CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 5301 • OAKLAND, CALIFORNIA 94612-2034

Public Works Agency
Environmental Services Divison

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March 18, 2011

Mr. Paresh Khatri
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Completion Report - Limited Subsurface Investigation, City of Oakland CorporationYard 4, 5921 Shepherd Canyon Road, Oakland, California, Fuel Lead Case No. RO0000141 and Geotracker Global ID T0600100469

Dear Mr. Khatri:

The City of Oakland is pleased to submit the attached Completion Report prepared by Fugro Consultants Inc. (Fugro) for the Shephard Canyon site. The City is submitting this report as part obtaining a "No Further Action" status to the above referenced site. Fugro prepared this report as a consultant to the City.

Certification

I certify under penalty of law that this document and attachments are prepared under my direction or supervision in accordance with the system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing the violations.

If you have questions or need additional information, please contact me at (510)238-6361.

Sincerely

Gopal Nair
Environmental Program Specialist

FUGRO CONSULTANTS, INC.

1000 Broadway, Suite 440
Oakland, California 94607
Tel: (510) 268-0461
Fax: (510) 268-0137

March 16, 2011
Project No. 04.741000012

Alameda County Environmental Health
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Mr. Paresh Khatri, Hazardous Materials Specialist

Subject: Completion Report - Limited Subsurface Investigation, City of Oakland Corporation Yard 4, 5921 Shepherd Canyon Road, Oakland, California, Fuel Lead Case No. RO0000141 and Geotracker Global ID T0600100469

Dear Mr. Khatri:

With this letter, Fugro Consultants Inc. (Fugro) presents the result of our Limited Subsurface Investigation at the subject site (Plate 1). Fugro completed the subsurface investigation to characterize soil and groundwater conditions in the vicinity of the former underground storage tanks (USTs) at the site as required by Alameda County Environmental Health (ACEH) in their letter dated October 14, 2010. This report was prepared on behalf of the City of Oakland, Environmental Services Division (City).

LIMITATION

Fugro has prepared this report in a professional manner, using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Fugro shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. Fugro also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report. Fugro believes that conclusions stated herein to be factual, but no guarantee is made or implied.

Fugro prepared this document for the sole use of the City of Oakland and Alameda County Environmental Health, the intended beneficiaries of this work. No other party should rely on the information contained herein without the prior written consent of the City and Fugro. This report and the interpretations, conclusions, and recommendations contained within are based in part on information presented in other documents that are cited in the text and listed in the references. Therefore, this report is subject to the limitations and qualifications presented in the referenced documents.

BACKGROUND

In May 1990, one 2,000-gallon gasoline UST and one 550-gallon diesel UST were removed from the Site. Chemical analysis on two confirmation soil samples collected at depths of 11 feet below the ground surface (bgs) detected up to 790 milligram per kilogram (mg/kg) of total petroleum hydrocarbons as gasoline (TPHg) and up to 27 mg/kg of benzene. No groundwater was reported during the excavation activity.

On March 5, 1999, SCI (a wholly owned subsidiary of Fugro West Inc.) drilled one soil boring (SCI-1) to a depth of 25 feet bgs at the former gasoline UST location. Chemical analysis on two soil samples collected at depths of 13.5 and 19 feet below ground surface (bgs) detected no TPHg, benzene, or methyl tertiary butyl ether (MTBE) concentrations at or above analytical reporting limits. Analyses detected up to 14 mg/kg of total petroleum hydrocarbons as diesel fuel (TPHd) and up to 21 mg/kg of total petroleum hydrocarbons as motor oil (TPHmo). One grab groundwater sample was also collected from the boring. Chemical analysis detected 140 micrograms per liter (µg/L) of TPHg, 150 µg/L of TPHd, and 12 µg/L of benzene in the grab groundwater sample.

Between April and November 1999, SCI installed a 2-inch diameter monitoring well (MW-1) within 10 feet of the former UST location. At that time, the depth to groundwater in MW-1 ranged from 14 to 19 feet bgs. Fractured siltstone bedrock was encountered at approximately 8.0 feet and 19 feet below ground surface at MW-1 and SCI-1, respectively.

Results of analyses on groundwater samples indicated that the shallow groundwater was impacted with low concentrations of petroleum hydrocarbons and no MTBE concentrations. Additionally, field measurements indicated that dissolved oxygen concentrations in groundwater were likely adequate to support ongoing biodegradation of the dissolved petroleum hydrocarbons detected at the Site.

In the letter dated October 14, 2010, ACEH indicated that the Site was not adequately characterized and requested an additional investigation to evaluate the lateral and vertical extent of petroleum hydrocarbons near the former USTs. Fugro's Work Plan for Limited Subsurface Investigation dated December 22, 2010 was submitted to and accepted by the ACEH in their letter dated January 13, 2011.

SUBSURFACE INVESTIGATION

Fugro's subsurface investigation was conducted using standard industry practices regarding worker health and safety, sample collection and handling, chemical testing, and reporting. All investigation-derived waste, which includes soil cuttings, purged groundwater, and decontamination water were drummed, labeled, and stored temporarily at the City's Corporation Yard pending offsite disposal. Field work was completed between January 27, 2011 and February 4, 2011.

Fugro sampled MW-1 with a clean disposable bailer and groundwater samples were placed in laboratory-prepared containers, stored in cooled ice-chests, and transported to a state-certified analytical laboratory under chain-of-custody documentation.

On January 27th Fugro drilled boring B-1 and B-2 to 25 and 30 feet, respectively. Boring B-1 was completed within approximately 10 feet of the former UST locations. Boring B-2 was completed 60 feet southeast of the former UST on the south side of Shepherd Canyon Road and within the paved parking area of Fire Station No. 24 (Plate 2).

No groundwater was encountered during drilling. Both boring were secured overnight to allow for recharge. On January 28th Fugro encountered groundwater in B-1 at a depth of 22.88 feet below ground surface (bgs) and collected a grab groundwater sample. A sample was collected using a new disposable bailer and decanted into laboratory cleaned sampling bottles. Boring B-1 was then grouted with neat cement. However, no groundwater was encountered in B-2. Boring B-2 was secured over the weekend to allow for recharge. On February 1st Fugro returned and encountered no groundwater. Boring B-2 was then drilled an additional 8 feet, secured, and allowed to recharge for several days. Fugro returned on February 4th to encounter no groundwater. Fugro then proceeded to grout using neat cement.

SUBSURFACE CONDITIONS

Fugro encountered brown silt with sub-rounded to angular gravel to 6 feet bgs in Borings B-1 and B-2. From 6 feet to the maximum depth explored in B-1 and B-2 we encountered light brown fractured siltstone. No odors were detected during drilling and the highest Organic Vapor Meter (OVM) reading was 2.5 parts per million (ppm) for B-1@9.5 feet, Fugro detected no OVM readings in soil samples from B-2. Based on field observations, soil samples B-1@9.5' or B-2@24' were selected for chemical analyses.

During sampling, groundwater was encountered in MW-1 at a depth of 14.37 feet. Fugro purged approximately 4.3 gallons of water from this well. Pre-purge downhole field measurements included; 19.47 C^{o}; pH of 7.17; conductivity of 690 µMHOS/cm; an Oxygen Reducing Potential (ORP) of 47.3 millivolts (mV); and Dissolved Oxygen (DO) at 4.89 milligrams per liter (mg/L). No free-phase hydrocarbons, oily sheen, or hydrocarbon odors were observed.

CHEMICAL TESTING

Selected soil and groundwater samples were submitted to a State-certified testing laboratory for the following analyses:

- TPHg, benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE using USEPA Test Method 8260, and
- TPHd and TPHmo using USEPA Test Method 8015 modified, and
- Naphthalene and Lead Scavengers using USEPA 8260.

DISCUSSION OF ANALYTICAL RESULTS

Results of analyses are summarized on Tables 1 and 2. For soils samples analyses detected no TPHg, TPHmo, BTEX, or MTBE in Samples B-1@9.5' or B-2@24'. Only 4.2 milligrams per kilograms (mg/kg) of TPHd was detected in B-1@5', which is well below the Environmental Screening Level (ESL) established by the Regional Water Quality Control Board (RWQCB) for a residential land use. Analyses detected no TPHd in B-2@24'.

Except for 0.66 mg/l of benzene in MW-1, analyses detected no TPHg, TPHd, TPHmo, BTEX, MTBE, naphthalene, or lead scavengers in groundwater samples collected from MW-1 or B-1. The detected benzene in groundwater is below the ESL criteria for residential land use, commercial / industrial worker, and drinking water toxicity criteria.

