



**RECEIVED**

2:33 pm, Jun 29, 2007

Alameda County  
Environmental Health

June 29, 2007

GA Project No. 157-02-01

Alameda County Health Services Agency  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Attention: Mr. Jerry Wickham

Subject: Report of Additional Sampling Activities  
533 Exchange Court  
Livermore, California

Ladies and Gentleman:

Gribi Associates is pleased to submit this letter report plan on behalf of Pitcock Petroleum documenting additional sampling activities to assess remaining hydrocarbon impacts following the removal of hydrocarbon-impacted soil conducted in May and June 2006 at 533 Exchange Court in Livermore, California (Site) (Figure 1 and Figure 2). A confirmation sample adjacent to the block wall enclosing the Site indicated remaining soils impacted with elevated levels diesel-range hydrocarbons, indicating that impacted soils may exist beyond the wall and below the concrete surface of the Site.

Gribi Associates conducted two hand auger borings to characterize soil impacts beyond the block wall. Two samples were collected at each location. The first soil sample was collected of soils encountered immediately below the base rock pavement section underlying the concrete slab. There was difficulty in locating the hand auger locations. Adjacent to the inside of the block wall, in addition to the buried vent lines, are numerous wiring and conduit associated with the USTs. There are also oil and soda vending machines in the immediate vicinity of the desired sampling area.

## **BACKGROUND**

The project site is an operating commercial card lock fueling facility located south of Interstate 580, near the intersection of South Vasco Road and Brisa Street. Five UST vent lines are present adjacent to a concrete wall near the perimeter of the site. It is our understanding that fuel hydrocarbons were accidentally released from the UST vent lines in the recent past during UST filling.

On December 3, 2004 (with the approval of Mr. John Rigter of Livermore-Pleasanton Fire Department), Gribi Associates conducted an investigation of shallow soils in a landscape area adjacent to UST vent lines. The soil investigation included three shallow (less than 2 feet deep) soil borings. Analysis of collected soil samples showed detectable levels of total petroleum hydrocarbons (TPH) as diesel as high as 410,000 milligrams per kilogram (mg/kg) and TPH as gasoline as high as 410 mg/kg. Soil investigation details were documented in *Report of Vent Area Sampling* (Gribi Associates, February 2005). The report concluded that the soil impacts were limited in both vertical and lateral extent, and that the impacts do not appear to be recent, as evidenced by the non-detectable levels of benzene and MTBE in the soil samples.

On January 16, 2006, Gribi Associates submitted a work plan to Alameda County Health Services Agency (ACHSA) proposing soil removal with confirmation sampling, and drilling of a single boring for soil and groundwater sampling. The work plan was approved by ACHSA on February 7, 2006. The workplan provided cleanup goals for site-specific chemicals of concern (COC). The provided cleanup goals were 100 mg/kg total petroleum hydrocarbons as gasoline (TPH-G), 100 mg/kg total petroleum hydrocarbons as diesel (TPH-D), 0.044 mg/kg benzene, 2.9 mg/kg toluene, 3.3 mg/kg ethylbenzene, and 2.3 mg/kg xylenes.

On May 17, 2006, an approximate area of 4 feet by 8 feet by 1 foot in depth was excavated adjacent to the block wall below the vent lines. Following excavation, four sidewall confirmation samples (CS-1 through CS-4) and one bottom confirmation sample (CS-5) were collected. TPH-D was detected above the respective, proposed clean up goal of 100 mg/kg at confirmation soil samples CS-1 (3,700 mg/kg) and CS-3 (130 mg/kg).

On June 9, 2006, further excavation in the direction of sample location CS-3 was conducted and a subsequent confirmation sampling of the new sidewall (CS-3A) showed a TPH-D concentration within the cleanup goal. The only other detected chemical of concern was TPH-G, detected at both CS-1 (23 mg/kg) and CS-5 (5.1 mg/kg). These concentrations were well below the respective clean up goal of 100 mg/kg. No other COC's were detected in the confirmation samples.

