



424 First Street, Benicia, CA 94510  
(707) 748-3170 / fax (707) 748-3171

**RECEIVED**

1:39 pm, Aug 01, 2007

**Alameda County  
Environmental Health**

October 27, 2006  
Project: CA1264-6  
Alameda County ID: RO0000396

Ted Dang  
Tomorrow Development  
1305 Franklin, #500  
Oakland, California

**Quarterly Groundwater Monitoring  
and  
Deeper Groundwater Sampling**  
Former Gas Station  
2547 East 27<sup>th</sup> Street  
Oakland, California

Dear Mr. Dang

Ceres Associates is pleased to provide this quarterly groundwater monitoring and deeper groundwater sampling report for the former gas station at 2547 East 27<sup>th</sup> Street, Oakland California (Property).

**Background**

The Property was formerly developed with a fuel and service station between 1927 and 1994. In 1994, one 100-gallon waste oil UST and four 500-gallon gasoline USTs were removed from the Property. After the tanks were removed, the excavation pits were lined with visqueen plastic and backfilled with the excavated material. It was reported that eight soil samples were collected from below the tanks and two were collected from the stockpiled soil (from the excavation).

Contamination on the Property was historically attributable to soil contamination by petroleum hydrocarbons and associated BTEX compounds. Groundwater contamination was limited. However, during January 2005 and January 2006 sampling events, petroleum hydrocarbon and BTEX compounds were identified above regulatory action limits in the groundwater, but generally not in the soil. This is true of both on and off-site sample points.

The most recent sampling event, January 2006, indicated the presence of target analytes in groundwater samples off-site. Six groundwater monitoring wells were installed on and off the Property to assess for plume migration and extent. This is the first quarterly sampling event for these wells.

## DEEPER GROUNDWATER SAMPLING

### Soil Boring Details

Ceres Associates notified USA prior to commencing with soil boring activities. A Health and Safety Plan, prepared by Ceres Associates, was used to facilitate a pre-drilling safety meeting prior to conducting work. Signatures of attendees were collected at the meeting indicating an understanding of the risks and hazards involved in the drilling process. A copy of this document was kept on site during the drilling process.

Ceres Associates advanced one soil boring (SB-25) to a depth of 27 feet below ground surface (bgs) (*refer to the Appendix for a copy of the Soil Log for this boring*). Although the initial request by the EHD was to sample to 40 feet bgs, the geoprobe met with refusal at 27 feet bgs. Other attempts were made in nearby locations to exceed this depth, however these attempts were unsuccessful and resulted in shallower borings.

Continuous soil cores were collected during the advance of SB-25 and analyzed in the field for potential water bearing zones. Based upon the soil data water bearing zones were anticipated at 13 and 21 feet bgs.

### Groundwater Sampling

After the target water bearing zones were identified, Ceres Associates advanced adjacent borings to collect groundwater samples using a hydro-punch device. The hydro-punch was extended as detailed in the following table:

Target Water Bearing Zone	Depth of Hydro-Punch Tip	Retraction Distance
13 feet bgs	13.5 feet	2 feet
21 feet bgs	21.5 feet	2 feet

After the screen of the hydro-punch was exposed, a grab groundwater sample was collected by extending polyethylene tubing through the device to the screened interval. Ceres Associates collected one 1-liter amber bottle and four VOAs of groundwater at each target water bearing zone.

Groundwater samples were submitted to McCampbell Analytical, a state-certified laboratory, following chain of custody protocols to be analyzed total petroleum hydrocarbons (TPH) as gasoline (TPHg), as diesel (TPHd), as using US EPA method 8015 as well as for benzene, toluene, ethylbenzene, and xylenes (BTEX) using US EPA method 8020.

Each boring hole was then tremmie grouted according to the requirements of the Alameda County Public Works Agency, Well Division. This was conducted under a former, re-opened permit through this agency.

## Results

The results of this deeper groundwater sampling are tabulated in the following table (*refer to the Appendix for a copy of the Laboratory Data Sheets*). However, the following constituents were not reported above the method reporting limits (ND) for either sample depth: TPHg, TPHd, TPHmo, MTBE, Toluene, Ethylbenzene, or Xylenes.

Target Depth	Benzene (parts per billion, ppb)
13 feet bgs	ND
21 feet bgs	0.84
<b>GSL (table A-2)</b>	<b>1.0</b>

GSL: Groundwater Screening Limit, where groundwater IS a potential drinking water source, SF Bay Regional Water Quality Control Board.

## QUARTERLY GROUNDWATER SAMPLING

### Scope of Sampling

Ceres Associates conducted quarterly sampling activities of six monitoring wells on the Property on August 24, 2006: MW-1, MW-2, MW-3, MW-4, MW-5, and EX-1. These wells were installed in January 2006; this was the initial sampling of these wells.