RECOMMENDATIONS

Field observations and results of analyses indicate no significant TPH impacts to soil at Boring B-1 or B-2 located downgradient of the former UST. Results of analyses on groundwater samples detected only 0.66 ug/L of benzene in MW-1 and no contaminants in grab groundwater samples from B-1. The detected benzene concentration at MW-1 is below the ESL criteria for a residential land use, commercial / industrial worker, and drinking water toxicity levels. Accordingly, the benzene detected in MW-1 and TPHd detected in soil sample B-1@9.5' are considered to be minor and do not posed a significant risk to human health and the environment.

It is Fugro's opinion that hydrocarbon impacts resulting from UST operations are minnow and localized to the near vicinity of the former UST. It is Fugro's opinion that the soil and groundwater conditions at the Site have been adequately characterized and that no further investigation is required. On behalf of the City, Fugro requests ACEH concurrence that no further action is required for this Site. Once such concurrence is received, the existing monitoring well (MW-1) should be properly decommissioned in accordance with Alameda County drilling permit requirements.

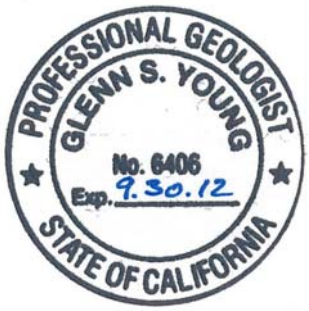
If you have any questions or comments, please feel free to contact the undersigned at (510) 268-0461.

Sincerely,

FUGRO CONSULTANTS, INC.

Mike D'Anna
Staff Geologist

Glenn S. Young. P.G., LEED AP
Principal Geologist

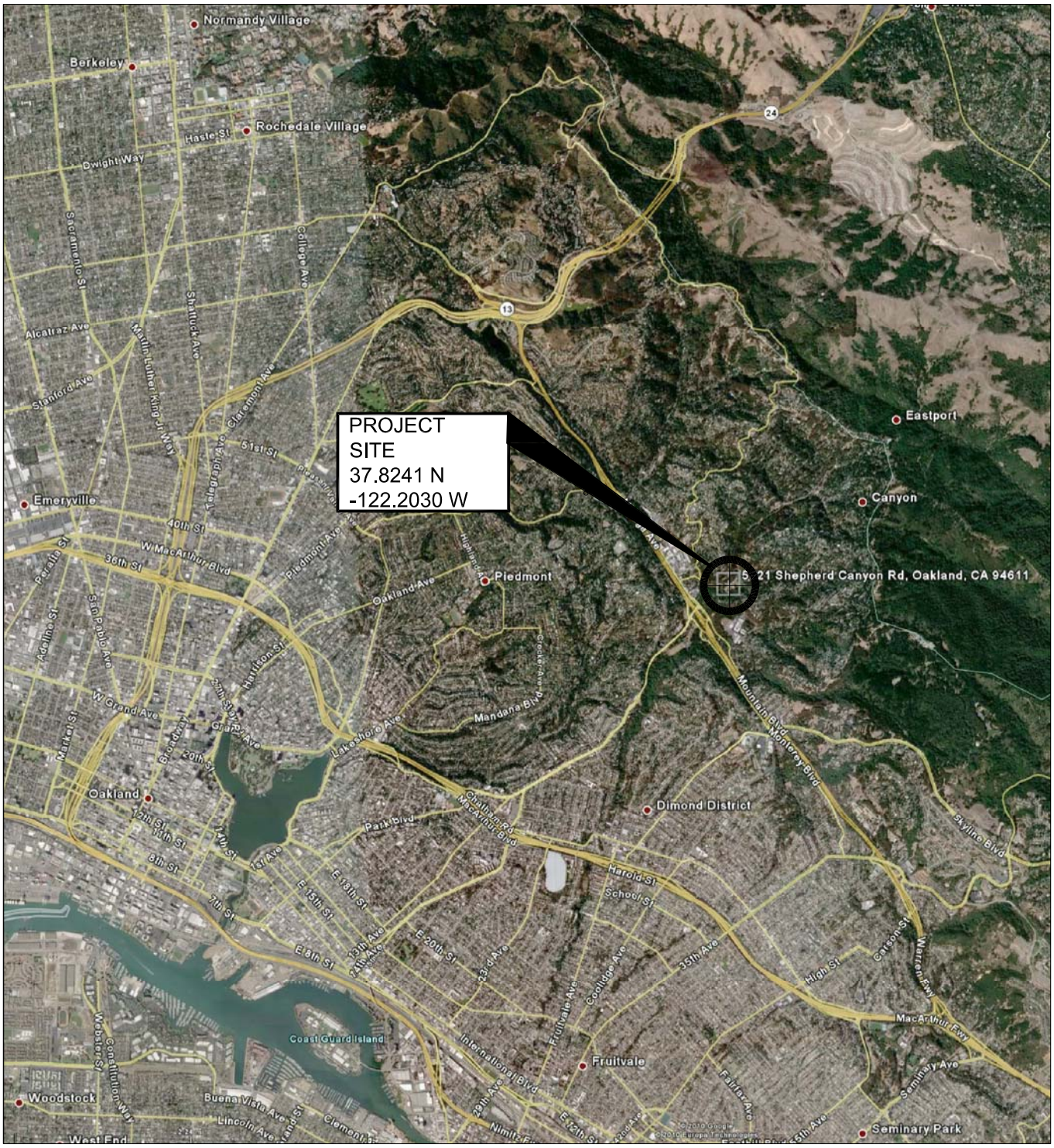


KAE/GSY:ke

Attachments: Plate 1 – Vicinity Map
Plate 2 – Site Plan
Table 1 – Summary of Analytical Results - Soil Samples
Table 2 – Summary of Analytical Results - Groundwater
Appendix A – Boring Logs with USCS Classification Key
Appendix B – Well Sampling Form
Appendix C – Analytical Report

Copies Submitted: (1) Addressee
(1 pdf) Mr. Gopal Nair, City of Oakland

PLATES



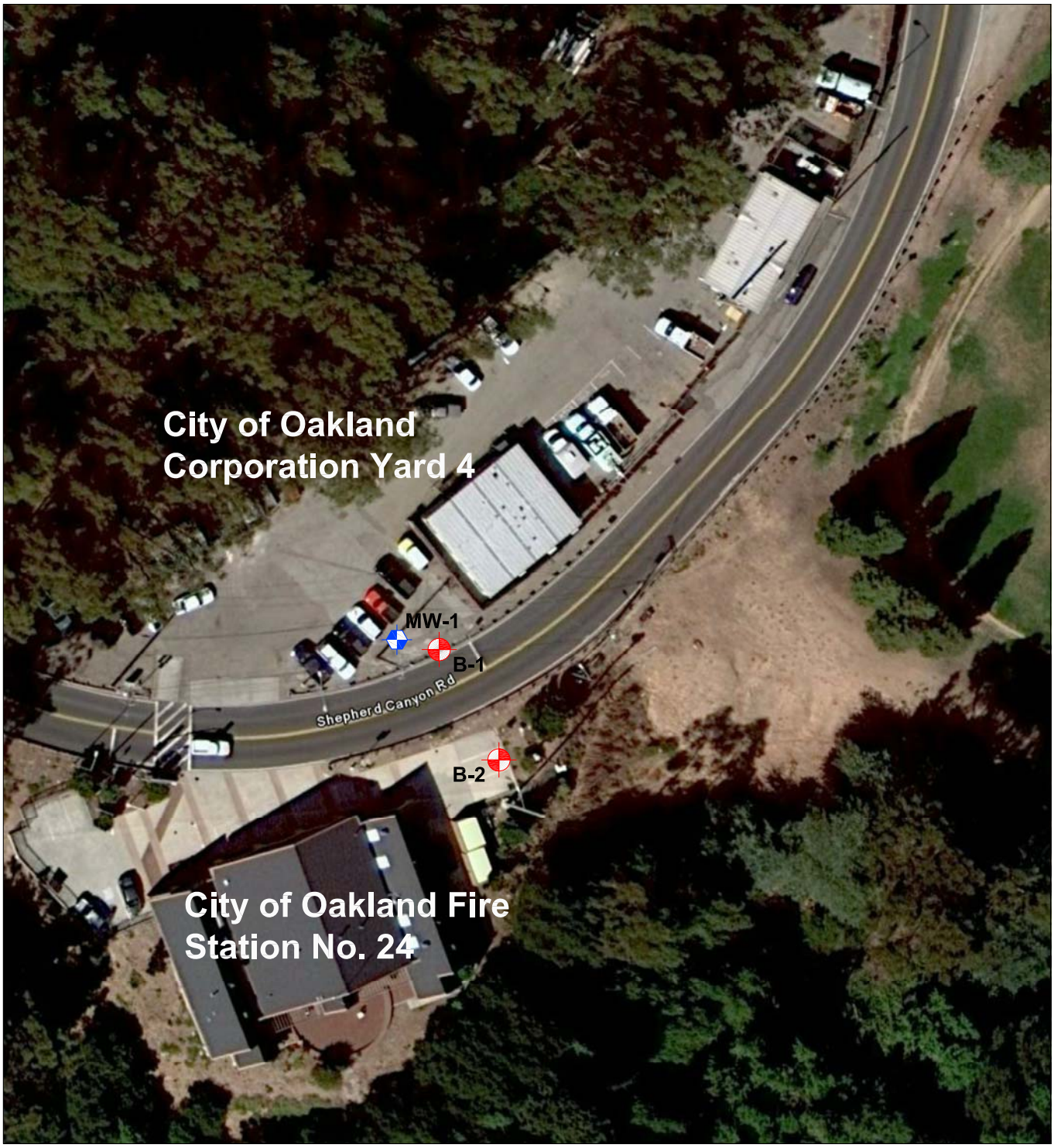
BASE MAP SOURCE: Aerial photograph from Google Earth Pro 2010.