On June 12, 2006, a single soil boring (SB-1) was drilled by to a total depth of 30 feet below grade using direct-push hydraulically-driven soil coring equipment. Soils encountered in boring SB-1 consisted primarily of silts and clays to a depth of approximately 13 feet below surface grade followed by generally sandy soils with varying amounts of silty, clays, and coarser grain soils to the termination of the boring at approximately 30 feet in depth. Groundwater was encountered in boring SB-1 at a depth of approximately 25 feet below surface grade. Soil samples were collected approximately every five feet starting at a depth of 5 feet below surface grade, and extending down to a final depth of 30 feet. Laboratory results for the five samples reported no concentrations above their respective reporting limits for TPH-D, TPH-G, BTEX, and MTBE. Laboratory results for a single grab groundwater sample reported no concentrations above their reporting limits for fuel-range hydrocarbons, except for a sole xylene concentration of 0.5 micrograms per liter (ug/L). In a letter dated August 11, 2006, ACHSA requested that the shallow excavation of soils be continued in the direction of the wall to removed remaining impacted soil. In an email correspondence to Alameda County, Gribi Associates proposed sampling of soils at several distances from the wall to better characterize remaining soil impacts beyond the wall and below the concrete slab of the Site. The proposed Gribi Associates approach was approved by ACHSA.

## **FIELD ACTIVITIES**

### **Soil Sampling Activities**

On June 4, 2007, Gribi Associates attempted to collect soil samples from two locations using a hand auger (Figure 3). The locations were selected in order to work around the presence of vending machines and to avoid existing buried pipes, including the UST vent lines and associated UST wiring. The locations were first made accessible by core drilling through the concrete surface. Site photos are provided as Attachment A.

The first sample location was located approximately 9 feet inside the perimeter wall adjacent to the vent lines. Soil samples HA-1-2.0' and HA-1-4.0' were collected at depths below surface grade of 2.0 feet and 4.0 feet, respectively. The first sample was collected at the base rock-soil interface. Although effort was made avoid UST vent lines, the second sample location, approximately 1.5 feet inside the perimeter wall, was located over the buried vent lines, therefore a collection of soil samples was not possible.

On June 21, 2007, a third sample location was cored within 1 to 2 feet from the previous sample location obstructed by vent lines. Vent lines were not encountered and two soil samples, HA-2-1.5' and HA-2-3.5', were collected at depths below surface grade of 1.5 feet and 3.5 feet, respectively. The first of the two samples was collected at the base rock-soil interface.

### **Laboratory Analysis of Soil Samples**

Four soil samples were analyzed for the following parameters:

- USEPA 8015C - Total Petroleum Hydrocarbons as Diesel (TPH-D)
- USEPA 8015Cm - Total Petroleum Hydrocarbons as Gasoline (TPH-G)
- USEPA 8021B - Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- USEPA 8021B - Methyl-t-butyl Ether (MTBE)

All analyses were conducted by McCampbell Analytical (a California-certified laboratory) located in Pittsburg, California.

## **RESULTS OF FIELD ACTIVITIES**

### **Laboratory Analytical Results**

Laboratory analytical results reported no concentrations above their respective detection limits for TPH-D, TPH-G, BTEX, and MTBE for both soil samples collected at HA-1. Only concentrations of 60 mg/kg TPH-D and 2.8 mg/kg TPH-D were reported for soil samples HA-2-1.5' and HA-2-3.5'.

Soil analytical results are summarized in Table 1 and on Figure 3. The laboratory data report is contained in Attachment B.

## **CONCLUSIONS**

Results from the hand auger boring soil samples indicate that, although there was detectable concentrations of TPH-D in soil on the opposite side of the block wall from the soil excavation, the concentrations were well below the previous confirmation sample CS-1 result of 3,700 mg/kg TPH-D, and within the proposed cleanup goal of 100 mg/kg TPH-D.

During the course of the field work, it was also observed that a perimeter foundation footing exists below the concrete slab, presumably to support the weight of the block wall. The footing extends approximately 18 to 24 inches below the concrete slab, and also extends at least 12 inches below the elevation of the failing confirmation sample CS-1. The footing would act to inhibit the lateral migration of hydrocarbons in the direction of the fueling facility.

Alameda County Health Services Agency  
Environmental Protection  
June 29, 2007  
Page 4

Except for confirmation sample CS-1, confirmation samples collected as part of the soil removal activities were will below the proposed cleanup goals, indicating that significant TPH-D soil impacts did not extend laterally in the remaining directions and that a majority of the impacted soil was removed. Laboratory analytical results for soil and groundwater samples collected from the single soil boring drilled within the the soil removal area reported no concentrations for fuel-range hydrocarbons above their respective detection limits, indicating that significant vertical migration of TPH-D in soil did not occur.