### Sampling Process

Ceres Associates measured the depth to water from the top of each well casing in addition to measuring the total depth of the well (*Refer to Figure 3 - Groundwater Contour Map*).

Monitoring Well	Depth to Water (ft)
MW-1	4.63
MW-2	4.26
MW-3	4.40
MW-4	4.87
MW-5	5.00
EX-1	4.84

Groundwater generated during this process was placed into an on-site 55-gallon drum, pending laboratory analysis for proper disposal.

As per the approved workplan, Ceres Associates employed a “low flow technique” to monitor the groundwater at the site. Polyethylene tubing was extended from the surface to the approximate mid-point of the screened interval of the well. The tubing was connected to a peristaltic pump, which pumped the groundwater to a flow-through multi-parameter cell devise. The water then flowed into additional tubing into a collection bucket to be transferred to the above mentioned 55-gallon drum for future disposal.

The wells were purged for at least five minutes at a rate of less than 1 liter per minute until the readings on the flow-through devise showed less than a 10% change for three consecutive minutes, for the following parameters: pH, conductivity, dissolved oxygen, and temperature. A sounding probe was used during the collection so that the pumping rate could be adjusted to assure that the well water depth

remained stable.

The water samples were then collected in laboratory-cleaned 40-milliliter glass vials and one-liter amber bottles with Teflon-lined caps. The samples were then placed into an ice-cooled chest for delivery to a State of California-certified analytical laboratory.

Decontamination was accomplished by discarding all the tubing and then washing the flow-through cell and sounding probe using a non-phosphate detergent followed by two freshwater rinses.

Ceres Associates, pursuant to an approved workplan, requested that the laboratory analyze the samples for total petroleum hydrocarbons (TPH) as gasoline (TPHg), as diesel (TPHd), as using US EPA method 8015 as well as for benzene, toluene, ethylbenzene, and xylenes (BTEX) using US EPA method 8020.

Ceres Associates anticipates using a bladder pump for the next quarterly monitoring event so as to reduce potential instrument bias on the groundwater samples.

## Results

The following table details the concentrations reported by the laboratory for samples submitted from this sampling event and results for depth to water measurements (*no contour maps were generated for this data because there are only two field points, which is insufficient for contouring*):

**Quarterly Monitoring Results for CA1264-6**

<b>Monitoring Well</b>	<b>Sample Date</b>	<b>TPHg</b>	<b>TPHd</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>Xylenes</b>	<b>MTBE</b>
MW-1	8/24/2006	ND	ND	ND	ND	ND	ND	ND
MW-2	8/24/2006	ND	78	ND	ND	0.65	1.5	ND
MW-3	8/24/2006	ND	ND	ND	ND	ND	ND	ND
MW-4	8/24/2006	ND	ND	ND	ND	ND	ND	ND
MW-5	8/24/2006	ND	ND	ND	ND	ND	ND	ND
EX-1	8/24/2006	460	220	ND	ND	ND	ND	ND
<b>GSL (Table F-1a)</b>		<b>100</b>	<b>100</b>	<b>1.00</b>	<b>40</b>	<b>30</b>	<b>13</b>	<b>5.00</b>

GSL - Groundwater Screening Limit, where groundwater IS a potential source of drinking water, SF Bay Regional Water Quality Control Board

TPHg - total petroleum hydrocarbons as gasoline

TPHd- total petroleum hydrocarbons as diesel

MTBE - methyl tertiary butyl ether

### Groundwater Elevation Data

Monitoring Well	Sample Date	Depth to Water	MW Elevation	GW Elevation
MW-1	8/24/2006	4.63	108.75	104.12
MW-2	8/24/2006	4.26	109.55	105.29
MW-3	8/24/2006	4.40	108.40	104.00
MW-4	8/24/2006	4.87	107.89	103.02
MW-5	8/24/2006	5.00	108.65	103.65
EX-1	8/24/2006	4.84	109.46	104.62

## Discussion and Conclusions

### Deeper Groundwater Sampling

The results of the soil sampling indicate that two water bearing zones are present at depths greater than 10 feet bgs (where previously sampling has focused on). Additional zones were identified at 13 and 21 feet bgs (sampling was done to a maximum depth of 27 feet bgs). The results of the groundwater sampling from these zones indicate that only one concentration of target analytes was reported above the method reporting limits: 0.84 parts per billion (ppb) of benzene at 21 feet bgs. This result falls below the Residential Environmental Screening Limit (ESL) for benzene of 1.0 ppb (Table F-1a).

