte</u>	<u>Result</u>	<u>RL</u>
Diesel C10-C24	520 Y	50

<u>Surrogate</u>	<u>%REC</u>	<u>Limits</u>
Hexacosane	83	60-135

Field ID: MW-5                      Lab ID: 183339-004  
Type: SAMPLE                      Analyzed: 11/23/05

<u>Analyte</u>	<u>Result</u>	<u>RL</u>
Diesel C10-C24	ND	50

<u>Surrogate</u>	<u>%REC</u>	<u>Limits</u>
Hexacosane	87	60-135

Field ID: MW-6                      Lab ID: 183339-005  
Type: SAMPLE                      Analyzed: 11/24/05

<u>Analyte</u>	<u>Result</u>	<u>RL</u>
Diesel C10-C24	270 Y	50

<u>Surrogate</u>	<u>%REC</u>	<u>Limits</u>
Hexacosane	81	60-135

Y= Sample exhibits chromatographic pattern which does not resemble standard  
ND= Not Detected  
RL= Reporting Limit  
Page 1 of 2

### Total Extractable Hydrocarbons

Lab #: 183339	Location: 444 Hegenberger Road
Client: ACC Environmental Consultants	Prep: EPA 3520C
Project#: STANDARD	Analysis: EPA 8015B
Matrix: Water	Sampled: 11/16/05
Units: ug/L	Received: 11/21/05
Diln Fac: 1.000	Prepared: 11/21/05
Batch#: 107992	

Field ID: MW-7	Lab ID: 183339-006
Type: SAMPLE	Analyzed: 11/24/05

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	84	60-135

Field ID: MW-8	Lab ID: 183339-007
Type: SAMPLE	Analyzed: 11/24/05

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	75	60-135

Type: BLANK	Analyzed: 11/23/05
Lab ID: QC318105	Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	83	60-135

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	183339	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC318106	Batch#:	107992
Matrix:	Water	Prepared:	11/21/05
Units:	ug/L	Analyzed:	11/23/05

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,400	96	53-138

Surrogate	%REC	Limits
Hexacosane	83	60-135

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	183339	Location:	444 Hegenberger Road
Client:	ACC Environmental Consultants	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	107992
MSS Lab ID:	183223-003	Sampled:	11/15/05
Matrix:	Water	Received:	11/16/05
Units:	ug/L	Prepared:	11/21/05
Diln Fac:	1.000	Analyzed:	11/24/05

Type: MS  
 Lab ID: QC318107

Cleanup Method: EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	219.2	2,500	2,762	102	55-133

Surrogate	%REC	Limits
Hexacosane	96	60-135

Type: MSD  
 Lab ID: QC318108

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,824	104	55-133	2	33

Surrogate	%REC	Limits
Hexacosane	107	60-135



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Berkeley, CA 94710  
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## Analyses

C&T LOGIN # 103170

**Project No:** 6748-014.00

**Sampler:** ANW

**Project Name:** 444 Hagenberger Road

**Report To:** Aaron Wolf

**Project P.O.:**

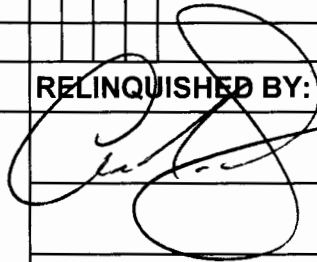
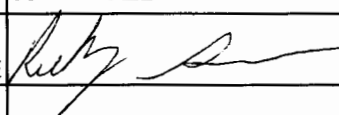
**Company :** ACC Environmental

**Turnaround Time:** Standard

**Telephone:** 510.638.8400

**Fax:** 510.638.8404

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative					TPHd w/8015M	TPHg, BTEX, MTBE w/ 3260B	LUFT 5 Metals
			Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE	None			
-1	MW-2	11/16/2005 13:44	X			4	3					1	3	3
-2	MW-3	11/17/2005 13:25	X			4	3					1	3	3
-3	MW-4	11/18/2005 13:35	X			4	3					1	3	3
-4	MW-5	11/19/2005 14:06	X			4	3					1	3	3
-5	MW-6	11/20/2005 13:55	X			4	3					1	3	3
-6	MW-7	11/21/2005 12:02	X			4	3					1	3	3
-7	MW-8	11/22/2005 12:15	X			4	3					1	3	3

<b>Notes:</b> * All labels have date = 11-16-05 => logged in as such. JW 11-17-05	<b>Global ID:</b> T0600100011	<b>RELINQUISHED BY:</b> 	<b>RECEIVED BY:</b> 
		DATE/TIME	11/17/05 1358 DATE/TIME
		DATE/TIME	DATE/TIME

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