Based on results of the hand auger soil samples, and results from the previous soil removal activities, Gribi Associates believes that regulatory site closure is warranted.

We appreciate the opportunity to present this letter report for your review. Please call if you have questions or require additional information. We look forward to working with you on this important project.

Very truly yours,



Matthew A. Rosman  
Project Engineer

MAR:JEG:ct



James E. Gribi  
Registered Geologist  
California No. 5843



cc Jeff Pitcock, Pitcock Petroleum

## FIGURES

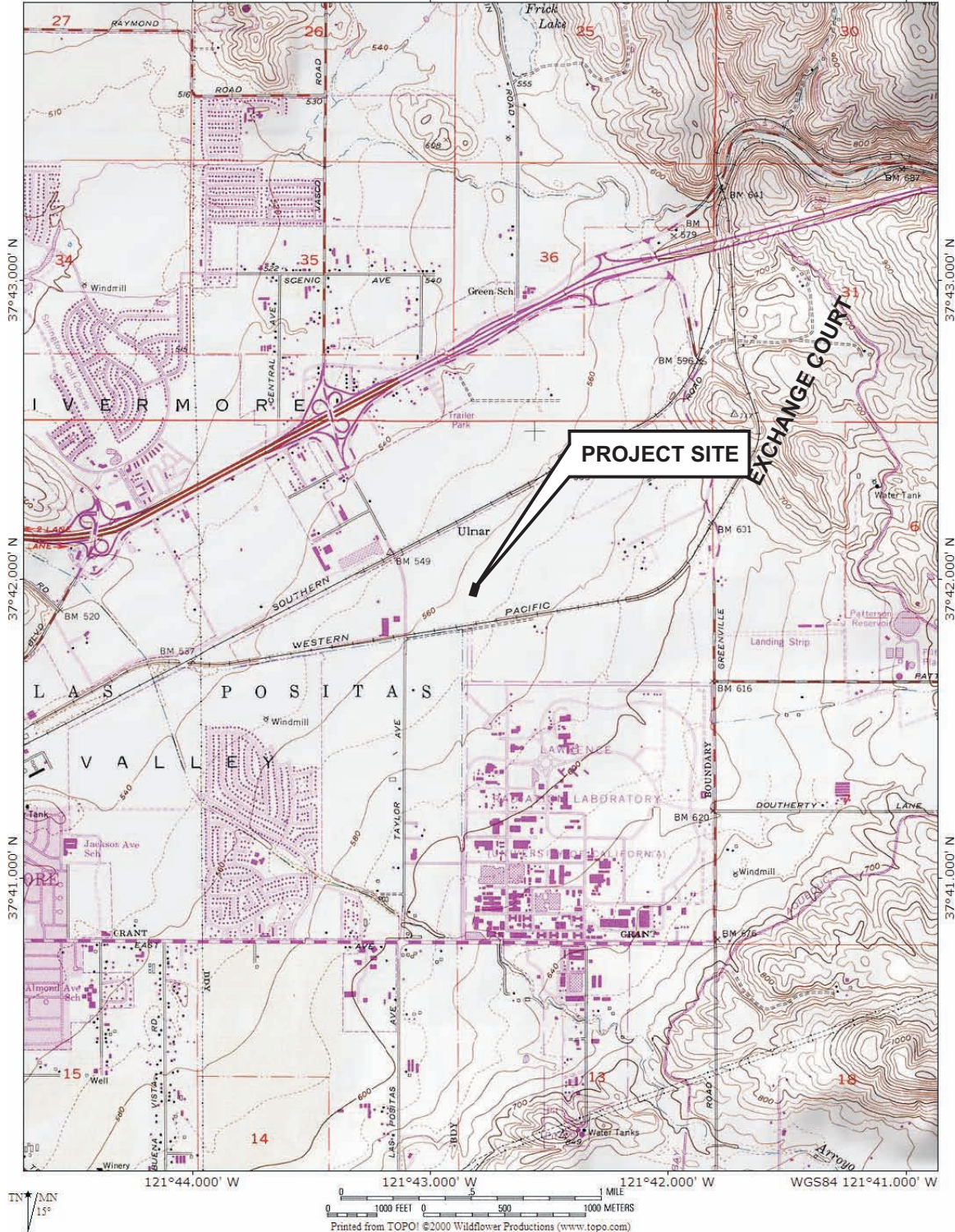
TOPO! map printed on 02/02/05 from "California.tpo" and "Untitled.tpg"