NORTH
0 5000
FEET

VICINITY MAP

5921 Shepherd Canyon Road
Oakland, California

PLATE 1



BASE MAP SOURCE: Aerial photograph from Google Earth Pro 2010.

LEGEND

MW-1 Location of Monitoring Well

B-2 Location of Proposed Boring

NORTH

0 60

FEET

SITE PLAN - PROPOSED BORING LOCATIONS
5921 Shepherd Canyon Road
Oakland, California

PLATE 2

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TABLES

Table 1
Summary of Analytical Results - Soil Samples
5921 Shepherd Canyon Road
Oakland, California

		Sample ID		Regulatory Screening Criteria	
Analyte	Units	B-1 @ 9.5'	B-2 @ 24'	ESLs Residential Land Use*	ESLs Commercial Industrial Worker*
Sample Depths	ft	9.5'	24'		
Hydrocarbons					
TPHg	mg/kg	<1.1	<1.1	110	450
TPHd	mg/kg	**4.2** Y	<0.99	110	450
TPHmo	mg/kg	<5.0	<5.0	370	3,700
Volatile Organic Compounds					
MTBE	µg/kg	<22	<21	30,000	65,000
Benzene	µg/kg	<5.4	<5.3	120	270
Toluene	µg/kg	<5.4	<5.3	630,000	210,000
Ethylbenzene	µg/kg	<5.4	<5.3	2,300	5,000
o-Xylene	µg/kg	<5.4	<5.3	31,000	100,000

Notes:
TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
TPHmo = Total Petroleum Hydrocarbons as motor oil
VOCs = Volatile organic compounds
mg/kg = Milograms per kilogram
Detected Concetrations shown in **Bold**
<25 = Not detected above laboratory detection limit
ND = Not Detected
Y = Sample exhibits chromatographic pattern which does not resemble standard
ESL = Environmental Screening Levels, RWQCB Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater -- Interim Final, November 2007, Revised May 2008
* = Table K-1 and K-2: ESL for Direct Exposure of residential Land use and Commercial / Industrial Exposure Scenarios, respectively.

Table 2
Summary of Analytical Results - Groundwater
5921 Shepherd Canyon Road
Oakland, California

		Sample ID				Screening Criteria
Analyte	**Units**	**MW-1**	**MW-1**	**MW-1**	**B-1**	**ESL**
Date		6/10/1999	9/10/1999	1/27/2011	1/27/2011	
Petroleum Hydrocarbons						
TPHg	µg/L	**8,000**	**210**	<50	<50	100
TPHd	µg/L	**1,100**	**360**	<50	<50	100
TPHmo	µg/L	<300	<280	<300	<300	100
Volatile Organic Compounds						
MTBE	µg/L	<40	<0.5	<0.5	<0.5	5
Benzene	µg/L	**1,300**	**110**	**0.66**	<0.5	1.0
Toluene	µg/L	**2,000**	**8.8**	<0.5	<0.5	150
Ethylbenzene	µg/L	**240**	**32**	<0.5	<0.5	30
Total Xylenes	µg/L	**1,350**	**5.8**	<1.0	<1.0	0.05
Naphthalene	µg/L	--	--	<2.0	<2.0	17
Lead Scavengers						
1,2-Dichloroethane	µg/L	--	--	<0.5	<0.5	0.5
1,2-Dibromoethane	µg/L	--	--	<0.5	<0.5	0.05

Notes:
Detected Concentrations shown in **Bold**
<0.5 = Not detected above laboratory detection limit
-- = Not Analysed
ND = Not Detected
TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
TPHmo = Total Petroleum Hydrocarbons as motor oil
MTBE = Methyl tert Butyl Ether
µg/L = micrograms per liter
NE= Not established
ESL = Environmental Screening Levels, RWQCB Screening for Environmental Concerns
at Sites with Contaminated Soil and Groundwater -- Interim Final, November 2007, revised May 2008, Table F-1a

APPENDIX A
BORING LOGS

CLASSIFICATION AND MATERIAL SYMBOLS

MAJOR DIVISIONS PER ASTM D2488-06			MAJOR GROUP NAMES AND MATERIAL SYMBOLS		
COARSE-GRAINED SOILS (More than 50% retained on the No. 200 sieve)	GRAVELS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	Clean gravels less than 5% fines	GW		Well-Graded Gravel
			GP		Poorly Graded Gravel
		Gravels with more than 12% fines	GM		Silty Gravel
			GC		Clayey Gravel
	SANDS (MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE)	Clean sand less than 5% fines	SW		Well-Graded Sand
			SP		Poorly Graded Sand
		Sands with more than 12% fines	SM		Silty Sand
			SC		Clayey Sand
FINE-GRAINED SOILS (50% or more passes the No. 200 sieve)	SILTS AND CLAYS (Liquid Limit Less than 50%)		ML		Silt
			CL		Lean Clay
			OL		Organic Silt
	SILTS AND CLAYS (Liquid Limit Greater than 50%)		MH		Elastic Silt
			CH		Fat Clay
			OH		Organic Clay
HIGHLY ORGANIC SOILS			PT		Peat or Highly Organic Soils

Notes:
Classification of soils on the boring logs is in general accordance with ASTM D2488, or D2487 if appropriate laboratory data are available.
The geologic formation is noted in bold font at the top of interpreted interval on the boring logs.

OTHER MATERIAL SYMBOLS

- Debris or Mixed Fill
- Pavement with Aggregate Base

SAMPLER TYPE

- SPT (Driven) 1-3/8" ID 2" OD
- Modified California (Driven) 2-3/8" ID 3" OD
- Modified California (Driven) 1-7/8" ID 2-1/2" OD
- Shelby Tube (Pushed) 2-7/8" ID 3" OD
- Pitcher Barrel (Rotary-cut) 2-7/8" ID
- Osterberg (Piston) 2-7/8" ID
- 101 Geobarrel (Rotary-cut) 2-7/8" ID
- Rock Core (Rotary-cut) See log for size
- Vibracore (Vibrated) See log for size
- Push-core (Pushed) See log for size
- Collected from Auger
- Other See log for details

Note: Refer to text of report for additional details or other sampler types.

BLOW COUNT

Number of blows with to drive sampler each of three 6-in. intervals, as measured in the field (uncorrected). An SPT hammer (140 lb., falling 30-in.) was used unless otherwise noted on the boring log. For example:

Blow Count	Description
5 7 8	5, 7, and 8 blows for first, second, and third interval, respectively.
35 50/3"	35 blows for the first interval. 50 blows for the first 3 inches of the second interval. Lack of third value implies that driving was stopped after 3 inches into the second interval.
WOH WOH 5	"WOH" indicates that the weight of the hammer was sufficient to advance the sampler over the first two intervals. 5 blows were required to advance the sampler over the third interval.

N-VALUE

The N-Value represents the blowcount for the last 12 inches of the sample drive if three 6-inch intervals were driven. If 50 hammer blows were insufficient to drive through either the second or the third interval, the total number of blows and total length driven are reported (excluding the first interval). "ref" (refusal) indicates that 50 blows were insufficient to drive through the first 6-inch interval.