Some source material remains on-site as contaminated backfill soil. This material is scheduled to be excavated in November 2006 and replaced with imported fill. The removal of this material is anticipated to remove the majority of potential source material remaining on-site which would aid in preventing vertical migration of contaminants to deeper aquifers.

### Quarterly Groundwater Sampling

The results of the quarterly groundwater sampling event indicate that two wells are impacted with target analytes above the method reporting limits: MW-2 and EX-1. One of these wells, EX-1, is near the southeast corner of the Property. One off-site well, MW-2, located across East 27<sup>th</sup> Street from the Property, was identified as being impacted with target compounds. Other on and off-site wells were not reported by the laboratory above the method reporting limits (ND). Groundwater flow, based upon this monitoring event, is calculated to the south, south-east.

The concentrations of target analytes near MW-2 are interesting because a well in-between EX-1 and MW-2, namely MW-1, was not identified as having been impacted by target compounds during this monitoring event. MW-2 was placed only 8 feet below ground surface because of auger refusal at this depth. It is not clear why this scenario is taking place, however, further monitoring events will likely prove helpful in assessing this situation.

This is the first quarterly monitoring event. Additional sampling events will be necessary to assess for potential contamination migration patterns both on and off-site. The planned excavation of contaminated materials (from historic backfill) is anticipated to remove the likely source of contamination contribution to these wells. Ceres Associates would anticipate that over time the concentrations of target analytes in these two wells will decrease, especially with the removal of contaminated soil on-site.



## Recommendations

Based upon the results of these sampling events, Ceres Associates recommends the following:

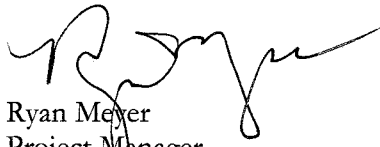
- The contaminated backfill material should be removed and replaced with imported soil. This is scheduled to occur in early November 2006 per an approved interim CAP.
- After soil has been removed and replaced, the Risk Assessment for the Property should be updated using the more recent sampling data for both soil and groundwater.
- Continue monitoring the groundwater wells to identify patterns of migration and/or stability of the plume originating from the Property.

## Limitations

This Environmental Site Assessment (ESA) was conducted according to accepted industry standards and guidelines for similar assessments conducted in this geographic region at this time. This assessment cannot fully eliminate the possibility of the Property having environmental impairments. In today's technology, no amount of assessment can certify that the Property is completely free of environmental concern. It is possible undocumented or concealed conditions of the Property could exist beyond what was found during this ESA. This report does not cover any Property conditions beyond the date the Property survey was conducted.

If you have questions regarding this project please contact Ryan Meyer at (916) 485-2110 or via email at [ryanmeyer@ceresassociates.com](mailto:ryanmeyer@ceresassociates.com).

