



RAVEN
RESEARCH

December 1, 2009

Jason Garbon
City of Suisun City Redevelopment Agency
701 Civic Center Boulevard
Suisun City California 94585

**SUBJECT: Phase II Site Assessment
APN 0032-230 Parcels 290, 370, and 310
Suisun City, California**

Dear Mr. Garben:

Raven Research has completed a field investigation of the subject site to evaluate potential environmental concerns revealed by a Phase I Environmental Site Assessment and Update. These concerns in order of relative priority include:

- Undocumented fill in the southwest corner of Parcel 290
- A material threat of a release from two Kinder Morgan high pressure petroleum pipe lines near the northwest border of Parcel 290

Raven Research conducted one day of fieldwork to observe subsurface conditions and collect representative soil and groundwater samples for chemical analysis.

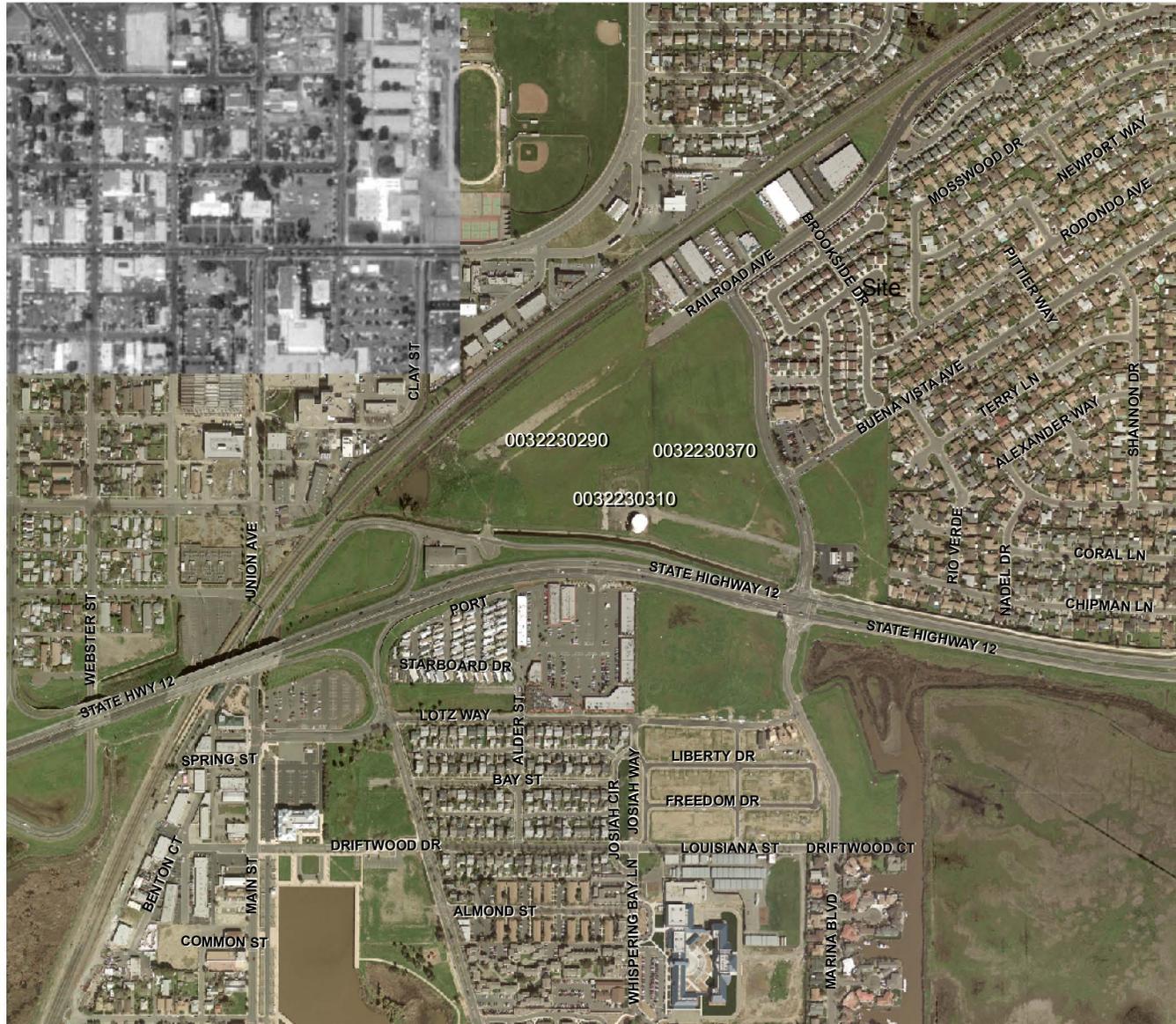
Assessment of Undocumented Fill

Imported construction debris covers approximately 2.8 acres of Parcel 290. Reportedly the material is waste generated over 25 years ago during installation of underground telecommunications utilities in the greater Solano County area. The origin of the material was not documented; therefore, Raven Research recommended a Phase II Assessment to evaluate the potential presence of hazardous substances or petroleum products. Additionally, we recommended an evaluation of the material's suitability for building purposes.

Raven Research subcontracted a backhoe and operator to excavate ten (10) test pits in the fill area at the location shown on the attached plate. The pits were excavated to depths of 2 ½ to 4 ½ feet deep. Raven Research logged and photographed each pit to document the materials encountered.

The material excavated from the test pits consists mainly of imported sandy to clayey soil with fragments of concrete and asphalt. Other debris including lumber, concrete pipe, and rebar are present in smaller quantities.

Solano County, California



0 200 400 800

Scale in Feet



RAVEN
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Site Location Map
Parcels 0032 230 290 & 0032 230 370
Marina Boulevard , Suisun City, California

PLATE
1

Raven Research did not observe discolored soil, chemical odors, or other evidence of the presence of hazardous chemicals or petroleum products.

Soil samples were collected from eight pits. Only native soil was observed in Pits 9 and 10 and no samples were collected. Raven Research selected and submitted eight (8) soil samples to a State certified analytical laboratory for analysis of commonly occurring chemical contaminants including total petroleum hydrocarbons in the gasoline, diesel, and motor oil ranges, LUFT metals, and volatile organic compounds. Copies of the laboratory reports are attached.

The results of analysis are summarized in Tables 1 and 2. The samples contain low levels of diesel and motor oil range petroleum hydrocarbons. The concentrations are well below applicable risk based screening levels (San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels for residential land use of shallow soils where groundwater is not a potential drinking water resource) and are, in Raven Research's experience, typical of soil which contains fragments of asphalt. The metals concentrations are also well below concentrations of concern.

Raven Research also collected samples for geotechnical analysis. Three (3) samples were submitted to a geotechnical laboratory and evaluated as potential fill material by conducting sieve analyses and Atterberg limit tests. Copies of laboratory reports are attached. According to the geotechnical laboratory, RGH consultants Inc. of Santa Rosa, California, the results indicate that the debris laden soil is suitable as general fill but not select fill. Atterbergs are too high for select. This means that it can be used in any general fill areas but typically not within the upper 30 inches of building pads and upper 12 inches of pavement areas.

Assessment of High Pressure Petroleum Pipeline

Raven Research contracted with a Woodward Drilling to drill three (3) borings near the Kinder Morgan high pressure petroleum pipeline. The boring locations are shown on the attached plate. An earlier assessment conducted in 2005 consisting of four soil borings and analysis of soil samples found no evidence of a release. Raven Research drilled three (3) additional borings spaced between the previous borings. We collected one soil sample from each boring and a groundwater sample from B2 (Water was not encountered in B1 or B3). The samples were analyzed for diesel range hydrocarbons. Copies of the laboratory reports are attached. Petroleum hydrocarbons were not detected in any of the samples.

Conclusion

Raven Research conducted a Phase II assessment of the subject site to evaluate environmental concerns related to imported fill and a high pressure petroleum pipeline. The assessment consisted of the collection and analysis of soil and groundwater samples for commonly occurring chemical contaminants including total petroleum hydrocarbons in the gasoline, diesel, and motor oil ranges, LUFT metals, and volatile organic compounds. Raven Research's assessment did not reveal evidence of a release of hazardous chemicals or petroleum products. Low levels of diesel and motor oil range petroleum hydrocarbons were detected in samples of imported fill. The

concentrations detected are well below applicable risk based screening levels and are, in Raven Research's experience, typical of soil containing fragments of asphalt.

Limitations

This report was prepared in general accordance with the accepted standard of practice that existed in Northern California at the time the investigation was performed. It should be recognized that definition and evaluation of environmental conditions is a difficult and inexact art. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the conditions present. More extensive studies, including additional environmental investigation, can reduce the inherent uncertainties associated with such studies. If the City of Suisun City wishes to reduce the uncertainty beyond the level associated with this study, Raven Research should be notified for additional consultation. Our firm has prepared this report for the City's exclusive use for this particular project and in accordance with generally accepted engineering practices within the area at the time of our investigation. No other representations, expressed or implied, and no warranty or guarantee is included or intended.

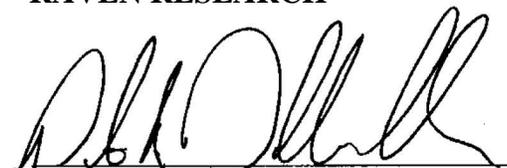
This report may be used only by the City of Suisun City and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on-site and off-site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the City of Suisun City who wishes to use this report shall notify Raven Research of such intended use.

Based on the intended use of the report, Raven Research may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the City of Suisun City or anyone else will release Raven Research from any liability resulting from the use of this report by any unauthorized party.

We appreciate the opportunity to assist the City of Suisun City with this project. If you have any questions, please contact Peter Dellavalle at 707 490-5040

Respectfully submitted,

RAVEN RESEARCH



Peter A. Dellavalle
Project Geologist

TABLE 1
 Summary of Analytical Results – Petroleum Hydrocarbons in Soil
 HOFFMAN PROPERTY
 October 30, 2009

Petroleum Hydrocarbons Concentrations in mg/kg								
Sample ID	TPH-G	TPH-D	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
TP1	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP2	ND<1.0	2.2	17	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP3	ND<1.0	2.3	27	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP4	ND<1.0	2.1	22	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP5	ND<1.0	ND<1.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP6	ND<1.0	3.4	41	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP7	ND<1.0	4.8	20	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
TP8	ND<1.0	2.2	11	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SF Bay ESL*	100	100	370	8.4	0.12	9.3	2.3	11

* San Francisco Bay Environmental Screening Levels, Table B-1 Shallow Soil Screening Levels (<3m bgs) Residential Land Use (groundwater is not a current or potential drinking water source), November 2007

mg/kg: milligrams per kilogram = parts per million
 TPH-G/-D/-MO: Total Petroleum Hydrocarbons quantified as Gasoline/Diesel/Motor Oil
 MTBE: Methyl Tert Butyl Ether

TABLE 2
 Summary of Analytical Results – LUFT5 Metals in Soil
 HOFFMAN PROPERTY
 October 30, 2009

LUFT5 Metals Concentrations in mg/kg					
Sample ID	Cadmium	Chromium	Lead	Nickel	Zinc
TP1	ND<1.5	42	18	40	78
TP2	ND<1.5	31	13	31	54
TP3	ND<1.5	34	34	40	79
TP4	ND<1.5	42	47	44	110
TP5	ND<1.5	37	21	38	74
TP6	ND<1.5	32	27	38	67
TP7	ND<1.5	44	30	44	82
TP8	ND<1.5	39	6.0	33	59
SF Bay ESL*	1.7	-	200	150	600

* San Francisco Bay Environmental Screening Levels, Table B-1 Shallow Soil Screening Levels (<3m bgs) Residential Land Use (groundwater is not a current or potential drinking water source), November 2007

mg/kg: milligrams per kilogram = parts per million



EXPLANATION

- Borings
- TestPits
- Site Boundary
- Construction Debris



1 inch = 300 feet
 0 75 150 300
 Scale in Feet



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

Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Reported: 11/06/09
	Client P.O.:	Date Completed: 11/05/09

WorkOrder: 0910927

November 09, 2009

Dear Peter:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **TP1-TP8**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice 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 or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

0910927



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

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: Peter Dellavalle Bill To: Same
Company: Raven Research, Inc.
5450 Pepperwood Road
Santa Rosa, CA 95409 E-Mail: ravenre@neteze.com; yousef@econca.com
Tele: (707) 490-5040 Fax: (707) 823-8725
Project #: Project Name:
Project Location:
Sampler Signature:

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE
TPH as Diesel/motor oil/jet-fuel(4015) w/ silica gel cleanup

Other Comments

Filter Samples for Metals analysis: Yes / No

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED								
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other					
TP1		10/30/09	0818	1			✓												
TP2			0900	1															
TP3			0920	1															
TP4			1002	1															
TP5			1028	1															
TP6			1050	1															
TP7			1120	1															
TP8			1134	1															

ICE/# 7-2
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB
COMMENTS:
VOAS O&G METALS OTHER
PRESERVATION pH<2

Relinquished By: [Signature] Date: 10/30/09 Time: 13:50 Received By: [Signature]
Relinquished By: [Signature] Date: 10/30/09 Time: 1740 Received By: [Signature]
Relinquished By: [Signature] Date: Time: Received By:

McC Campbell Analytical, Inc.