121°44.000' W

121°43.000' W

121°42.000' W

WGS84 121°41.000' W



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DESIGNED BY:

CHECKED BY:

DRAWN BY: JG

SCALE:

PROJECT NO: 157-02-01

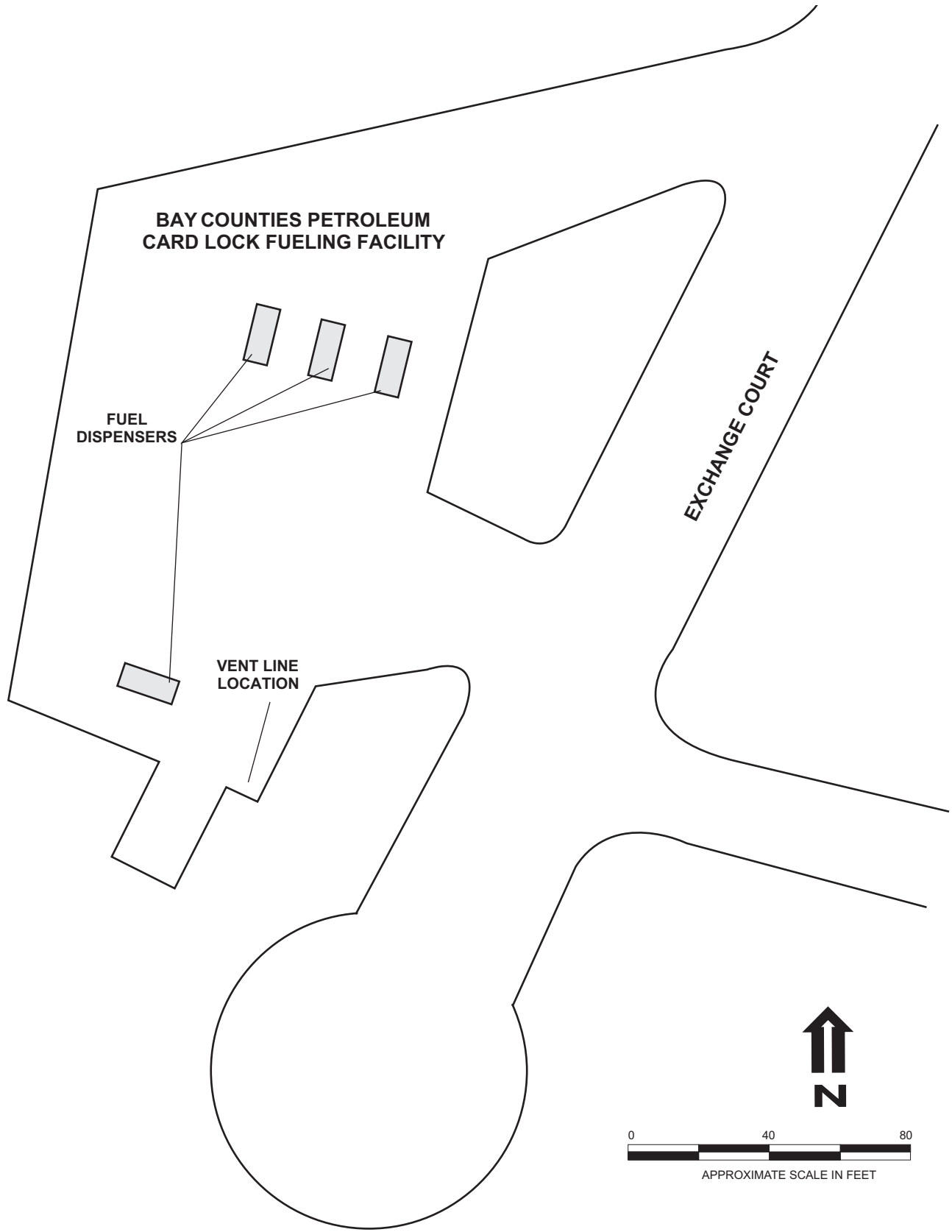
### SITE VICINITY MAP

BAY COUNTIES PETROLEUM  
533 EXCHANGE COURT  
LIVERMORE, CALIFORNIA

DATE: 06/25/2007

FIGURE: 1

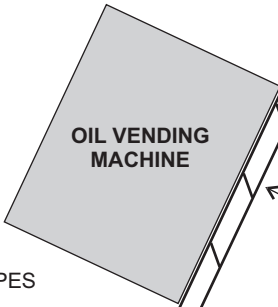
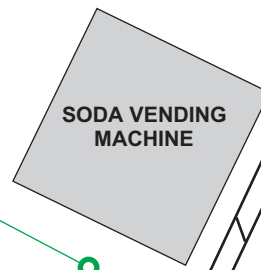




DESIGNED BY:	CHECKED BY:	<b>SITE PLAN</b> BAY COUNTIES PETROLEUM 533 EXCHANGE COURT LIVERMORE, CALIFORNIA	DATE: 06/25/2007	FIGURE:
DRAWN BY: JG	SCALE:			
PROJECT NO: 157-02-01				

**BAY COUNTIES PETROLEUM  
CARD LOCK FUELING FACILITY**

HA-1		
DEPTH	2.0'	4.0'
TPH-D:	ND	ND
TPH-G:	ND	ND
B:	ND	ND
T:	ND	ND
E:	ND	ND
X:	ND	ND
MTBE:	ND	ND



UST ASSOCIATED  
WIRING PULL BOX

VENT PIPES

EXCHANGE COURT

EXCHANGE COURT = 43 FT

HA-2		
DEPTH	1.5'	3.5'
TPH-D:	60	2.8
TPH-G:	ND	ND
B:	ND	ND
T:	ND	ND
E:	ND	ND
X:	ND	ND
MTBE:	ND	ND

CONCRETE  
WALLS

Area of  
Soil Removal

CS-1	
DEPTH	0.5'
TPH-D:	3,700
TPH-G:	23
B:	ND
T:	ND
E:	ND
X:	ND
MTBE:	ND

GRASS KNOLL

DRAINAGE

LANDSCAPED  
AREA



APPROXIMATE SCALE IN FEET

- HA-1 - HAND AUGER SOIL SAMPLE LOCATION (JUNE 2007)
- CS-1 - CONFIRMATION SOIL SAMPLE LOCATION (MAY 2006)
- AREA OF SOIL REMOVAL (MAY-JUNE 2006)

