

**FUGRO WEST, INC.**

**Alameda County**

**FEB 07 2007**



**Environmental Health**

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October 11, 2006  
Project No. 1803.001

APS Technology Inc  
1653 East 28th Street  
Signal Hill, California 90755

Attention: Mr. Jim Sexton

Subject: Environmental Sampling and Analysis, Trapac – Berth 30 Gate Improvement,  
Port of Oakland, Oakland, California

Dear Mr. Sexton:

Fugro West, Inc., (Fugro) is pleased to present this letter report to summarize the field activities and results of environmental sampling conducted to characterize soil-gas, and soil-vapor conditions that may pose risks to future construction workers at the Trapac - Berth 30 Site. Fugro also conducted soil sampling to characterize soils onsite for potential reuse or disposal following construction activities. A Vicinity Map and a Site Plan are presented as Plates 1 and 2.

The Trapac Terminal Site is located at 2800 7th Street, Berth 30, Port of Oakland. The proposed gate improvement activities will include saw cutting, shallow excavation, and trenching within the transport trucking lanes to facilitate planned gate improvement activities. We understand the proposed excavation depths range from 2.5 to 6 feet below ground surface (bgs).

The services outlined herein are in general conformance with Fugro's revised Sampling and Analysis Plan (SAP) dated September 2006, requested, and approved by the Port of Oakland Environmental Programs & Safety (EP&S) department. The Port EP&S requested that this investigation be conducted prior to gate improvement activities due to the presence of a former oil tank farm, operated by the Powerine Oil Company comprising several large aboveground fuel tanks (AGTs) in the vicinity of gate improvement activities. Fugro understands that although impacted soils were removed from the site, residual soil and groundwater potentially impacted by Total Petroleum Hydrocarbons (TPHGs) remain onsite. Primary chemicals of concern include petroleum hydrocarbons (TPHg, TPHd, and TPHmo), and volatile constituents of gasoline (including benzene).

The Port EP&S department raised concerns regarding potential safety issues posed by worker exposure to TPH impacted soils, and elevated concentrations of benzene vapors potentially trapped beneath asphalt and concrete surface slabs onsite. In addition, the Port EP&S department has also raised concerns regarding the potential for elevated levels of

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methane vapors below the slabs which could become a fire/explosive hazard during proposed construction related saw cutting activities onsite.

### SCOPE OF WORK

Fugro's scope of work comprised the following:

- Collect and analyze five soil-gas samples (B-1, B-2, B-3, B-6, and B-7) from various locations corresponding with proposed construction activities across the site;
- Screen soil vapor at each boring and in the breathing zone using a PID, Drager tube and pump sampling apparatus, and LEL meter, to measure volatile organic compounds, and methane concentrations;
- Retain IHI Ltd, (IHI) an industrial hygiene sub-consultant to collect ambient air, and soil vapor samples from the breathing zone and beneath the slab at a total of five companion locations. Three samples (B-1, B-2, and B-3) were to be collected from ambient air during drilling activities; five samples (B-1a, B-2a, B-3a, B-6a, and B-7a) were to be collected from companion locations located within 1 foot of soil gas probes. The remaining samples (B-4 and B-5) were to be collected from separate cored probes in accordance with our SAP;
- Collect soil samples from depths ranging from 3 to 6 feet bgs; and
- Prepare this report

Soil-gas, soil-vapor, as well as soil sampling and screening activities were conducted in accordance with Fugro's revised SAP, which was approved by the Port EP&S department, with the following deviations:

- Fugro's driller encountered practical refusal six inches below grade at four attempted probes due to the presence of reinforced concrete at location B-6. Consequently no companion probe was advanced, no soil-vapor sampling or screening was performed, and no soil samples were collected from this location.
- Fugro's driller encountered practical refusal six inches below grade at two attempted probes due to the presence of reinforced concrete at location B-7. Consequently, no soil gas sample was collected from this location.
- Only two probes (B-3 and B-4), as opposed to the three proposed, were completed in the proposed trench location due to time constraints.

### FIELD PREPARATION ACTIVITIES

Prior to commencing field activities, Fugro prepared a Site-Specific Health & Safety Plan (SSHSP) which was signed by a Certified Industrial Hygienist and submitted to the Port EP&S department for their review and comment. The SSHSP was followed by Fugro staff, IHI, and



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our drilling subcontractors, while performing soil and soil gas/vapor sampling and screening activities. Fugro conducted a tailgate safety meeting at the beginning of field activities. A copy of the SSHSP is included in Appendix A.

Prior to drilling activities, Fugro procured a drilling permit from the Alameda County Department of Public Works (ACDPW), contacted USA Alert, and had the sampling locations screened by a private utility locator. A copy of the drilling permit is also presented in Appendix A.

## FIELD OBSERVATIONS AND SAMPLING ACTIVITIES

Field work was conducted between 1700 hours on October 2, 2006, and 0330 hours on October 3, 2006, in order to avoid heavy truck traffic as well as to minimize potential exposure of port workers to any encountered gas/vapors. Drilling activities were conducted by Vironex Inc, under supervision of Fugro staff.

### Background Odors

Prior to commencement of sampling activities, Fugro's field staff noticed a strong odor resembling odorized natural gas or a hydrogen sulfide, carried by the prevailing west to east winds. Fugro's staff commented on this odor to IHI's field scientist who also detected the odor and opined that it may be natural gas or perhaps propane. Fugro's staff subsequently noticed this odor again during field activities. Based on our field observations, it is Fugro's opinion that the odor was not related to drilling activities or subterranean conditions at the site since the odor was originally detected prior to commencement of intrusive field activities.

### Soil Gas Sampling

Fugro's drilling contractor (Vironex) advanced 4 probes (B-1, B-2, B-4, and B-6) to depths ranging from 2.5 to 6 feet bgs and collected soil-gas samples from each probe. Approximate locations are shown on Plate 2.

The breathing zone at each location was screened with an organic vapor meter (OVM) and a LEL/O<sub>2</sub> meter during drilling to evaluate whether any obvious indicators exist suggesting the presence of petroleum hydrocarbon compound vapors and/or methane gas, respectively. Field meters detected no petroleum and methane vapors within the breathing zone during drilling. Soil gas samples were collected according to protocol as described in our revised SAP. Following completion of soil gas sampling, each probe was grouted with neat cement grout and patched with concrete to match the surface grade, in accordance with ACDPW requirements.

### Soil Vapor Screening

We instructed Vironex to core through asphalt and concrete at five locations (B-1a, B-2a, B-3a, B-4, and B-7) using wet coring methods. Following coring activities Fugro screened soil vapor beneath the slab using a Drager pump and tube screening system equipped with a benzene specific colorimetric short-term reactive tube, PID, and LEL meter. We also instructed



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IHI to collect various soil-vapor samples from each location using a charcoal tube and sampling pump. Soil-vapor sampling and screening was conducted in accordance with Fugro's revised SAP.

PID, LEL, and Drager tubes detected no readings at any of the cored probe locations screened, and no readings at anytime while screening the breathing zone. Photos of Drager tubes following screening activities are presented in Appendix B.

### **Soil Sampling and Screening**

Following completion of soil-vapor sampling and screening, Fugro's drilling contractor advanced 5 direct push probes (B-1a, B-2a, B-3a, B-4, and B-7) to depths ranging from 3 to 6 feet bgs at companion locations to previously installed soil gas probes in order to facilitate collection of soil samples in accordance with our SAP. Continuous soil samples were collected from each location. Soil samples were screened in the field using a PID and olfactory methods. No OVM readings or odors were observed in any of the soil samples screened. Samples were labeled, logged in general conformance with the Unified Soils Classification System (USCS) and placed in an ice chilled chest. Following sample collection, probes were grouted with neat cement and quick setting concrete, to match the surface grade in accordance with ACDPW requirements. Logs of borings are presented in Appendix B.

No groundwater was encountered during this investigation.

### **FIELD QUALITY CONTROL**

Fugro implemented the following field quality assurance and quality control (QA/QC) activities during this field investigation in accordance with our SAP.

- Soil-gas samples were collected using laboratory prepared SUMA canisters equipped with flow restrictors and pressure regulators.
- Fugro conducted a vacuum leak check test prior to the collection of each soil-gas sample, by inducing a vacuum on the sampling manifold and confirming that this vacuum was maintained for 10 minutes prior to sample collection.
- Fugro instructed the driller to place paper towels dipped in 2-propanol (leak check compound) at various locations along the sampling manifold as a leak check compound to determine if ambient air was infiltrating the system. All collected soil gas samples were tested for this leak check compound.
- One duplicate soil-gas sample was collected for analysis.
- The duplicate soil-gas sample was collected using a sampling "T" device, which allowed collection of two discreet samples from the same sample location and depth. Duplicate samples were tested for the same list of analytes as each original sample as well as for the leak check compound (2-propanol).
- New sampling tubes and soil gas equipment fittings were used at each probe.



- Clean sampling rods, new acetate liners and new end caps were used at each sampling location to prevent cross contamination.

### **SUBSURFACE CONDITIONS**

At B-1 to B-4 located in asphalt within the eastern half of the site, Fugro encountered 11 inches of asphalt underlain by moist medium to fine-grained, poorly-graded sand with silt and gravel. At B-7, Fugro's encountered 28 inches of concrete reinforced at various locations with heavy rebar. Beneath the concrete and rebar, our investigation encountered moist medium to fine grained poorly-graded sand with silt to a depth of about four feet. This was underlain by red brown, moist, loose, medium-to-fine grained sand with gravel to the maximum depth explored (6 feet). No Bay Mud or groundwater was encountered during this investigation.

Fugro observed no PID or LEL readings while screening the breathing zone or soil cuttings from any of the borings during this investigation.

### **CHEMICAL TESTING**

Soil samples were stored in an ice-chilled cooler and transported under chain-of-custody documentation to STL Laboratory, a State of California-certified testing laboratory. Five soil-gas samples were shipped under chain-of-custody documentation to Air Toxics laboratory (ATL), a State of California certified testing laboratory. Soil vapor samples collected by IHI were transported under chain-of-custody documentation to Galson Laboratories a State of California certified testing laboratory. The sample testing laboratories indicated that all samples were received intact and with no irregularities.

#### **Soil-Gas and Soil-Vapor Samples**

A total of four soil-gas samples and one duplicate sample were collected for analysis, and analyzed for the following:

- Total Petroleum Hydrocarbons as gasoline (TPHg), using EPA Method TO-3;
- Volatile Organic Compounds including benzene, toluene, ethylbenzene, total xylenes (BTEX), and Methyl tert butyl ether (MTBE), by EPA Method TO-15;
- Methane gas by ASTM 1946; and
- Isopropyl alcohol (2- propanol), by EPA Method TO-15.