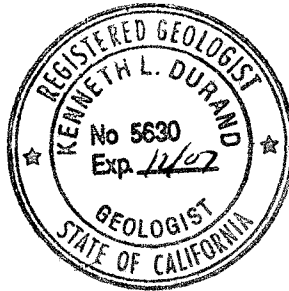
Sincerely,



Ryan Meyer  
Project Manager



Ken Durand, RG CHG  
Senior Project Manager



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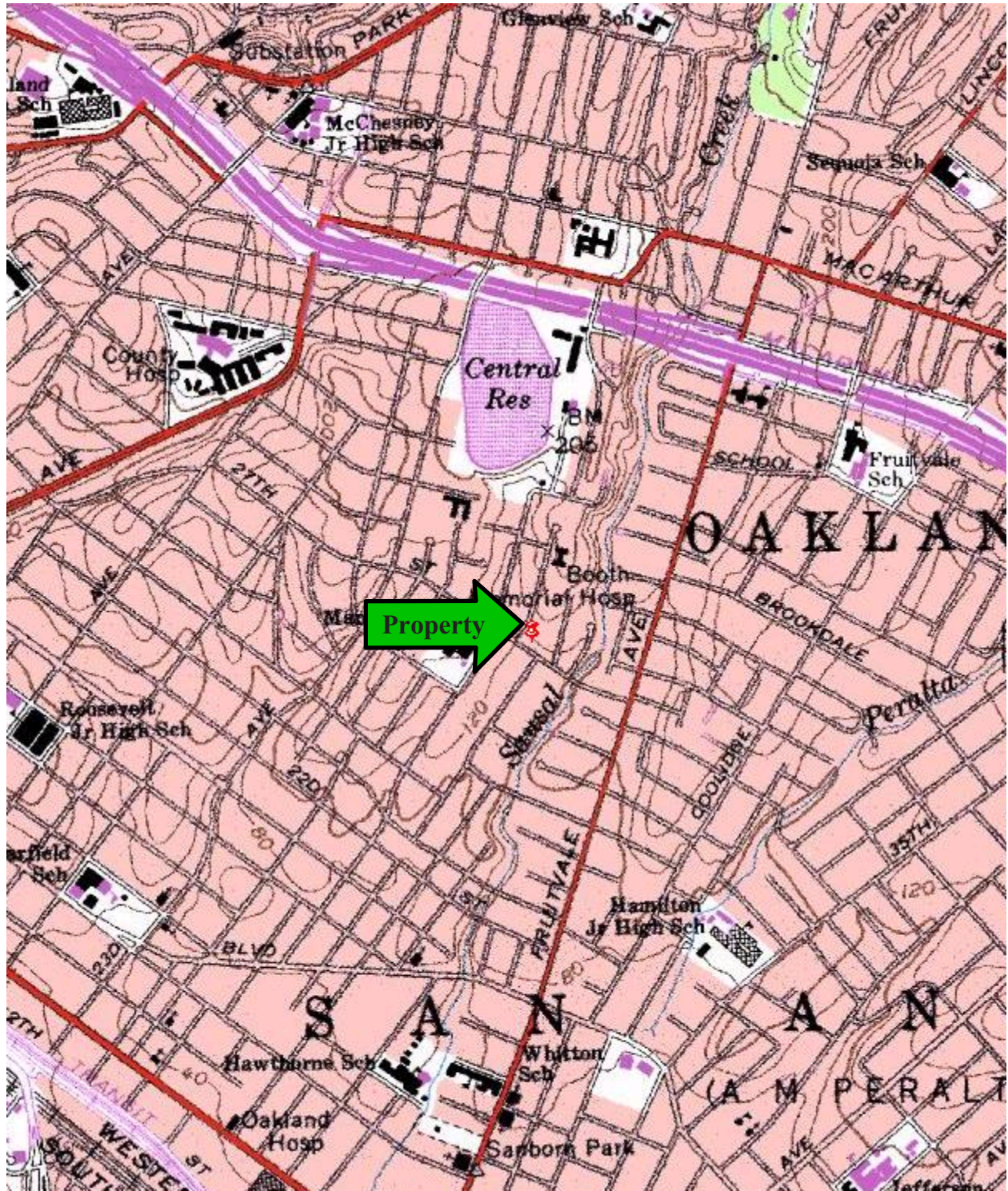
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## Figures

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1 inch equals 2000 feet

Map Taken From:  
 United States Geological Survey  
 7.5 Minute Topographic Series  
 Oakland East, California Quadrangle