Parenthesis indicate that an approximate correction has been applied for non-SPT drive samplers. For example, a factor of 0.63 is commonly used to adjust blow counts obtained using a 3-inch outside diameter modified California sampler to correspond to Standard Peneteration Test.

UNDRAINED SHEAR STRENGTH

A value of undrained shear strength is reported. The value is followed by a letter code indicating the type of test that was performed, as follows:

U - Unconfined Compression
Q - Unconsolidated Undrained Triaxial
T - Torvane
P - Pocket Penetrometer
M - Miniature Vane
F - Field Vane
R - R-value

OTHER TESTS

Field or laboratory tests without a dedicated column on the boring log are reported in the Other Tests column. A letter code is used to indicate the type of test. For certain tests, a value representing the test result is also provided. Typical letter codes are as follows. Additional codes may be used. Refer to the report text and the laboratory testing results for additional information.

k - Permeability (cm/s)
Consol - Consolidation
Gs - Specific Gravity
MA - Particle Size Analysis
EI - Expansion Index
OVM - Organic Vapor Meter

WATER LEVEL SYMBOLS

- Initial water level
- Stabilized water level
- Seepage encountered

INCREASING MOISTURE CONTENT

Dry
Moist
Wet

CONSISTENCY OF COHESIVE SOIL

CONSISTENCY	UNDRAINED SHEAR STRENGTH (KIPS PER SQUARE FOOT)
Very Soft	< 0.25
Soft	0.25 to 0.50
Medium Stiff	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	> 4.0
Note: In absence of test data, consistency has been estimated based on manual observation.	

APPARENT DENSITY OF COHESIONLESS SOIL

APPARENT DENSITY	N-VALUE
Very Loose	0 to 4
Loose	5 to 9
Medium Dense	10 to 29
Dense	30 to 49
Very Stiff	> 49

TERMS AND SYMBOLS USED ON BORING LOGS

MATERIAL SYMBOLS

	Sandstone
	Siltstone
	Claystone
	Basalt
	Bolders and Cobbles
	Other (refer to boring log)

Note: Composite or additional symbols may be shown on boring log. Refer to material description on boring log.

GRAIN SIZE FOR CRYSTALLINE IGNEOUS AND METAMORPHIC ROCK

DESCRIPTION	AVERAGE CRYSTAL DIAMETER
Very Coarse Grained or Pegmatic	Greater of equal to 3/8 inch
Coarse-Grained	3/16 to 3/8 inch
Medium-Grained	1/32 to 3/16 inch
Fine-Grained	1/250 to 1/32 inch
Aphanitic	Less than 1/250 inch

WEATHERING OF INTACT ROCK

DESCRIPTION	CHARACTERISTICS
Fresh	No discoloration, not oxidized.
Slightly Weathered	Discoloraton or oxidation is limited to surface of, or short distance from fractures; some feldspar crystals are dull.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty", feldspar crystals are "clowdy".
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation, see grain boundary conditions.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.

BEDDING SPACING

DESCRIPTION	THICKNESS/SPACING
Massive	Greater than 10 feet.
Very Thickly Bedded	3 to 10 feet.
Thickly Bedded	1 to 3 feet.
Moderately Bedded	4 inches to 1 foot.
Thinly Bedded	1 to 4 inches.
Very Thinly Bedded	1/4 to 1 inch.
Laminated	Less than 1/4 inch.

HARDNESS

DESCRIPTION	CRITERIA
Extremely Hard	Cannot be scratched with a pocket knife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very Hard	Cannot be scratched with a pocket knife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocket knife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with a pocket knife or sharp pick with light or moderate pressure. Core breaks with moderate hammer blows.
Moderately Soft	Can be grooved 1/6-inch deep with a pocket knife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily with a pocket knife or sharp pick with light pressure. Can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

FRACTURE DENSITY

DESCRIPTION	OBSERVED FRACTURE DENSITY
Unfractured	No fractures.
Very Slightly Fractured	Core lengths greater than 3 feet.
Slightly Fractured	Core lengths mostly from 1 to 3 feet.
Moderately Fractured	Core lengths mostly 4 inches to 1 foot.
Intensely Fractured	Core lengths mostly from 1 to 4 inches.
Very Intensely Fractured	Mostly chips and fragments.

TERMS AND SYMBOLS USED FOR ROCK

PLATE A-1

City of Oakland
Project No. 04.74100012

DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/ PRESSURE	OVM/PID (ppm)	LOCATION: SURFACE EL: ft +/- (rel. datum) MATERIAL DESCRIPTION	OTHER TESTS
						12 inch Asphalt / Concrete Pavement	
1		1			1.5	SILT with gravel (ML): brown, moist, medium sub-rounded to angular gravel, no odor or staining	
2							
3							
4							
5		5			1.5		
6						SILTSTONE: light brown, dry, hard, fractured, no odor or staining	
7							
8							
9							
10		9.5			2.5		
11							
12							
13						- color change to gray	
14		13.5			1		

Continued

BORING DEPTH: 25.0 ft
DEPTH TO WATER: 23.0 ft
BACKFILL: Grout
COMPLETION DATE: January 27, 2011
NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push
HAMMER TYPE: Direct Push
RIG TYPE: Geo Probe 7822DT
DRILLED BY: VTS
LOGGED BY: M D'Anna

LOG OF B-1
Oakland Corporation Yard 4
Oakland, California

DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/ PRESSURE	OVM/PID (ppm)	LOCATION: SURFACE EL: ft +/- (rel. datum) MATERIAL DESCRIPTION	OTHER TESTS
16		15.5			0.5		
17							
18							
19						- color change to gray brown	
20		19.5			0.5		
21							
22							
23						▼	
24		24			1.5		
25						- Bottom of Boring at 25 feet	
26							
27							
28							
29							

BORING DEPTH: 25.0 ft
DEPTH TO WATER: 23.0 ft
BACKFILL: Grout
COMPLETION DATE: January 27, 2011
NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push
HAMMER TYPE: Direct Push
RIG TYPE: Geo Probe 7822DT
DRILLED BY: VTS
LOGGED BY: M D'Anna

LOG OF B-1
Oakland Corporation Yard 4
Oakland, California

DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/ PRESSURE	OVM/PID (ppm)	LOCATION: SURFACE EL: ft +/- (rel. datum) MATERIAL DESCRIPTION	OTHER TESTS
		0.5			0	8 inch Asphalt / Concrete Pavement	
						SILT with gravel (ML): brown, dry, medium to coarse, sub-rounded to sub-angular gravel, no odor or staining	
5		5			0		
						SILTSTONE: brown, dry, weathered, no odor or staining	
10		10			0		
		13.5			0		
15		15			0		
		16.5			0		
		18			0		
		19.5			0		

Continued

BORING DEPTH: 38.0 ft
DEPTH TO WATER: Not Encountered
BACKFILL: Grout
COMPLETION DATE: February 4, 2011
NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push
HAMMER TYPE: Direct Push
RIG TYPE: Geo Probe 7822DT
DRILLED BY: VTS
LOGGED BY: M D'Anna

LOG OF B-2
Oakland Corporation Yard 4
Oakland, California

DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/ PRESSURE	OVM/PID (ppm)	LOCATION: SURFACE EL: ft +/- (rel. datum) MATERIAL DESCRIPTION	OTHER TESTS
						- color change to dark brown	
		24			0	- color change to dark brown to gray brown, some iron oxide staining	
		24.5			0		
25						- color change to gray brown	
		27			0		
		28			0		
30						- no iron oxide staining	
35						- Bottom of Boring at 38 feet bgs	

BORING DEPTH: 38.0 ft
DEPTH TO WATER: Not Encountered
BACKFILL: Grout
COMPLETION DATE: February 4, 2011
NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push
HAMMER TYPE: Direct Push
RIG TYPE: Geo Probe 7822DT
DRILLED BY: VTS
LOGGED BY: M D'Anna

LOG OF B-2
Oakland Corporation Yard 4
Oakland, California

APPENDIX B
WELL SAMPLING FORM

ES-F50 WELL SAMPLING FORM

PROJECT NAME: Oakland Corp Yard
PROJECT NO.:
SAMPLED BY:
DATE:
WEATHER:

WELL NO.: MW-1
WELL CASING DIAMETER: 2"
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC): 23.15 FEET (23.1 ft)