DESIGNED BY:	CHECKED BY:	<b>RESULTS OF SOIL SAMPLING</b> BAY COUNTIES PETROLEUM 533 EXCHANGE COURT LIVERMORE, CALIFORNIA	DATE: 06/25/2007	FIGURE: 2
DRAWN BY: JG	SCALE:			
PROJECT NO: 157-02-01				



**TABLE**

<p align="center"><b>Table 1</b>  <b>SOIL HYDROCARBON ANALYTICAL RESULTS</b>  533 Exchange Court, Livermore, California</p>								
Sample ID	Sample Depth	Concentration in milligrams per kilogram (mg/kg), parts per million (ppm)						
		TPH-D	TPH-G	B	T	E	X	MTBE
HA-1-2.0'	2.0 feet	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
HA-1-4.0'	4.0 feet	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
HA-2-1.5'	1.5 feet	<b>60</b>	<0.50	<0.005	<0.005	<0.005	<0.005	<0.05
HA-2-3.5'	3.5 feet	<b>2.8</b>	<0.50	<0.005	<0.005	<0.005	<0.005	<0.05
<b>Soil ESL</b>		<b>100</b>	<b>100</b>	<b>0.044</b>	<b>2.9</b>	<b>3.3</b>	<b>2.3</b>	<b>0.023</b>

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

<0.50 = Not detected above the expressed value.

ESL = Shallow Soil Environmental Screening Levels for evaluation of commercial/industrial land use, where groundwater is a current or potential drinking water source, as contained in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, Interim Final, February 2005, Appendix 1, Tables A-2.

**ATTACHMENT A**


**SITE PHOTOS**



Photo 1. View of vent line area and work area.



Photo 2. Closer view of vent lines and work area.