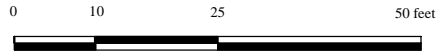
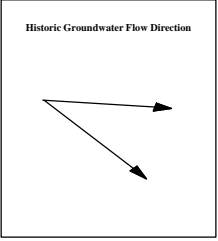
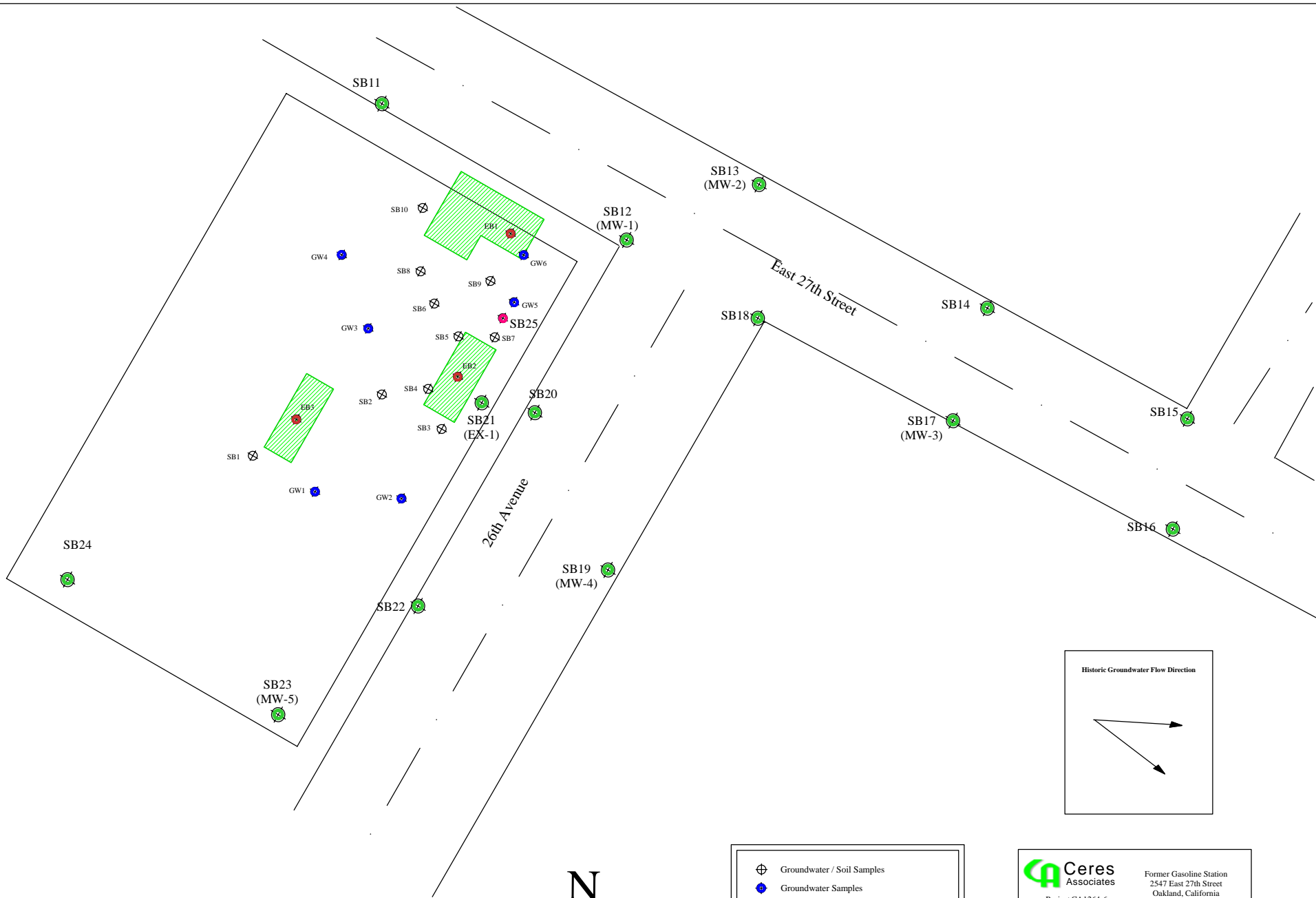
 **Ceres**  
 Associates  
 Project CA1264-6