DEPTH TO GROUNDWATER (BTOC): 14.37 FEET

FEET OF WATER IN WELL: 8.78 FEET

CALCULATED PURGE VOLUME: 4.3 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)
8.78 · 4 · .3

FREE PRODUCT: none

PURGE METHOD: Disposable Bailer

MEASUREMENT METHOD: ELECTRONIC SOUNDER or OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	Temp	pH	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
Downhole (Pre-Purge)	7:53	19.47	7.17	690	—	47.3	4.89	
1.3	7:56	[illegible].28	7.31	879	—	44.4	5.48	turbid
2.3	7:59	18.47	7.31	687	—	42.5	5.10	turbid Brown
3.9	8:03	18.53	7.71	698	—	41.5	4.82	turbid

ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC): (14.4) 80% 7.096 ft TIME SAMPLED: 11:20

SAMPLING METHOD: Disposable Bailer

CONTAINERS / PRESERVATIVE: 3 / HCL (40 ML) ___ / ___ (LITER)

___ / ___ (Poly) 2 500 ml / None (OTHER)

ANALYSES: (Note if any samples are field filtered)

- ___ TEHd, TEHmo (8015 w/ Silica gel)
- ___ TVHg, BTEX, MTBE (8015/8020)
- ___ VOCs (8260)
- ___ HVOCs (8260)
- ___ Title 22 Metals (6010/9000)
- ___ Pesticides (8080)
- ___ PCBs (8080)
- ___ Sulfate (300.0)
- ___ Nitrate (300.0)
- ___ Fe^{2+} - Field Filtered

MISC FIELD OBSERVATION:

Equipment	Serial No.	Calibration
Conductivity		Equip Co.
pH		
Turbidity		
Temperature		

YSI 600

APPENDIX C
ANALITCAL REPORT


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 225612
ANALYTICAL REPORT

Fugro West Inc.	Project : 04.74100012
1000 Broadway	Location : Oakland Corp. Yard
Oakland, CA 94607	Level : II

Sample ID	Lab ID
B-1 @ 9.5'	225612-001
B-1 @ 13.5'	225612-002
B-2 @ 24'	225612-003
B-2 @ 19.5'	225612-004
MW-1	225612-005

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

Signature: _____ Date: 02/04/2011
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**225612**
Client:	**Fugro West Inc.**
Project:	**04.74100012**
Location:	**Oakland Corp. Yard**
Request Date:	**01/28/11**
Samples Received:	**01/28/11**

This data package contains sample and QC results for two soil samples and one water sample, requested for the above referenced project on 01/28/11. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Soil:
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

225612

ES-F10 CHAIN OF CUSTODY

PROJECT NAME: Oakland Corp. Yard

PROJECT NO.: 04.74100012 LAB: C & T

PROJECT CONTACT: K Emery TURNAROUND: std

SAMPLED BY:M D'Anna

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX			CONTAINERS					PRESERVATIVE						SAMPLING DATE				NOTES	ANALYSIS REQUESTED									
		WATER	SOIL	AIR	VOA	LITER	PINT	TUBE	500mL	HCL	H_2SO_4	HNO_3	ICE	OTHER	NONE	MONTH	DAY	YEAR	TIME		TPHg, BTEX, MTBE Method 8260		TPHd and mo method 8015 Modified	Archive						EDF Reporting
1	B-1@9.5'		X													0	1	2	7		X		X							X
2	B-1@13.5'		X													0	1	↓	↓					X						
3	B-2@24'		X													0	1				X		X							X
4	B-2@19.5'		X													0	1							X						
5	MW-1	X			X				X	X			X			0	1	↓	↓		X		X							X

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
	1-28-11 9:12		1/28/11 92
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

COMMENTS & NOTES:

FUGRO WEST, INC.
1000 Broadway, Suite 440
Oakland, California 94607
Tel: 510.268.0461 Fax: 510.268.0545

Approved by Glenn Young, AC 62 Manager, Fugro West, Inc. 10/15/07.
Note: If this is a printed copy, please check the online QMS to ensure that it is the latest version.

Subject: RE: 04.74100012 - C&T Login Summary (225612)
From: "Emery, Karen [FWI]" <kemery@fugro.com>
Date: Mon, 31 Jan 2011 08:34:06 -0800
To: "Micah Smith" <micah.smith@ctberk.com>
CC: "D'Anna, Michael [FWI]" <mdanna@fugro.com>

Micah-

Please run Napthalene and Lead scavengers on the water sample from MW-1. Also Silica gel cleanup on the TPHd and TPHmo. Please confirm you have received this email and adjusted the analyses accordingly.

Thanks,
Karen

From: Micah Smith [mailto:micah.smith@ctberk.com]
Sent: Friday, January 28, 2011 6:45 PM
To: Young, Glenn [FWI]; Emery, Karen [FWI]
Subject: 04.74100012 - C&T Login Summary (225612)

I have the soils logged in for BTXE and MTBE by 8260 and gas by 8015 because we cannot analyze soils for gas by 8260. Thanks Micah

C&T Login Summary for 225612

Project: 04.74100012 **Site:** Oakland Corp. Yard **Lab Login #:** 225612 **Report Level:** II **Report Due:** 02/04/11 **PO#:** **C&T Proj Mgr:** Micah Smith	**Report To:** Fugro West Inc. 1000 Broadway Suite 440 Oakland, CA 94607 ATTN: Karen Emery (510) 268-0461	**Bill To:** Fugro West Inc. 1000 Broadway Suite 440 Oakland, CA 94607 ATTN: Karen Emery (510) 268-0461

Client ID	Lab ID	Sampled	Received	Matrix	Analyses	COC #	Comments
B-1 @ 9.5'	001	01/27	01/28				
				Soil	8020MS		TVH/MBTXE
				Soil	EDF		
				Soil	TEHM		
				Soil	TVH		
B-1 @ 13.5'	002	01/27	01/28				
				Soil	HOLD		
B-2 @ 24'	003	01/27	01/28				
				Soil	8020MS		TVH/MBTXE

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 225612 Date Received 1/28/11 Number of coolers 1
Client FUGRO Project Oakland Corp. Yard

Date Opened 1/28/11 By (print) R. Paris (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☒ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C)

☒ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are samples in the appropriate containers for indicated tests? (YES) NO
11. Are sample labels present, in good condition and complete? (YES) NO
12. Do the sample labels agree with custody papers? (YES) NO
13. Was sufficient amount of sample sent for tests requested? (YES) NO
14. Are the samples appropriately preserved? (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? (YES) NO N/A
16. Was the client contacted concerning this sample delivery? YES (NO)
If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012		
Matrix:	Soil	Sampled:	01/27/11
Basis:	as received	Received:	01/28/11
Diln Fac:	1.000	Analyzed:	01/31/11
Batch#:	171377		

Field ID: B-1 @ 9.5' Lab ID: 225612-001
Type: SAMPLE

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	EPA 8015B
MTBE	ND	22	ug/Kg	EPA 8021B
Benzene	ND	5.4	ug/Kg	EPA 8021B
Toluene	ND	5.4	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.4	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.4	ug/Kg	EPA 8021B
o-Xylene	ND	5.4	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	87	67-140	EPA 8015B
Bromofluorobenzene (PID)	93	45-125	EPA 8021B

Field ID: B-2 @ 24' Lab ID: 225612-003
Type: SAMPLE

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	EPA 8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.3	ug/Kg	EPA 8021B
Toluene	ND	5.3	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.3	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.3	ug/Kg	EPA 8021B
o-Xylene	ND	5.3	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	86	67-140	EPA 8015B
Bromofluorobenzene (PID)	92	45-125	EPA 8021B

Type: BLANK Lab ID: QC578132

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.20	mg/Kg	EPA 8015B
MTBE	ND	4.0	ug/Kg	EPA 8021B
Benzene	ND	1.0	ug/Kg	EPA 8021B
Toluene	ND	1.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	1.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	1.0	ug/Kg	EPA 8021B
o-Xylene	ND	1.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	84	67-140	EPA 8015B
Bromofluorobenzene (PID)	91	45-125	EPA 8021B

ND= Not Detected
RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC578133	Batch#:	171377
Matrix:	Soil	Analyzed:	01/31/11
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12	1.000	0.9646	96	79-121	EPA 8015B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	88	67-140	EPA 8015B
Bromofluorobenzene (PID)	92	45-125	EPA 8021B

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012		
Matrix:	Soil	Batch#:	171377
Units:	ug/Kg	Analyzed:	01/31/11
Diln Fac:	1.000		