DESIGNED BY:	CHECKED BY:	<b>SITE PHOTOS</b> BAY COUNTIES PETROLEUM 533 EXCHANGE COURT LIVERMORE, CALIFORNIA	DATE: 06/26/2007	FIGURE:
DRAWN BY: JG	SCALE:			
PROJECT NO: 157-02-01				

**ATTACHMENT B**  
**LABORATORY DATA REPORT**



## **McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: [www.mcccampbell.com](http://www.mcccampbell.com) E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)  
Telephone: 877-252-9262 Fax: 925-252-9269

Gribi Associates  1090 Adams St., Suite K  Benicia, CA 94510	Client Project ID: Pitcock	Date Sampled: 06/04/07
		Date Received: 06/06/07
	Client Contact: Matt Rosman	Date Reported: 06/12/07
	Client P.O.:	Date Completed: 06/12/07

**WorkOrder: 0706156**

June 12, 2007

Dear Matt:

Enclosed are:

- 1). the results of **2** analyzed samples from your **Pitcock 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

GRIB 0706156



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

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

Report To: Matthew Roman Bill To:
Company: GRIB Associates
1090 Adams St #K
Berkeley CA 94510 E-Mail:
Tele: (707) 748-7763 Fax: (707) 748-7763
Project #: Project Name: Pitcock. B
Project Location: Livermore CA
Sampler Signature: MRC

Analysis Request Other Comments

Table with columns: SAMPLE ID, LOCATION/Field Point Name, SAMPLING (Date, Time), # Containers, Type Containers, MATRIX (Water, Soil, Air, Sludge, Other), METHOD PRESERVED (ICE, HCL, HNO3, Other), and various analytical methods like BTEX & TPH, Total Petroleum Oil & Grease, etc.

Relinquished By: [Signature] Date: 6/06/07 Time: 1635 Received By: [Signature]
Relinquished By: Date: Time: Received By:
Relinquished By: Date: Time: Received By:

ICE # 1549 COMMENTS:
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: 0706156**

**ClientID: GRIB**

EDF     Excel     Fax     Email     HardCopy     ThirdParty

<b>Report to:</b>		<b>Bill to:</b>	<b>Requested TAT: 5 days</b>
Matt Rosman	Email: mrosman@gribiassociates.com	Terry Ferrell	
Gribi Associates	TEL: 707-748-7743    FAX: 707-748-7763	Gribi Associates	<i>Date Received 06/06/2007</i>
1090 Adams St., Suite K	ProjectNo: Pitcock	1090 Adams St., Suite K	<i>Date Printed: 06/06/2007</i>
Benicia, CA 94510	PO:	Benicia, CA 94510	
		tferrell@gribiassociates.com	

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0706156-001	HA-1-2.0'	Soil	6/4/2007	<input type="checkbox"/>	A	A											
0706156-002	HA-1-4.0'	Soil	6/4/2007	<input type="checkbox"/>	A	A											

**Test Legend:**

1	G-MBTX S	2	TPH(D) S	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Sheli Cryderman**

**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.





**Sample Receipt Checklist**

Client Name: **Gribi Associates**

Date and Time Received: **6/6/2007 5:41:49 PM**

Project Name: **Pitcock**

Checklist completed and reviewed by: **SC**

WorkOrder N°: **0706156** Matrix Soil

Carrier: Client Drop-In

**Chain of Custody (COC) Information**

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: 15.4°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA

Client contacted:

Date contacted:

Contacted by:

Comments:



# 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

Gribi Associates  1090 Adams St., Suite K  Benicia, CA 94510	Client Project ID: Pitcock	Date Sampled: 06/04/07
		Date Received: 06/06/07
	Client Contact: Matt Rosman	Date Extracted: 06/06/07
	Client P.O.:	Date Analyzed 06/07/07-06/08/07

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

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0706156

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	HA-1-2.0'	S	ND	ND	ND	ND	ND	ND	1	87
002A	HA-1-4.0'	S	ND	ND	ND	ND	ND	ND	1	88

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and 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) value derived using a client specified carbon range; o) results are reported on a dry weight basis; p) see attached narrative.