Former Gasoline Station  
 2547 East 27th Street  
 Oakland, California

**PROPERTY  
 LOCATION MAP**

**FIGURE  
 1**

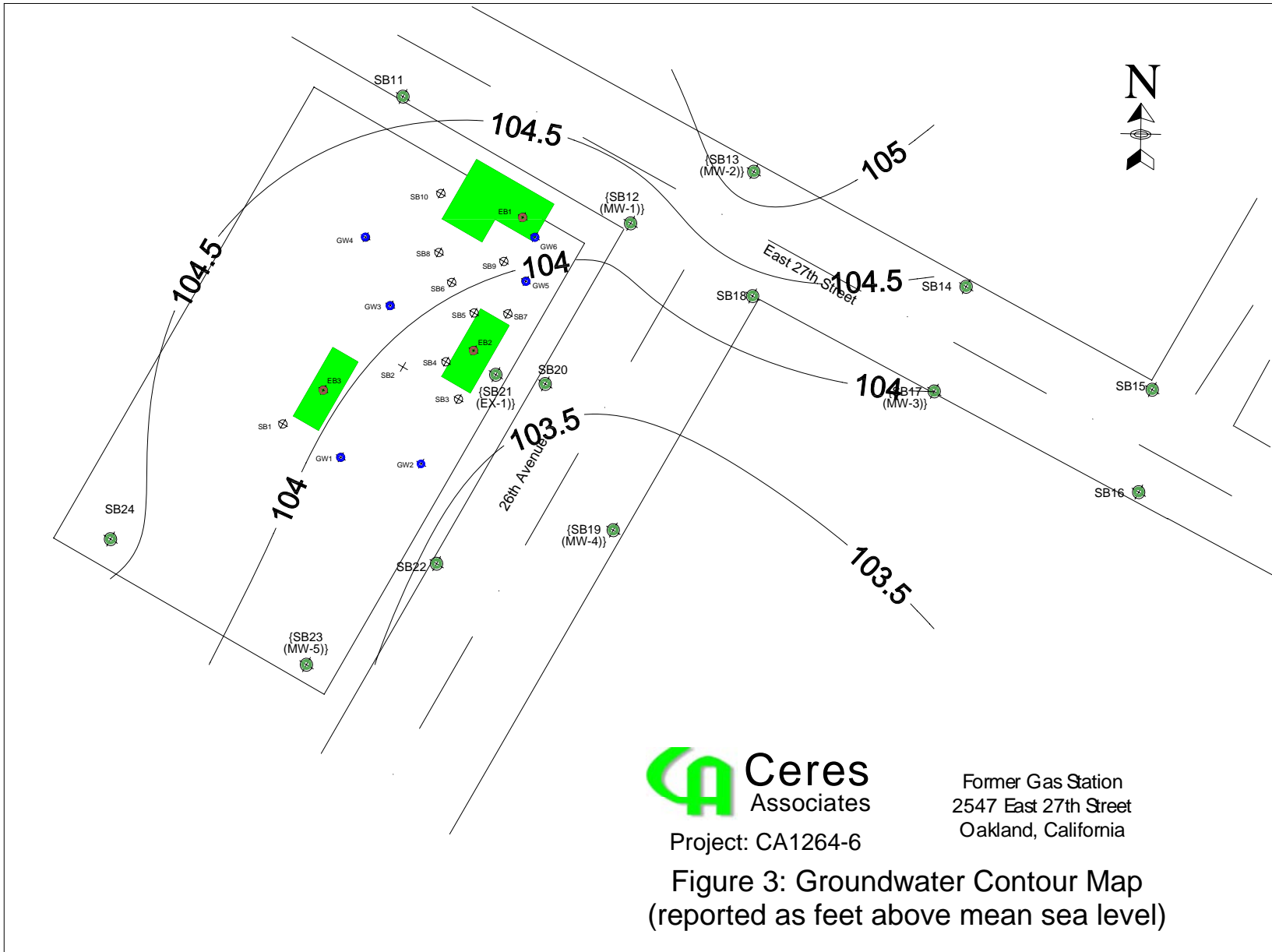




- Groundwater / Soil Samples
- Groundwater Samples
- Former boring/well installed by Kleinfelder
- January 2006 Boring Locations
- September 2006 Deeper Soil Boring

	Former Gasoline Station 2547 East 27th Street Oakland, California Project CA1264-6
	<b>General Data Map</b>

**Figure 2**



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**Soil Boring Log**

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Soil Boring Completion Details	Depth	Sample Interval	USCS Code	Soil Description
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;">1.5" Dia. Borehole</div> <div style="margin-bottom: 20px;">Portland cement/bentonite</div> <div style="margin-bottom: 20px;">▼</div> <div style="margin-bottom: 20px;">▼</div> <div style="margin-bottom: 20px;">TD 27.5'</div> </div>	1		GM	Mixed gravel and loam, olive brown 2.5Y4/4
	2			
	3		CL	Clay with some silt and sand, very dark greyish brown 10YR2/2, medium plasticity.
	4			
	5			
	6			
	7		CL	Clay, dark olive, 5Y3/2, high plasticity, with some fine sands
	8			
	9			
	10			
	11			
	12			
	13		SC	Clayey sand, fine grained sand with 30% clay, moist, wet, olive brown 2.5Y5/4, medium plasticity.
	14			
	15			
	16		CL	Sandy clay, with 20% gravel, reddish brown 5YR 4/4, high plasticity
	17			
	18			
	19			
	20		CL	Sandy clay, with 30% gravel, very moist, reddish brown 5YR4/4, high plasticity
	21			
	22			
	23		CL	Clay, with some silt, very dense, black, 2.5Y5/4, high plasticity
	24			
	25			
	26			
	27			
	28			
	29			Refusal at 27.5'
	30			
	31			



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**Laboratory Data Sheets**

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**McC Campbell Analytical, Inc.**

"When Quality Counts"

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

Ceres Associates 424 First Street Benicia, CA 94510	Client Project ID: #CA1264-5	Date Sampled: 09/20/06
		Date Received: 09/20/06
	Client Contact: Ryan Meyer	Date Reported: 09/27/06
	Client P.O.:	Date Completed: 09/27/06

**WorkOrder: 0609417**

September 27, 2006

Dear Ryan:

Enclosed are:

- 1). the results of **2** analyzed samples from your **#CA1264-5 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. McC Campbell 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



**McC Campbell Analytical, Inc.**



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0609417**

**ClientID: CAB**

**EDF: YES**

Report to:  
 Ryan Meyer  
 Ceres Associates  
 424 First Street  
 Benicia, CA 94510

Email:  
 TEL: (707) 748-3170 FAX: (707) 748-3171  
 ProjectNo: #CA1264-5  
 PO:

Bill to:  
 Lori  
 Ceres Associates  
 424 First Street  
 Benicia, CA 94510

**Requested TAT: 5 days**  
  
*Date Received: 09/20/2006*  
*Date Printed: 09/22/2006*

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0609417-001	B-13-X	Water	09/20/2006	<input type="checkbox"/>	A	A	B										
0609417-002	B-21-X	Water	09/20/2006	<input type="checkbox"/>	A		B										

**Test Legend:**

1	G-MBTEX_W	2	PREFD REPORT	3	TPH(DMO)_W	4		5	
6		7		8		9		10	
11		12							

**Prepared by: Nickole White**

**Comments:**

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.







### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0609417

EPA Method SW8021B/8015Cm		Extraction SW5030B			BatchID: 23890			Spiked Sample ID: 0609456-014A				
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) <sup>£</sup>	ND	60	96.9	103	5.74	97.9	98.5	0.661	70 - 130	30	70 - 130	30
MTBE	ND	10	108	107	0.843	105	116	10.2	70 - 130	30	70 - 130	30
Benzene	ND	10	97.6	97.9	0.259	96.6	99.4	2.85	70 - 130	30	70 - 130	30
Toluene	ND	10	90.8	90	0.829	90.2	92.8	2.78	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	99.6	100	0.935	99.6	103	2.98	70 - 130	30	70 - 130	30
Xylenes	ND	30	96	96.7	0.692	96.7	100	3.39	70 - 130	30	70 - 130	30
%SS:	93	10	95	94	1.14	93	93	0	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 23890 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0609417-001	9/20/06	9/25/06	9/25/06 8:31 PM	0609417-002	9/20/06	9/25/06	9/25/06 10:01 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.



### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0609417

EPA Method SW8015C		Extraction SW3510C				BatchID: 23865			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	97.2	101	3.59	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	102	103	1.27	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 23865 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0609417-001	9/20/06	9/20/06	9/24/06 10:09 PM	0609417-002	9/20/06	9/20/06	9/24/06 11:18 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.





**McCAMPBELL ANALYTICAL, INC.**  
 1534 WILLOW PASS ROAD  
 PITTSBURG, CA 94565-1701  
 Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
 Telephone: (877) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**  
**TURN AROUND TIME**       
 RUSH 24 HR 48 HR 72 HR 5 DAY  
 GeoTracker EDF  PDF  Excel  Write On (DW)   
 Check if sample is effluent and "J" flag is required

**Report To:** Ryan Myer **Bill To:**  
**Company:** Ceres  
 424 First Street, Benicia CA 94510  
**E-Mail:** [ryannmeyer@gmail.com](mailto:ryannmeyer@gmail.com)  
**Tele:** (707) 748-3170 **Fax:** (707) 748-3171  
**Project #:** CA1264-6 **Project Name:** Qtrly Tomorrow  
**Project Location:** Oakland, CA  
**Sampler Signature:** *[Signature]*

Analysis Request										Other	Comments							
BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/608 / 8081 (CI Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic CI Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAS)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)		Filter Samples for Metals analysis: Yes / No	
MW-1		8/24/05		4		X												
MW-2																		
MW-3																		
MW-4																		
MW-5																		
EX-1																		
<i>Nothing Fertilized</i>																		

**Relinquished By:** *[Signature]* **Date:** 8-25 **Time:** 3:35 **Received By:** ENVIRO-TECH AA 15:35  
**Relinquished By:** *[Signature]* **Date:** 7.31.05 **Time:** 8/25 **Received By:** LB. Mai  
**Relinquished By:** **Date:** **Time:** **Received By:**

**COMMENTS:**  
 ICE/IF \_\_\_\_\_  
 GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PRESERVED IN LAB \_\_\_\_\_  
 VOAS O&G METALS OTHER  
 PRESERVATION pH<2

**McC Campbell Analytical, Inc.**



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0608534**

**ClientID: CAB**

**EDF: YES**

Report to:  
 Ryan Meyer  
 Ceres Associates  
 424 First Street  
 Benicia, CA 94510

Email:  
 TEL: (707) 748-3170 FAX: (707) 748-3171  
 ProjectNo: CA1264-6; Qtrly Tomorrow  
 PO:

Bill to:  
 Lori  
 Ceres Associates  
 424 First Street  
 Benicia, CA 94510

**Requested TAT: 5 days**  
  
*Date Received: 08/24/2006*  
*Date Printed: 09/05/2006*

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0608534-001	MW-1	Water	08/24/2006	<input type="checkbox"/>	A	A	B										
0608534-002	MW-2	Water	08/24/2006	<input type="checkbox"/>	A		B										
0608534-003	MW-3	Water	08/24/2006	<input type="checkbox"/>	A		B										
0608534-004	MW-4	Water	08/24/2006	<input type="checkbox"/>	A		B										
0608534-005	MW-5	Water	08/24/2006	<input type="checkbox"/>	A		B										
0608534-006	EX-1	Water	08/28/2006	<input type="checkbox"/>	A		B										

**Test Legend:**

1	G-MBTX_W	2	PREFD REPORT	3	TPH(D)_W	4		5	
6		7		8		9		10	
11		12							

**Prepared by: Rosa Venegas**

**Comments:** Sample 006 received 8/28/06

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.