Type: BS Lab ID: QC578134

Analyte	Spiked	Result	%REC	Limits	Analysis
MTBE	10.00	10.74	107	64-142	EPA 8021B
Benzene	10.00	9.748	97	72-125	EPA 8021B
Toluene	10.00	9.435	94	74-124	EPA 8021B
Ethylbenzene	10.00	9.552	96	73-125	EPA 8021B
m,p-Xylenes	10.00	9.508	95	74-126	EPA 8021B
o-Xylene	10.00	9.318	93	71-128	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	88	67-140	EPA 8015B
Bromofluorobenzene (PID)	96	45-125	EPA 8021B

Type: BSD Lab ID: QC578135

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
MTBE	10.00	11.24	112	64-142	5	39	EPA 8021B
Benzene	10.00	9.643	96	72-125	1	20	EPA 8021B
Toluene	10.00	9.528	95	74-124	1	24	EPA 8021B
Ethylbenzene	10.00	9.893	99	73-125	4	20	EPA 8021B
m,p-Xylenes	10.00	9.630	96	74-126	1	20	EPA 8021B
o-Xylene	10.00	9.303	93	71-128	0	20	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	87	67-140	EPA 8015B
Bromofluorobenzene (PID)	92	45-125	EPA 8021B

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012		
Field ID:	B-1 @ 9.5'	Diln Fac:	1.000
MSS Lab ID:	225612-001	Batch#:	171377
Matrix:	Soil	Sampled:	01/27/11
Units:	mg/Kg	Received:	01/28/11
Basis:	as received	Analyzed:	01/31/11

Type: MS Lab ID: QC578166

Analyte	MSS Result	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12	0.06368	10.87	8.860	81	41-120	EPA 8015B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	90	67-140	EPA 8015B
Bromofluorobenzene (PID)	94	45-125	EPA 8021B

Type: MSD Lab ID: QC578167

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
Gasoline C7-C12	10.64	8.669	81	41-120	0	47	EPA 8015B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	90	67-140	EPA 8015B
Bromofluorobenzene (PID)	95	45-125	EPA 8021B

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3520C
Project#:	04.74100012	Analysis:	EPA 8015B
Field ID:	MW-1	Sampled:	01/27/11
Matrix:	Water	Received:	01/28/11
Units:	ug/L	Prepared:	01/31/11
Diln Fac:	1.000	Analyzed:	02/01/11
Batch#:	171383		

Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 225612-005

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	92	60-129

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC578158

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	76	60-129

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3520C
Project#:	04.74100012	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC578159	Batch#:	171383
Matrix:	Water	Prepared:	01/31/11
Units:	ug/L	Analyzed:	02/01/11

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,091	84	53-128

Surrogate	%REC	Limits
o-Terphenyl	93	60-129

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3520C
Project#:	04.74100012	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	171383
MSS Lab ID:	225630-004	Sampled:	01/26/11
Matrix:	Water	Received:	01/28/11
Units:	ug/L	Prepared:	01/31/11
Diln Fac:	1.000	Analyzed:	02/01/11

Type: MS Lab ID: QC578160

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	492.4	2,500	2,979	99	50-126

Surrogate	%REC	Limits
o-Terphenyl	98	60-129

Type: MSD Lab ID: QC578161

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	3,253	110	50-126	9	47

Surrogate	%REC	Limits
o-Terphenyl	106	60-129

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3550B
Project#:	04.74100012	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	171371
Units:	mg/Kg	Sampled:	01/27/11
Basis:	as received	Received:	01/28/11
Diln Fac:	1.000	Prepared:	01/31/11

Field ID: B-1 @ 9.5' Analyzed: 02/01/11
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 225612-001

Analyte	Result	RL
Diesel C10-C24	4.2 Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	69	52-130

Field ID: B-2 @ 24' Analyzed: 02/01/11
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 225612-003

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	86	52-130

Type: BLANK Analyzed: 01/31/11
Lab ID: QC578110 Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	82	52-130

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

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3550B
Project#:	04.74100012	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC578111	Batch#:	171371
Matrix:	Soil	Prepared:	01/31/11
Units:	mg/Kg	Analyzed:	01/31/11

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.79	34.57	69	44-151

Surrogate	%REC	Limits
o-Terphenyl	80	52-130

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3550B
Project#:	04.74100012	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	171371
MSS Lab ID:	225582-001	Sampled:	01/26/11
Matrix:	Soil	Received:	01/27/11
Units:	mg/Kg	Prepared:	01/31/11
Basis:	as received	Analyzed:	01/31/11
Diln Fac:	1.000		

Type: MS Cleanup Method: EPA 3630C
Lab ID: QC578112

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.968	49.99	34.21	62	39-146

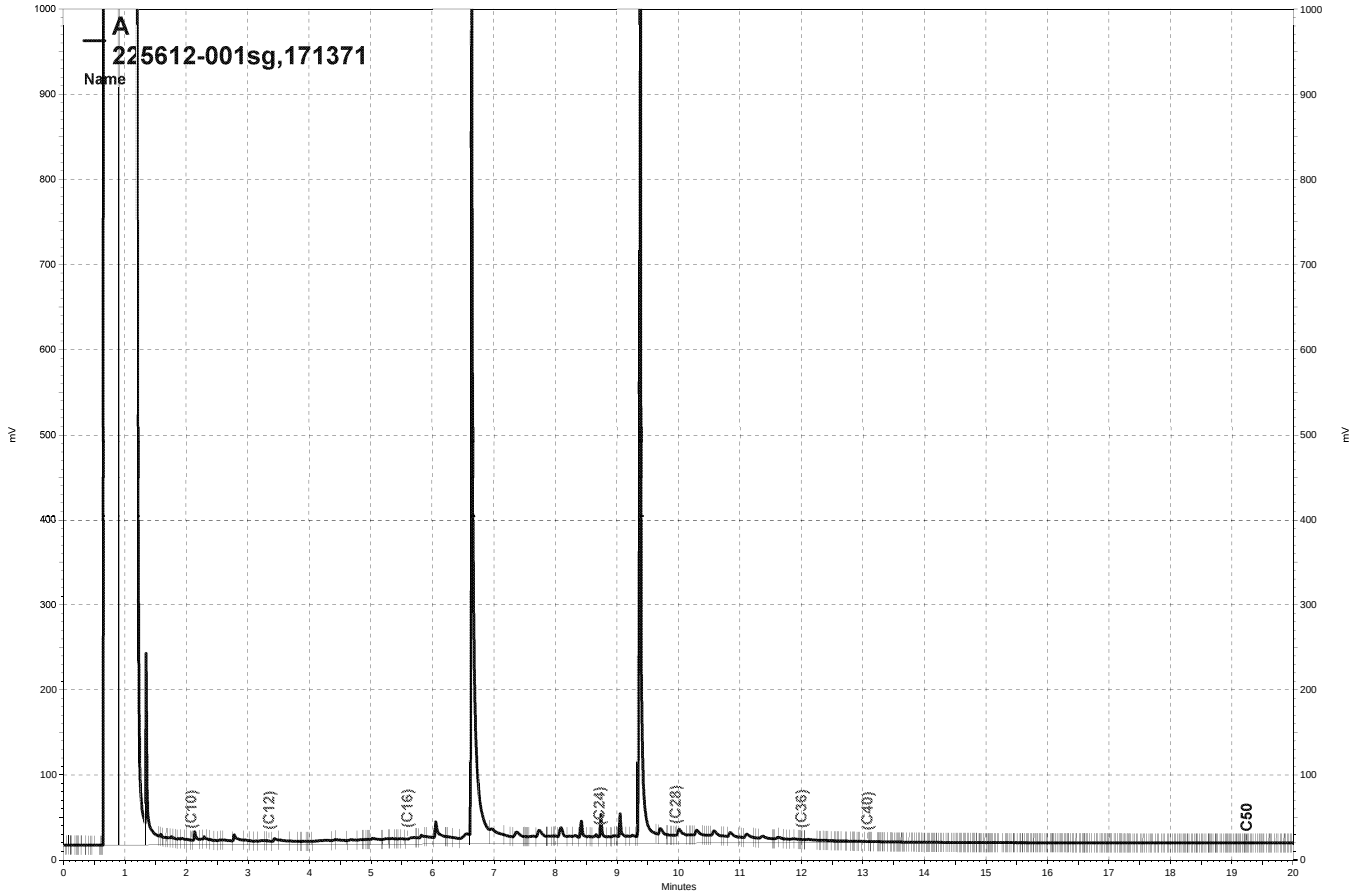
Surrogate	%REC	Limits
o-Terphenyl	74	52-130