**McC Campbell Analytical, Inc.**

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Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

Gribi Associates  1090 Adams St., Suite K  Benicia, CA 94510	Client Project ID: Pitcock	Date Sampled: 06/04/07
		Date Received: 06/06/07
	Client Contact: Matt Rosman	Date Extracted: 06/06/07
	Client P.O.:	Date Analyzed 06/08/07-06/09/07

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel\***

Extraction method SW3550C

Analytical methods SW8015C

Work Order: 0706156

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0706156-001A	HA-1-2.0'	S	ND	1	103
0706156-002A	HA-1-4.0'	S	ND	1	94

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

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

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

+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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; o) results are reported on a dry weight basis.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 0706156

EPA Method SW8021B/8015Cm		Extraction SW5030B			BatchID: 28548			Spiked Sample ID: 0706116-007A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	0.60	111	103	7.71	108	96.8	10.9	70 - 130	30	70 - 130	30
MTBE	ND	0.10	102	98.6	3.35	93.4	88.8	5.06	70 - 130	30	70 - 130	30
Benzene	ND	0.10	94.3	97.4	3.22	88.2	96.8	9.36	70 - 130	30	70 - 130	30
Toluene	ND	0.10	84.4	87	2.93	88.2	110	22.1	70 - 130	30	70 - 130	30
Ethylbenzene	ND	0.10	103	103	0	103	106	2.92	70 - 130	30	70 - 130	30
Xylenes	ND	0.30	107	107	0	107	120	11.8	70 - 130	30	70 - 130	30
%SS:	104	0.10	106	115	7.78	95	95	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 28548 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0706156-001A	06/04/07	06/06/07	06/08/07 9:00 AM	0706156-002A	06/04/07	06/06/07	06/07/07 11:42 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.



### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 0706156

Analyte	EPA Method SW8015C		Extraction SW3550C			BatchID: 28572			Spiked Sample ID: 0706156-002A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	ND	20	98.2	95.6	2.67	112	113	0.899	70 - 130	30	70 - 130	30
%SS:	93	50	103	102	1.30	108	108	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 28572 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0706156-001A	06/04/07	06/06/07	06/09/07 5:46 PM	0706156-002A	06/04/07	06/06/07	06/08/07 5:13 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.



## **McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: [www.mcccampbell.com](http://www.mcccampbell.com) E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)  
Telephone: 877-252-9262 Fax: 925-252-9269

Gribi Associates  1090 Adams St., Suite K  Benicia, CA 94510	Client Project ID: Pitcock	Date Sampled: 06/21/07
		Date Received: 06/22/07
	Client Contact: Matt Rosman	Date Reported: 06/26/07
	Client P.O.:	Date Completed: 06/26/07

**WorkOrder: 0706596**

June 26, 2007

Dear Matt:

Enclosed are:

- 1). the results of **2** analyzed samples from your **Pitcock 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

070595 GRIB

**McCAMPBELL ANALYTICAL, INC.**

1534 WILLOW PASS ROAD  
PITTSBURG, CA 94565-1701

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**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME

RUSH  24 HR  48 HR  72 HR  5 DAY  
GeoTracker EDF  PDF  Excel  Write On (DW)

**RUSH**


Report To: Matthew Roman Bill To: \_\_\_\_\_  
Company: Grisbi Associates  
1090 Adams St #K  
Benicia, CA 94510 E-Mail: \_\_\_\_\_  
Tele: (707) 748-7747 Fax: (707) 748-7763  
Project #: \_\_\_\_\_ Project Name: Pitcock  
Project Location: Livermore, CA  
Sampler Signature: [Signature]

Analysis Request										Other	Comments						
MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	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 / PNAAs)	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
HA-2-1.5'		6/21	0945														
HA-2-3.0'		6/21	0955														

Relinquished By: [Signature] Date: 6/21/07 Time: 1225 Received By: [Signature]  
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/r [Signature] ✓  
GOOD CONDITION \_\_\_\_\_  
HEAD SPACE ABSENT \_\_\_\_\_  
DECHLORINATED IN LAB \_\_\_\_\_  
APPROPRIATE CONTAINERS \_\_\_\_\_  
PRESERVED IN LAB \_\_\_\_\_  
VOAS O&G METALS OTHER  
PRESERVATION pH<2  
COMMENTS: Results by Wed. (6/27)