# McC Campbell Analytical, Inc.

"When Quality Counts"

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Ceres Associates  424 First Street  Benicia, CA 94510	Client Project ID: CA1264-6; Qtrly Tomorrow	Date Sampled: 08/24/06-08/28/06
		Date Received: 08/24/06-08/28/06
	Client Contact: Ryan Meyer	Date Extracted: 08/28/06-09/06/06
	Client P.O.:	Date Analyzed 08/28/06-09/06/06

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0608534

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND	ND	ND	ND	ND	ND	1	104
002A	MW-2	W	ND	ND	ND	ND	0.65	1.5	1	93
003A	MW-3	W	ND	ND	ND	ND	ND	ND	1	104
004A	MW-4	W	ND	ND	ND	ND	ND	ND	1	99
005A	MW-5	W	ND	ND	ND	ND	ND	ND	1	100
006A	EX-1	W	460,m	ND	ND	ND	ND	ND	1	105

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* 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 McC Campbell 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.





**QC SUMMARY REPORT FOR SW8021B/8015Cm**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0608534

EPA Method SW8021B/8015Cm		Extraction SW5030B			BatchID: 23382			Spiked Sample ID 0608530-006A		
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	LCS / LCSD
TPH(btex) <sup>f</sup>	ND	60	100	99.8	0.210	104	104	0	70 - 130	70 - 130
MTBE	ND	10	86.6	89.8	3.62	99.1	98.8	0.256	70 - 130	70 - 130
Benzene	ND	10	94	89.9	4.45	93.8	92.5	1.42	70 - 130	70 - 130
Toluene	ND	10	94.3	83	12.7	93.6	92.9	0.787	70 - 130	70 - 130
Ethylbenzene	ND	10	83.3	100	18.4	99	98.5	0.536	70 - 130	70 - 130
Xylenes	ND	30	91.7	95.7	4.27	95	95.3	0.350	70 - 130	70 - 130
%SS:	103	10	96	101	5.33	100	99	0.777	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 23382 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0608534-001A	8/24/06	8/30/06	8/30/06 1:25 AM	0608534-002A	8/24/06	8/28/06	8/28/06 7:44 PM
0608534-003A	8/24/06	8/30/06	8/30/06 2:24 AM	0608534-004A	8/24/06	8/29/06	8/29/06 2:51 AM
0608534-005A	8/24/06	8/29/06	8/29/06 3:55 AM				

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.

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



**QC SUMMARY REPORT FOR SW8021B/8015Cm**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0608534

EPA Method SW8021B/8015Cm		Extraction SW5030B			BatchID: 23404			Spiked Sample ID 0608587-005A		
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	LCS / LCSD
TPH(btex) <sup>f</sup>	ND	60	101	101	0	99.8	102	2.07	70 - 130	70 - 130
MTBE	ND	10	108	99.8	8.37	88.4	83.7	5.40	70 - 130	70 - 130
Benzene	ND	10	102	93.8	8.48	86.3	81.4	5.89	70 - 130	70 - 130
Toluene	ND	10	96.1	89.8	6.88	93.4	87.3	6.65	70 - 130	70 - 130
Ethylbenzene	ND	10	98.8	93.3	5.74	106	101	4.33	70 - 130	70 - 130
Xylenes	ND	30	90.7	89.7	1.11	100	96.3	3.74	70 - 130	70 - 130
%SS:	101	10	107	100	7.46	105	99	6.03	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 23404 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0608534-006A	8/28/06	9/06/06	9/06/06 1:21 AM	0608534-007A	Not Provided	8/29/06	8/29/06 6:43 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.

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



### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0608534

EPA Method SW8015C	Extraction SW3510C			BatchID: 23365			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	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	105	103	1.70	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	102	102	0	N/A	70 - 130

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

NONE

#### BATCH 23365 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0608534-001B	8/24/06	8/24/06	3/26/06 11:37 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.



### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0608534

EPA Method SW8015C	Extraction SW3510C			BatchID: 23429			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	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	105	102	3.33	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	102	99	3.16	N/A	70 - 130

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

NONE

#### BATCH 23429 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0608534-002B	8/24/06	8/24/06	8/30/06 12:06 AM	0608534-003B	8/24/06	8/24/06	8/27/06 1:49 AM
0608534-004B	8/24/06	8/24/06	8/30/06 9:07 PM	0608534-005B	8/24/06	8/24/06	8/27/06 12:43 AM
0608534-006B	8/28/06	8/24/06	9/05/06 8:06 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.