Type: MSD Cleanup Method: EPA 3630C
Lab ID: QC578113

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.86	31.56	57	39-146	8	61

Surrogate	%REC	Limits
o-Terphenyl	67	52-130

RPD= Relative Percent Difference



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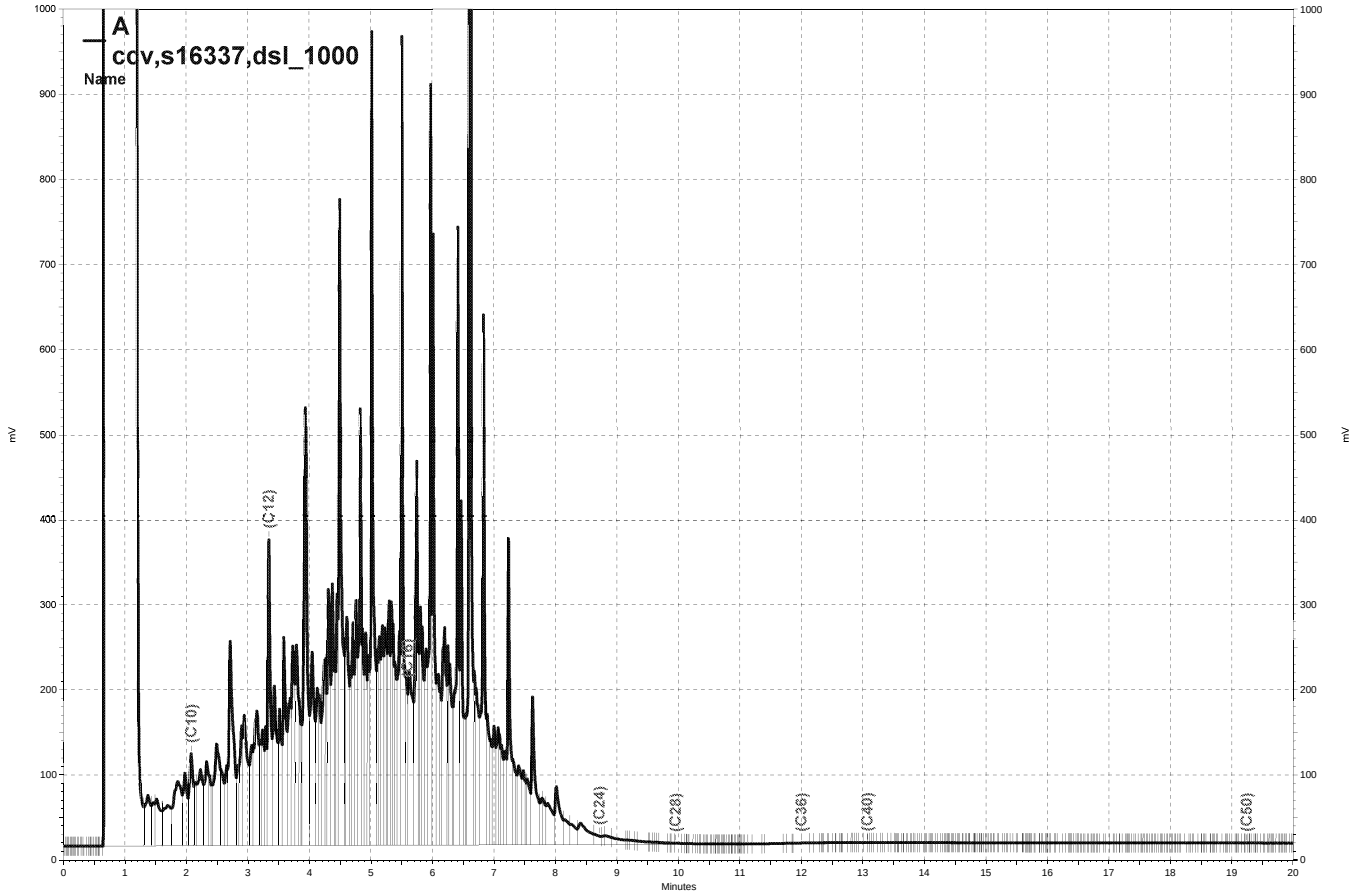

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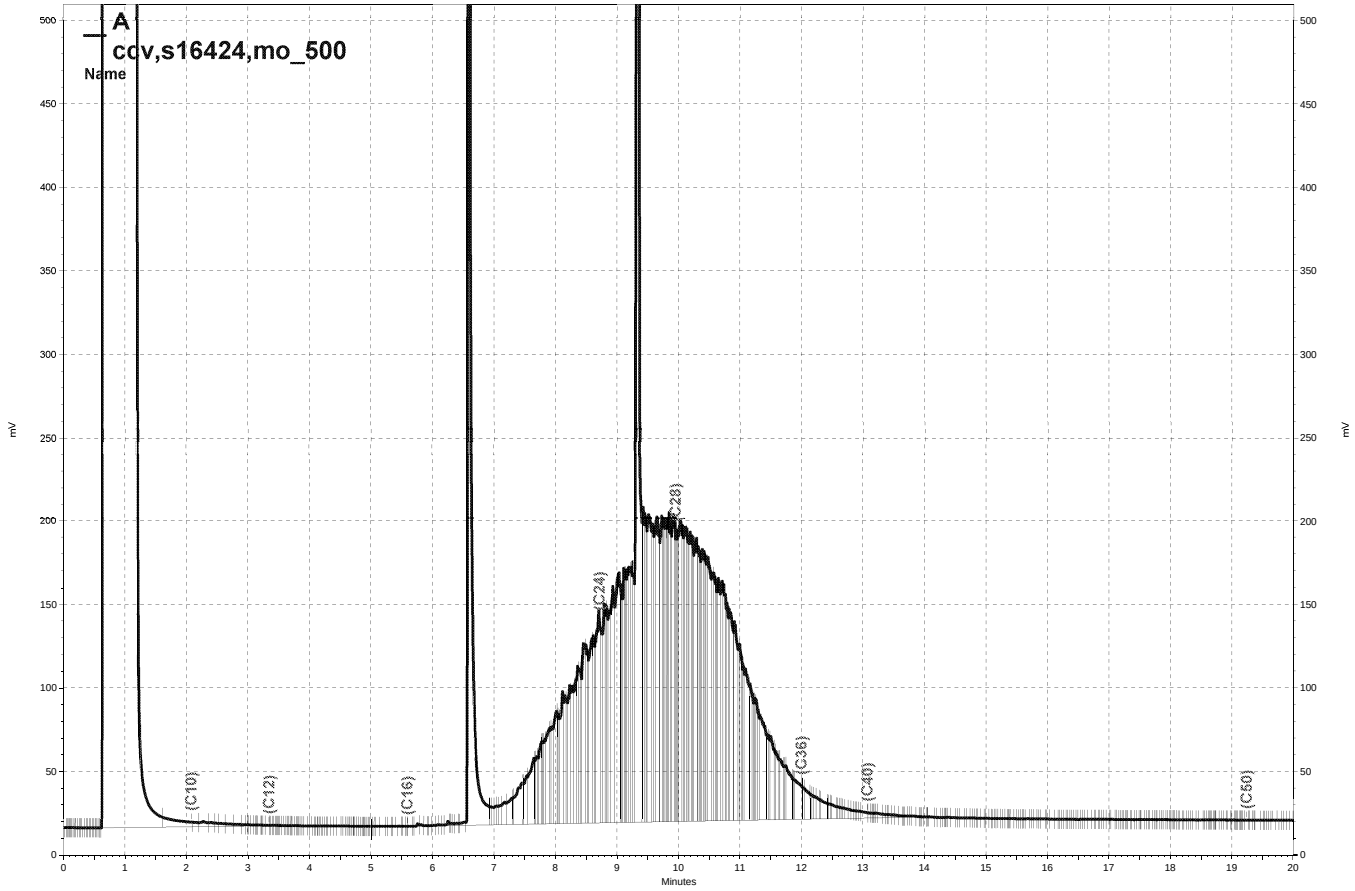

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Curtis & Tompkins, Ltd.