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0910927

ClientCode: RRSR

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:
 Peter Dellavalle
 Raven Research
 5450 Pepperwood Road
 Santa Rosa, CA 95409
 (707) 490-5040 FAX (707)

Email: ravenre@neteze.com, yousef@econca.c
cc:
PO:
ProjectNo: TP1-TP8

Bill to:
 Peter Dela Valle
 Raven Research
 241 South Main Street
 Sebastopol, CA 95472

Requested TAT: 5 days

Date Received: 10/30/2009
Date Printed: 10/30/2009

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0910927-001	TP1	Soil	10/30/2009 8:18	<input type="checkbox"/>	A	A	A										
0910927-002	TP2	Soil	10/30/2009 9:00	<input type="checkbox"/>	A		A										
0910927-003	TP3	Soil	10/30/2009 9:20	<input type="checkbox"/>	A		A										
0910927-004	TP4	Soil	10/30/2009 10:02	<input type="checkbox"/>	A		A										
0910927-005	TP5	Soil	10/30/2009 10:28	<input type="checkbox"/>	A		A										
0910927-006	TP6	Soil	10/30/2009 10:50	<input type="checkbox"/>	A		A										
0910927-007	TP7	Soil	10/30/2009 11:20	<input type="checkbox"/>	A		A										
0910927-008	TP8	Soil	10/30/2009 11:34	<input type="checkbox"/>	A		A										

Test Legend:

1	G-MBTX_S	2	PREDF REPORT	3	TPH(DMO)WSG_S	4		5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



Sample Receipt Checklist

Client Name: **Raven Research**

Date and Time Received: **10/30/2009 6:08:14 PM**

Project Name: **TP1-TP8**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **0910927** Matrix Soil

Carrier: Benjamin Yslas (MAI Courier)

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: 7.2°C NA
 - Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
 - Sample labels checked for correct preservation? Yes No
 - Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 - Samples Received on Ice? Yes No
- (Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

Client contacted:

Date contacted:

Contacted by:

Comments:



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Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Extracted: 10/30/09
	Client P.O.:	Date Analyzed: 11/03/09-11/04/09

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 0910927

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	TP1	S	ND	ND	ND	ND	ND	ND	1	87	
002A	TP2	S	ND	ND	ND	ND	ND	ND	1	84	
003A	TP3	S	ND	ND	ND	ND	ND	ND	1	86	
004A	TP4	S	ND	ND	ND	ND	ND	ND	1	89	
005A	TP5	S	ND	ND	ND	ND	ND	ND	1	94	
006A	TP6	S	ND	ND	ND	ND	ND	ND	1	82	
007A	TP7	S	ND	ND	ND	ND	ND	ND	1	82	
008A	TP8	S	ND	ND	ND	ND	ND	ND	1	90	

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	0.5	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

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

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:



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Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Extracted: 10/30/09
	Client P.O.:	Date Analyzed: 10/31/09-11/06/09

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3550C/3630C

Analytical methods: SW8015B

Work Order: 0910927

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Motor Oil (C18-C36)	DF	% SS	Comments
0910927-001A	TP1	S	ND	ND	1	99	
0910927-002A	TP2	S	2.2	17	1	99	e7,e2
0910927-003A	TP3	S	2.3	27	1	106	e7
0910927-004A	TP4	S	2.1	22	1	103	e7,e2
0910927-005A	TP5	S	ND	ND	1	100	
0910927-006A	TP6	S	3.4	41	1	105	e7
0910927-007A	TP7	S	4.8	20	1	89	e7,e2
0910927-008A	TP8	S	2.2	11	1	103	e7,e2

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:

e2) diesel range compounds are significant; no recognizable pattern
e7) oil range compounds are significant



QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 46851

WorkOrder 0910927

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 0910927-008A			
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) [£]	ND	0.60	101	107	6.03	102	104	1.44	70 - 130	20	70 - 130	20
MTBE	ND	0.10	90.5	95.2	5.02	90.3	92.1	2.05	70 - 130	20	70 - 130	20
Benzene	ND	0.10	101	97.3	4.14	93.6	95.9	2.34	70 - 130	20	70 - 130	20
Toluene	ND	0.10	100	96.8	3.52	95.7	96.6	0.962	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	101	97.5	3.69	96.8	97.9	1.08	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	103	99.8	2.89	99.3	100	0.952	70 - 130	20	70 - 130	20
%SS:	90	0.10	96	91	4.87	92	92	0	70 - 130	20	70 - 130	20

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

BATCH 46851 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910927-001A	10/30/09 8:18 AM	10/30/09	11/03/09 6:08 AM	0910927-002A	10/30/09 9:00 AM	10/30/09	11/03/09 6:40 AM
0910927-003A	10/30/09 9:20 AM	10/30/09	11/03/09 5:05 AM	0910927-004A	10/30/09 10:02 AM	10/30/09	11/03/09 7:12 AM
0910927-005A	10/30/09 10:28 AM	10/30/09	11/03/09 6:05 AM	0910927-006A	10/30/09 10:50 AM	10/30/09	11/03/09 7:44 AM
0910927-007A	10/30/09 11:20 AM	10/30/09	11/04/09 2:20 PM	0910927-008A	10/30/09 11:34 AM	10/30/09	11/03/09 5:36 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 enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or 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 6010C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 0910927

EPA Method SW6010B		Extraction SW3050B				BatchID: 46794			Spiked Sample ID: 0910927-001A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	Spiked	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	mg/Kg	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Cadmium	ND	50	91.2	89.4	1.99	10	89.8	90	0.278	75 - 125	20	75 - 125	20
Chromium	42	50	106	101	2.64	10	85.6	87.2	1.85	75 - 125	20	75 - 125	20
Lead	18	50	111	101	6.67	10	101	112	10.8	75 - 125	20	75 - 125	20
Nickel	40	50	96.2	92.9	1.88	10	85.8	86.4	0.610	75 - 125	20	75 - 125	20
Zinc	78	500	103	92.5	9.60	100	92.8	96.8	4.27	75 - 125	20	75 - 125	20
%SS:	94	250	90	94	4.05	250	101	101	0	70 - 130	20	70 - 130	20

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

BATCH 46794 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910927-001A	10/30/09 8:18 AM	11/02/09	11/03/09 8:47 PM	0910927-002A	10/30/09 9:00 AM	11/02/09	11/03/09 9:06 PM
0910927-003A	10/30/09 9:20 AM	11/02/09	11/03/09 9:12 PM	0910927-004A	10/30/09 10:02 AM	11/02/09	11/03/09 9:19 PM
0910927-005A	10/30/09 10:28 AM	11/02/09	11/03/09 9:25 PM	0910927-006A	10/30/09 10:50 AM	11/02/09	11/03/09 9:45 PM
0910927-007A	10/30/09 11:20 AM	11/02/09	11/03/09 9:51 PM	0910927-008A	10/30/09 11:34 AM	11/02/09	11/03/09 9:58 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 applicable to this method.

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 SW8015B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 46812

WorkOrder 0910927

EPA Method SW8015B		Extraction SW3550C/3630C							Spiked Sample ID: 0910836-009A			
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-Diesel (C10-C23)	220	20	NR	NR	NR	79.5	79.2	0.421	70 - 130	30	70 - 130	30
%SS:	80	50	81	103	23.7	74	72	1.98	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 46812 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910927-001A	10/30/09 8:18 AM	10/30/09	10/31/09 10:34 PM	0910927-002A	10/30/09 9:00 AM	10/30/09	10/31/09 11:43 PM
0910927-003A	10/30/09 9:20 AM	10/30/09	11/03/09 8:14 AM	0910927-004A	10/30/09 10:02 AM	10/30/09	11/06/09 6:03 PM
0910927-005A	10/30/09 10:28 AM	10/30/09	11/01/09 7:45 AM	0910927-006A	10/30/09 10:50 AM	10/30/09	11/03/09 7:05 AM
0910927-007A	10/30/09 11:20 AM	10/30/09	11/05/09 5:42 AM	0910927-008A	10/30/09 11:34 AM	10/30/09	11/05/09 9:09 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.



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

Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Reported: 11/06/09
	Client P.O.:	Date Completed: 11/05/09

WorkOrder: 0910927

November 06, 2009

Dear Peter:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **TP1-TP8**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice 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 or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

McC Campbell Analytical, Inc.



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 091092 **A** ClientCode: RRSR

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:
Peter Dellavalle
Raven Research
5450 Pepperwood Road
Santa Rosa, CA 95409
(707) 490-5040 FAX (707)

Email: ravenre@neteze.com, yousef@econca.c
cc:
PO:
ProjectNo: TP1-TP8

Bill to:
Peter Dela Valle
Raven Research
241 South Main Street
Sebastopol, CA 95472

Requested TAT: **5 days**
Date Received: **10/30/2009**
Date Add-On: **11/02/2009**
Date Printed: **11/02/2009**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0910927-001	TP1	Soil	10/30/2009 8:18	<input type="checkbox"/>		A											
0910927-002	TP2	Soil	10/30/2009 9:00	<input type="checkbox"/>		A											
0910927-003	TP3	Soil	10/30/2009 9:20	<input type="checkbox"/>	A	A											
0910927-004	TP4	Soil	10/30/2009 10:02	<input type="checkbox"/>	A	A											
0910927-005	TP5	Soil	10/30/2009 10:28	<input type="checkbox"/>		A											
0910927-006	TP6	Soil	10/30/2009 10:50	<input type="checkbox"/>		A											
0910927-007	TP7	Soil	10/30/2009 11:20	<input type="checkbox"/>	A	A											
0910927-008	TP8	Soil	10/30/2009 11:34	<input type="checkbox"/>		A											

Test Legend:

1	8260B_S	2	LUFT_S	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments: All Samples added Luft metals, & 003,004,&007 added VOCs per P.D STD TAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



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Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Extracted: 11/02/09
	Client P.O.:	Date Analyzed 11/04/09

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0910927

Lab ID	0910927-003A
Client ID	TP3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	100	%SS2:	110
%SS3:	101		

Comments:

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

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

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



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Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Extracted: 11/02/09
	Client P.O.:	Date Analyzed 11/03/09

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0910927

Lab ID	0910927-004A
Client ID	TP4
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	90	%SS2:	115
%SS3:	101		

Comments:

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

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

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



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

Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Extracted: 11/02/09
	Client P.O.:	Date Analyzed 11/04/09

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0910927

Lab ID	0910927-007A
Client ID	TP7
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	99	%SS2:	109
%SS3:	100		

Comments:

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

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

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



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

Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: TP1-TP8	Date Sampled: 10/30/09
		Date Received: 10/30/09
	Client Contact: Peter Dellavalle	Date Extracted: 11/02/09
	Client P.O.:	Date Analyzed: 11/03/09

LUFT 5 Metals*

Extraction method: SW3050B

Analytical methods: SW6010B

Work Order: 0910927

Lab ID	Client ID	Matrix	Extraction Type	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS	Comments
001A	TP1	S	TOTAL	ND	42	18	40	78	1	94	
002A	TP2	S	TOTAL	ND	31	13	31	54	1	105	
003A	TP3	S	TOTAL	ND	34	34	40	79	1	92	
004A	TP4	S	TOTAL	ND	42	47	44	110	1	96	
005A	TP5	S	TOTAL	ND	37	21	38	74	1	97	
006A	TP6	S	TOTAL	ND	32	27	38	67	1	92	
007A	TP7	S	TOTAL	ND	44	30	44	82	1	97	
008A	TP8	S	TOTAL	ND	39	6.0	33	59	1	94	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TOTAL	NA	NA	NA	NA	NA	NA	NA
	S	TOTAL	1.5	1.5	5.0	1.5	5.0	mg/Kg	

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

means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = acid digestion.
WET = Waste Extraction Test (STLC).
DI WET = Waste Extraction Test using de-ionized water.



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 46789

WorkOrder 0910927

Analyte	Extraction SW5030B		Spiked Sample ID: 0910837-001a						Acceptance Criteria (%)			
	Sample mg/Kg	Spiked mg/Kg	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	LCSD % Rec.	LCS-LCSD % RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	70	70	0	72.5	71.6	1.18	60 - 130	30	60 - 130	30
Benzene	ND	0.050	90.7	91.8	1.26	93.6	91.9	1.80	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	85.2	79.5	6.89	81	81.6	0.740	60 - 130	30	60 - 130	30
Chlorobenzene	ND	0.050	98.3	98.6	0.366	102	102	0	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	103	101	1.82	107	105	2.55	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	81.3	82.4	1.27	85.1	83.9	1.47	60 - 130	30	60 - 130	30
1,1-Dichloroethene	ND	0.050	112	111	0.870	114	112	1.44	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	81.5	82.8	1.54	84.2	83	1.44	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	77.8	78.3	0.613	80.3	79.2	1.45	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	84.8	84	0.905	88.6	87	1.84	60 - 130	30	60 - 130	30
Toluene	ND	0.050	110	112	1.88	116	115	0.558	60 - 130	30	60 - 130	30
Trichloroethene	ND	0.050	119	118	0.857	121	120	0.298	60 - 130	30	60 - 130	30
%SS1:	100	0.13	95	94	0.546	93	93	0	70 - 130	30	70 - 130	30
%SS2:	104	0.13	116	117	0.856	117	117	0	70 - 130	30	70 - 130	30
%SS3:	98	0.013	124	124	0	123	125	1.52	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 46789 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910927-003A	10/30/09 9:20 AM	11/02/09	11/04/09 1:17 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.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 46876

WorkOrder 0910927

Analyte	Extraction SW5030B			Spiked Sample ID: 0910927-004A								
	Sample mg/Kg	Spiked mg/Kg	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	LCSD % Rec.	LCS-LCSD % RPD	Acceptance Criteria (%)			
tert-Amyl methyl ether (TAME)	ND	0.050	77.2	77.6	0.588	78.6	76.3	2.98	60 - 130	30	60 - 130	30
Benzene	ND	0.050	105	105	0	104	101	2.74	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	80.8	79.6	1.53	96.2	85.5	11.8	60 - 130	30	60 - 130	30
Chlorobenzene	ND	0.050	107	105	2.44	108	105	2.26	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	107	105	2.08	110	104	5.65	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	93.6	91.6	2.12	92.3	87.2	5.66	60 - 130	30	60 - 130	30
1,1-Dichloroethene	ND	0.050	117	115	2.00	119	114	4.06	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	95.9	96.3	0.434	94.6	92.9	1.75	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	88.6	87.6	1.17	88.7	86.4	2.58	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	93.3	92.6	0.689	96.8	93.2	3.85	60 - 130	30	60 - 130	30
Toluene	ND	0.050	122	120	1.42	124	121	2.25	60 - 130	30	60 - 130	30
Trichloroethene	ND	0.050	124	123	1.16	127	121	4.61	60 - 130	30	60 - 130	30
%SS1:	90	0.13	92	92	0	92	92	0	70 - 130	30	70 - 130	30
%SS2:	115	0.13	119	117	2.19	116	119	2.12	70 - 130	30	70 - 130	30
%SS3:	101	0.013	117	118	0.582	120	119	0.787	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 46876 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910927-004A	10/30/09 10:02 AM	11/02/09	11/03/09 10:34 AM	0910927-007A	10/30/09 11:20 AM	11/02/09	11/04/09 1:55 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.

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.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



QC SUMMARY REPORT FOR 6010C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 0910927

EPA Method SW6010B		Extraction SW3050B				BatchID: 46794			Spiked Sample ID: 0910927-001A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	Spiked	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	mg/Kg	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Cadmium	ND	50	91.2	89.4	1.99	10	89.8	90	0.278	75 - 125	20	75 - 125	20
Chromium	42	50	106	101	2.64	10	85.6	87.2	1.85	75 - 125	20	75 - 125	20
Lead	18	50	111	101	6.67	10	101	112	10.8	75 - 125	20	75 - 125	20
Nickel	40	50	96.2	92.9	1.88	10	85.8	86.4	0.610	75 - 125	20	75 - 125	20
Zinc	78	500	103	92.5	9.60	100	92.8	96.8	4.27	75 - 125	20	75 - 125	20
%SS:	94	250	90	94	4.05	250	101	101	0	70 - 130	20	70 - 130	20

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

BATCH 46794 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910927-001A	10/30/09 8:18 AM	11/02/09	11/03/09 8:47 PM	0910927-002A	10/30/09 9:00 AM	11/02/09	11/03/09 9:06 PM
0910927-003A	10/30/09 9:20 AM	11/02/09	11/03/09 9:12 PM	0910927-004A	10/30/09 10:02 AM	11/02/09	11/03/09 9:19 PM
0910927-005A	10/30/09 10:28 AM	11/02/09	11/03/09 9:25 PM	0910927-006A	10/30/09 10:50 AM	11/02/09	11/03/09 9:45 PM
0910927-007A	10/30/09 11:20 AM	11/02/09	11/03/09 9:51 PM	0910927-008A	10/30/09 11:34 AM	11/02/09	11/03/09 9:58 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 applicable to this method.

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

Raven Research 5450 Pepperwood Road Santa Rosa, CA 95409	Client Project ID: Former Corp Yard; Suisun City, CA	Date Sampled: 10/30/09
	Client Contact: Peter Dellavalle	Date Received: 10/30/09
	Client P.O.:	Date Reported: 11/04/09
		Date Completed: 11/04/09

WorkOrder: 0910940

November 04, 2009

Dear Peter:

Enclosed within are:

- 1) The results of the **5** analyzed samples from your project: **Former Corp Yard; Suisun City, CA,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice 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 or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

0910940



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

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: Peter Dellavalle Bill To: Same
 Company: Raven Research, Inc.
 5450 Pepperwood Road
 Santa Rosa, CA 95409 E-Mail: ravenre@neteze.com; yousef@econca.com
 Tele: (707) 490-5040 Fax: (707) 823-8725
 Project #: Project Name: Franchise Corp Yard
 Project Location: Suisun City, CA
 Sampler Signature: [Signature]

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE
 TPH as Diesel/nonhydrocarbons (8015) w/ silica gel cleanup

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other		
B1-5		10-30-09		1		x					x					
B1-10				1		x					x					
B1-12				1		x					x			X	x	
B1-15				1		x					x					#
B1-20				1		x					x					10-1
B2-6				1		x					x					
B2-11				1		x					x			X	x	
B2-15				1		x					x					
B2-20				1		x					x					10-1
B3-6				1		x					x					
B3-10				1		x					x			X	x	
B3-15				1		x					x					
B1W		10-30-09		4		x	x				x	x		X	x	
B2W				2		x	x				x	x		X	x	

Relinquished By: [Signature] Date: 10-30-09 Time: 12:00 Received By: [Signature]
 Relinquished By: [Signature] Date: 10/30 Time: 17:50 Received By: [Signature]
 Relinquished By: _____ Date: _____ Time: _____ Received By: _____

ICE/TPH 504
 GOOD CONDITION
 HEAD SPACE ABSENT
 DECHLORINATED IN LAB
 APPROPRIATE CONTAINERS
 PRESERVED IN LAB
 COMMENTS: Gas cancelled per yousef 11/01/09.
 VOAS O&G METALS OTHER
 PRESERVATION pH<2

120
+10

McC Campbell Analytical, Inc.



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0910940

ClientCode: RRSR

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:

Peter Dellavalle
 Raven Research
 5450 Pepperwood Road
 Santa Rosa, CA 95409
 (707) 490-5040 FAX (707)

Email: ravenre@neteze.com, yousef@econca.c
 cc:
 PO:
 ProjectNo: Former Corp Yard; Suisun City, CA

Bill to:

Peter Dela Valle
 Raven Research
 241 South Main Street
 Sebastopol, CA 95472

Requested TAT: 5 days

Date Received: 10/30/2009

Date Printed: 11/02/2009

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0910940-003	B1-12	Soil	10/30/2009	<input type="checkbox"/>	A		A	A								
0910940-007	B2-11	Soil	10/30/2009	<input type="checkbox"/>	A			A								
0910940-011	B3-10	Soil	10/30/2009	<input type="checkbox"/>	A			A								
0910940-013	B1W	Water	10/30/2009	<input type="checkbox"/>		A			B							
0910940-014	B2W	Water	10/30/2009	<input type="checkbox"/>		A										

Test Legend:

1	G-MBTEX_S	2	G-MBTEX_W	3	PREFD REPORT	4	TPH(D)WSG_S	5	TPH(D)WSG_W
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments: Gas for all samples have been cancelled per Yousef 11/02/09

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
 Hazardous samples will be returned to client or disposed of at client expense.



Sample Receipt Checklist

Client Name: **Raven Research** Date and Time Received: **10/30/2009 8:12:15 PM**
Project Name: **Former Corp Yard; Suisun City, CA** Checklist completed and reviewed by: **Ana Venegas**
WorkOrder N°: **0910940** Matrix Soil/Water Carrier: Benjamin Yslas (MAI Courier)

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: 5.4°C NA
Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
Sample labels checked for correct preservation? Yes No
Metal - pH acceptable upon receipt (pH<2)? Yes No NA
Samples Received on Ice? Yes No
(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

Client contacted: Date contacted: Contacted by:

Comments:



QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 46797

WorkOrder 0910940

Analyte	EPA Method SW8015B			Extraction SW3510C/3630C					Spiked Sample ID: N/A			
	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-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	80.7	80.2	0.545	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	72	72	0	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 46797 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910940-013B	10/30/09	10/30/09	10/31/09 12:10 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 SW8015B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 46812

WorkOrder 0910940

EPA Method SW8015B		Extraction SW3550C/3630C							Spiked Sample ID: 0910836-009A			
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-Diesel (C10-C23)	220	20	NR	NR	NR	79.5	79.2	0.421	70 - 130	30	70 - 130	30
%SS:	80	50	81	103	23.7	74	72	1.98	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 46812 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0910940-003A	10/30/09	10/30/09	11/01/09 12:24 PM	0910940-007A	10/30/09	10/30/09	11/01/09 1:35 PM
0910940-011A	10/30/09	10/30/09	11/01/09 2:46 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.

LIQUID AND PLASTIC LIMIT TEST DATA

11/9/2009

Client: Raven Research, Inc.

Project: Hoffman Property

Project Number: 9248.1

Location: TP-3

Depth: 0.0'

Material Description: Mottled Brown Clayey Sand W/Gravel (SC)

%<#40: 63.2

%<#200: 44.4

USCS: SC

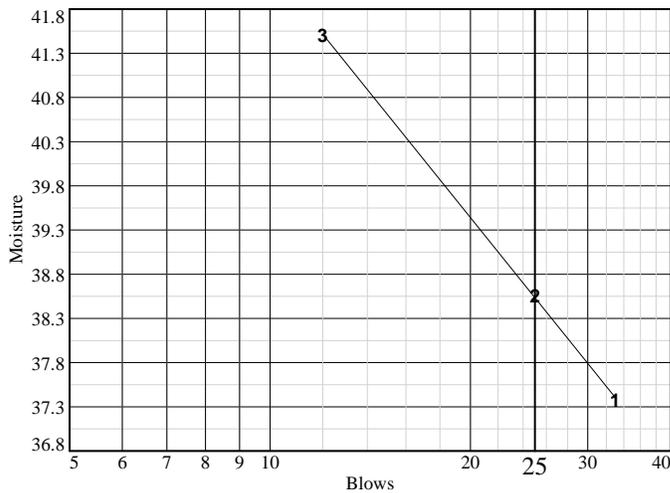
AASHTO: A-6(5)

Tested by: TMc

Checked by: TMc

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	23.93	21.71	21.25			
Dry+Tare	20.39	18.64	18.22			
Tare	10.92	10.68	10.92			
# Blows	33	25	12			
Moisture	37.4	38.6	41.5			



Liquid Limit= 39
Plastic Limit= 19
Plasticity Index= 20

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	6.64	6.16		
Dry+Tare	6.28	5.83		
Tare	4.36	4.09		
Moisture	18.7	19.0		

LIQUID AND PLASTIC LIMIT TEST DATA

11/9/2009

Client: Raven Research, Inc.

Project: Hoffman Property

Project Number: 9248.1

Location: TP-4

Depth: 0.0'

Material Description: Dark Brown Sandy Lean Clay W/Gravel (CL)

%<#40: 65.9

%<#200: 52.1

USCS: CL

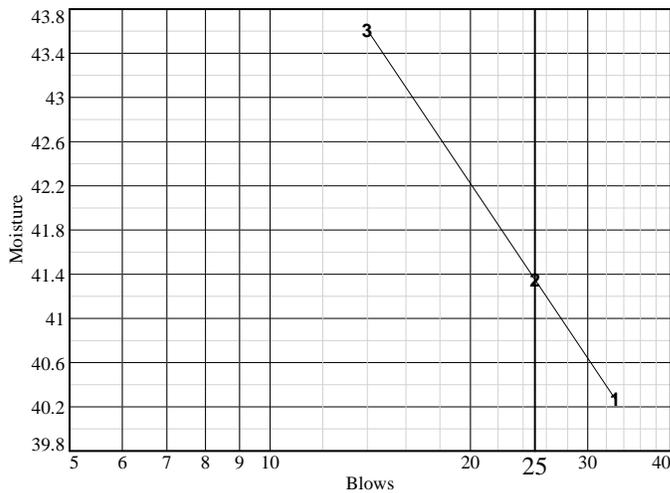
AASHTO: A-7-6(9)

Tested by: TMc

Checked by: TMc

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.55	21.74	27.83			
Dry+Tare	18.57	18.56	22.71			
Tare	11.17	10.87	10.97			
# Blows	33	25	14			
Moisture	40.3	41.4	43.6			



Liquid Limit= 41
Plastic Limit= 17
Plasticity Index= 24

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	6.74	6.36		
Dry+Tare	6.39	6.03		
Tare	4.36	4.09		
Moisture	17.2	17.0		

LIQUID AND PLASTIC LIMIT TEST DATA

11/9/2009

Client: Raven Research, Inc.

Project: Hoffman Property

Project Number: 9248.1

Location: TP-7

Depth: 0.0'

Material Description: Brown Clayey Gravel W/Sand (GC)

%<#40: 56.4

%<#200: 43.0

USCS: GC

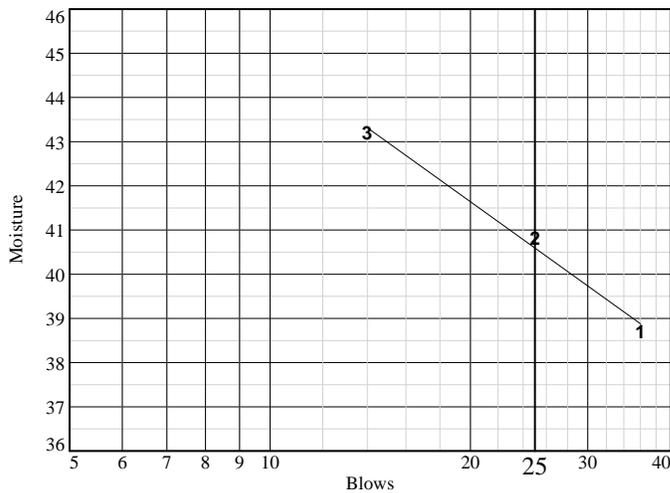
AASHTO: A-7-6(6)

Tested by: TMc

Checked by: TMc

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	21.99	22.44	26.42			
Dry+Tare	18.83	19.14	21.77			
Tare	10.67	11.06	11.01			
# Blows	36	25	14			
Moisture	38.7	40.8	43.2			

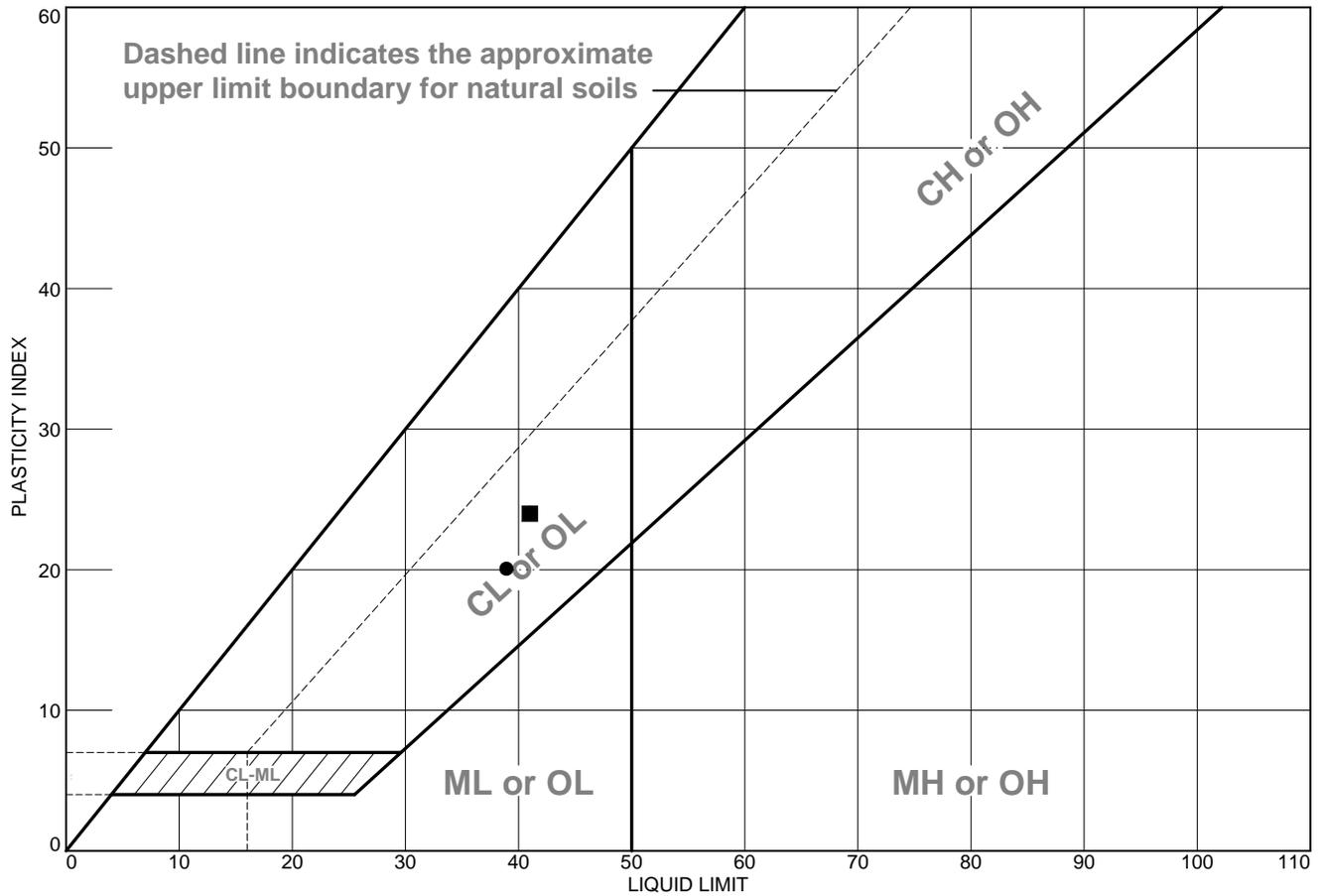


Liquid Limit= 41
Plastic Limit= 17
Plasticity Index= 24

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	7.07	7.20		
Dry+Tare	6.65	6.78		
Tare	4.10	4.31		
Moisture	16.5	17.0		

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Mottled Brown Clayey Sand W/Gravel (SC)	39	19	20	63.2	44.4	SC
■	Dark Brown Sandy Lean Clay W/Gravel (CL)	41	17	24	65.9	52.1	CL
▲	Brown Clayey Gravel W/Sand (GC)	41	17	24	56.4	43.0	GC

Project No. 9248.1 **Client:** Raven Research, Inc.
Project: Hoffman Property
● Source of Sample: TP-3 **Depth:** 0.0'
■ Source of Sample: TP-4 **Depth:** 0.0'
▲ Source of Sample: TP-7 **Depth:** 0.0'

Remarks:

R G H CONSULTANTS, INC.

Plate

Tested By: TMc **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2009

Client: Raven Research, Inc.

Project: Hoffman Property

Project Number: 9248.1

Location: TP-3

Depth: 0.0'

Material Description: Mottled Brown Clayey Sand W/Gravel (SC)

USCS: SC

Tested by: TMc

Checked by: TMc

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
883.00	0.00	0.00	3"		
			1-1/2"	0.00	100.0
			1"	54.80	93.8
			3/4"	81.80	90.7
			1/2"	155.70	82.4
			3/8"	190.70	78.4
			#4	232.50	73.7
			#8	263.50	70.2
			#16	285.70	67.6
			#30	307.20	65.2
			#50	352.10	60.1
			#100	425.30	51.8
			#200	491.10	44.4

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	9.3	17.0	26.3	4.2	6.3	18.8	29.3			44.4

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
				0.1280	0.2964	10.9374	14.4002	18.2161	28.0177

Fineness Modulus
2.42

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2009

Client: Raven Research, Inc.

Project: Hoffman Property

Project Number: 9248.1

Location: TP-4

Depth: 0.0'

Material Description: Dark Brown Sandy Lean Clay W/Gravel (CL)

USCS: CL

Tested by: TMc

Checked by: TMc

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
969.00	0.00	0.00	3"		
			1-1/2"		
			1"	0.00	100.0
			3/4"	51.20	94.7
			1/2"	92.70	90.4
			3/8"	128.60	86.7
			#4	189.60	80.4
			#8	243.20	74.9
			#16	280.30	71.1
			#30	309.20	68.1
			#50	356.30	63.2
			#100	410.00	57.7
			#200	463.80	52.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	5.3	14.3	19.6	6.6	7.9	13.8	28.3			52.1

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
					0.2000	4.4964	8.1826	12.2367	19.4188

Fineness Modulus
2.03

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2009

Client: Raven Research, Inc.

Project: Hoffman Property

Project Number: 9248.1

Location: TP-7

Depth: 0.0'

Material Description: Brown Clayey Gravel W/Sand (GC)

USCS: GC

Tested by: TMc

Checked by: TMc

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
1521.90	0.00	0.00	3"		
			1-1/2"	0.00	100.0
			1"	69.90	95.4
			3/4"	134.00	91.2
			1/2"	338.90	77.7
			3/8"	405.20	73.4
			#4	498.70	67.2
			#8	563.10	63.0
			#16	606.40	60.2
			#30	637.70	58.1
			#50	700.90	53.9
			#100	794.30	47.8
			#200	867.10	43.0

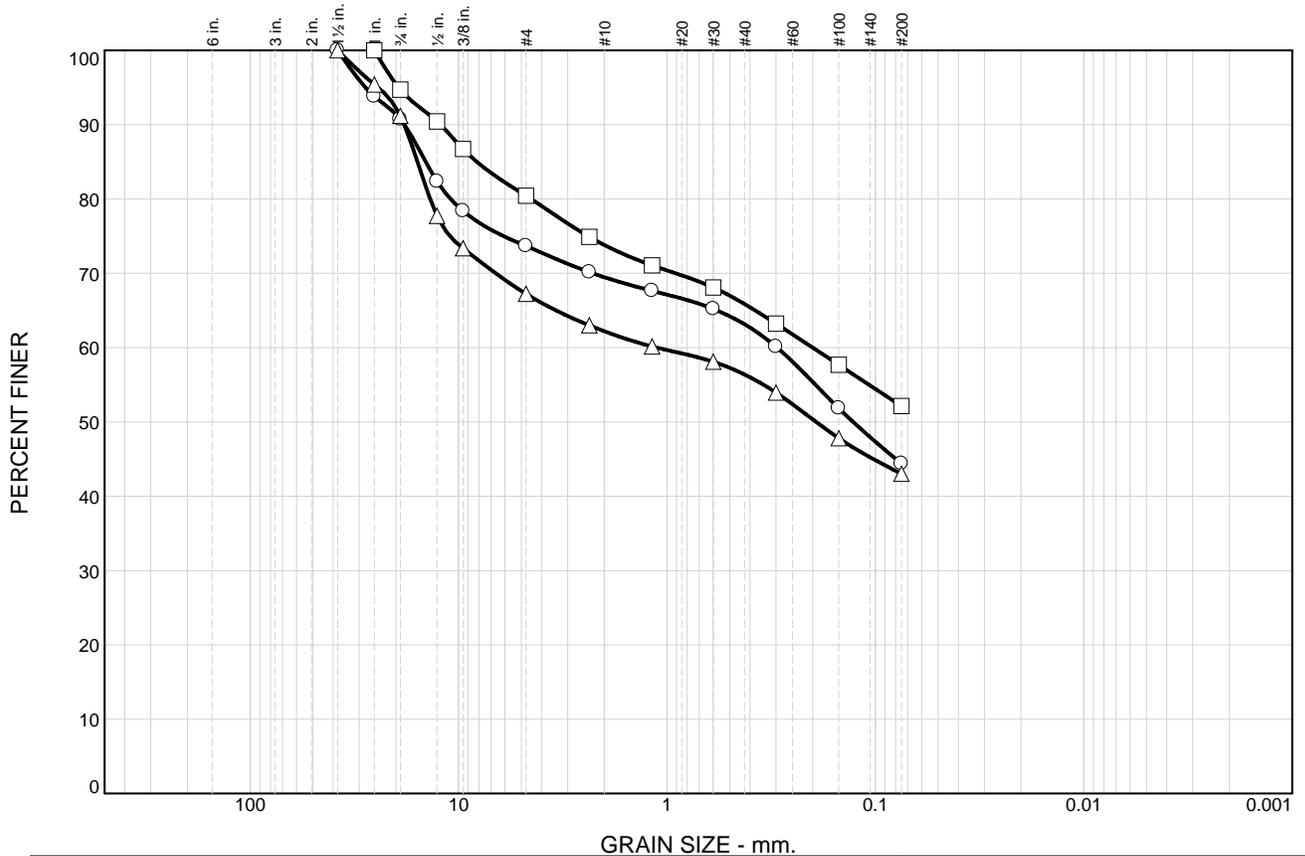
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	8.8	24.0	32.8	5.0	5.8	13.4	24.2			43.0

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
				0.1925	1.1214	13.7107	15.7666	18.2406	24.3836

Fineness Modulus
2.85

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	9.3	17.0	4.2	6.3	18.8	44.4	
□	0.0	5.3	14.3	6.6	7.9	13.8	52.1	
△	0.0	8.8	24.0	5.0	5.8	13.4	43.0	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-3		0.0'	Mottled Brown Clayey Sand W/Gravel (SC)	SC
□	TP-4		0.0'	Dark Brown Sandy Lean Clay W/Gravel (CL)	CL
△	TP-7		0.0'	Brown Clayey Gravel W/Sand (GC)	GC

	<p>Client: Raven Research, Inc.</p> <p>Project: Hoffman Property</p> <p>Project No.: 9248.1</p>
Plate	

Tested By: TMc Checked By: TMc

**PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
PROPOSED MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA**

**SUBMITTED
TO
SIGNATURE PROPERTIES
PLEASANTON, CALIFORNIA**

**PREPARED
BY
ENGEO INCORPORATED
PROJECT NO. 6714.1.002.01**

JULY 15, 2005

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OF ENGEO INCORPORATED**

Project No.
6714.1.002.01

July 15, 2005

Mr. Doug Park
Signature Properties
4670 Willow Road, Suite 200
Pleasanton, CA 94588

Subject: Proposed Mixed-Use Development Site
Assessor's Parcel Numbers (APN) 0032-230-290, 0032-230-370, 0032-230-140 and
0032-230-310
Suisun City, California

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

Reference: ENGEO Inc.; Phase One Environmental Site Assessment, Proposed Mixed-Use
Development Site, Suisun City, California; April 29, 2005; Project No. 6714.1.001.01.

Dear Mr. Park:

ENGEO Incorporated is pleased to present this report for a Phase Two Environmental Site Assessment (ESA) for the proposed mixed-use development site (Site) in Suisun City, California. The Site is located at the northwestern corner of Highway 12 and Marina Boulevard in Suisun City, California and is comprised of four parcels totaling approximately 30 acres (Figure 1). The Site is mainly vacant except for a former city corporation yard located just off Highway 12.

A review of the Suisun City Downtown Master Plan prepared by ROMA Design Group indicates the development site will have four primary components: Commercial center, special use, service commercial and residential neighborhood.

The recently completed Phase One Environmental Site Assessment identified several potential environmental conditions that require subsurface sampling and laboratory testing in order to provide a better evaluation of reported historical releases at the site. The potential environmental conditions are summarized as follows:

City of Suisun Corporation Yard

1. On March 17, 1987, a complaint was filed against the City of Suisun for spraying unknown chemicals in the Suisun marsh-water areas as well as for improper hazardous material storage and waste handling procedures. The inspection of the site by the Solano County Environmental Health Services Division noted the following violations of the California Health and Safety Code in a letter dated March 25, 1987.

“Inspection noted obvious soil contamination from apparent lax and/or negligent handling of hazardous materials and wastes. Fifty-five gallon drums containing solvents, flammable liquids, motor oils, kerosene, thinner and waste oils are being used and stored in a manner which allows materials to discharge and run onto the ground and into the water drainage coarse adjacent to the property.”

The City of Suisun was ordered to cease any activity that would allow further impact of the soil and groundwater. They were required to collect soil and groundwater samples to be tested for total petroleum hydrocarbons (TPH), PCBs, metals, extractable organics, pH and pesticides in order to identify the extent of contamination both on and off site. Laboratory testing of the samples collected on March 27, 1987, confirmed the presence of Bis (2-ethylexyl) phthalate (a potential ingredient in pesticides) as well as trace metals including silver, barium, cobalt, copper, chromium, nickel, antimony, thallium, vanadium and zinc. Due to inadequate sample collection, the required laboratory testing for chlorinated pesticides, PCBs, total oil/grease and extractable organics was not performed as required.

Additional samples were collected by the Solano County Department of Environmental Management near the northwest corner of the City Corporation Yard on July 31, 1987, and tested for oil/grease as well as total petroleum hydrocarbons (TPH). Laboratory results indicated that the two samples contained approximately 49,500 parts per million and 64,800 parts per million oil/grease as well as 92,000 parts per million and 47,000 parts per million TPH.

2. In 1989, a leaking underground diesel tank of unknown capacity was removed from the northwest corner of the site. A site characterization report by Terratech Incorporated (January 1989) indicated that both soil and groundwater had been impacted by the leaking tank. Verification samples beneath the tank (approximately 8 feet below ground surface) indicated elevated concentrations of diesel remained in the soil.

The soil removed from the tank excavation was stockpiled and aerated until the concentrations of total petroleum hydrocarbons as diesel were below 1,000 parts per million and were no longer considered hazardous waste. The stockpiled material was to be disposed of at an appropriate facility.

3. In 1990, an application for a permit to permanently close and remove two leaking 1,000-gallon underground gasoline tanks was submitted to the Department of Environmental Management. The tanks were subsequently removed once the stockpile from the diesel tank excavation was properly disposed of off site (May 1990). A site characterization report by Terratech Incorporated (January 1989) indicated that both soil and groundwater had been impacted by the leaking tanks. Three monitoring wells were subsequently installed to evaluate impact to groundwater as well as to define the vertical and horizontal extent of the contamination. Monitoring wells were monitored quarterly until 1997.

4. A “Workplan for Soil Characterization and Remediation” was submitted by Certified Environmental Consulting, Incorporated (CEC) in May 1994 and approved in June 1994. The workplan was to address the following problem areas:
- The vehicle storage area – numerous indications of petroleum product spillage on the concrete slab were noted. Soil samples were to be collected beneath the concrete pad and analyzed for total petroleum hydrocarbons as gasoline and diesel, oil/grease as well as halogenated volatile organics.
 - The pesticide/herbicide locker and historic liquid storage area – this area was not adequately characterized in March 1987. Soil samples were to be collected and analyzed for pesticides, PCBs, chlorinated herbicides, total petroleum hydrocarbons as gasoline and diesel, oil/grease, benzene, toluene, ethylbenzene, xylenes and CAM 17 metals. The limit of the surface spill area noted in 1987 extends to the west onto the adjacent property. Further testing was recommended of the area once the existing buildings had been demolished and the concrete pads were removed.
 - The above-ground diesel tank and solvent storage area – numerous indications of petroleum product spillage on the concrete slab were noted. Soil samples were to be collected and analyzed for total petroleum hydrocarbons as gasoline and diesel, oil and grease, benzene, toluene, ethylbenzene, xylenes and volatile organic compounds.
 - The abandoned vehicle storage area – numerous indications of petroleum product spillage on the concrete slab were noted. Soil samples were to be collected and analyzed for total petroleum hydrocarbons as gasoline and diesel, oil and grease, benzene, toluene, ethylbenzene and xylenes.
 - Area containing open 5-gallon paint drums – numerous indications of spillage was noted. Soil samples were to be collected and analyzed for volatile organics and CAM 17 metals.
 - The 55-gallon drum storage area – numerous indications of spillage were noted. Soil samples were to be collected and analyzed for volatile organics, semi-volatile organics, oil/grease, PCBs and CAM 17 metals.
 - In the vicinity of the former underground gasoline and diesel tanks – including the area beneath the concrete slab of the vehicle storage area at the southern portion of the site (close proximity to gasoline tanks) as well as within the northwestern corner of the site (location of former diesel tank). Soil samples were to be collected and analyzed for total petroleum hydrocarbons as gasoline and diesel, benzene, toluene, ethylbenzene and xylenes volatile organics. In addition, the vertical and horizontal extent of contamination associated with the leaking underground storage tanks was to be defined.

Solano County records did not indicate if the CEC work plan to identify the extent of contamination on the City Corporation Property and on the adjacent parcels was completed, nor were records found documenting any subsequent sampling and/or soil excavation as required by the Department of Environmental Management.

Kinder Morgan Petroleum Pipeline

Kinder Morgan owns and operates two petroleum pipelines which cross the property from east to west near the railroad corridor. The southern pipeline was recently installed and would not be considered an environmental concern; however the northern pipeline, near the railroad corridor has been in operation for many years and may have impacted soil and/or groundwater.

SCOPE OF SERVICES

Based on these findings of the Phase One Site Assessment, the specific scope of work of the Phase Two Assessment included the following:

City of Suisun Corporation Yard

- A groundwater assessment of the former City Corporation Yard including seven Geoprobe borings, 10 to 15 feet in depth, with the recovery of groundwater samples. Laboratory analysis of the samples for Total Petroleum Hydrocarbons as gas, diesel, BTEX and MTBE.
- Soil investigation of the former City Corporation Yard including ten Geoprobe borings, 10 to 15 feet in depth, with the recovery of seven soil samples. A photoionization detector was used in the field to screen the soil samples for volatile organic vapors. The seven soil samples were analyzed for Petroleum Hydrocarbons as gas, diesel and motor oil along with BTEX and MTBE.
- Review of laboratory data according to residential risk guidelines established by CAL-EPA.

Kinder Morgan Pipeline

- A groundwater assessment of the Kinder Morgan petroleum pipelines including four Geoprobe borings, approximately 10 feet in depth, with the recovery of four groundwater samples. The groundwater samples were analyzed for Total Petroleum Hydrocarbons as gas and diesel, BTEX and fuel oxygenates including MTBE.
- Review of laboratory data according to residential risk guidelines established by CAL-EPA.

FIELD ACTIVITIES

Field activities were conducted on May 12 and June 28, 2005. Prior to the start of work, the boring locations were marked and Underground Service Alert (USA) contacted for underground utility

clearance. Sample recovery was accomplished with *Geoprobe* direct-push sampling equipment. Probes were logged in the field by an ENGEO staff geologist. The field logs were then used to develop the report borelogs in Appendix A. The logs depict subsurface conditions within the probes for the date of drilling; however, subsurface conditions may vary with time. Drilling was performed under permit with the Solano County Department of Resource Management. Following the completion of drilling, the *Geoprobe* borings were backfilled with neat cement grout.

Groundwater Assessment of the Former City Corporation Yard

Seven probes were advanced to depths ranging between 16 and 20 feet for the recovery of grab-groundwater samples (Figure 2). Groundwater was encountered at varying depths from 5 to 22 feet below the ground surface. Samples 2-E2, 2-E6, 2-E8 were recovered on May 12, 2005, while samples 3E-1, 3E-2, 3E-3, and 3E-4 were recovered on June 28, 2005. The grab-groundwater samples were recovered using a dedicated polyethylene tube equipped with a check valve. Following recovery, the groundwater samples were decanted into appropriate laboratory glassware, labeled, and preserved in a cooled ice chest for delivery under documented chain of custody.

Soil Investigation of the Former City Corporation Yard

Ten probes were advanced to depths of approximately 12 to 20 feet below ground surface, with the recovery of a total of seven soil samples (Figure 2). Borings 2-E1, 2-E2, 2-E3, 2-E4, 2-E5 and 2-E7 were advanced on May 12, 2005, while Borings 3E-1, 3E-2, 3E-3, 3E-4 were completed on June 28, 2005. A photoionization detector was used in the field to screen the soil samples for volatile organic vapors. The soil samples were recovered in acrylic tubes, which were cut into six-inch lengths at the appropriate sampling interval. The sample tubes were sealed with Teflon sheets, polyethylene end caps and tape. Following recovery, the samples were placed in an ice-cooled chest for delivery under documented chain of custody.

Groundwater Assessment of the Kinder Morgan Petroleum Pipeline

Four probes (2-E9, 2-E10, 2-E11 and 2-E12) were advanced on May 12, 2005, to depths of approximately 16 feet below ground surface in proximity to the older Kinder Morgan Petroleum Pipelines which crosses the property from east to west near the railroad corridor (Figure 3). One grab-groundwater sample was recovered from each location using a dedicated polyethylene tube equipped with a check valve. Following recovery, the groundwater samples were decanted into appropriate laboratory glassware, labeled, and preserved in a cooled ice chest for delivery under documented chain of custody.

LABORATORY TESTING

Groundwater Assessment of the Former City Corporation Yard

The seven groundwater samples collected within the former City Corporation Yard were analyzed for Total Petroleum Hydrocarbons as gas, diesel and motor oil as well as BTEX and Volatile Organic

Compounds (VOCs). The four samples recovered on June 28, 2005, were not analyzed for VOCs, since the May 2005 analyses found no significant VOCs. The laboratory testing found that TPH gasoline, diesel and motor oil as well as BTEX and VOCs were non-detectable for Samples 2-E6, 2-E8, 3E-2, 3E-3, and 3E-4. However, elevated levels of TPH as gasoline, diesel and motor oil as well as BTEX and VOCs were detected in Samples 2-E2 and 3E-1. The reported Benzene concentration of 13,000 micrograms per liter (ug/l) for Sample 2-E2 exceeds the RWQCB's Environmental Screening Levels for the groundwater to indoor air exposure pathway. A summary of laboratory analyses is summarized in Table I below. The laboratory test reports are included in Appendix B.

TABLE I
Summary of Groundwater Sample Results
(Concentrations reported in micrograms per Liter)

Sample Location	Date Sampled	TPHmo	TPHd	TPHg	B	T	E	X	MTBE	VOCs*
		µg/L								
Former UST Area										
GW-2 (2-E2)	5/12/05	5,200	43,000	61,000	1,300	710	4,800	11,000	<100	Napthalene - 260
GW-6 (2-E6)	5/12/05	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	ND
GW-8 (2-E8)	5/12/05	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	ND
GW-3E-1	6/28/05	<250	270	470	<0.5	3.1	28	<0.5	<5.0	NT
GW-3E-2	6/28/05	<250	93	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NT
GW-3E-3	6/28/05	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NT
GW-3E-4	6/28/05	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NT
ESL		---	---	---	530	500000	14000	150000	24000	---
MCL					1	---	---	1750	13	---

Notes:

TPHmo - Total petroleum hydrocarbons as motor oil

TPHd - Total petroleum hydrocarbons as diesel

TPHg - Total petroleum hydrocarbons as gasoline

B - Benzene

T - Toluene

E - Ethylbenzene

X - Total xylenes

MTBE - Methyl tert-butyl ether

VOCs - Volatile organic compounds

* - Results for VOCs other than BTEX and MTBE

ESL - Environmental Screening Levels, SFRWQCB July 2003, Table E-1A,
groundwater is not a current or potential drinking water resource

µg/L - micrograms per liter equal to parts per million

<50 - Not detected above indicated laboratory reporting limit

ND - Not detected above laboratory reporting limits

NT - Not tested

Soil Investigation of the Former City Corporation Yard

Soil samples were screened at the time of drilling for organic vapors using a photoionization detector. No significant organic vapors were noted during drilling. The seven soil samples collected within the former City Corporation Yard (2-E1, 2-E2, 2-E3, 2-E4, 2-E5 and 2-E7) were analyzed for Total Petroleum Hydrocarbons (TPH) as gas, diesel and motor oil as well as BTEX and MTBE. The laboratory testing found that TPH gasoline, BTEX and MTBE were non-detectable in all of the samples analyzed. Trace concentrations of TPH as motor oil (5.9 mg/kg) were reported in Sample 2-E1-1 (5 feet), as well as minor concentrations of TPH as diesel (1.6 mg/kg) and motor oil (5.5 mg/kg) reported in Sample 2-E2-1 (5 feet). A trace concentration of diesel (18 mg/kg) was also reported for sample 3E-1 at a depth of 7½ feet. Laboratory results are well below the applicable RWQCB's Environmental Screening Levels for residential soils. The laboratory test reports are included in Appendix B.

Groundwater Assessment of the Kinder Morgan Petroleum Pipelines

Four groundwater samples (2-E9, 2-E10, 2-E11 and 2-E12) were collected in proximity to the older Kinder Morgan Petroleum Pipelines which were analyzed for Total Petroleum Hydrocarbons as gas and diesel as well as BTEX. The laboratory testing found that TPH gasoline, BTEX and fuel oxygenates, including MTBE, were non-detectable in all of the samples analyzed. The laboratory test reports are included in Appendix B.

SUMMARY AND CONCLUSIONS

Based on a review of the laboratory data, limited groundwater impact exists in the vicinity of the former underground storage tanks. The extent of the groundwater impact appears isolated to the area of Borings 2E-2 and 3E-1. The detected TPH/BTEX concentrations are likely associated with isolated groundwater within the former UST backfill material. Given the lack of groundwater usage for the proposed development and the available data, additional groundwater characterization and monitoring does not appear necessary; however, the reported Benzene concentration of 13,000 micrograms per liter (ug/l) for Sample 2-E2 exceeds the RWQCB's Environmental Screening Levels for the groundwater to indoor air residential exposure pathway. If land use is to be changed from commercial to residential, some remediation or engineering controls such as vapor retarders (liquid boot) will be necessary.

The professional staff at ENGEO Incorporated strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports, and personal communications. ENGEO Incorporated assumes no liability for the validity of the materials relied upon in the preparation of this report.

ENGEO Incorporated has prepared this report for the exclusive use of our client, Signature Properties. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

The reported laboratory analyses are intended only to represent that portion of strata encountered. The reported laboratory analyses are not intended to represent organic or inorganic analyses, which were not reported by the analytical laboratory.

We are pleased to be of continued service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Very truly yours,

ENGEO INCORPORATED

Reviewed by:



Shawn Munger, CHG, REA II



Brian Flaherty, CEG

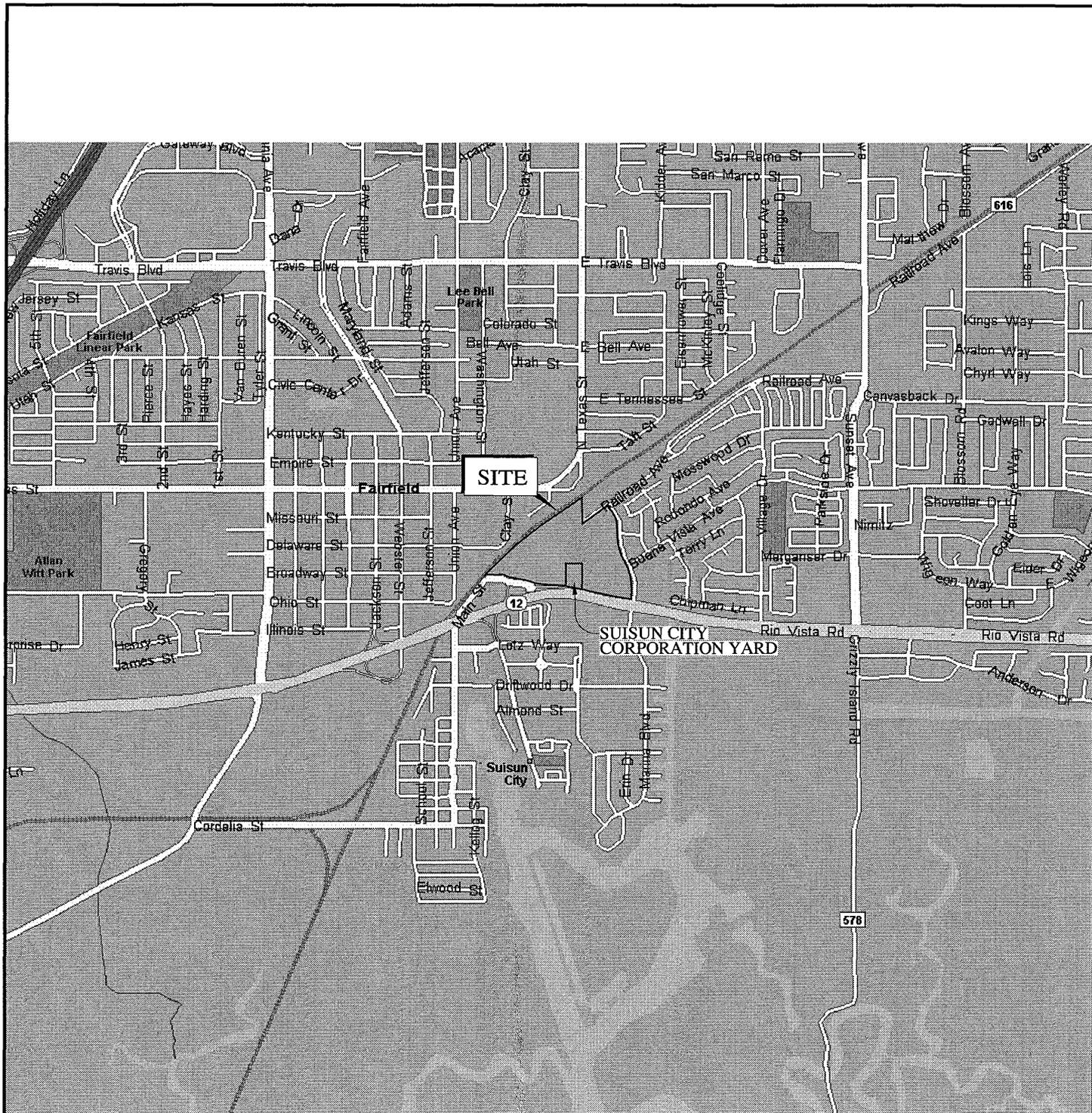
sm/smc:esa

Attachments: Figures
Appendix A – ENGEO Incorporated, Borelogs
Appendix B – McCampbell Analytical, Inc. Laboratory Test Results

LIST OF FIGURES

Figure 1	Site Vicinity Map
Figure 2	City Corporation Yard - Site Plan
Figure 3	Pipeline Study – Site Plan

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BASE MAP SOURCE: MS STREETS AND TRIPS

NO SCALE



SITE VICINITY MAP
MIXED USE DEVELOPMENT VILLAGE
SUISUN CITY, CALIFORNIA

PROJECT NO.: 6714.1.002.01

FIGURE NO.

DATE: JULY 2005

1

DRAWN BY: DLB

CHECKED BY: MT

ORIGINAL FIGURE PRINTED IN COLOR

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EXPLANATION

 APPROXIMATE LOCATION OF
 ENVIROMENTAL SAMPLE
2-E12

BASE MAP SOURCE: PACIFIC AERIAL SURVEYS, 06/29/00



NO SCALE



PIPELINE STUDY SITE PLAN
MIXED USE DEVELOPMENT VILLAGE
SUISUN CITY, CALIFORNIA

PROJECT NO.: 6714.1.002.01
DATE: JULY 2005
DRAWN BY: DLB CHECKED BY: MT

FIGURE NO.

3

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APPENDIX A

ENGEO INCORPORATED

Boring Logs

6714.1.002.01
July 15, 2005

KEY TO BORING LOGS

MAJOR TYPES

DESCRIPTION

COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES		GW - Well graded gravels or gravel-sand mixtures GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES		GM - Silty gravels, gravel-sand and silt mixtures GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES		SW - Well graded sands, or gravelly sand mixtures SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES		SM - Silty sand, sand-silt mixtures SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS			ML - Inorganic silt with low to medium plasticity CL - Inorganic clay with low to medium plasticity OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 %			MH - Inorganic silt with high plasticity CH - Inorganic clay with high plasticity OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS			PT - Peat and other highly organic soils

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE				CLEAR SQUARE SIEVE OPENINGS			
	200	40	10	4	3/4"	3"	12"
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT (S.P.T.)
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH*	BLOWS/FOOT (S.P.T.)
VERY SOFT	0-1/4	0-2
SOFT	1/4-1/2	2-4
MEDIUM STIFF	1/2-1	4-8
STIFF	1-2	8-15
VERY STIFF	2-4	15-30
HARD	OVER 4	OVER 30

MOISTURE CONDITION

DRY	Absence of moisture, dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible free water
SATURATED	Below the water table

MINOR CONSTITUENT QUANTITIES (BY WEIGHT)

TRACE	Particles are present, but estimated to the less than 5%
SOME	5 to 15%
WITH	15 to 30%
.....Y	30 to 50%

SAMPLER SYMBOLS

	Modified California (3" O.D.) sampler
	California (2.5" O.D.) sampler
	S.P.T. - Split spoon sampler
	Shelby Tube
	Continuous Core
	Bag Samples
	Grab Samples
NR	No Recovery

LINE TYPES

—————	Solid - Layer Break
-----	Dashed - Gradational or approximate layer break

GROUND-WATER SYMBOLS

	Groundwater level during drilling
	Stabilized groundwater level

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer



LOG OF BORING 2-E1

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 20 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SILTY GRAVEL, (GM), dark gray, moist, angular to subangular, abundant asphaltics. (FILL).		
						CLAYEY SAND (SC), yellowish brown, very moist, fine to medium grained sand. (FILL)		
1						SILTY CLAY (CL-CH), black, moist.		
5		Δ				SILTY CLAY (CL), yellowish brown, very moist, trace fine grained sand.		
						Wet zone between 5.8 feet and 6.9 feet.		
10	3	Δ						
15						CLAYEY SAND (SC), yellowish brown, very moist, fine grained sand.		
20	6					Bottom of boring at approximately 20 feet at 12:10		
						Groundwater not encountered.		
25								
30	9							

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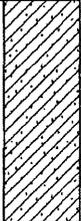
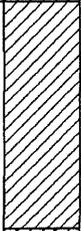


LOG OF BORING 2-E2

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 16 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVN / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SILTY GRAVEL (GM), dark gray, angular to subangular (FILL). CLAYEY GRAVEL (GC), olive gray, very moist, angular to subangular (FILL).		
5	1.5	Δ				CLAYEY SAND (SC), olive gray, moist, fine to medium grained, trace angular to subangular gravels (FILL).		▽
10	3.0	Δ				SILTY CLAY (CL), mottled gray and dark yellowish brown, very moist to wet.		
15	4.5					CLAYEY SAND (SC), dark yellowish brown, very moist to wet, fine grained.		
Bottom of boring at approximately 16 feet at 12:38						Water measured at 5.8 feet at 12:42		

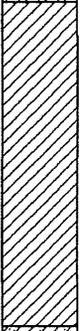


LOG OF BORING 2-E3

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 12 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					CONCRETE, gray, underlain by approximately 3 inches of aggregate (FILL).		
						CLAYEY SAND (SC), yellowish brown, moist, trace subangular gravels (FILL).		
1						SILTY CLAY (CL), dark gray, moist, trace fine to medium grained sand.		
5		Δ1						
2								
10		Δ1						
						CLAYEY SAND (SC), brown, wet, fine grained.		
4						Bottom of boring at approximately 12 feet at 16:01		
						Groundwater not encountered		
15								
5								
20								
6								
25								
7								
30								
8								
9								



LOG OF BORING 2-E4

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 12 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					CONCRETE, gray, underlain by approximately 3 inches of aggregate (FILL).		
						CLAYEY SAND (SC), yellowish brown, moist, medium to coarse grained (FILL).		
1						SILTY CLAY (CL), dark gray, very moist.		
5		<1						
2		<1						
10	3					CLAYEY SAND (SC), brown, wet, fine grained.		▽
						SILTY CLAY (CL), mottled grayish brown and dark yellowish brown, very moist to wet, trace fine grained sand.		
4						Bottom of boring at approximately 12 feet at 16:22		
						Groundwater measured at approximately 8.9 feet at 16:34.		
15								
20	6							
25								
30	9							

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LOG OF BORING 2-E5

PHASE TWO ESA
 MIXED USE DEVELOPMENT
 SUISUN CITY, CALIFORNIA
 6714.1.002.01

DATE DRILLED: MAY 12, 2005
 HOLE DEPTH (FT): 12 ft.
 HOLE DIAMETER: 3.0 in.
 SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
 DRILLING CONTRACTOR: GREGG DRILLING
 DRILLING METHOD: GEOPROBE
 HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					CONCRETE, underlain by 6 inches of aggregate (FILL).		
						CLAYEY SAND (SC), yellowish brown with minor grayish brown, moist, fine to medium grained (FILL).		
						SILTY CLAY (CL-CH), dark gray, very moist, trace fine grained sand.		
5	<1							
			1.5			SILTY SAND (SM), gray, saturated, fine to medium grained.		
						CLAYEY SAND (SC), brown with minor gray veining, wet, fine grained.		
2								
						SILTY CLAY (CL), grayish brown, moist, trace fine grained sand.		
10	3							
4						Bottom of boring at approximately 12 feet at 16:39		
						Groundwater not encountered.		
15								
20	6							
25								
30	9							



LOG OF BORING 2-E6

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 24 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SILTY GRAVEL (GM), olive gray, slightly moist, angular (FILL).		
						SILTY CLAY (CL), dark brown, very moist, trace sand, gravel and asphaltics (FILL).		
1								
5		△1				SILTY CLAY (CL), yellowish brown, moist to very moist, trace fine grained sand.		
2								
10		△1						
4								
15						CLAYEY SAND (SC), yellowish brown, very moist, fine grained.		
5						SILTY CLAY (CL), mottled gray and dark yellowish brown, moist, trace fine grained sand, carbonates present.		
20								
7								▽
25						Bottom of boring at approximately 24 feet at 13:34		
8						Groundwater measured at approximately 22.8 feet at 17:05.		
9								
30								

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LOG OF BORING 2-E7

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 12 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OMV / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					CONCRETE, gray (FILL).		
						CLAYEY SAND (SC), yellowish brown with minor grayish brown, slightly moist, fine to medium grained (FILL)		
1			Δ			SILTY CLAY (CL-CH), dark gray, very moist, trace fine grained sand.		
5			Δ			SILTY SAND (SM), gray, saturated, fine to medium grained. Water encountered at 6.7 feet while drilling.		▽
2						SILTY CLAY (CL), grayish brown, very moist, trace fine grained sand.		
10	3					SILTY SAND (SM), gray, saturated, fine to medium grained.		
4		Bottom of boring at approximately 12 feet at 17:01						
15		Groundwater measures at approximately 7.7 feet						
5								
20	6							
7								
25								
8								
30	9							

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LOG OF BORING 2-E8

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 20 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVN / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SILTY CLAY (CL), dark yellowish brown, very moist, trace subangular to subrounded gravels, minor fine roots (FILL).		
1						SILTY CLAY (CL), dark gray and yellowish brown, very moist, trace fine grained sand.		
5			< 1					
2			< 1					
10	3							
15								
5						CLAYEY SAND (SC), dark yellowish brown, saturated, fine grained.		
						SILTY CLAY (CL), yellowish brown, very moist, trace fine grained sand.		
20	6							
		Bottom of boring at approximately 20 feet at 14:05						
		Groundwater measured at approximately 5.5 feet at 14:15						
7								
25								
8								
30	9							

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LOG OF BORING 2-E9

PHASE TWO ESA
 MIXED USE DEVELOPMENT
 SUISUN CITY, CALIFORNIA
 6714.1.002.01

DATE DRILLED: MAY 12, 2005
 HOLE DEPTH (FT): 16 ft.
 HOLE DIAMETER: 3.0 in.
 SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
 DRILLING CONTRACTOR: GREGG DRILLING
 DRILLING METHOD: GEOPROBE
 HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVUM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SANDY CLAY (CL), dark grayish brown, very moist, trace fine grained sand.		▽
5	1.5	Δ						
10	3.0	Δ				CLAYEY SAND (SC), yellowish brown, wet, fine grained.		
15	4.5							
20	6.0							
25	7.5							
30	9.0							
Bottom of boring at approximately 16 feet at 09:20. Groundwater measured at approximately 7.0 feet at 09:35.								



LOG OF BORING 2-E10

PHASE TWO ESA
 MIXED USE DEVELOPMENT
 SUISUN CITY, CALIFORNIA
 6714.1.002.01

DATE DRILLED: MAY 12, 2005
 HOLE DEPTH (FT): 16 ft.
 HOLE DIAMETER: 3.0 in.
 SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
 DRILLING CONTRACTOR: GREGG DRILLING
 DRILLING METHOD: GEOPROBE
 HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SANDY CLAY (CL), dark grayish brown, very moist, fine grained.		▽
5	1.5		<1					
10	3.0		<1			CLAYEY SAND (SC), yellowish brown, wet, fine grained.		
15	4.5							
20	6.0					Bottom of boring at approximately 16 feet at 09:50. Groundwater measured at approximately 5.9 feet at 14:55.		
25	7.5							
30	9.0							



LOG OF BORING 2-E11

PHASE TWO ESA
 MIXED USE DEVELOPMENT
 SUISUN CITY, CALIFORNIA
 6714.1.002.01

DATE DRILLED: MAY 12, 2005
 HOLE DEPTH (FT): 16 ft.
 HOLE DIAMETER: 3.0 in.
 SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
 DRILLING CONTRACTOR: GREGG DRILLING
 DRILLING METHOD: GEOPROBE
 HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Unconfined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SILTY CLAY (CL), grayish brown, moist, trace fine grained sand.		
5	1.5	<1						
10	3.0		<1			CLAYEY SAND (SC), yellowish brown, wet, fine grained.		
15	4.5							
20	6.0							
25	7.5							
30	9.0							
Bottom of boring at approximately 16 feet at 10:24. Groundwater measured at approximately 8.8 feet at 10:27.								

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LOG OF BORING 2-E12

PHASE TWO ESA
MIXED USE DEVELOPMENT
SUISUN CITY, CALIFORNIA
6714.1.002.01

DATE DRILLED: MAY 12, 2005
HOLE DEPTH (FT): 16 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 13 ft.

LOGGED BY: K. NOWELL
DRILLING CONTRACTOR: GREGG DRILLING
DRILLING METHOD: GEOPROBE
HAMMER TYPE: --

Depth in Feet	Depth in Meters	Sample Type	OVM / PID (ppm)	Uncoufined Strength (tsf) *field approx	Blow Count / FT	DESCRIPTION	GRAPHIC	Water Level
0	0					SANDY CLAY (CL), grayish brown, very moist, fine grained.		
1						SILTY CLAY (CL-CH), grayish brown, very moist.		
5		<1						
2								
10	3	<1				CLAYEY SAND (SC), mottled gray and dark yellowish brown, wet, fine grained.		
						SANDY CLAY (CL), grayish brown, moist, fine grained.		
4						CLAYEY SAND (SC), grayish brown, wet, fine grained.		
15						SILTY-CLAYEY SAND (SM-SC), yellowish brown, wet, fine grained.		
5						Bottom of boring at approximately 16 feet at 10:53.		
						Groundwater measured at approximately 5.0 feet at 10:58.		
20	6							
7								
25								
8								
9								
30								

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LOG OF BORING 3-E4

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City, California
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 9.5 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
0	0		Concrete slab					
			SILTY CLAY (CH), mottled light brown and brown, soft, moist, with sand (FILL).					
	1		SILTY CLAY (CH), dark brown, moderately stiff, moist, some medium sand (FILL).					
	5		SILTY CLAY (CH), mottled light brown with gray fragments, stiff, moist				3.0	
	2		SANDY SILTY CLAY (CL), light brown, very stiff, moist, medium sand				1	
	3	wet			▽		2	
	4	with gray fragments					2	
	15	moist						
	5		Bottom of boring -- 16ft				2	
	6							
	7							
	25							
	8							
	9							
	30							



LOG OF BORING 3-E4

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City, California
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 9.5 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
30								
10								
35								
11								
12								
40								
13								
45								
14								
50								
15								
55								
16								
17								
18								
60								

LOG OF BORING 3-E2

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 9.5 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
0	0		Asphaltic concrete					
			SILTY SAND (SM), reddish brown, stiff, slightly moist (FILL).					
	1		SILTY CLAY (CH), dark brown, moderately stiff, moist, plant fragments and other organics (FILL).				0.8	
	5		SILTY CLAY (CH), brown, moderately stiff, moist, rootlets				1.0	
	2						1.0	
	3		SILTY CLAY (CH), mottled reddish brown and gray, stiff, moist, manganese staining				NR	
	10						0.8	
	4						NR	
	15		SILTY CLAY (CH), light brown, very stiff, moist, calcium carbonate nodules (<1in)				0.3	
	5						NR	
	20		greenish gray fragments of clay					
	7		hard				0.9	
	25						1.5	
	8							
	9		Bottom of boring -- 28ft					
	30							

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LOG OF BORING 3-E2

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 9.5 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
30								
10								
35								
11								
12								
40								
13								
45								
14								
50								
15								
55								
16								
17								
18								
60								



LOG OF BORING 3-E3

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 10.0 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
0	0		Asphaltic concrete					
			SILTY CLAY (CH), bluish gray, soft, moist (FILL).				0.8	
			SILTY CLAY (CH), dark brown, moderately stiff, moist (FILL)					
1								
5			SILTY Clay (CH), mottled gray and light brown, very stiff, slightly moist, trace fine sand				NR	
2							0.8	
			less gray clay with depth, manganese staining				NR	
10							0.5	
4			more iron oxide staining				0.5	
15							0.9	
5								
20			more gray clay fragments				0.5	
7								
25							NR	
8								
30								



LOG OF BORING 3-E3

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 10.0 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
30			small calcium carbonate nodules					
10			Bottom of boring -- 32ft				0.7	
35								
11								
12								
40								
13								
45								
14								
15								
50								
16								
55								
17								
18								
60								



LOG OF BORING 3-E1

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 10.3 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
0	0		Asphaltic concrete					
			SILTY SAND (SM), reddish brown, slightly moist (FILL).					
5			SILTY CLAY (CH), mottled grayish blue and olive brown, stiff, moist, with sand				NR	
			SILTY SAND (SM), reddish brown, slightly moist				265	
10	3		increased clay content with depth				NR	
							NR	
							NR	
15			SILTY CLAY (CH), yellowish brown, stiff, slightly moist, some sand				NR	
			manganese staining				NR	
20	6		SILTY CLAY (CH), orangish yellowish brown, stiff, moist				NR	
							NR	
25			SILTY CLAY (CH), light brown, very stiff, moist					
			hard , fragments of gray clay					
			Bottom of boring -- 28ft					

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LOG OF BORING 3-E1

PHASE TWO ESA
MIXED USE DEVELOPMENT
Suisun City
6714.1.002.01

DATE DRILLED: June 28, 2005
HOLE DEPTH (FT): 18 ft.
HOLE DIAMETER: 3.0 in.
SURF ELEV (FT-MSL): 10.3 ft.

LOGGED / REVIEWED BY: L. Damerell / SM
DRILLING CONTRACTOR: Woodward Drilling
DRILLING METHOD: Direct Push
HAMMER TYPE: ---

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count / Foot	PID (ppm)	Unconfined Strength (tsf) *field approx
30								
10								
35								
11								
12								
40								
13								
45								
14								
50								
15								
55								
16								
17								
18								
60								

APPENDIX B

MCCAMPBELL ANALYTICAL, INCORPORATED

Soil/Groundwater Laboratory Test Results

McC Campbell Analytical, Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0505185

ClientID: ENGM

Report to:

Keith Nowell
 ENGEO Incorporated
 690 Walnut Avenue, Suite 220
 Mare Island, CA 94592

TEL: (707) 562-0030
 FAX: (707) 562-0032
 ProjectNo: #6714.1.001.01; City Corporation Yard
 PO:

Bill to:

Matthew Harrell
 ENGEO Incorporated
 690 Walnut Avenue, Suite 220
 Mare Island, CA 95492

Requested TAT:

5 days

Date Received: 05/12/2005

Date Printed: 05/12/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0505185-001	GW-2	Water	5/12/05 12:50:00	<input type="checkbox"/>		B	A												
0505185-002	GW-8	Water	5/12/05 2:25:00 PM	<input type="checkbox"/>		B	A												
0505185-003	GW-9	Water	5/12/05 9:25:00 AM	<input type="checkbox"/>	C		A	B											
0505185-004	GW-10	Water	5/12/05 3:00:00 PM	<input type="checkbox"/>	C		A	B											
0505185-005	GW-11	Water	5/12/05 10:35:00	<input type="checkbox"/>	C		A	B											
0505185-006	GW-12	Water	5/12/05 11:05:00	<input type="checkbox"/>	C		A	B											
0505185-007	GW-6	Water	5/12/05 3:40:00 PM	<input type="checkbox"/>		B	A												

Test Legend:

1	5-OXYS_W	2	8260B_W	3	G-MBTEX_W	4	TPH(DMO)_W	5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

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.



McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

ENGEO Incorporated 690 Walnut Avenue, Suite 220 Mare Island, CA 94592	Client Project ID: #6714.1.001.01; City Corporation Yard	Date Sampled: 05/12/05
	Client Contact: Keith Nowell	Date Received: 05/12/05
	Client P.O.:	Date Extracted: 05/12/05
		Date Analyzed: 05/12/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0505185

Lab ID	0505185-001B						
Client ID	GW-2						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<1000	200	5.0	Acrolein (Propenal)	ND<1000	200	5.0
Acrylonitrile	ND<400	200	2.0	tert-Amyl methyl ether (TAME)	ND<100	200	0.5
Benzene	1300	200	0.5	Bromobenzene	ND<100	200	0.5
Bromochloromethane	ND<100	200	0.5	Bromodichloromethane	ND<100	200	0.5
Bromoform	ND<100	200	0.5	Bromomethane	ND<100	200	0.5
2-Butanone (MEK)	ND<400	200	2.0	t-Butyl alcohol (TBA)	ND<1000	200	5.0
n-Butyl benzene	ND<100	200	0.5	sec-Butyl benzene	ND<100	200	0.5
tert-Butyl benzene	ND<100	200	0.5	Carbon Disulfide	ND<100	200	0.5
Carbon Tetrachloride	ND<100	200	0.5	Chlorobenzene	ND<100	200	0.5
Chloroethane	ND<100	200	0.5	2-Chloroethyl Vinyl Ether	ND<200	200	1.0
Chloroform	ND<100	200	0.5	Chloromethane	ND<100	200	0.5
2-Chlorotoluene	ND<100	200	0.5	4-Chlorotoluene	ND<100	200	0.5
Dibromochloromethane	ND<100	200	0.5	1,2-Dibromo-3-chloropropane	ND<100	200	0.5
1,2-Dibromoethane (EDB)	ND<100	200	0.5	Dibromomethane	ND<100	200	0.5
1,2-Dichlorobenzene	ND<100	200	0.5	1,3-Dichlorobenzene	ND<100	200	0.5
1,4-Dichlorobenzene	ND<100	200	0.5	Dichlorodifluoromethane	ND<100	200	0.5
1,1-Dichloroethane	ND<100	200	0.5	1,2-Dichloroethane (1,2-DCA)	ND<100	200	0.5
1,1-Dichloroethene	ND<100	200	0.5	cis-1,2-Dichloroethene	ND<100	200	0.5
trans-1,2-Dichloroethene	ND<100	200	0.5	1,2-Dichloropropane	ND<100	200	0.5
1,3-Dichloropropane	ND<100	200	0.5	2,2-Dichloropropane	ND<100	200	0.5
1,1-Dichloropropene	ND<100	200	0.5	cis-1,3-Dichloropropene	ND<100	200	0.5
trans-1,3-Dichloropropene	ND<100	200	0.5	Diisopropyl ether (DIPE)	ND<100	200	0.5
Ethylbenzene	4800	200	0.5	Ethyl tert-butyl ether (ETBE)	ND<100	200	0.5
Freon 113	ND<2000	200	10	Hexachlorobutadiene	ND<100	200	0.5
Hexachloroethane	ND<100	200	0.5	2-Hexanone	ND<100	200	0.5
Isopropylbenzene	ND<100	200	0.5	4-Isopropyl toluene	ND<100	200	0.5
Methyl-t-butyl ether (MTBE)	ND<100	200	0.5	Methylene chloride	ND<100	200	0.5
4-Methyl-2-pentanone (MIBK)	ND<100	200	0.5	Naphthalene	260	200	0.5
Nitrobenzene	ND<2000	200	10	n-Propyl benzene	440	200	0.5
Styrene	ND<100	200	0.5	1,1,1,2-Tetrachloroethane	ND<100	200	0.5
1,1,2,2-Tetrachloroethane	ND<100	200	0.5	Tetrachloroethene	ND<100	200	0.5
Toluene	710	200	0.5	1,2,3-Trichlorobenzene	ND<100	200	0.5
1,2,4-Trichlorobenzene	ND<100	200	0.5	1,1,1-Trichloroethane	ND<100	200	0.5
1,1,2-Trichloroethane	ND<100	200	0.5	Trichloroethene	ND<100	200	0.5
Trichlorofluoromethane	ND<100	200	0.5	1,2,3-Trichloropropane	ND<100	200	0.5
1,2,4-Trimethylbenzene	3600	200	0.5	1,3,5-Trimethylbenzene	900	200	0.5
Vinyl Chloride	ND<100	200	0.5	Xylenes	11,000	200	0.5

Surrogate Recoveries (%)

%SS1:	102	%SS2:	104
%SS3:	105		

Comments: h,i

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

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

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

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



McC Campbell Analytical, Inc.

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 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

ENGEO Incorporated 690 Walnut Avenue, Suite 220 Mare Island, CA 94592	Client Project ID: #6714.1.001.01; City Corporation Yard	Date Sampled: 05/12/05
	Client Contact: Keith Nowell	Date Received: 05/12/05
	Client P.O.:	Date Extracted: 05/12/05
		Date Analyzed: 05/12/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0505185

Lab ID		0505185-002B					
Client ID		GW-8					
Matrix		Water					
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	5.0	Acrolein (Propenal)	ND	1.0	5.0
Acrylonitrile	ND	1.0	2.0	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	5.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	ND	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	1.0
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.5
1,2-Dibromoethane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Diisopropyl ether (DIPE)	ND	1.0	0.5
Ethylbenzene	ND	1.0	0.5	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5
Freon 113	ND	1.0	10	Hexachlorobutadiene	ND	1.0	0.5
Hexachloroethane	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Isopropyl toluene	ND	1.0	0.5
Methyl-t-butyl ether (MTBE)	ND	1.0	0.5	Methylene chloride	ND	1.0	0.5
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5	Naphthalene	ND	1.0	0.5
Nitrobenzene	ND	1.0	10	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes	ND	1.0	0.5

Surrogate Recoveries (%)

%SS1:	107	%SS2:	99
%SS3:	115		

Comments: i

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

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

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

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



McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

ENGEO Incorporated
690 Walnut Avenue, Suite 220
Mare Island, CA 94592

Client Project ID: #6714.1.001.01; City
Corporation Yard
Client Contact: Keith Nowell
Client P.O.:

Date Sampled: 05/12/05
Date Received: 05/12/05
Date Extracted: 05/18/05
Date Analyzed: 05/18/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0505185

Lab ID	0505185-007B						
Client ID	GW-6						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	5.0	Acrolein (Propenal)	ND	1.0	5.0
Acrylonitrile	ND	1.0	2.0	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	5.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	ND	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	1.0
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.5
1,2-Dibromopropane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Diisopropyl ether (DIPE)	ND	1.0	0.5
Ethylbenzene	ND	1.0	0.5	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5
Freon 113	ND	1.0	10	Hexachlorobutadiene	ND	1.0	0.5
Hexachloroethane	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Isopropyl toluene	ND	1.0	0.5
Methyl t-butyl ether (MTBE)	ND	1.0	0.5	Methylene chloride	ND	1.0	0.5
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5	Naphthalene	ND	1.0	0.5
Nitrobenzene	ND	1.0	10	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes	ND	1.0	0.5

Surrogate Recoveries (%)

%SS1:	105	%SS2:	101
%SS3:	110		

Comments: i

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

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

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

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

 Angela Rydelius, Lab Manager



McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 Website: www.mccampbell.com E-mail: main@mccampbell.com

ENGEO Incorporated 690 Walnut Avenue, Suite 220 Mare Island, CA 94592	Client Project ID: #6714.1.001.01; City Corporation Yard	Date Sampled: 05/12/05
	Client Contact: Keith Nowell	Date Received: 05/12/05
	Client P.O.:	Date Extracted: 05/12/05
		Date Analyzed: 05/12/05

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0505185

Lab ID	0505185-003C	0505185-004C	0505185-005C	0505185-006C	Reporting Limit for DF=1	
Client ID	GW-9	GW-10	GW-11	GW-12		
Matrix	W	W	W	W		
DF	1	1	1	1		
Compound	Concentration				ug/kg	ug/L
tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	5.0
Diisopropyl ether (DIPE)	ND	ND	ND	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	NA	0.5

Surrogate Recoveries (%)

%SS:	101	100	101	101	
Comments	i	i	i	i	

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

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

ENGEO INCORPORATED

690 Walnut Avenue, Suite 220
 Mare Island, Vallejo, CA 94592
 Phone: (707) 562-0030
 Fax (707) 562-0032

LEAK
 GOOD CONDITION
 HEAD SPACE ABSENT
 DECHLORINATED IN LAB
 PRESERVATION

APPROPRIATE CONTAINERS
 PRESERVED IN LAB

VOAS | OAG | METALS | OTHER

CHAIN OF CUSTODY RECORD

OBJECT NUMBER: **5714.1.001.01** PROJECT NAME: **City Corporation Yard**
 FILED BY: SIGNATURE: **Keith Nowell (Keith Nowell)**

SAMPLE NUMBER	DATE	TIME	MATRIX	CONTAINER NUMBER	CONTAINER SIZE	PRESERVATIVE	TPH - GASOLINE (EPA 8015/3010)	TPH - DIESEL & MO (EPA 8015/3501/310)	PURGEABLE AROMATICS (EPA 602, 8020) MTBE	PURGEABLE HALOCARBONS (EPA 801, 8010)	VOLATILE ORGANICS (EPA 624, 8260)	SEMI-VOLATILE ORGANICS (EPA 8210)	TOTAL OIL & GREASE (SWMW 5520 (E/F))	PCBS (EPA 605, 8082)	TITLE 26 METALS (17)	MIBS (EPA 602, 8020)	REMARKS/REQUIRED DETECTION LIMITS
1	5-12-05	1134	Soil	1	1 1/2' x 6"	None	X	X	X								
2-1	5-12-05	1233	Soil	1	1 1/2' x 6"	None	X	X	X								
3-2	5-12-05	1501	Soil	1	1 1/2' x 6"	None	X	X	X								
4-2	5-12-05	1620	Soil	1	1 1/2' x 6"	None	X	X	X								
5-2	5-12-05	1636	Soil	1	1 1/2' x 6"	None	X	X	X								
7-1	5-12-05	1954 1659	Soil	1	1 1/2' x 6"	None	X	X		X	X		X				

GOOD CONDITION
 HEAD SPACE ABSENT
 DECHLORINATED IN LAB
 PRESERVATION

APPROPRIATE CONTAINERS
 PRESERVED IN LAB

VOAS | OAG | METALS | OTHER

RELINQUISHED BY: **Keith Nowell** DATE/TIME: **5/10/05 1835** RECEIVED BY: **Mike Valle**

RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____

RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____

RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED FOR LABORATORY BY: _____

REMARKS: **Conform 8020 MTBE detects by 8260. Stan David TAT**

This form was modified by CELEDA for use as a chain of custody form for environmental samples.

FORM 1360 (REV. 10/01) DATE: 01/01/2000 4:00:01 PM



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

WorkOrder: 0505186

ClientID: ENGM

Report to:

Keith Nowell
 ENGEO Incorporated
 690 Walnut Avenue, Suite 220
 Mare Island, CA 94592

TEL: (707) 562-0030
 FAX: (707) 562-0032
 ProjectNo: #6714.1.001.01; City Corporation Yard
 PO:

Bill to:

Matthew Harrell
 ENGEO Incorporated
 690 Walnut Avenue, Suite 220
 Mare Island, CA 95492

Requested TAT:

5 days

Date Received: 05/12/2005

Date Printed: 05/12/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0505186-001	1-1	Soil	5/12/05 11:34:00	<input type="checkbox"/>				A	A											
0505186-002	2-1	Soil	5/12/05 12:33:00	<input type="checkbox"/>				A	A											
0505186-003	3-2	Soil	5/12/05 4:01:00 PM	<input type="checkbox"/>				A	A											
0505186-004	4-2	Soil	5/12/05 4:20:00 PM	<input type="checkbox"/>				A	A											
0505186-005	5-2	Soil	5/12/05 4:36:00 PM	<input type="checkbox"/>				A	A											
0505186-006	7-1	Soil	5/12/05 4:59:00 PM	<input type="checkbox"/>	A	A	A	A												

Test Legend:

1	8082A_PCB_S	2	8260B_S	3	8270D-PNA_S	4	G-MBTEX_S	5	TPH(DMO)_S
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Rosa Venegas

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.



McC Campbell Analytical, Inc.

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ENGEO Incorporated
690 Walnut Avenue, Suite 220
Mare Island, CA 94592

Client Project ID: #6714.1.001.01; City
Corporation Yard
Client Contact: Keith Nowell
Client P.O.:

Date Sampled: 05/12/05
Date Received: 05/12/05
Date Extracted: 05/12/05
Date Analyzed: 05/12/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0505186

Table with columns: Lab ID (0505186-006A), Client ID (7-1), Matrix (Soil), Compound, Concentration, DF, Reporting Limit. Lists various organic compounds like Acetone, Benzene, Chloroethane, etc., with their respective concentrations and reporting limits.

Surrogate Recoveries (%)

Table showing surrogate recoveries: %SS1: 97, %SS2: 109, %SS3: 119

Comments:

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

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

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

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



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ENGEO Incorporated 690 Walnut Avenue, Suite 220 Mare Island, CA 94592	Client Project ID: #6714.1.001.01; City Corporation Yard	Date Sampled: 05/12/05
	Client Contact: Keith Nowell	Date Received: 05/12/05
	Client P.O.:	Date Extracted: 05/12/05
		Date Analyzed: 05/14/05

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS*

Extraction Method: SW3550C

Analytical Method: SW8270D

Work Order: 0505186

Lab ID	0505186-006A	Client ID	7-1	Matrix	S	Reporting Limit for DF = 1	
						S	W
DF	1	Compound	Concentration			mg/kg	ug/L
Acenaphthene	ND				0.005	NA	
Acenaphthylene	ND				0.005	NA	
Anthracene	ND				0.005	NA	
Benzo(a)anthracene	ND				0.005	NA	
Benzo(a)pyrene	ND				0.005	NA	
Benzo(b)fluoranthene	ND				0.005	NA	
Benzo(g,h,i)perylene	ND				0.005	NA	
Benzo(k)fluoranthene	ND				0.005	NA	
Chrysene	ND				0.005	NA	
Dibenzo(a,b)anthracene	ND				0.005	NA	
Fluoranthene	ND				0.005	NA	
Fluorene	ND				0.005	NA	
Indeno (1,2,3-cd) pyrene	ND				0.005	NA	
1-Methylnaphthalene	ND				0.005	NA	
2-Methylnaphthalene	ND				0.005	NA	
Naphthalene	ND				0.005	NA	
Phenanthrene	ND				0.005	NA	
Pyrene	ND				0.005	NA	
Surrogate Recoveries (%)							
%SS1	92						
%SS2	85						
Comments							

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

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

#) surrogate diluted out of range; &) low or no surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) estimated to be below this level based on our MDL study.



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ENGEO Incorporated 690 Walnut Avenue, Suite 220 Mare Island, CA 94592	Client Project ID: #6714.1.001.01; City Corporation Yard	Date Sampled: 05/12/05
	Client Contact: Keith Nowell	Date Received: 05/12/05
	Client P.O.:	Date Extracted: 05/12/05
		Date Analyzed: 05/13/05

Polychlorinated Biphenyls (PCBs) Aroclors by GC-ECD*

Extraction Method: SW3550C

Analytical Method: SW8082A

Work Order: 0505186

Lab ID	0505186-006A				Reporting Limit for DF =1
Client ID	7-1				
Matrix	S				
DF	1				

Compound	Concentration				mg/kg	ug/L
Aroclor1016	ND				0.025	NA
Aroclor1221	ND				0.025	NA
Aroclor1232	ND				0.025	NA
Aroclor1242	ND				0.025	NA
Aroclor1248	ND				0.025	NA
Aroclor1254	ND				0.025	NA
Aroclor1260	ND				0.025	NA
PCBs, total	ND				0.025	NA

Surrogate Recoveries (%)

%SS:	107			
------	-----	--	--	--

Comments

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

(a) PCB aroclor 1016; (b) PCB aroclor 1221; (c) PCB aroclor 1232; (d) PCB aroclor 1242; (e) PCB aroclor 1248; (f) PCB aroclor 1254; (g) PCB aroclor 1260; (h) a lighter than water immiscible sheen/product is present; (i) liquid sample that contains >= 1 vol. % sediment; (j) sample diluted due to high organic content; (k) p,p,- is the same as 4,4,-; (l) florisil (EPA 3620) cleanup; (m) silica-gel (EPA 3630) cleanup; (n) elemental sulfur (EPA 3660) cleanup; (o) sulfuric acid permanganate (EPA 3665) cleanup; (r) results are reported on a dry weight basis; (p) see attached narrative.



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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505186

Table with columns: EPA Method: SW8021B/8015Cm, Extraction: SW5030B, BatchID: 16214, Spiked Sample ID: 0505178-011A. Rows include analytes like TPH(btex), MTBE, Benzene, Toluene, Ethylbenzene, Xylenes, and %SS with various recovery and RPD values.

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

NONE

BATCH 16214 SUMMARY

Summary table with columns: Sample ID, Date Sampled, Date Extracted, Date Analyzed. Contains data for samples 0505186-001A through 0505186-005A.

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 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.

Handwritten signature and text: QA/QC Officer



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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505186

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 16224			Spiked Sample ID: 0505186-006A		
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	LCS / LCSD
TPH(bt _{ex}) [£]	ND	0.60	96.7	97.4	0.697	103	98.7	4.07	70 - 130	70 - 130
MTBE	ND	0.10	94.9	100	5.58	87.3	89.5	2.48	70 - 130	70 - 130
Benzene	ND	0.10	102	105	2.85	101	98	3.02	70 - 130	70 - 130
Toluene	ND	0.10	83.3	86.6	3.85	83.4	81.2	2.65	70 - 130	70 - 130
Ethylbenzene	ND	0.10	105	107	2.35	98.6	98.4	0.231	70 - 130	70 - 130
Xylenes	ND	0.30	91.3	95.7	4.63	90	90	0	70 - 130	70 - 130
%SS:	95	0.10	110	96	14.0	107	101	5.77	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 16224 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505186-006A	5/12/05 4:59 PM	5/12/05	5/14/05 7:23 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(bt_{ex}) = sum of BTEX areas from the FID.
 # cluttered chromatogram; sample peak coelutes with surrogate peak.
 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.

QA/QC Officer



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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505186

EPA Method: SW8015C		Extraction: SW3550C			BatchID: 16219			Spiked Sample ID: 0505182-012A		
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	LCS / LCSD
TPH(d)	ND	20	91.7	92.9	1.30	104	103	0.944	70 - 130	70 - 130
%SS:	87	50	85	86	0.980	95	95	0	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 16219 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505186-001A	5/12/05 11:34 AM	5/12/05	5/14/05 7:03 AM	0505186-002A	5/12/05 12:33 PM	5/12/05	5/14/05 7:03 AM
0505186-003a	5/12/05 4:01 PM	5/12/05	5/14/05 1:20 AM	0505186-004A	5/12/05 4:20 PM	5/12/05	5/14/05 2:26 AM
0505186-005A	5/12/05 4:36 PM	5/12/05	5/14/05 3:32 AM	0505186-006A	5/12/05 4:59 PM	5/12/05	5/14/05 4:38 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.

DHS Certification No. 1644

 QA/QC Officer



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505186

EPA Method: SW8260B	Extraction: SW5030B			BatchID: 16192			Spiked Sample ID: 0505153-002A			
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	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	0.050	95.7	97.1	1.43	86.5	87.4	1.04	70 - 130	70 - 130
Benzene	ND	0.050	101	102	0.531	94.6	95.7	1.24	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	0.25	93.9	91.5	2.58	88	87.2	0.867	70 - 130	70 - 130
Chlorobenzene	ND	0.050	119	119	0	114	116	1.99	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	86.9	90.2	3.73	77.3	79.4	2.64	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	112	111	0.246	103	103	0	70 - 130	70 - 130
1,1-Dichloroethene	ND	0.050	83.1	81.7	1.60	82.5	81.3	1.47	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	0.050	105	106	0.924	94.2	95.2	1.09	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	0.050	97.7	96.3	1.39	88.5	89.6	1.23	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	0.050	98.6	101	2.23	89.6	89.9	0.262	70 - 130	70 - 130
Toluene	ND	0.050	106	107	1.15	100	102	1.33	70 - 130	70 - 130
Trichloroethene	ND	0.050	86.8	88.2	1.61	83.4	83.1	0.367	70 - 130	70 - 130
%SS1:	95	0.050	98	97	0.692	97	94	2.55	70 - 130	70 - 130
%SS2:	109	0.050	100	100	0	100	101	1.32	70 - 130	70 - 130
%SS3:	97	0.050	114	114	0	116	113	2.17	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 16192 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505186-006A	5/12/05 4:59 PM	5/12/05	5/12/05 10:58 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.
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

QA/QC Officer



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QC SUMMARY REPORT FOR SW8270D

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505186

EPA Method: SW8270D		Extraction: SW3550C			BatchID: 16225			Spiked Sample ID: 0505186-006A		
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	LCS / LCSD
Benzo(a)pyrene	ND	0.10	82.2	80.4	2.25	83.7	85.1	1.56	30 - 130	30 - 130
Chrysene	ND	0.10	71.7	71.3	0.537	79	72.8	8.13	30 - 130	30 - 130
1-Methylnaphthalene	ND	0.10	85.4	84.1	1.54	91.1	86.9	4.71	30 - 130	30 - 130
2-Methylnaphthalene	ND	0.10	77.2	75.2	2.62	82.3	78.4	4.85	30 - 130	30 - 130
Phenanthrene	ND	0.10	73.7	71.9	2.48	79	74.7	5.56	30 - 130	30 - 130
Pyrene	ND	0.10	84	83.6	0.444	82.8	81.6	1.45	30 - 130	30 - 130
%SS1:	92	0.050	95	95	0	93	93	0	30 - 130	30 - 130
%SS2:	85	0.050	89	89	0	86	86	0	30 - 130	30 - 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 16225 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505186-006A	5/12/05 4:59 PM	5/12/05	5/14/05 1:23 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).

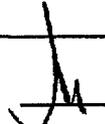
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the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

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

 QA/QC Officer



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QC SUMMARY REPORT FOR SW8082A

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505186

EPA Method: SW8082A		Extraction: SW3550C			BatchID: 16187			Spiked Sample ID: 0505153-001A		
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	LCS / LCSD
PCBs, total	ND	0.075	99	98	1.05	95.4	96.7	1.29	70 - 130	80 - 120
%SS:	97	0.050	98	96	1.80	99	99	0	80 - 120	80 - 120

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

BATCH 16187 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505186-006A	5/12/05 4:59 PM	5/12/05	5/13/05 9:12 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.

DHS Certification No. 1644

QA/QC Officer



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ENGEO Incorporated 2010 Crow Canyon Place, Ste 250 San Ramon, CA 94583-4634	Client Project ID: #6714100201; Corporation Yard, Suisun City	Date Sampled: 06/28/05
		Date Received: 06/28/05
	Client Contact: Shawn Munger	Date Reported: 07/05/05
	Client P.O.:	Date Completed: 07/05/05

WorkOrder: 0506534

July 05, 2005

Dear Shawn:

Enclosed are:

- 1). the results of 5 analyzed samples from your #6714100201; Corporation Yard, Suisun City 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.

Yours truly,

Angela Rydelius, Lab Manager



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0506534

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 16906			Spiked Sample ID: 0506534-004A		
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) £	ND	60	97.5	101	3.27	95.4	90.2	5.51	70 - 130	70 - 130
MTBE	ND	10	92.1	91.7	0.464	93.4	93.1	0.323	70 - 130	70 - 130
Benzene	ND	10	93.9	94.3	0.439	91	96.5	5.82	70 - 130	70 - 130
Toluene	ND	10	92.2	91.1	1.21	89	97.9	9.53	70 - 130	70 - 130
Ethylbenzene	ND	10	94.9	96.5	1.70	98.2	98	0.218	70 - 130	70 - 130
Xylenes	ND	30	86	85.3	0.778	100	90	10.5	70 - 130	70 - 130
%SS:	103	10	105	106	1.28	99	99	0	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 16906 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506534-002A	6/28/05	7/02/05	7/02/05 8:02 PM	0506534-003A	6/28/05 1:05 PM	7/02/05	7/02/05 5:58 AM
0506534-004A	6/28/05 3:20 PM	7/02/05	7/02/05 6:28 AM	0506534-005A	6/28/05 4:35 PM	7/02/05	7/02/05 7:57 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.

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.

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Website: www.mcccampbell.com E-mail: main@mcccampbell.com

QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0506534

EPA Method: SW8015C		Extraction: SW3550C			BatchID: 16874			Spiked Sample ID: 0506499-015A		
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	LCS / LCSD
TPH(d)	ND	20	101	117	15.2	99.9	106	6.35	70 - 130	70 - 130
%SS:	112	50	98	116	16.9	102	106	4.28	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 16874 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506534-001A	6/28/05	6/29/05	6/30/05 4:47 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.

DHS Certification No. 1644

 QA/QC Officer



QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0506534

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 16905			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	107	109	1.15	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	81	81	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 16905 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506534-002B	6/28/05	6/29/05	6/29/05 8:48 PM	0506534-003B	6/28/05 1:05 PM	6/29/05	6/29/05 9:57 PM
0506534-004B	6/28/05 3:20 PM	6/29/05	6/29/05 11:05 PM	0506534-005B	6/28/05 4:35 PM	6/29/05	6/30/05 12:13 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.

0506534

CHAIN OF CUSTODY RECORD

PROJECT NUMBER 074400201		PROJECT NAME CORPORATION YARD, SUISUN CITY																		REMARKS REQUIRED DETECTION LIMITS			
SAMPLED BY: (SIGNATURE/PRINT) J. Samerell		PROJECT MANAGER: (SIGNATURE/PRINT) Luis DARGULL																					
ROUTING: E-MAIL SMU-GER@ENR50.COM		HARD COPY																					
SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE																	
3E-1@7 1/2	6-28-05	0900	SOIL	1	QT. BAG	ICE		X													SAMPLE NUMBER REWRITTEN: "3E-1@ 7 1/2"		
+1 3E-1-GW	6-28-05	1005	AQUEOUS	1	1L	ICE		X															
3E-1-GW	6-28-05	1020	AQUEOUS	3	40ml	HCL		X															
+10 3E-2-GW	6-28-05	1305	AQUEOUS	1	1L	ICE		X															
3E-2-GW	6-28-05	1310	AQUEOUS	3	40ml	HCL		X															
+1 3E-3-GW	6-28-05	1520	AQUEOUS	1	1L	ICE		X															
3E-3-GW	6-28-05	1524	AQUEOUS	3	40ml	HCL		X															
+2 3E-4-GW	6-28-05	1635	AQUEOUS	1	1L	ICE		X															
3E-4-GW	6-28-05	1640	AQUEOUS	3	40ml	HCL		X															
RELINQUISHED BY: (SIGNATURE) <i>J. Samerell</i>		DATE/TIME 6-28-05 / 6:20 PM		RECEIVED BY: (SIGNATURE) <i>[Signature]</i>		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)	
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)	
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE/TIME		REMARKS															

EPA 8260
 TPH - GAS, BTEX +
 EPA 8210
 TPH - DIESEL + METALS

ICE/CAP
 GOOD CONDITION
 HEAD SPACE ABSENT
 DECHLORINATED IN LAB
 PRESERVATION

APPROPRIATE CONTAINERS
 PRESERVED IN LAB
 VOAS O&O METALS OTHER

5 DAY DAT

ENGEO
INCORPORATED

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