# McC Campbell Analytical, Inc.


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

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 0706596**

**ClientID: GRIB**

EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty

<b>Report to:</b>		<b>Bill to:</b>	<b>Requested TAT: 3 days</b>
Matt Rosman	Email: mrosman@gribiassociates.com	Terry Ferrell	
Gribi Associates	TEL: (707) 748-774 FAX: (707) 748-776	Gribi Associates	<i>Date Received 06/22/2007</i>
1090 Adams St., Suite K	ProjectNo: Pitcock	1090 Adams St., Suite K	<i>Date Printed: 06/22/2007</i>
Benicia, CA 94510	PO:	Benicia, CA 94510	
		tferrell@gribiassociates.com	

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0706596-001	HA-2-1.5'	Soil	6/21/2007 9:45:00	<input type="checkbox"/>	A	A											
0706596-002	HA-2-3.0'	Soil	6/21/2007 9:55:00	<input type="checkbox"/>	A	A											

**Test Legend:**

1	G-MBTX S	2	TPH(DMO) S	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Chloe Lam**

**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.





### Sample Receipt Checklist

Client Name: **Gribi Associates**

Date and Time Received: **6/22/2007 2:06:36 PM**

Project Name: **Pitcock**

Checklist completed and reviewed by: **Chloe Lam**

WorkOrder N°: **0706596** Matrix Soil

Carrier: Client Drop-In

#### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: 24.2°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA

Client contacted:

Date contacted:

Contacted by:

Comments:



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 Telephone: 877-252-9262 Fax: 925-252-9269

Gribi Associates  1090 Adams St., Suite K  Benicia, CA 94510	Client Project ID: Pitcock	Date Sampled: 06/21/07
		Date Received: 06/22/07
	Client Contact: Matt Rosman	Date Extracted: 06/22/07
	Client P.O.:	Date Analyzed 06/23/07

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

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0706596

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	HA-2-1.5'	S	ND	ND	ND	ND	ND	ND	1	89
002A	HA-2-3.0'	S	ND	ND	ND	ND	ND	ND	1	85

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and 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) value derived using a client specified carbon range; o) results are reported on a dry weight basis; p) see attached narrative.



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Gribi Associates  1090 Adams St., Suite K  Benicia, CA 94510	Client Project ID: Pitcock	Date Sampled: 06/21/07
		Date Received: 06/22/07
	Client Contact: Matt Rosman	Date Extracted: 06/22/07
	Client P.O.:	Date Analyzed 06/23/07

**Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil\***

Extraction method: SW3550C

Analytical methods: SW8015C

Work Order: 0706596

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0706596-001A	HA-2-1.5'	S	60,g,b	67	1	84
0706596-002A	HA-2-3.0'	S	2.8,b	ND	1	83

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L
	S	1.0	5.0	mg/Kg

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

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

+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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; o) mineral oil; p) see attached narrative.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 0706596

Analyte	EPA Method SW8021B/8015Cm		Extraction SW5030B			BatchID: 28880			Spiked Sample ID: 0706577-004A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	0.60	106	108	2.21	102	103	0.222	70 - 130	30	70 - 130	30
MTBE	ND	0.10	109	103	5.16	97.7	86.3	12.4	70 - 130	30	70 - 130	30
Benzene	ND	0.10	96.7	93.9	2.94	97.5	98.3	0.819	70 - 130	30	70 - 130	30
Toluene	ND	0.10	87.4	85.5	2.19	107	108	0.892	70 - 130	30	70 - 130	30
Ethylbenzene	ND	0.10	99.1	101	1.40	102	104	1.65	70 - 130	30	70 - 130	30
Xylenes	ND	0.30	96.7	96.7	0	110	110	0	70 - 130	30	70 - 130	30
%SS:	91	0.10	96	103	7.07	109	107	2.56	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 28880 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0706596-001A	06/21/07 9:45 AM	06/22/07	06/23/07 2:52 AM	0706596-002A	06/21/07 9:55 AM	06/22/07	06/23/07 3:25 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.



### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 0706596

EPA Method SW8015C		Extraction SW3550C			BatchID: 28800			Spiked Sample ID: 0706470-002A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	3.2	20	101	102	1.01	107	107	0	70 - 130	30	70 - 130	30
%SS:	101	50	110	108	1.15	109	109	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 28800 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0706596-001A	06/21/07 9:45 AM	06/22/07	06/23/07 8:12 AM	0706596-002A	06/21/07 9:55 AM	06/22/07	06/23/07 9:20 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.

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.