Gasoline by GC/MS

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	171369
Lab ID:	225612-005	Sampled:	01/27/11
Matrix:	Water	Received:	01/28/11
Units:	ug/L	Analyzed:	01/31/11
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	0.66	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50
Naphthalene	ND	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-125
1,2-Dichloroethane-d4	121	71-146
Toluene-d8	98	80-120
Bromofluorobenzene	102	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	171369
MSS Lab ID:	225608-001	Sampled:	01/25/11
Matrix:	Water	Received:	01/28/11
Units:	ug/L	Analyzed:	01/31/11
Diln Fac:	1.000		

Type: MS Lab ID: QC578097

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.1000	25.00	22.49	90	68-120
1,2-Dichloroethane	<0.1000	25.00	29.37	117	80-132
Benzene	<0.1000	25.00	23.43	94	80-121
Toluene	<0.1000	25.00	22.98	92	80-120
1,2-Dibromoethane	<0.1000	25.00	23.92	96	80-120
Ethylbenzene	<0.1022	25.00	24.49	98	80-120
m,p-Xylenes	<0.1357	50.00	48.82	98	80-120
o-Xylene	<0.1322	25.00	23.87	95	80-120
Naphthalene	<0.1000	25.00	21.34	85	72-125

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-125
1,2-Dichloroethane-d4	120	71-146
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

Type: MSD Lab ID: QC578098

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	24.65	99	68-120	9	20
1,2-Dichloroethane	25.00	30.17	121	80-132	3	20
Benzene	25.00	24.21	97	80-121	3	20
Toluene	25.00	24.08	96	80-120	5	20
1,2-Dibromoethane	25.00	26.86	107	80-120	12	20
Ethylbenzene	25.00	25.12	100	80-120	3	20
m,p-Xylenes	50.00	49.36	99	80-120	1	20
o-Xylene	25.00	24.78	99	80-120	4	20
Naphthalene	25.00	26.21	105	72-125	20	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-125
1,2-Dichloroethane-d4	122	71-146
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	171369
Units:	ug/L	Analyzed:	01/31/11
Diln Fac:	1.000		

Type: BS Lab ID: QC578099

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,002	100	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-125
1,2-Dichloroethane-d4	122	71-146
Toluene-d8	99	80-120
Bromofluorobenzene	103	80-120

Type: BSD Lab ID: QC578100

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	974.2	97	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	121	71-146
Toluene-d8	99	80-120
Bromofluorobenzene	102	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC578101	Batch#:	171369
Matrix:	Water	Analyzed:	01/31/11
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50
Naphthalene	ND	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-125
1,2-Dichloroethane-d4	122	71-146
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225612	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC578157	Batch#:	171369
Matrix:	Water	Analyzed:	01/31/11
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	22.33	89	60-123
1,2-Dichloroethane	25.00	27.79	111	70-136
Benzene	25.00	22.65	91	80-124
Toluene	25.00	23.47	94	80-120
1,2-Dibromoethane	25.00	24.50	98	80-120
Ethylbenzene	25.00	24.16	97	80-122
m,p-Xylenes	50.00	46.77	94	80-123
o-Xylene	25.00	23.85	95	80-121
Naphthalene	25.00	21.95	88	62-133

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-125
1,2-Dichloroethane-d4	117	71-146
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-120


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 225648
ANALYTICAL REPORT

Fugro West Inc.	Project : 04.74100012
1000 Broadway	Location : Oakland Corp. Yard
Oakland, CA 94607	Level : II

Sample ID	Lab ID
B-1	225648-001

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

Signature: _____ Date: 02/07/2011
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**225648**
Client:	**Fugro West Inc.**
Project:	**04.74100012**
Location:	**Oakland Corp. Yard**
Request Date:	**01/31/11**
Samples Received:	**01/31/11**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 01/31/11. The sample was received cold and intact.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

225648

ES-F10 CHAIN OF CUSTODY

PROJECT NAME: Oakland Corp. Yard

PROJECT NO.: 04.74100012 LAB: C & T

PROJECT CONTACT: K Emery TURNAROUND: ~~Std~~ 5 Day turn around

SAMPLED BY: M D'Anna

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX			CONTAINERS					PRESERVATIVE						SAMPLING DATE										NOTES	ANALYSIS REQUESTED									
		WATER	SOIL	AIR	VOA	LITER	PINT	TUBE	500ml	HCL	H_2SO_4	HNO_3	ICE	OTHER	NONE	MONTH		DAY		YEAR		TIME					TPHg, BTEX, MTBE ~~Method 8260~~	TPHd and mo Method 8015 Modified w/ Silica gel cleanup		Lead Scavengers	Naphtalene					EDF Reporting
	B-1	x			x				x	x			x			0	1	2	8	1	1	1	1	5	5		x	x		x	x					x

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
	1-31-11 9:20		1-31-11 0920
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

COMMENTS & NOTES:

FUGRO WEST, INC.
1000 Broadway, Suite 440
Oakland, California 94607
Tel: 510.268.0461 Fax: 510.268.0545

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 225648 Date Received 1/31/11 Number of coolers 1
Client FUGRO Project Oakland corp. yard

Date Opened 1/31/11 By (print) R. Paris (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
   Shipping info
2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C)

☒ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are samples in the appropriate containers for indicated tests? (YES) NO
11. Are sample labels present, in good condition and complete? (YES) NO
12. Do the sample labels agree with custody papers? (YES) NO
13. Was sufficient amount of sample sent for tests requested? (YES) NO
14. Are the samples appropriately preserved? (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? (YES) NO N/A
16. Was the client contacted concerning this sample delivery? YES (NO)
   If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	225648	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3520C
Project#:	04.74100012	Analysis:	EPA 8015B
Field ID:	B-1	Sampled:	01/28/11
Matrix:	Water	Received:	01/31/11
Units:	ug/L	Prepared:	02/01/11
Diln Fac:	1.000	Analyzed:	02/02/11
Batch#:	171435		

Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 225648-001

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	89	60-129

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC578342

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	81	60-129

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	225648	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 3520C
Project#:	04.74100012	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	171435
Units:	ug/L	Prepared:	02/01/11
Diln Fac:	1.000	Analyzed:	02/02/11

Type: BS
Lab ID: QC578343
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,952	78	53-128

Surrogate	%REC	Limits
o-Terphenyl	78	60-129

Type: BSD
Lab ID: QC578344
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,866	75	53-128	4	48

Surrogate	%REC	Limits
o-Terphenyl	78	60-129

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/MS

Lab #:	225648	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Field ID:	B-1	Batch#:	171445
Lab ID:	225648-001	Sampled:	01/28/11
Matrix:	Water	Received:	01/31/11
Units:	ug/L	Analyzed:	02/02/11
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50
Naphthalene	ND	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-125
1,2-Dichloroethane-d4	122	71-146
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225648	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	171445
Units:	ug/L	Analyzed:	02/02/11
Diln Fac:	1.000		

Type: BS Lab ID: QC578392

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	24.02	96	60-123
1,2-Dichloroethane	25.00	29.29	117	70-136
Benzene	25.00	23.58	94	80-124
Toluene	25.00	23.73	95	80-120
1,2-Dibromoethane	25.00	25.69	103	80-120
Ethylbenzene	25.00	24.58	98	80-122
m,p-Xylenes	50.00	49.13	98	80-123
o-Xylene	25.00	24.08	96	80-121
Naphthalene	25.00	22.43	90	62-133

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-125
1,2-Dichloroethane-d4	120	71-146
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-120

Type: BSD Lab ID: QC578393

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	26.35	105	60-123	9	20
1,2-Dichloroethane	25.00	30.41	122	70-136	4	20
Benzene	25.00	25.23	101	80-124	7	20
Toluene	25.00	25.60	102	80-120	8	20
1,2-Dibromoethane	25.00	26.72	107	80-120	4	20
Ethylbenzene	25.00	27.06	108	80-122	10	20
m,p-Xylenes	50.00	52.84	106	80-123	7	20
o-Xylene	25.00	26.19	105	80-121	8	20
Naphthalene	25.00	24.95	100	62-133	11	20

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-125
1,2-Dichloroethane-d4	118	71-146
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225648	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	171445
Units:	ug/L	Analyzed:	02/02/11
Diln Fac:	1.000		

Type: BS Lab ID: QC578394

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,007	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-125
1,2-Dichloroethane-d4	124	71-146
Toluene-d8	97	80-120
Bromofluorobenzene	101	80-120

Type: BSD Lab ID: QC578395

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,048	105	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-125
1,2-Dichloroethane-d4	117	71-146
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/MS

Lab #:	225648	Location:	Oakland Corp. Yard
Client:	Fugro West Inc.	Prep:	EPA 5030B
Project#:	04.74100012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC578396	Batch#:	171445
Matrix:	Water	Analyzed:	02/02/11
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50
Naphthalene	ND	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-125
1,2-Dichloroethane-d4	121	71-146
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit