

**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								
<b>Former UST Area</b>										
GW-2 (2-E2)	5/12/05	<b>5,200</b>	<b>43,000</b>	<b>61,000</b>	<b>1,300</b>	<b>710</b>	<b>4,800</b>	<b>11,000</b>	<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	<b>270</b>	<b>470</b>	<0.5	<b>3.1</b>	<b>28</b>	<0.5	<5.0	NT
GW-3E-2	6/28/05	<250	<b>93</b>	<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.

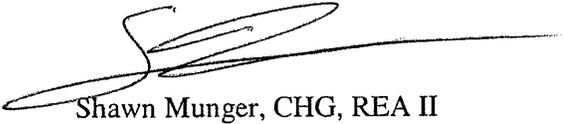
The reported laboratory analyses are intended only to represent that portion of strata encountered. The reported laboratory analyses are not intended to represent organic or inorganic analyses, which were not reported by the analytical laboratory.

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.

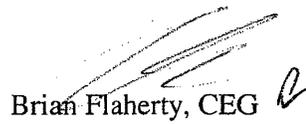
Very truly yours,

ENGEO INCORPORATED

Reviewed by:



Shawn Munger, CHG, REA II



Brian Flaherty, CEG

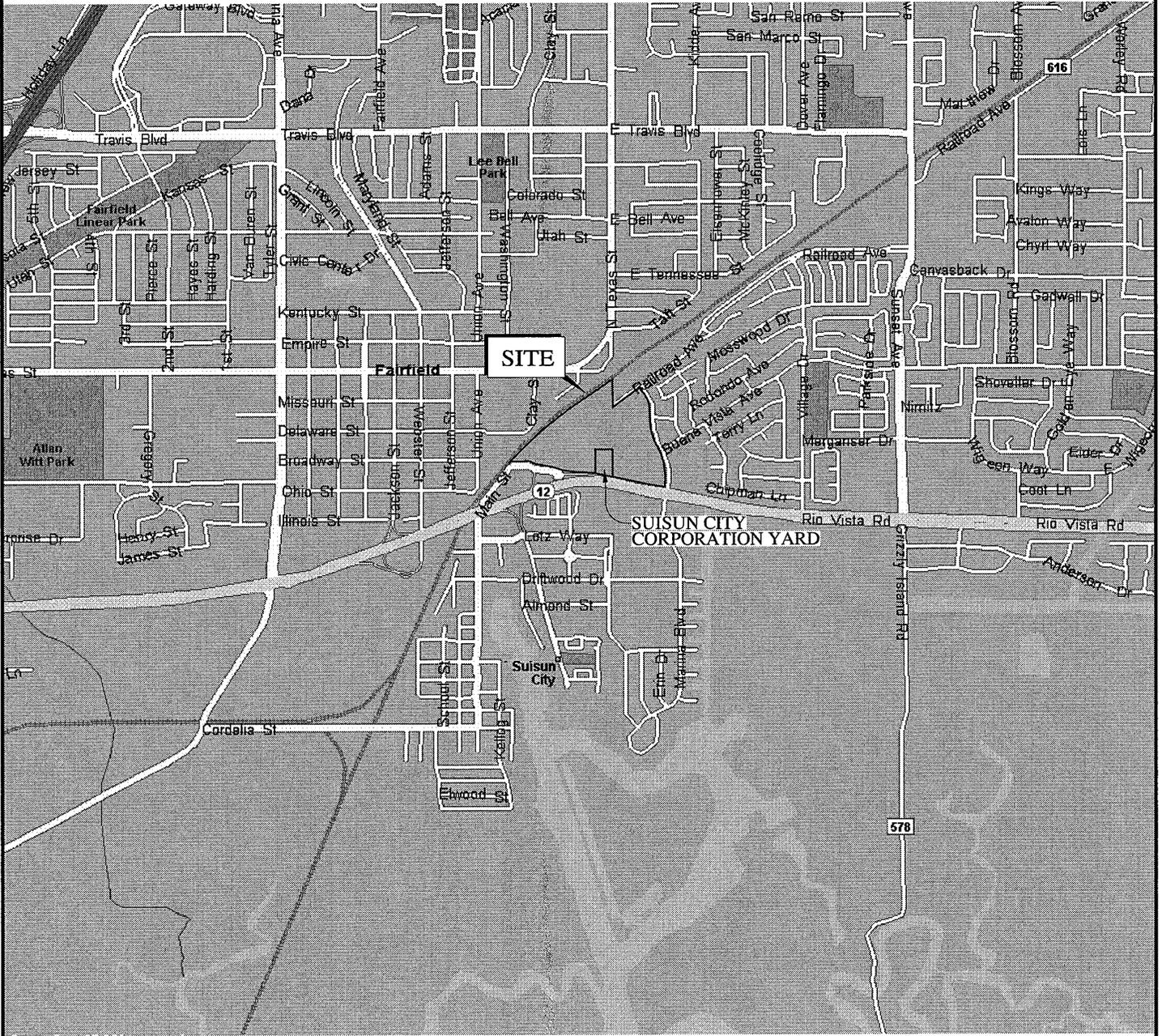
sm/smc:esa

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





NO SCALE

PROJECT NO.: 6714.1.002.01	FIGURE NO. 3
DATE: JULY 2005	
DRAWN BY: DLB	CHECKED BY: MT

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

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



**EXPLANATION**

APPROXIMATE LOCATION OF ENVIRONMENTAL SAMPLE

● 2-E12

**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		<1				SILTY CLAY (CL), yellowish brown, very moist, trace fine grained sand.		
						Wet zone between 5.8 feet and 6.9 feet.		
10		<1						
15						CLAYEY SAND (SC), yellowish brown, very moist, fine grained sand.		
20						Bottom of boring at approximately 20 feet at 12:10 Groundwater not encountered.		
25								
30								

05-20-2005 G:\Active Projects\6714\6714100101\ESAIL\Bore logs\6714100101-01-P01.bor



# 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	OVM / 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			CLAYEY SAND (SC), olive gray, moist, fine to medium grained, trace angular to subangular gravels (FILL).		▽
10			<1			SILTY CLAY (CL), mottled gray and dark yellowish brown, very moist to wet.		
15						CLAYEY SAND (SC), dark yellowish brown, very moist to wet, fine grained.		
<p>Bottom of boring at approximately 16 feet at 12:38 Water measured at 5.8 feet at 12:42</p>								

05-20-2005 G:\Active Projects\6714\6714100101ESAllBore logs\6714100101-01-P02.bor



# 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		<1						
2								
10		<1						
3						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								
7								
25								
8								
30								
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		Δ						
2								
		Δ						
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								
5								
20	6							
7								
25								
8								
30	9							

05-20-2005 G:\Active Projects\6714\6714100101\ESA\Bore logs\6714100101-01-P04.bor



# 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).		
1						SILTY CLAY (CL-CH), dark gray, very moist, trace fine grained sand.		
5			<1					
			1.5					
2						SILTY SAND (SM), gray, saturated, fine to medium grained.		
						CLAYEY SAND (SC), brown with minor gray veining, wet, fine grained.		
10						SILTY CLAY (CL), grayish brown, moist, trace fine grained sand.		
4						Bottom of boring at approximately 12 feet at 16:39		
						Groundwater not encountered.		
15								
5								
20								
6								
25								
7								
8								
30								
9								

05-20-2005 C:\Active Projects\6714\6714100101ESA\Bore logs\6714100101-01-P05.bor



# 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		Δ1				SILTY CLAY (CL), yellowish brown, moist to very moist, trace fine grained sand.		
10		Δ1						
15						CLAYEY SAND (SC), yellowish brown, very moist, fine grained.		
20						SILTY CLAY (CL), mottled gray and dark yellowish brown, moist, trace fine grained sand, carbonates present.		
25						Bottom of boring at approximately 24 feet at 13:34 Groundwater measured at approximately 22.8 feet at 17:05.		▽
30								

05-20-2005 C:\Active Projects\6714100101\ESAI\Bore logs\6714100101-01-P06.bor



# 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	OVM / 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			<1			SILTY CLAY (CL-CH), dark gray, very moist, trace fine grained sand.			
5			<1			SILTY SAND (SM), gray, saturated, fine to medium grained. Water encounered 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							
		Groundwater measures at approximately 7.7 feet							
15									
20	6								
25									
30	9								

05-20-2005 G:\Active Projects\6714\6714100101ES\Bore logs\6714100101-01-P07.bor



# 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	OVM / 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			△					
2			△					
10	3							
15								
5						CLAYEY SAND (SC), dark yellowish brown, saturated, fine grained.		
20	6					SILTY CLAY (CL), yellowish brown, very moist, trace fine grained sand.		
						Bottom of boring at approximately 20 feet at 14:05		
						Groundwater measured at approximately 5.5 feet at 14:15		
7								
25								
8								
9								
30								



# 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	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, trace fine grained sand.		▽
5	1.5	△						
10	3.0	△				CLAYEY SAND (SC), yellowish brown, wet, fine grained.		
15	4.5							
16	4.88					Bottom of boring at approximately 16 feet at 09:20.		
						Groundwater measured at approximately 7.0 feet at 09:35.		
20	6.0							
25	7.62							
30	9.14							



# 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	△				CLAYEY SAND (SC), yellowish brown, wet, fine grained.		
10	3.0							
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							

05-20-2005 G:\Active Projects\6714\6714100101ESAllBore logs\6714100101-01-P10.bor



# 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	△						
10	3.0		△			CLAYEY SAND (SC), yellowish brown, wet, fine grained.		▽
15	4.5							
20	6.0							
25	7.5							
30	9.0							
<p>Bottom of boring at approximately 16 feet at 10:24. Groundwater measured at approximately 8.8 feet at 10:27.</p>								



# 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)	Unconfined 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		Δ						▽
2								
10	3	Δ				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								
30	9							



# 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	
	10		wet		▽		2	
	4		with gray fragments				2	
	15		moist					
	5		Bottom of boring -- 16ft				2	
	20							
	7							
	25							
	8							
	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								
40								
12								
45								
13								
50								
14								
55								
15								
60								
16								
17								
18								

## 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	
	10		SILTY CLAY (CH), mottled reddish brown and gray, stiff, moist, manganese staining				NR	
	3						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				0.9	
	7		hard					
	25						1.5	
	8							
	30		Bottom of boring -- 28ft					



# 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								
15								
50								
16								
55								
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).					
			SILTY CLAY (CH), dark brown, moderately stiff, moist (FILL)				0.8	
5			SILTY Clay (CH), mottled gray and light brown, very stiff, slightly moist, trace fine sand				NR	
10			less gray clay with depth, manganese staining				0.8	
15			more iron oxide staining				NR	
20			more gray clay fragments				0.5	
25							0.9	
30							0.5	
							NR	



# 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								
50								
15								
55								
16								
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	
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	
25			SILTY CLAY (CH), light brown, very stiff, moist				NR	
			hard , fragments of gray clay					
			Bottom of boring -- 28ft					
30	9							



# 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								
40								
12								
45								
13								
50								
14								
55								
15								
60								
16								
17								
18								

**APPENDIX B**

MCCAMPBELL ANALYTICAL, INCORPORATED

Soil/Groundwater Laboratory Test Results

6714.1.002.01  
July 15, 2005











# 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 & 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: 05/12/05

## 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 & 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.



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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: 05/18/05  
 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-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:	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.



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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: 05/12/05

### 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	µg/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.











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	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: 0505186

Lab ID	0505186-006A
Client ID	7-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	Acrolein (Propenal)	ND	1.0	0.05
Acrylonitrile	ND	1.0	0.02	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	0.025
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	2-Chloroethyl Vinyl Ether	ND	1.0	0.01
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	0.005
1,2-Dibromoethane (EDB)	ND	1.0	0.005	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	0.005
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethane	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-4-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
Nitrobenzene	ND	1.0	0.1	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-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:	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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	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				Reporting Limit for DF =1
Client ID	7-1				
Matrix	S				
DF	1				

Compound	Concentration				mg/kg	ug/L
	Acenaphthene	ND				0.005
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 (%)

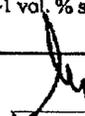
%SS1	92			
%SS2	85			
Comments				

\* 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.

 Angela Rydelius, Lab Manager



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	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			
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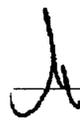
Comments

\* 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.

 Angela Rydelius, Lab Manager



**McC Campbell Analytical, Inc.**

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### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505185

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 16214			Spiked Sample ID: 0505178-011A		
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(btex) <sup>E</sup>	ND	0.60	97.4	97.5	0.0974	97.6	101	2.90	70 - 130	70 - 130
MTBE	ND	0.10	90.4	87.9	2.78	83.2	86.8	4.24	70 - 130	70 - 130
Benzene	ND	0.10	95	92.2	3.01	95.2	97.8	2.73	70 - 130	70 - 130
Toluene	ND	0.10	80.6	87.7	8.41	81.8	83.4	1.98	70 - 130	70 - 130
Ethylbenzene	ND	0.10	100	97.1	3.17	101	107	5.32	70 - 130	70 - 130
Xylenes	ND	0.30	90.3	86	4.91	90.7	96	5.71	70 - 130	70 - 130
%SS:	108	0.10	83	108	25.7	105	103	1.92	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 16214 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	5/13/05 1:24 PM	0505186-002A	5/12/05 12:33 PM	5/12/05	5/13/05 3:50 PM
0505186-003A	5/12/05 4:01 PM	5/12/05	5/13/05 4:23 PM	0505186-004A	5/12/05 4:20 PM	5/12/05	5/14/05 6:17 AM
0505186-005A	5/12/05 4:36 PM	5/12/05	5/14/05 6:50 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).

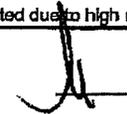
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the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

 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.

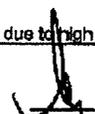
% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

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).

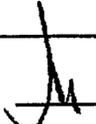
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the 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 =  $100 \cdot (\text{MS-Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 \cdot (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

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) <sup>£</sup>	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.



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### 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.



**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.

# CHAIN OF CUSTODY RECORD

PROJECT NUMBER: **0506534**  
 PROJECT NAME: **SUNSHIN CORPORATION YARD, SUISUN CITY**  
 SAMPLED BY (SIGNATURE/PRINT): **Louis Darnocell**  
 PROJECT MANAGER (SIGNATURE/PRINT): **Louis Darnocell**

ROUTING: E-MAIL **SPMUGBL@BURLCO.COM** HARD COPY

SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	REMARKS
H1 3E-1-AM	6-28-05	0900	SPL	1	QT. BGA	ICE	TPH - GAS, BTEX + TPH - DIESEL MOTOR OIL
H1 3E-1-AM	6-28-05	1005	AQUEOUS	1	1L	ICE	
H1 3E-1-AM	6-28-05	1020	AQUEOUS	3	40ml	HCL	
H10 3E-2-AM	6-28-05	1305	AQUEOUS	1	1L	ICE	
H10 3E-2-AM	6-28-05	1310	AQUEOUS	3	40ml	HCL	
H1 3E-3-AM	6-28-05	1520	AQUEOUS	1	1L	ICE	
H1 3E-3-AM	6-28-05	1524	AQUEOUS	3	40ml	HCL	
H2 3E-4-AM	6-28-05	1635	AQUEOUS	1	1L	ICE	
H2 3E-4-AM	6-28-05	1640	AQUEOUS	3	40ml	HCL	
RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	REMARKS
<i>Louis Darnocell</i>	6-28-05 6:20 AM	<i>[Signature]</i>					

KEEP  
 GOOD CONDITION  
 HEAD SPACE ABSENT  
 DECONTAMINATED IN LAB  
 PRESERVATION  
 APPROPRIATE  
 CONTAINERS  
 PRESERVED IN LAB  
 METALS OTHER

5 Day Test

# ENGEO

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