In addition, eight soil-vapor samples collected by IHI from beneath the asphalt and concrete slab, as well as from the breathing zone, were submitted to Galson Laboratories and analyzed for benzene by modified NIOSH 1501; GC/FID.

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## Soil Samples

A total of seven samples were submitted under chain of custody documentation to STL Laboratories and tested for some or all of the following:

- TPHg, BTEX, and MTBE by US EPA Test Method 8015/8020, 8260 (7 samples);
- TPHd and TPHmo, with silica gel cleanup by EPA Test Method 8015 modified (7 samples);
- 17 Heavy Metals by US EPA Test Method 6010/7000 (7 samples);
- Volatile organic compounds including BTEX, by EPA Test Methods 8260 (3 samples); and
- Semi-volatile organic compounds by US EPA Test Method 8270 (3 samples).

## RESULTS OF CHEMICAL TESTING

Results of analysis for soil-gas and soil-vapor samples are presented in Table 1. We will tabulate soil data as a separate table as soon as it becomes available. Analytical test reports and chain-of-custody documentation are presented in Appendix C.

### Quality Control and Data Validation

Fugro implemented field quality control measures and conducted data validation. The QA/QC objectives were to obtain and evaluate data that was accurate, precise, and complete so that analytical data would be representative of field conditions. Based on the findings described below, Fugro judges that the samples collected and the results of analyses are accurate, precise, complete, and representative of site conditions.

#### Leak Check Compound

Analysis detected no 2-propanol in any of the samples tested. Consequently we believe that no short circuiting occurred during sampling, and that the soil-gas samples tested are representative of soil-gas conditions of the site.

#### Duplicate Soil-Gas Samples

For the duplicate sample, results indicate that analysis detected TPHg, 2,2,4-trimethylpentane, cyclohexane, and methane concentrations with Relative Percentage Differences (RPDs) ranging from 0 to 5.4 percent. The RPD for methylene chloride was approximately 15 percent. These RPDs are consistent with the data quality objective RPD of 20 percent accepted by the US EPA for similar studies. The EPA typically requires RPDs of 20 percent or less. Therefore soil-gas samples meet the precision data quality objectives for this investigation. Resulting RPDs are presented in Table 3.



### Laboratory QA/QC Samples

To assess the accuracy of the data, Fugro reviewed all of the laboratory reports to confirm compliance with the laboratory's own QA/QC limits. For the soil-gas samples, Fugro reviewed ATL's QA/QC reports with respect to laboratory blanks and duplicates, as well as surrogate recoveries. These reports indicated compliance with ATL's internal QA/QC limits and reporting goals. ATL noted no QA/QC problems for any of the analytes or samples tested. ATL's laboratory report indicated that elevated detection limits in sample B-2 and Duplicate-1 (B-2 duplicate) were due to a matrix interference caused by elevated levels of TPHg in both samples.

For the soil-vapor samples collected by IHI, Fugro reviewed Galson's QA/QC report which indicated compliance with all their internal QA/QC limits and reporting goals. Galson noted no QA/QC problems for any of the analytes or samples tested.

To assess the completeness of the data, Fugro checked 100 percent of the laboratory reports for soil, soil-gas and soil vapor samples, and found that all requested tests were completed. Therefore, the chemical reports are considered to be complete.

### **Results of Soil-Gas Sampling**

Laboratory analytical results are presented in Appendix C. Results of chemical analysis for soil-gas samples are summarized in Table 1. Sampling locations are shown on Plate 2. For the purpose of this investigation soil-gas results were compared to respective time weighted Permissible Exposure Limits (PEL) established by Occupational Safety and Health Administration (OSHA)

Analysis detected no benzene, toluene, ethylbenzene, or total xylenes in samples B-1 and B-2. Analysis detected 23 and 49  $\text{ug}/\text{m}^3$  of benzene in samples B-3 and B-6 respectively. Detected benzene concentrations are significantly less than the 3,194  $\text{ug}/\text{m}^3$  (1 ppm) PEL established for the protection of workers. Detected benzene concentrations are also below the 85 and 290  $\text{ug}/\text{m}^3$  residential and commercial Environmental Screening Levels (ESLs) established by the San Francisco Regional Water Quality Control Board, established for the evaluation of potential indoor air impacts. Detected benzene concentrations are below their respective commercial California Human Health Screening Levels (CHHSLs) prepared by the California Environmental Protection Agency (EPA). Detected benzene concentration in B-6 (49  $\text{ug}/\text{m}^3$ ) exceeds the residential CHHSL. Analysis detected 27 and 54  $\text{ug}/\text{m}^3$  of toluene in B-3 and B-6 respectively, 5.7  $\text{ug}/\text{m}^3$  of ethylbenzene in B-3, 12 and 47  $\text{ug}/\text{m}^3$  of total xylenes in B-3 and B-6 respectively. None of the detected toluene, ethylbenzene or total xylene concentrations exceed respective PELs, ESLs or CHHSLs.

Analysis detected no MTBE in any of the samples tested. Detected methane concentrations ranged from 0.0005 percent in B-3 to 3.6 percent in B-2. Detected concentrations of methane are below the 5 percent lower explosive limit (LEL) for this gas.



Analysis detected TPHg concentrations in all four samples ranging from 2,177 ug/m<sup>3</sup> in B-1 to 4,498,978 ug/m<sup>3</sup> in B-2. Detected TPHg concentrations in samples B-2 (4,498,978 ug/m<sup>3</sup>) exceeds both residential and commercial ESLs while detected concentrations in sample B-6 (61,350 ug/m<sup>3</sup>) exceed the residential ESL, but is less than the commercial ESL. No PELs or CHHSLs exist for TPHg.

Results of chemical analysis detected various analytes including; 1,3-butadien, Freon 11, acetone, carbon disulfide, methylene chloride, and various hydrocarbons including, heptane, hexane, cyclohexane and 2,2,4-trimethylpentane. None of these detected concentrations exceed their respective PELs, established ESL or CHHSL criteria. No PELs, ESLs or CHHSLs are currently established for 1,1,4-trimethylpentane.

Analysis also detected low levels of 2-butanol (27 and 44 ug/m<sup>3</sup> in B-3 and B-6), tetrahydrofuran (3.8 ug/m<sup>3</sup> in B-1), tetrachloroethene (19 ug/m<sup>3</sup> in B-3), and 1,1,1-trichloroethene (9.8 ug/m<sup>3</sup> in B-3). Detected concentrations are all well below respective PEL, ESL and CHHSL criteria.

#### **Results of Soil-Vapor Sampling**

Results of soil vapor sampling conducted by IHI are also presented in Table 1. Samples B-1, B-2 and B-3, were collected from the breathing zone during drilling operations, while samples B-1a, B-2a, B-3a, B-4, and B-7 were collected from vapors in each hole and beneath the slab following coring activities and prior to soil sampling at each probe location. Analysis detected no benzene concentrations in any of the samples tested.

Field screening and sampling of the breathing zone and individual probes during drilling, detected no PID, LEL, or Drager tube readings.

#### **Results of Soil Sampling**

Chemical results for soil samples were not available at the time this report was prepared. Since results of soil sampling will be used to characterize excavated soils to determine reuse or disposal issues for the Port EP&S department, we will tabulate soil data and present it as an additional attachment as soon as it becomes available.

#### **Investigation Derived Waste (IDW)**

No investigation derived waste was generated during this investigation.

### **CONCLUSIONS AND RECOMMENDATIONS**

Fugro concludes that the site investigation was completed in general conformance with the SAP. The following summarizes our conclusions for this investigation;





- Site area is open air site with significant prevailing winds, consequently we believe results of soil gas sampling presents worst case scenario exposure concentrations for future construction workers, and thus is very conservative.
- No structures exist at ground level within the proposed gate improvement site area.
- Prior to commencement of field work and once again during soil-gas sampling, Fugro's and IHI's field personnel noted a strong odor that resembled an odorized natural gas/sulfur gas smell, and which IHI opined smelled like natural gas or propane.
- No benzene was detected in any of the soil-vapor samples collected by IHI using the charcoal tube and pump, from the breathing zone or from the cored probe locations.
- No benzene was detected in any of the soil-vapor samples collected by the Drager tube sampling apparatus from the breathing zone or from cored probes.
- No PID readings were observed during this investigation.
- Analysis detected benzene in 2 of 4 soil gas samples tested, however detected benzene soil gas concentrations are below respective OSHA PEL criteria. Although elevated levels of TPHg in B-2 resulted in a higher detection limit for benzene ( $<1200 \text{ ug/m}^3$ ), this is still less than the OSHA worker protection PEL for benzene.
- Although analysis detected  $49 \text{ ug/m}^3$  of benzene in soil gas, which exceeds the residential CHHSL for this compound, it is less than the commercial CHHSL and both the residential and commercial ESL criteria.
- Concentrations of TPHg exceeding the residential ESL criteria exist in soil gas in the vicinity of probes B-2 and B-6, however no residential structures exist onsite.
- Detected TPHg concentrations in B-2 exceed both the residential and commercial ESLs. No PELs or CHSSLS currently exist for TPHg.
- Analysis detected various other hydrocarbons and solvents, all at concentrations below their respective PEL, ESL, and CHHSL screening criteria.
- Detected concentrations of methane are below the 5 percent LEL, suggesting no explosive hazard for intrusive mechanical construction work onsite.
- None of the detected chemicals of concern was detected at concentrations above established Permissible Exposure Limits (PELs) established by OSHA for the protection of workers.



## Recommendations

Fugro recommends that the Port EP&S department, consider conducting air monitoring and screening to better characterize the composition and origination of the background gas odors detected by Fugro's and IHI's field staff.

Although soil-gas onsite appears to be impacted by TPHg, various hydrocarbons and low concentrations of solvents, it is Fugro's opinion that these concentrations should not pose a significant risk to planned gate improvement activities at the site. The gate improvement/construction activities at the Trapac-Berth 30 site can be conducted with the following recommendations;

- Work should be conducted off hours to minimize presence of unauthorized Port workers onsite.
- Coring and trenching activities should be conducted using wet methods to minimize generation of dust and sparks.
- Soil vapor screening using a PID and LEL meter should be implemented during construction activities to confirm that chemicals of concern are below respective OSHA PELs. Monitoring should be conducted within the breathing zone and vicinity of intrusive activity.
- APS Technology Inc should prepare a Site Specific Health and Safety Plan (SSHSP) approved by a Certified Industrial Hygienist (CIH) that notifies workers of the presence of detected chemicals at the Site, particularly benzene and methane, and describes field monitoring and mitigation procedures, as well as personal protective equipment, and dust control measures. The SSHSP should also address the potential for high traffic at the site.
- If staining, chemical odors, or contaminated materials are encountered during the gate improvement construction activities, the contractor should notify the Port of those conditions and appropriate precautions, investigation, and/or mitigation should be implemented.

## LIMITATIONS

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.

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This report has been prepared for the benefit of APS Technology Inc and the Port. The information contained in this report, including all exhibits and attachments, may not be used by any party other than the noted entities without the express written consent of Fugro.

### CLOSING

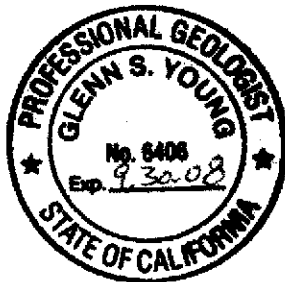
Thank you for the opportunity to be of service to APS Technology Inc. If you should have any questions regarding the information in this report, please contact the undersigned at (510) 268-0461.

Sincerely,

FUGRO WEST, INC.

Obi Nzewi  
Project Geologist

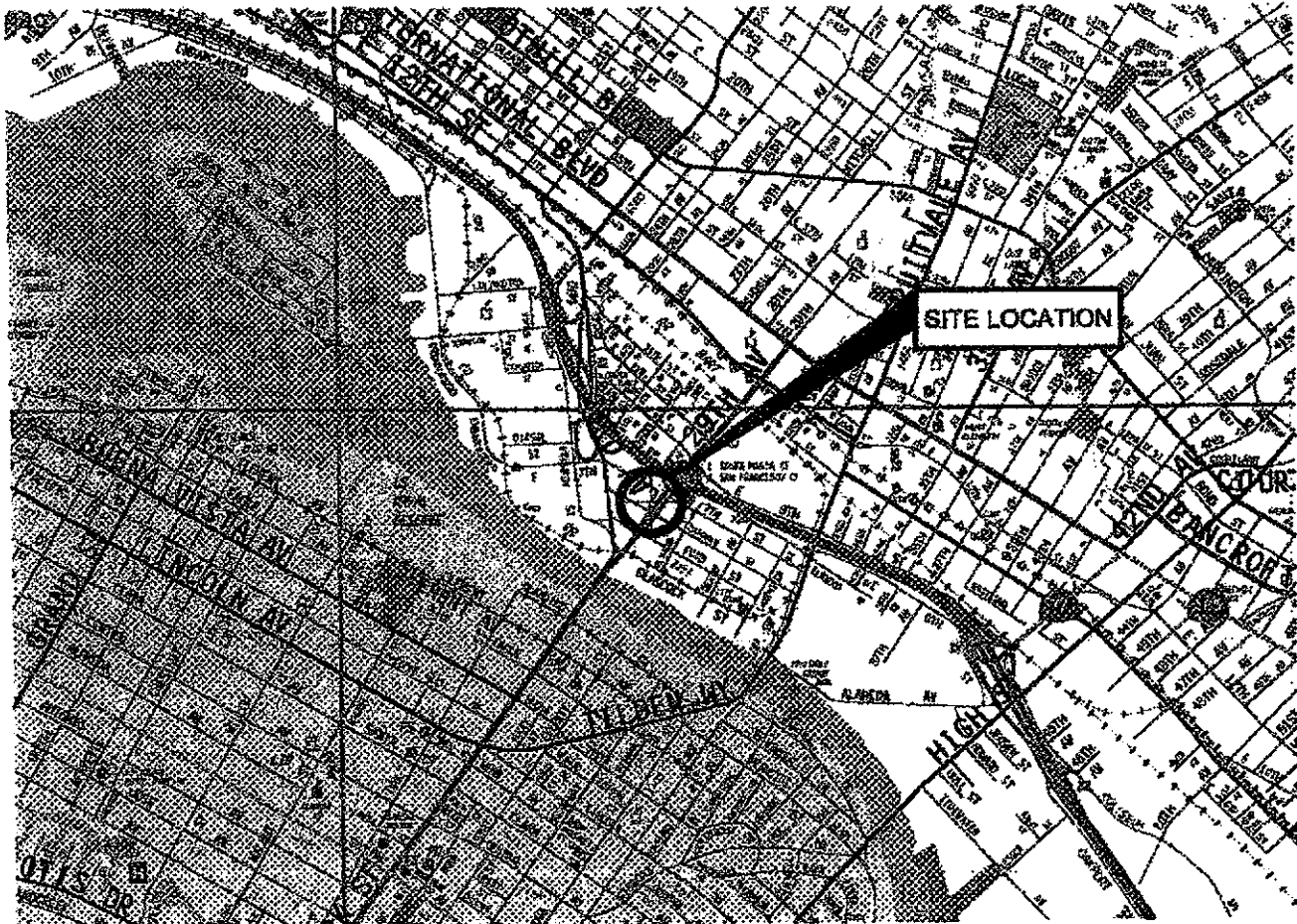
Glenn Young, P.G  
Principal Geologist



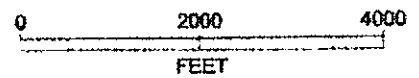
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Copies Submitted: (2) Addressee  
(1) John Prall, Port of Oakland EP&S Department

Attachments: Table 1 - Summary of Analytical Results- Soil-Gas and Soil-Vapor  
Table 2 - Summary of Analytical Results- Soil  
Table 3 - RPD Data  
Plate 1 - Vicinity Map  
Plate 2 - Site Plan  
Appendix A - Sampling and Analysis Plan, SSHSP, and ACPWA Drilling Permit  
Appendix B - Boring Logs  
Appendix C - Laboratory Data and Chain of Custody Documentation



**SOURCE:** This Site Vicinity Map is based on The Thomas Guide Digital Edition 2006, Bay Area Metro, Alameda, Contra Costa, Marin, San Francisco, San Mateo, and Santa Clara Counties.

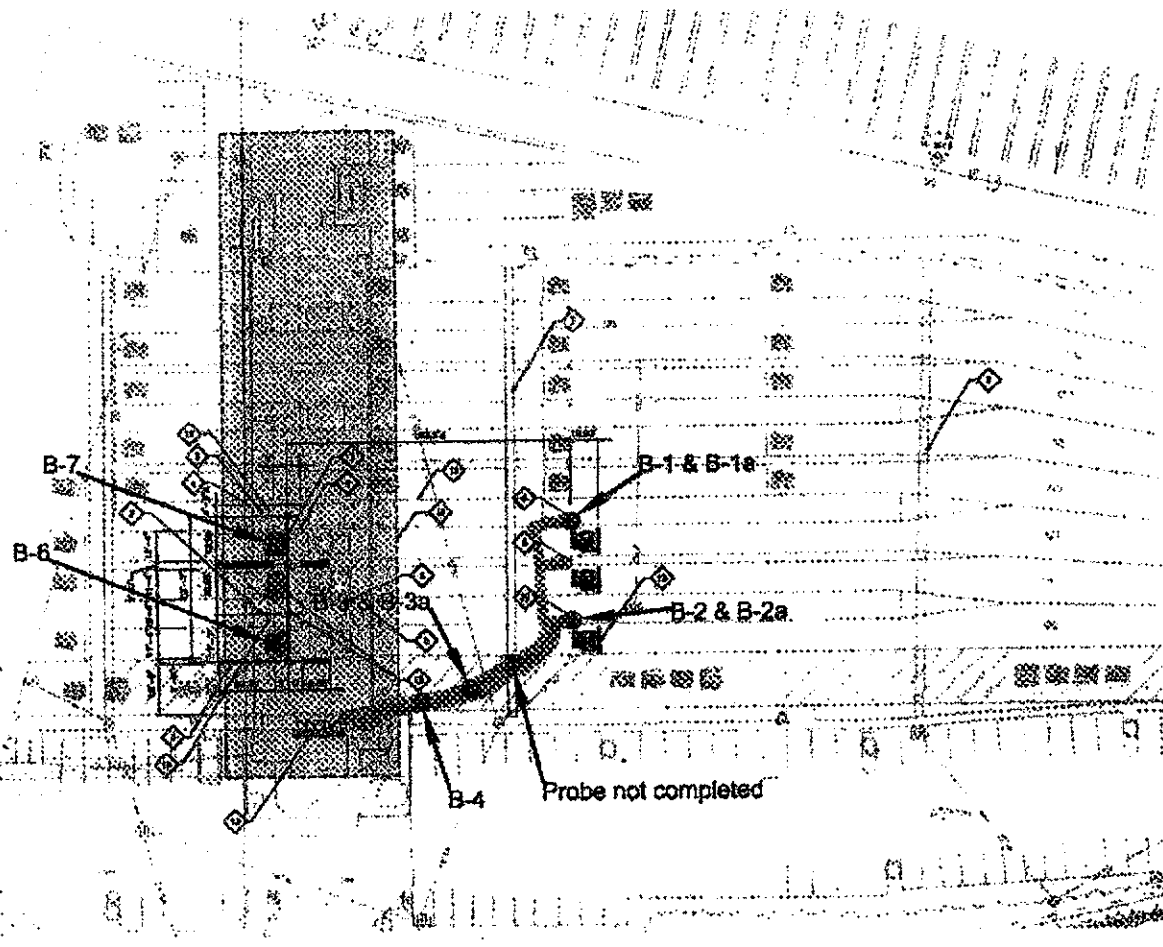


**VICINITY MAP**  
Trapac - Berth 30 Site Investigation  
Port of Oakland, California

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**KEYNOTES**

- ◆ END OF PROBE, SEE #10
- ◆ BRICKING CHIMNEY BASELINE WITH METAL FRINGE SEE #11  
REMOVE METAL FRINGE AND CONTACT SUPERVISOR TO REMOVE METAL FRINGE BASELINE OF BRICKING
- ◆ METAL FRINGE CONCRETE PATCH TO PROTECT END OF PROBE, SEE #12
- ◆ BRICKING OF PRO.
- ◆ CRACKED CONCRETE (3) TOP.
- ◆ CRACKED CONCRETE (2) TOP.
- ◆ CRACKED CONCRETE (2) TOP.
- ◆ CRACKED CONCRETE (2) TOP.
- ◆ CRACKED CONCRETE (2) TOP & 1/2" & 1/4" CRACKS SEE #13 FOR EACH CASE #
- ◆ NEW CONCRETEWORK PERFORM AT END LANE 0
- ◆ NEW CONCRETEWORK PERFORM AT END LANE 1
- ◆ PROTECT BRICKING (2) TO REMAIN
- ◆ SPOT AND PATCH
- ◆ CRACK PATCH WITH NEW CONCRETE PATCH
- ◆ CRACKED CONCRETE PATCH WITH REPAIRING CONCRETE PATCH, TOP.
- ◆ REPAIR CRACK PATCH, 1" REPAIRING TOP OF PRO.
- ◆ END OF PROBE COMPLETE BRICKING BRICKING



**SITE PLAN**  
SCALE: 1" = 20'

**PRELIMINARY**



**SOIL, SOIL GAS SAMPLING  
& SOIL VAPOR SCREENING LOCATIONS**  
Trapac - Berth 30 Site Investigation  
Port of Oakland, California



**APPENDIX A**  
**SAMPLING AND ANALYSIS PLAN, SSHSP, AND**  
**ACPWA DRILLING PERMIT**



**Table 2**  
Summary of Analytical Data - Soil

**Oakland California**  
Hazardous Waste Site No. 42221 001

Analyte Metal	Units	Soil Samples								ESLs	
		1	2	3	4	5	6	7	8	ESLs	ESLs
Arsenic	mg/kg	2.5	4.4	8.8	3.4	7.3	4.3	3.7	3.7	2.5	10,000
Cadmium	mg/kg	<0.5	<0.48	<0.48	<0.48	<0.48	<0.5	<0.5	<0.5	33	100
Copper	mg/kg	10	11	15	7.7	11	8.8	18	18	25,000	2,500
Chromium	mg/kg	<1.0	<0.95	<0.95	<0.95	<0.95	<0.95	<0.95	<0.95	60	20
Lead	mg/kg	<2.0	<1.9	<1.9	<1.9	<1.9	<2.0	<2.0	<2.0	3,400	100
Vanadium	mg/kg	21	19	20	19	22	19	31	31	5,000	2,600
<b>Hydrocarbons</b>											
TPHd	mg/kg	18	18	41	<0.00	22	3.5	<0.00	<0.00	8,000	NE
TPHg	mg/kg	<0.24	<0.23	<0.21	<0.23	<0.23	<0.23	<0.24	<0.24	10,000	NE
Ethylbenzene	mg/kg	<4.0	<4.7	<4.2	<4.3	<4.9	<4.7	<4.9	<4.9	400,000	NE
<b>VOCs</b>											
1,1-DCE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TPHg = Total petroleum hydrocarbons as gasoline  
TPHd = Total petroleum hydrocarbons as diesel

PCE = Tetrachloroethene

ND = Not detected except for chemicals listed below  
Threshold concentrations are shown in bold

1,1-DCE = 1,1-Dichloroethene  
VOCs = Volatile Organic Compounds

ESLs = Environmental Screening Levels Established by the SFRWDCB, February 2005.

\* = Table K-3: ESL for Direct Exposure for Uncontaminated Vegetative Exposure Categories  
TTC = Total Threshold Limit Concentration





Title:  
 for lup: at: Sar de  
 of akl d  
 an: Pc  
 Diff h: Ca  
 ag: -B: ant  
 ce ap  
 e F  
 lat

	Sa	ole	)	I	2 C	gir	)	DC	6	R	3 %
	ral	e/l	its		ug	n <sup>3</sup>		apl	ata		
IP					.48	97		198	078		0
vie	yle	C	orit		1,	0		1,3	)		1.3
2,2	tri	ath	ant	e	320	00		40	00		2
Cyr	he	ine			1,	0		1,8	)		.4
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## SITE-SPECIFIC HEALTH AND SAFETY PLAN

Page 1

**Project Title:** Trapac-Berth 30 Gate Improvement/Construction Project  
**Project No.:** 06.346  
**Client:** APS Technologies Inc  
**Date:** September 26, 2006

This form may be used for those site activities that pose a significant threat of exposure to site contaminants or hazards (e.g., well installation, soil borings, water/soil sampling, excavation/trenching). The FUGRO WEST, INC. (Fugro) Health and Safety Director will determine whether or not this form is appropriate for any given activity at the site. It is the responsibility of the Project Manager to complete the Health and Safety Plan (HSP). The Health and Safety Director must sign the HSP. All project personnel must receive a copy of this form, familiarize themselves with its contents, and sign the signature page before work begins.

### 1. Site Name and Address

Trapac Berth 30, Port of Oakland, 2800 7th Street Oakland CA

### 2. Site Personnel and Assigned Responsibilities

Principal-in-Charge: Jeriann Alexander

Project Manager: Obi Nzewi

Site Safety Officer: Obi Nzewi

Other Field Personnel:

### 3. Site Description and Background (attach site map)

Site is located within the freight trucking lanes near the entrance to Berth 30. The site is currently run by the Trans Pacific Container Service Corporation (Trapac)

Proposed site improvement would include installation of a gate in area of previous contamination

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## SITE-SPECIFIC HEALTH AND SAFETY PLAN

A historical oil tank farm formerly occupied portions of the site.

Previous investigation and remediation activities identified up to 1000 mg/kg of TPH in soils onsite.

Soil remediation included excavation and offsite disposal of impacted soil, however, records of remediation indicate that residual impacted soil remains onsite

#### 4. Planned Site Activities

- Core through 5 locations to facilitate drilling and soil vapor screening activities
- Advance 5 Geoprobe borings to between 2.5 and 6 feet bgs to facilitate collection of soil gas samples,
- Advance 5 Geoprobe borings to between 2.5 and 6 bgs to facilitate collection of soil samples

#### 5. Chemical Compounds at the Site (complete 5a and/or 5b, as appropriate)

##### 5a. Chemical Data Summary

Known Compounds	Source (soil/water/drum, etc.)	Known Concentrations Range (mg/kg)	
		Lowest	Highest
TPHg	Soil	100	1000
Benzene (Suspected)	Soil vapor	?	?
Methane (Suspected)	Soil vapor	?	?

#### 6. Potential Physical, Mechanical, Electrical, and Biological Hazards

(Check all boxes that potentially apply to the project)

<input type="checkbox"/>	Do not stand near backhoe buckets and earthmoving equipment.
<input checked="" type="checkbox"/>	Wear hard hat, safety glasses, and steel toed boots when working around drill rig.
<input type="checkbox"/>	Use noise meter to survey area to determine if the OSHA PEL-TWA of 85 decibels is exceeded in any area. If so, mark area and use earplugs or earmuffs within area.
<input checked="" type="checkbox"/>	If noise survey is not performed as a precautionary measure, wear ear muffs or plugs when working within 25 feet of operating machinery.

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**SITE-SPECIFIC HEALTH AND SAFETY PLAN**

<input checked="" type="checkbox"/>	Verify that all equipment is in good condition.
<input checked="" type="checkbox"/>	Do not stand or walk under elevated loads or ladders.
<input type="checkbox"/>	Do not stand near unguarded excavation and trenches.
<input type="checkbox"/>	Do not enter excavation or trenches over 5 feet deep that are not properly guarded, shored, or sloped.
<input type="checkbox"/>	Consult Health and Safety Director if other mechanical hazards exist.
<input type="checkbox"/>	Discuss location of buried utilities with client.
<input checked="" type="checkbox"/>	Locate and mark buried utilities, and notify USA (Date: _____ USA Tag No. _____)
<input checked="" type="checkbox"/>	Have buried utilities cleared by private utility locating company. OHJ Subsurface
<input checked="" type="checkbox"/>	Maintain at least 10-foot clearance from overhead power lines.
<input type="checkbox"/>	Contact utility company for minimum clearance from high voltage power lines. If unavoidably close to buried or overhead power line, have power turned off, with circuit breaker locked and tagged.
<input checked="" type="checkbox"/>	Properly ground all electrical equipment.
<input checked="" type="checkbox"/>	Avoid standing in water when operating electrical equipment.
<input checked="" type="checkbox"/>	If equipment must be connected by splicing wires, make sure all connections are properly tagged.
<input checked="" type="checkbox"/>	Be familiar with specific operating instructions for each piece of equipment.
<input type="checkbox"/>	Avoid contact with poison oak and poison ivy.
<input type="checkbox"/>	Avoid contact with potentially infectious waste.
<input type="checkbox"/>	Be aware of and avoid contact with potentially rabid animals.
<input type="checkbox"/>	Use appropriate insect repellent to avoid disease carrying or poisonous insects. Avoid breathing dust in dry desert or central valley areas (valley fever, Hanta virus, etc.).
<input checked="" type="checkbox"/>	Use high visibility vest when working in streets.
<input checked="" type="checkbox"/>	Cone/Barricade work area to prevent public access.

**7. Health and Safety Procedures Required by the Facility**

(Describe any client-specified safety requirements or check "Not Applicable" if there are none).

Due to limitation imposed by Trapac, site characterization activities will be conducted after 1700hrs to avoid working in areas of heavy truck traffic. Since our field work will be conducted off hours, no traffic control plan will be prepared. Although we do not anticipate truck traffic during off hours, all field staff will be required to wear reflective vests, and observe standard care, which will include marking off work areas.

Port of Oakland Environmental Services Division has requested that coring be conducted using wet methods, as well as field monitoring to mitigate potential methane vapors at explosive levels.

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## SITE-SPECIFIC HEALTH AND SAFETY PLAN

### 8. Special Procedures and Precautions

<input checked="" type="checkbox"/>	<b>Not Applicable.</b>
<input type="checkbox"/>	Obtain permit for confined space entry.
<input checked="" type="checkbox"/>	Monitor oxygen and organic vapors during construction. If following values are exceeded, do not enter: (a. oxygen less than 19.5 percent or greater than 25%; b. LEL greater than 10%).
<input type="checkbox"/>	If radiation meter indicates 2mR/hr or more, leave the area and consult DHS.
<input type="checkbox"/>	<b>Dust Suppression:</b> Stockpiled soil will be covered to prevent airborne conditions of affected soil.
<input type="checkbox"/>	<b>Dust Suppression:</b> Dust suppression for vehicular traffic and earth moving operations will be implemented (area water spray).
<input type="checkbox"/>	<b>Dust Suppression:</b> Perimeter ambient air monitoring will be used to analytically measure chemical concentrations of known constituents in fugitive dust. The laboratory analytical results will be used to determine that adequate dust control measures are employed to avoid off-site migration of contaminated dust.

### 9. Air Monitoring Procedures

Note: If applicable, see last page of this HSP for Total Dust Equivalency calculation instructions.

<input type="checkbox"/>	<b>Not Applicable</b>	Because no chemical contamination or excessive dust is expected, no air monitoring will be performed.
<input checked="" type="checkbox"/>	<b>Volatile organics only</b>	VOC concentrations in the breathing zone will be monitored using a PID or FID, during intrusive activities, or any time activities or site conditions change. Methane vapors will be monitored using an LEL meter. Benzene vapors will be monitored using a Drager tube screening apparatus.
<input type="checkbox"/>	<b>Uncontaminated dust only; Total dust monitoring w/Real Time Dust Monitors</b>	Monitoring will be performed when there is visual dust, using a Real Time Total Dust Meter, to detect if total dust levels are above the OSHA PEL for dust of 10 mg/m <sup>3</sup> .



## SITE-SPECIFIC HEALTH AND SAFETY PLAN

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<input type="checkbox"/>	<b>Contaminated dust only;</b> Total dust monitoring w/Real Time Dust Monitors	To obtain current information about potential exposure conditions to contaminated airborne dust, Real Time Total Dust Meter(s) will be used to monitor the breathing zone or immediate work area. Calculations have been done to determine the total airborne dust level necessary to reach the Permissible Exposure Level (Cal/OSHA, PEL-TWA) of _____ given it's highest known concentration in soil. The compound with the highest soil concentration, and the lowest PEL is _____. Subsequently, it has the lowest Total Dust Equivalency Level of _____. This is the amount of total dust necessary in the breathing zone to create an inhalation exposure exceeding the PEL of _____. Since, the number is above/below the OSHA PEL for simple Nuisance Dust/Particulate (non-toxic) of 10 mg/m <sup>3</sup> , then the Action Level to upgrade to respiratory protection during site activities will be the more conservative limit, _____ mg/m <sup>3</sup> . See item #10 for a detailed description of Action Levels, Activities, and corresponding PPE.
<input checked="" type="checkbox"/>	<b>Volatile organics and uncontaminated dust</b>	VOC concentrations in the breathing zone will be monitored using a PID or FID, during intrusive activities, or any time activities or site conditions change. Monitoring will be performed when there is visual dust, using a Real Time Total Dust Meter, to detect if total dust levels are above the OSHA PEL for dust of 10 mg/m <sup>3</sup> .



## SITE-SPECIFIC HEALTH AND SAFETY PLAN

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<input type="checkbox"/>	<b>Volatile organics and contaminated dust</b>	<p>VOC concentrations in the breathing zone will be monitored using a PID or FID, during intrusive activities, or any time activities or site conditions change.</p> <p>To obtain current information about potential exposure conditions to contaminated airborne dust, Real Time Total Dust Meter(s) will be used to monitor the breathing zone or immediate work area. Calculations have been done to determine the total airborne dust level necessary to reach the Permissible Exposure Level (Cal/OSHA, PEL-TWA) of _____ given its highest known concentration in soil. The compound with the highest soil concentration, and the lowest PEL is _____. Subsequently, it has the lowest Total Dust Equivalency Level of _____. This is the amount of total dust necessary in the breathing zone to create an inhalation exposure exceeding the PEL of _____. Since, the number is above/below the OSHA PEL for simple Nuisance Dust/Particulate (non-toxic) of 10 mg/m<sup>3</sup>, then the Action Level to upgrade to respiratory protection during site activities will be the more conservative limit, _____ mg/m<sup>3</sup>. See item #10 for a detailed description of Action Levels, Activities, and corresponding PPE.</p>
<input checked="" type="checkbox"/>	<b>Methane</b>	<p>Methane will be monitored using an LEL/O<sub>2</sub> meter (Combustible Gas Indicator such as a GasTech) during excavation or confined space activities, to protect against explosion hazards. Methane is an asphyxiant and is not considered to be an inhalation hazard.</p>



**SITE-SPECIFIC HEALTH AND SAFETY PLAN**

**10. Action Levels**

Not Applicable (No air monitoring will be performed)

**Note: If PID/FID readings in the breathing zone exceed 5 ppm consistently and Level C is required, contact the Project Manager before proceeding.**

Volatiles Organics	PID/FID	Level of Protection
<input checked="" type="checkbox"/> Drilling/sampling of soil and groundwater	Activities/Locations	
	Action Level	
	0 to 1 ppm (benzene)	Level D with steel toed boots, safety glasses, hard hat and latex inner gloves and nitrile or neoprene outer gloves. Regular or polycoated Tyvek is optional.
	1 to 50 ppm	Level C: Level D as above plus a half face respirator with organic vapor cartridges, and chemical goggles, and polycoated tyvek.
	50 to 250 ppm	Level C as above EXCEPT with a Full FACE respirator.
	> 250 ppm	Upgrade to Level B or Cease operations until vapors dissipate and readings are below 200 ppm.





## SITE-SPECIFIC HEALTH AND SAFETY PLAN

Uncontaminated Dust		Total Dust Meter	Level of Protection
	Activities/Locations	Action Level	
<input type="checkbox"/>	Drilling/sampling of soil and groundwater	0 < 10 mg/m <sup>3</sup>	Level D with steel toed boots, safety glasses, hard hat, and latex inner gloves and nitrile or neoprene outer gloves. Regular or polycoated Tyvek is optional.
		> 10 mg/m <sup>3</sup>	Level C: Level D as above plus a half face respirator with dust/mist cartridges, chemical goggles, and regular or polycoated tyvek. Or use dust suppression methods.

Contaminated Dust		Total Dust Meter	Level of Protection
	Activities/Locations	Action Level	
<input type="checkbox"/>	Drilling/sampling of soil and groundwater	0 < 10 mg/m <sup>3</sup> or _____ mg/m <sup>3</sup> level calculated in Item #9	Level D with steel toed boots, safety glasses, hard hat, and latex inner gloves and nitrile or neoprene outer gloves. Regular or polycoated Tyvek is optional.
		> 10 mg/m <sup>3</sup> or _____ mg/m <sup>3</sup> level calculated in Item #9	Level C: Level D as above plus a half face respirator with dust/mist cartridges, chemical goggles, and regular or polycoated tyvek. Or use dust suppression methods.

Other		Action Level	Level of Protection
	Activities/Locations		
<input type="checkbox"/>	Drilling/sampling of soil and groundwater		



## SITE-SPECIFIC HEALTH AND SAFETY PLAN

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### 11. Decontamination

<input type="checkbox"/>	Not Applicable.
<input checked="" type="checkbox"/>	General: Decontaminate all drilling and sampling equipment between boring locations.
<input type="checkbox"/>	Specific: Set up decon as necessary before work begins. Decon in the following order (as appropriate): Wash/Rinse/Remove: Outer boots, outer gloves, tyvek, respirator, inner gloves. Wash and rinse hands and face.

### 12. Sample Handling and Investigation – Derived Waste Management

<input type="checkbox"/>	Chemical contamination not suspected. If contamination is encountered, contact the project manager regarding special sample handling or waste management requirements.
<input checked="" type="checkbox"/>	Sample contamination known or suspected. Wear gloves when handling samples. If geotechnical testing of samples is necessary, testing should not be performed at Fugro's laboratory.
<input checked="" type="checkbox"/>	Place soil cuttings and equipment rinsate wastewater in labeled 55 gallon drums or other appropriate containers.

### 13. Emergency Contacts (names and telephone numbers)

Police:	911
Fire:	911
Ambulance:	911
Hospital:	(510) 627-4702 (Alta Bates)
Facility Health and Safety Officer (if applicable):	N/A
Fugro Health and Safety Director:	Glenn Young office: 510-267-4424 mobile: 510-610-8057



**SITE-SPECIFIC HEALTH AND SAFETY PLAN**

14. **Written Directions to Nearest Hospital (attach route map)**  
**Alta Bates Medical Group, 2201 Broadway #6, Oakland CA 94612**

Start off going East on 7<sup>th</sup> St  
 Take the I-880 South towards San Jose  
 Take the 5<sup>th</sup> Street exit towards Alameda/Broadway  
 Continue on 5<sup>th</sup> St  
 Turn Left on Broadway  
 Continue on Broadway/Broadway Auto Row  
 Arrive at 2201 Broadway, Oakland

15. **By my signature below, I hereby indicate that I have read and understand this HSP and I agree to follow the guidelines therein.**

Name (Print)

Name (Signature)

Date

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## SITE-SPECIFIC HEALTH AND SAFETY PLAN

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**TO THE SUBCONTRACTOR:** *This plan has been prepared solely for the use of Fugro personnel. It is supplied to you for informational purposes only. You are responsible for your own health and safety program.*


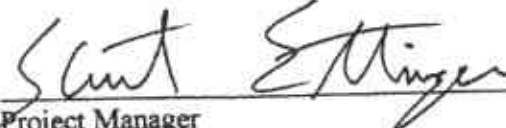
### 16. Checklist

This HSP contains the following attachments. If they are not present with this document, it is incomplete.

- Site Map (see Item 3)
- Hospital Route Map (see Item 14)
- Data/Sample Results, if available

### 17. Signatures

**Note:** *For sites with known or suspected chemical contamination, the HSP must be reviewed and approved by the Health and Safety Director or his designee. For other sites, the HSP may be reviewed and approved by the Health and Safety Director, the Geotechnical Group Leader, or the Project Manager*

_____	_____	Date
Fugro Health and Safety Director		
		
Certified Industrial Hygienist		
_____		10/2/2005
		Date
Project Manager		10/2/06

## SCOPE OF SERVICES



### Sampling and Analysis Plan Trapac - Berth 30 Gate Improvement /Construction Project

September 2006

Fugro West, Inc. (Fugro) proposes to provide the following scope of services to characterize soil and soil vapors prior to proposed construction activities at the above mentioned site. The approximate location of the project is shown on Plate 1, approximate sampling locations are shown on Plate 2.

The proposed construction activities at the Trapac Terminal Site located at 2800 7<sup>th</sup> Street, Berth 30, Port of Oakland, will include shallow excavation and trenching within the transport trucking lanes to facilitate planned gate improvement activities. Saw cutting of asphalt and perhaps concrete, will be conducted to facilitate completion of an east-west trending utility trench at the site. We understand the proposed excavation depths range from 2.5 to 6 feet below ground surface (bgs).

It is our understanding that a former oil tank farm operated by the Powerine Oil Company and comprising several large above ground fuel tanks (AGTs) existed onsite. Historical correspondence between Alameda County Health Services Agency (ACHSA) and the Port, as well as information provided to Fugro by the Port of Oakland's Environmental Programs and Safety Department (Port EP&S Department.), indicate that although impacted soils were removed from the site, residual soil and potentially groundwater impacted by Total Petroleum Hydrocarbons (TPHGs) remain onsite. Primary chemicals of concern include petroleum hydrocarbons (TPHg, TPHd, TPHmo and heavier oil), and volatile constituents of gasoline (including benzene).

The Port EP&S department has raised concerns regarding potential worker safety issues posed by worker exposure to TPH impacted soils, and elevated concentrations of benzene vapors potentially trapped beneath asphalt and concrete surface slabs onsite. In addition, the Port EH&SC department has also raised concerns regarding the potential for elevated levels of methane vapors below the slabs which could become a fire/explosive hazard during proposed construction related saw cutting activities onsite.

#### Site-Specific Health and Safety Plan (HSP)

The attached HSP is based on soil and groundwater quality data contained in correspondence letters with Mr. John Prall, of the Port EP&S department. These indicate that soils containing up to 1,000 mg/kg of TPH remains onsite. Fugro's HSP has been reviewed and signed by a Certified Industrial Hygienist. The HSP will be followed by Fugro staff and our subcontractor's while performing soil gas/vapor, soil sampling and screening activities. Mr. Obi Nzewi, the project manager will be the Fugro Site Safety Officer for this project. Mr. Nzewi is 40 hr. HAZWOPER trained. Fugro's staff, sub-contractors and consultants involved with collecting samples will also be 40 hr. HAZWOPER trained. Based on the presented information and concerns of Mr. John Prall, field staff will be required to have Level D personal protective equipment (PPE) and but be ready to upgrade to Level C PPE (which includes a half face ~~air filter~~ respirator fitted with organic vapor/acid gas (OV/AG) NIOSH P-100 cartridges) if field conditions require it. Conditions that would trigger an upgrade to Level C PPE as indicated in our HSP, include continuous PID readings of above 1ppm in the breathing zone.

## SCOPE OF SERVICES



Due to limitation imposed by Trapac, site characterization activities will be conducted after 1700hrs to avoid working in areas of heavy truck traffic. Since our field work will be conducted off hours, no traffic control plan will be prepared. Although we do not anticipate truck traffic during off hours, all field staff will be required to read and acknowledge the Port Guidelines for Working in Active Terminals, and observe standard care, while conducting field activities. Level D PPE will be suitable to address worker safety equipment requirements for working in Active Terminals

### Soil and Soil Vapor Screening/Sampling

The environmental scope of work described herein is considered preliminary in nature as it is not designed to determine the lateral and vertical extent of impact. The scope is limited to field screening conditions to which future construction workers could potentially be exposed any of the work areas. Sampling and screening activities will consist of the following:

- **Soil Gas/Vapor Sampling:**
  - Fugro will retain a geoprobe drilling contractor to advance 5 probes to depths ranging from 2.5 to 6 feet bgs and collect soil gas samples in a 1 liter summa canister.
  - Two proposed sampling locations are located in a concrete finished area of the site. Geoprobe drilling methods are generally unable to drive through concrete and as such these two locations will be cored through using wet methods, prior to soil gas sampling.
  - Each probe will be advanced using direct-push methods and the probe will be sealed in place by a bentonite putty mixed and placed around the exterior of the 1.5-inch probe. Probes will be allowed to stabilize undisturbed for approximately 30 minutes prior to purging and sampling. Using the Post Run Tubing system comprising ¼-inch diameter polyethylene tubing attached to the bottom of the 1.5-inch diameter steel probe, Fugro will collect a soil-gas sample from each of the five locations using a laboratory-provided 1 liter summa canister and 100 to 200 milliliter flow regulators.
  - Prior to sample collection, Fugro will also conduct a pressurized leak test, which will consist of charging sampling tubing with a negative pressure and maintaining that pressure for about 10 minutes. If no pressure change is observed, then soil-gas sampling will be conducted. If a pressure loss is observed, the tubing and fittings will be tightened, replaced, etc until the negative pressure can be maintained for at least 10 minutes.
  - Prior to sampling, Fugro will calculate the dead space volume that includes the volume of tubing and the annular space around the probe tip. At least three dead space volumes will be purged before collecting the soil-gas sample. Once the line has been purged, we will collect the soil-gas sample using a laboratory-provided 1 liter Summa canister. During sampling, clean gauze saturated with isopropyl alcohol will be briefly placed near fittings as an additional leak check.
  - After sample collection, the probe locations will be backfilled with neat cement grout and quick setting concrete to match the existing grade.
  - Fugro's field geologist will screen the breathing zone during drilling activities with a PID, and LEL meter, to monitor TPH and methane vapors.

## SCOPE OF SERVICES



- Soil gas samples will be shipped to Air Toxics Ltd, a State of California certified air testing laboratory and tested for the following:
  - TPHg only by TO-3 and the TO-15 list of analytes including benzene. Laboratory detection limit for benzene will be approximately 1.2 ppbv or 0.0012 ppmv, unless there is a matrix interference.
  - Methane only using ASTM 1946.
- **Soil Gas/Vapor Screening:**
  - Fugro will instruct the drilling contractor to core through asphalt and concrete at 5 companion locations using wet methods.
  - Prior to coring activities, we will ensure that soil gas sampling locations are sealed to the surface with neat cement grout in accordance with Alameda County Department of Public Works requirements, to mitigate short circuiting.
  - Immediately following coring activities at each location, we will screen TPH, methane and benzene vapor concentrations beneath the slab using a PID, LEL meter, and Drager pump and tube sampling apparatus (specifically setup to screen for benzene concentrations) Drager tubes with effective ranges of between 0.5 and 10 ppm (the lowest range available), as well as 15 and 420 ppm will be used. .
  - We will also retain IHI Ltd (an Industrial Hygiene consulting firm) to collect confirmatory air samples from each location using a charcoal tube and pump. Samples will be collected from each of the cored locations by inserting the probes into cored holes directly beneath the asphalt and concrete slab. These samples will be tested for benzene.
  - In our opinion soil vapor screening activities will assist in screening the potential presence of TPH and benzene vapors in the breathing zone which could pose an inhalation risk to future construction workers onsite. Screening will also characterize the potential for methane vapors at concentrations which could be an explosive hazard to workers during future construction activities.
- **Soil Sampling:**
  - Fugro will conduct soil sampling at each of the 5 companion vapor screening locations.
  - We will instruct our drilling contractor to advance direct push sampling apparatus to depths ranging from 3 to 6 feet bgs, and collect continuous samples at each location. Fugro's field geologist will prepare logs of conditions encountered.
  - Total depth at each location will correlate to the proposed depths of planned excavation activities related to gate construction and improvement activities by APS Technologies Inc.
  - Fugro will visually check soil samples generated at each location for obvious signs of contamination (staining, and/or odor) and screen soil samples in the field using a PID. We will retain a total of seven (7) samples for chemical testing.
  - Soil samples will be retained in acetate liners, the ends of which will be covered with Teflon sheets, plastic caps and labeled with depth, date, project number and time taken. Soils possessing the highest readings will be submitted for chemical analysis.

## SCOPE OF SERVICES



- Soil samples will be placed in an ice chilled chest, and transported under chain of custody documentation to a State of California certified chemical testing laboratory. Soil samples will be tested for the following:
  - Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes, as well as MTBE by US EPA Test Method 8015m/8020, 8260;
  - Total petroleum hydrocarbons as diesel and motor oil (TPHd and mo) by US EPA Test Method 8015m with silica gel cleanup;
  - 17 Heavy metals by US EPA Test Method 6010/7000;
  - Complete laboratory specific suite of semi volatile organic compounds (SVOCs) by US EPA Test Method 8270; and
  - Complete laboratory specific suite of volatile organic compounds by US EPA Test method 8260
- Results of chemical analysis will be used to determine if residual concentrations of TPH, benzene, or heavy metals pose an exposure risk to future construction workers at the site.
- Results will also be used to assist APS Technologies Inc. in classifying soils to be generated during their planned construction, for potential reuse or disposal by the Port of Oakland.

Prior to commencement of field activities, Fugro will mark the proposed boring locations in white paint, call USA and retain a private utility locator to screen the areas for shallow metallic anomalies and for lines on which an electromagnetic charge could be induced. There is no economical way to locate unmarked, non active or non metallic lines.

Work areas will be coned off to restrict access to unauthorized Terminal workers and others.

The breathing zone at each location will be screened with a PID during drilling to ensure that detected TPH and benzene concentrations do not pose a risk to field staff. Should concentrations exceed 1 ppm in the breathing zone, all field personnel will upgrade to Level C PPE.

Soil cuttings, not retained for chemical testing will be placed in a labeled 55 gallon Department of Transportation (DOT) approved and labeled drum and stored onsite pending disposal. The Wharfinger for TRAPAC, Phil Granger will be contacted to arrange for a location to temporarily store the drum(s). We understand that disposal of soil and cuttings will either be handled by the Port of Oakland or APS Technologies Inc.

No groundwater sampling will be conducted as part of this investigation.

### Schedule

Fugro has scheduled field work for Monday October 2<sup>nd</sup> 2006. Field work will begin at 1700 hrs as requested by Trapac, in order to avoid conducting work in the heavily truck trafficked lanes.



## SCOPE OF SERVICES



### Report Preparation

Fugro will prepare a written letter report documenting the results of this study. The report will include a narrative description of the site activities, comparison of the analytical results to RWQCB ESL criteria for construction workers. It will also include conclusions and/or recommendations on appropriate measures that may be required to mitigate vapors of any chemicals of concern below the asphalt and/or concrete slab that may be detected during this investigation at concentrations exceeding the applicable ESL criteria as well as CHSSLs and PRGs. The report will also include tabulated analytical data, sampling forms, chain-of-custody forms and the hard copy analytical reports. Copies of the report will be submitted to APS Technology Inc, as well as the Port EP&S department.

# Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street  
Hayward, CA 94544-1395  
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 09/29/2006 By Jamesy

Permit Numbers: W2006-0861  
Permits Valid from 10/10/2006 to 10/10/2006

Application Id: 1159469736007  
Site Location: Trapac - Berth 30, Port of Oakland 2800 7th Street, Oakland CA  
Project Start Date: 10/10/2006

City of Project Site: Alameda  
Completion Date: 10/10/2006

Applicant: Fugro West Inc - Obi Nzewi  
1000 Broadway Suite 200, Oakland, CA 94607  
Property Owner: Of Oakland Port  
530 Walec st, oakland, CA 94607  
Client: Technologiy Inc APS  
8250 Vickers Street Suite E, San Diego, CA 92111  
Contact: Obi Nzewi

Phone: 510-267-4413  
Phone: --  
Phone: 858-583-1178  
Phone: 510-267-4413  
Cell: 510-701-4174

Total Due: \$200.00  
Total Amount Paid: \$200.00  
Payer Name : Obiajulu Nzewi Paid By: VISA PAID IN FULL

### Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 12 Boreholes  
Driller: Vironex Inc - Lic #: 705927 - Method: DP

Work Total: \$200.00

### Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2006-0861	09/29/2006	01/09/2007	12	2.00 in.	6.00 ft

### Specific Work Permit Conditions

- Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.
- Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
- Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.
- Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
- Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

## Alameda County Public Works Agency - Water Resources Well Permit

6. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

7. No Inspector Assigned to this site.

Applicant shall contact this office by email at [wells@acpwa.org](mailto:wells@acpwa.org) and certify in writing that work was completed and according to County Standards within 5 working days after the completion of work.

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DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/ PRESSURE	OVEN/PID (ppm)	LOCATION: Oakland, California	OTHER TESTS
						SURFACE EL: Not Surveyed	
MATERIAL DESCRIPTION							
0		1				Asphalt: 11 inches of asphalt	
0		2				Poorly-graded SAND with gravel (SP): loose, dark brown - brown, medium grained with gravel	
0		3					
0		4				Silty SAND (SM): loose, dark brown, medium to fine grained sand with silt, some shells	
5						Boring completed at 3.5 feet	
10							
15							
20							
25							
30							
35							
40							
45							

BORING DEPTH: 3.5 ft  
 DEPTH TO WATER: Not Encountered

COMPLETION DATE:  
 NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push  
 HAMMER TYPE: NA  
 RIG TYPE: Direct Push  
 DRILLED BY: Vironex, Emerson  
 LOGGED BY: O Nzewi

**LOG OF B-1**  
 Trapac Berth 30  
 Oakland, California, California



DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/PRESSURE	OVM/PID (ppm)	LOCATION: Oakland, California	OTHER TESTS
						SURFACE EL: Not Surveyed	
MATERIAL DESCRIPTION							
0		1			0	Asphalt: 11 inches of asphalt	
0		2			0	Poorly-graded SAND with gravel (SP): loose, dark brown, moist, silty sand with gravel, some shells	
0		3			0	Boring completed at 3.5'	
5		4					
10							
15							
20							
25							
30							
35							
40							
45							

BORING DEPTH: 3.5 ft  
 DEPTH TO WATER: Not Encountered

COMPLETION DATE:  
 NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push  
 HAMMER TYPE: NA  
 RIG TYPE: Direct Push  
 DRILLED BY: Vironex, Emerson  
 LOGGED BY: O Nzewi

**LOG OF B-2**  
 Trapac Berth 30  
 Oakland, California, California



DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW COUNT/PRESSURE	OVM/PIID (ppm)	LOCATION: Oakland, California	OTHER TESTS
						SURFACE EL: Not Surveyed	
MATERIAL DESCRIPTION							
0		1				Asphalt: 11 inches of asphalt	
0		2				medium - fine grained sand: loose, dark brown - brown, with gravel	
Boring completed at 3.0'							
5							
10							
15							
20							
25							
30							
35							
40							
45							

BORING DEPTH: 3.0 ft  
 DEPTH TO WATER: Not Encountered

COMPLETION DATE:  
 NOTES: 1. Terms and symbols defined on Plate A-1.

DRILLING METHOD: 2-in. dia. Direct Push  
 HAMMER TYPE: NA  
 RIG TYPE: Direct Push  
 DRILLED BY: Vironex, Emerson  
 LOGGED BY: O Nzewi

**LOG OF B-3**  
 Trapac Berth 30  
 Oakland, California, California



DEPTH, ft	MATERIAL SYMBOL	SAMPLE NO.	SAMPLER TYPE	SAMPLER BLOW/COUNT/PRESSURE	OVNMPID (ppm)	LOCATION: Oakland, California	OTHER TESTS
						SURFACE EL: Not Surveyed	
MATERIAL DESCRIPTION							
						Concrete: 28 inches of concrete	
		1			0	brown to Dark Brown, moist	
5		2			0	Medium grained sand: reddish brown to brown, moist, with gravel	
		4			0	Boring completed at 6.0 feet	
10							
15							
20							
25							
30							
35							
40							
45							

BORING DEPTH: 6.0 ft  
 DEPTH TO WATER: Not Encountered

DRILLING METHOD: 2-in. dia. Direct Push  
 HAMMER TYPE: NA  
 RIG TYPE: Direct Push  
 DRILLED BY: Vironex, Emerson  
 LOGGED BY: O Nzewi

COMPLETION DATE:  
 NOTES: 1. Terms and symbols defined on Plate A-1.

**LOG OF B-5**  
 Trapac Berth 30  
 Oakland, California, California



# **AIR TOXICS LTD.**

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AN ENVIRONMENTAL ANALYTICAL LABORATORY

## **Air Toxics Ltd. Introduces the Electronic Report**

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

**180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630**

**(916) 985-1000 .FAX (916) 985-1020  
Hours 8:00 A.M to 6:00 P.M. Pacific**





# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## WORK ORDER #: 0610051A

### Work Order Summary

<b>CLIENT:</b>	Mr. Obi Nzewi Fugro West Inc. 1000 Broadway Suite 200 Oakland, CA 94607	<b>BILL TO:</b>	Mr. Obi Nzewi Fugro West Inc. 1000 Broadway Suite 200 Oakland, CA 94607
<b>PHONE:</b>	510-267-4413	<b>P.O. #</b>	
<b>FAX:</b>	510-268-0137	<b>PROJECT #</b>	1803.001 Trapac-Berth 30
<b>DATE RECEIVED:</b>	10/04/2006	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/05/2006		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC/PRES.</u>
01A	B-1	Modified TO-15	4.5 "Hg
02A	Duplicate-1	Modified TO-15	3.0 "Hg
03A	B-2	Modified TO-15	2.5 "Hg
04A	B-3	Modified TO-15	2.0 "Hg
05A	B-6	Modified TO-15	2.5 "Hg
06A	Lab Blank	Modified TO-15	NA
07A	CCV	Modified TO-15	NA
08A	LCS	Modified TO-15	NA

CERTIFIED BY:

Laboratory Director

DATE: 10/05/06

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/06, Expiration date: 06/30/07  
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified TO-15**  
**Fugro West Inc.**  
**Workorder# 0610051A**

Five 1 Liter Summa Canister samples were received on October 04, 2006. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

Method modifications taken to run these samples are summarized in the below table. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Daily CCV	+/- 30% Difference	<= 30% Difference with two allowed out up to <=40%; flag and narrate outliers
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

All Quality Control Limit failures and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

The reported LCS for each daily batch has been derived from more than one analytical file.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV



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N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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## Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: B-1

Lab ID#: 0610051A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Bromomethane	1.2	1.5	4.6	5.7
Tetrahydrofuran	1.2	1.3 J	3.5	3.8 J

Client Sample ID: Duplicate-1

Lab ID#: 0610051A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Cyclohexane	370	510	1300	1800
2,2,4-Trimethylpentane	370	140000	1700	640000

Client Sample ID: B-2

Lab ID#: 0610051A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Methylene Chloride	370	440	1300	1500
Cyclohexane	370	540	1300	1900
2,2,4-Trimethylpentane	370	130000	1700	620000

Client Sample ID: B-3

Lab ID#: 0610051A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,3-Butadiene	1.1	9.9	2.4	22
Freon 11	1.1	9.4	6.1	52
Acetone	4.3	44	10	100
Carbon Disulfide	1.1	4.0	3.4	12
Hexane	1.1	4.7	3.8	17
2-Butanone (Methyl Ethyl Ketone)	1.1	9.1	3.2	27
1,1,1-Trichloroethane	1.1	1.8	5.9	9.8
Cyclohexane	1.1	1.7	3.7	5.9
2,2,4-Trimethylpentane	1.1	3.1	5.0	14
Benzene	1.1	7.4	3.4	23
Heptane	1.1	7.3	4.4	30
Toluene	1.1	7.2	4.1	27
Tetrachloroethene	1.1	2.8	7.3	19



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## Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: B-3

Lab ID#: 0610051A-04A

Ethyl Benzene	1.1	1.3	4.7	5.7
m,p-Xylene	1.1	2.6	4.7	12

Client Sample ID: B-6

Lab ID#: 0610051A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,3-Butadiene	5.5	23	12	51
Acetone	22	74	52	180
Carbon Disulfide	5.5	13	17	39
Hexane	5.5	53	19	190
2-Butanone (Methyl Ethyl Ketone)	5.5	15	16	44
Cyclohexane	5.5	22	19	76
2,2,4-Trimethylpentane	5.5	1400	26	6400
Benzene	5.5	15	18	49
Heptane	5.5	37	22	150
Toluene	5.5	14	21	54
m,p-Xylene	5.5	11	24	47



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Client Sample ID: B-1

Lab ID#: 0610051A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100415	Date of Collection:	10/2006
Oil Packet:	2 38	Date of Analysis:	10/4/06 11:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	4.8	Not Detected	9.8	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	1.2	1.5	4.6	5.7
Chloroethane	1.2	Not Detected	3.1	Not Detected
Freon 11	1.2	Not Detected	6.7	Not Detected
Ethanol	4.8	Not Detected	9.0	Not Detected
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	4.8	Not Detected	11	Not Detected
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	1.2	Not Detected	3.7	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	1.2	Not Detected	4.1	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.2	Not Detected	3.5	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrahydrofuran	1.2	1.3 J	3.5	3.8 J
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected



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AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-1

Lab ID#: 0610051A-01A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100419	Date of Collection:	10/2/06
CR Factor:	2.35	Date of Analysis:	10/4/06 11:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
2-Hexanone	4.8	Not Detected	19	Not Detected
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.8	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	35	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	102	70-130



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Duplicate-1

Lab ID#: 0610051A-02A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100423	Date of Collection:	10/2/06	
Dil. Factor:	743	Date of Analysis:	10/5/06 02:10 AM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	370	Not Detected	1800	Not Detected
Freon 114	370	Not Detected	2600	Not Detected
Chloromethane	1500	Not Detected	3100	Not Detected
Vinyl Chloride	370	Not Detected	950	Not Detected
1,3-Butadiene	370	Not Detected	830	Not Detected
Bromomethane	370	Not Detected	1400	Not Detected
Chloroethane	370	Not Detected	980	Not Detected
Freon 11	370	Not Detected	2100	Not Detected
Ethanol	1500	Not Detected	2800	Not Detected
Freon 113	370	Not Detected	2900	Not Detected
1,1-Dichloroethene	370	Not Detected	1500	Not Detected
Acetone	1500	Not Detected	3500	Not Detected
2-Propanol	1500	Not Detected	3700	Not Detected
Carbon Disulfide	370	Not Detected	1200	Not Detected
3-Chloropropene	1500	Not Detected	4700	Not Detected
Methylene Chloride	370	Not Detected	1300	Not Detected
Methyl tert-butyl ether	370	Not Detected	1300	Not Detected
trans-1,2-Dichloroethene	370	Not Detected	1500	Not Detected
Hexane	370	Not Detected	1300	Not Detected
1,1-Dichloroethane	370	Not Detected	1500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	370	Not Detected	1100	Not Detected
cis-1,2-Dichloroethene	370	Not Detected	1500	Not Detected
Tetrahydrofuran	370	Not Detected U J	1100	Not Detected U J
Chloroform	370	Not Detected	1800	Not Detected
1,1,1-Trichloroethane	370	Not Detected	2000	Not Detected
Cyclohexane	370	510	1300	1800
Carbon Tetrachloride	370	Not Detected	2400	Not Detected
2,2,4-Trimethylpentane	370	140000	1700	640000
Benzene	370	Not Detected	1200	Not Detected
1,2-Dichloroethane	370	Not Detected	1500	Not Detected
Heptane	370	Not Detected	1500	Not Detected
Trichloroethene	370	Not Detected	2000	Not Detected
1,2-Dichloropropane	370	Not Detected	1700	Not Detected
1,4-Dioxane	1500	Not Detected	5400	Not Detected
Bromodichloromethane	370	Not Detected	2500	Not Detected
cis-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
4-Methyl-2-pentanone	370	Not Detected	1500	Not Detected
Toluene	370	Not Detected	1400	Not Detected
trans-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
1,1,2-Trichloroethane	370	Not Detected	2000	Not Detected





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Duplicate-1

Lab ID#: 0610051A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	6100423	Date of Collection:	10/2/06
DN Factor:	747	Date of Analysis:	10/5/06 02:10 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	370	Not Detected	2500	Not Detected
2-Hexanone	1500	Not Detected	6100	Not Detected
Dibromochloromethane	370	Not Detected	3200	Not Detected
1,2-Dibromoethane (EDB)	370	Not Detected	2900	Not Detected
Chlorobenzene	370	Not Detected	1700	Not Detected
Ethyl Benzene	370	Not Detected	1600	Not Detected
m,p-Xylene	370	Not Detected	1600	Not Detected
o-Xylene	370	Not Detected	1600	Not Detected
Styrene	370	Not Detected	1600	Not Detected
Bromoform	370	Not Detected	3900	Not Detected
Cumene	370	Not Detected	1800	Not Detected
1,1,2,2-Tetrachloroethane	370	Not Detected	2600	Not Detected
Propylbenzene	370	Not Detected	1800	Not Detected
4-Ethyltoluene	370	Not Detected	1800	Not Detected
1,3,5-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,2,4-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,3-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,4-Dichlorobenzene	370	Not Detected	2200	Not Detected
alpha-Chlorotoluene	370	Not Detected	1900	Not Detected
1,2-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,2,4-Trichlorobenzene	1500	Not Detected	11000	Not Detected
Hexachlorobutadiene	1500	Not Detected	16000	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	106	70-130



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-2

Lab ID#: 0610051A-03A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100426	Date of Collection:	10/2/95
Dil Factor:	1.00	Date of Analysis:	10/2/95 02:35 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	370	Not Detected	1800	Not Detected
Freon 114	370	Not Detected	2600	Not Detected
Chloromethane	1500	Not Detected	3000	Not Detected
Vinyl Chloride	370	Not Detected	940	Not Detected
1,3-Butadiene	370	Not Detected	810	Not Detected
Bromomethane	370	Not Detected	1400	Not Detected
Chloroethane	370	Not Detected	970	Not Detected
Freon 11	370	Not Detected	2000	Not Detected
Ethanol	1500	Not Detected	2800	Not Detected
Freon 113	370	Not Detected	2800	Not Detected
1,1-Dichloroethene	370	Not Detected	1400	Not Detected
Acetone	1500	Not Detected	3500	Not Detected
2-Propanol	1500	Not Detected	3600	Not Detected
Carbon Disulfide	370	Not Detected	1100	Not Detected
3-Chloropropene	1500	Not Detected	4600	Not Detected
Methylene Chloride	370	440	1300	1500
Methyl tert-butyl ether	370	Not Detected	1300	Not Detected
trans-1,2-Dichloroethene	370	Not Detected	1400	Not Detected
Hexane	370	Not Detected	1300	Not Detected
1,1-Dichloroethane	370	Not Detected	1500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	370	Not Detected	1100	Not Detected
cis-1,2-Dichloroethene	370	Not Detected	1400	Not Detected
Tetrahydrofuran	370	Not Detected U J	1100	Not Detected U J
Chloroform	370	Not Detected	1800	Not Detected
1,1,1-Trichloroethane	370	Not Detected	2000	Not Detected
Cyclohexane	370	540	1300	1900
Carbon Tetrachloride	370	Not Detected	2300	Not Detected
2,2,4-Trimethylpentane	370	130000	1700	620000
Benzene	370	Not Detected	1200	Not Detected
1,2-Dichloroethane	370	Not Detected	1500	Not Detected
Heptane	370	Not Detected	1500	Not Detected
Trichloroethene	370	Not Detected	2000	Not Detected
1,2-Dichloropropane	370	Not Detected	1700	Not Detected
1,4-Dioxane	1500	Not Detected	5300	Not Detected
Bromodichloromethane	370	Not Detected	2400	Not Detected
cis-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
4-Methyl-2-pentanone	370	Not Detected	1500	Not Detected
Toluene	370	Not Detected	1400	Not Detected
trans-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
1,1,2-Trichloroethane	370	Not Detected	2000	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-2

Lab ID#: 0610051A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100434	Date of Collection:	10/2006
Dil Factor:	733	Date of Analysis:	10/2006 02:36 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	370	Not Detected	2500	Not Detected
2-Hexanone	1500	Not Detected	6000	Not Detected
Dibromochloromethane	370	Not Detected	3100	Not Detected
1,2-Dibromoethane (EDB)	370	Not Detected	2800	Not Detected
Chlorobenzene	370	Not Detected	1700	Not Detected
Ethyl Benzene	370	Not Detected	1600	Not Detected
m,p-Xylene	370	Not Detected	1600	Not Detected
o-Xylene	370	Not Detected	1600	Not Detected
Styrene	370	Not Detected	1600	Not Detected
Bromoform	370	Not Detected	3800	Not Detected
Cumene	370	Not Detected	1800	Not Detected
1,1,2,2-Tetrachloroethane	370	Not Detected	2500	Not Detected
Propylbenzene	370	Not Detected	1800	Not Detected
4-Ethyltoluene	370	Not Detected	1800	Not Detected
1,3,5-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,2,4-Trimethylbenzene	370	Not Detected	1600	Not Detected
1,3-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,4-Dichlorobenzene	370	Not Detected	2200	Not Detected
alpha-Chlorotoluene	370	Not Detected	1900	Not Detected
1,2-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,2,4-Trichlorobenzene	1500	Not Detected	11000	Not Detected
Hexachlorobutadiene	1500	Not Detected	16000	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	106	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-3

Lab ID#: 0610051A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	6100420	Date of Collection:	10/2006
Dil. Factor:	2.18	Date of Analysis:	10/5/06 12:18 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	1.1	Not Detected	5.3	Not Detected
Freon 114	1.1	Not Detected	7.6	Not Detected
Chloromethane	4.3	Not Detected	8.9	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	9.9	2.4	22
Bromomethane	1.1	Not Detected	4.2	Not Detected
Chloroethane	1.1	Not Detected	2.8	Not Detected
Freon 11	1.1	9.4	6.1	52
Ethanol	4.3	Not Detected	8.1	Not Detected
Freon 113	1.1	Not Detected	8.3	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Acetone	4.3	44	10	100
2-Propanol	4.3	Not Detected	11	Not Detected
Carbon Disulfide	1.1	4.0	3.4	12
3-Chloropropene	4.3	Not Detected	14	Not Detected
Methylene Chloride	1.1	Not Detected	3.8	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	3.9	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Hexane	1.1	4.7	3.8	17
1,1-Dichloroethane	1.1	Not Detected	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.1	9.1	3.2	27
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrahydrofuran	1.1	Not Detected U J	3.2	Not Detected U J
Chloroform	1.1	Not Detected	5.3	Not Detected
1,1,1-Trichloroethane	1.1	1.8	5.9	9.8
Cyclohexane	1.1	1.7	3.7	5.9
Carbon Tetrachloride	1.1	Not Detected	6.8	Not Detected
2,2,4-Trimethylpentane	1.1	3.1	5.0	14
Benzene	1.1	7.4	3.4	23
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	7.3	4.4	30
Trichloroethene	1.1	Not Detected	5.8	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.0	Not Detected
1,4-Dioxane	4.3	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.2	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.9	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.4	Not Detected
Toluene	1.1	7.2	4.1	27
trans-1,3-Dichloropropene	1.1	Not Detected	4.9	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.9	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-3

Lab ID#: 0610051A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100438	Date of Collection:	10/20/06
Dil. Factor:	2.16	Date of Analysis:	10/20/06 12:15 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	1.1	2.8	7.3	19
2-Hexanone	4.3	Not Detected	18	Not Detected
Dibromochloromethane	1.1	Not Detected	9.2	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.3	Not Detected
Chlorobenzene	1.1	Not Detected	5.0	Not Detected
Ethyl Benzene	1.1	1.3	4.7	5.7
m,p-Xylene	1.1	2.6	4.7	12
o-Xylene	1.1	Not Detected	4.7	Not Detected
Styrene	1.1	Not Detected	4.6	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.3	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.4	Not Detected
Propylbenzene	1.1	Not Detected	5.3	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.3	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.3	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.3	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.5	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.5	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.6	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.5	Not Detected
1,2,4-Trichlorobenzene	4.3	Not Detected	32	Not Detected
Hexachlorobutadiene	4.3	Not Detected	46	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	106	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-6

Lab ID#: 0610051A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100422	Date of Collection:	10/5/98
Oil Factor:	110	Date of Analysis:	10/5/98 01:44 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	5.5	Not Detected	27	Not Detected
Freon 114	5.5	Not Detected	38	Not Detected
Chloromethane	22	Not Detected	45	Not Detected
Vinyl Chloride	5.5	Not Detected	14	Not Detected
1,3-Butadiene	5.5	23	12	51
Bromomethane	5.5	Not Detected	21	Not Detected
Chloroethane	5.5	Not Detected	14	Not Detected
Freon 11	5.5	Not Detected	31	Not Detected
Ethanol	22	Not Detected	41	Not Detected
Freon 113	5.5	Not Detected	42	Not Detected
1,1-Dichloroethene	5.5	Not Detected	22	Not Detected
Acetone	22	74	52	180
2-Propanol	22	Not Detected	54	Not Detected
Carbon Disulfide	5.5	13	17	39
3-Chloropropene	22	Not Detected	69	Not Detected
Methylene Chloride	5.5	Not Detected	19	Not Detected
Methyl tert-butyl ether	5.5	Not Detected	20	Not Detected
trans-1,2-Dichloroethene	5.5	Not Detected	22	Not Detected
Hexane	5.5	53	19	190
1,1-Dichloroethane	5.5	Not Detected	22	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.5	15	16	44
cis-1,2-Dichloroethene	5.5	Not Detected	22	Not Detected
Tetrahydrofuran	5.5	Not Detected U J	16	Not Detected U J
Chloroform	5.5	Not Detected	27	Not Detected
1,1,1-Trichloroethane	5.5	Not Detected	30	Not Detected
Cyclohexane	5.5	22	19	76
Carbon Tetrachloride	5.5	Not Detected	35	Not Detected
2,2,4-Trimethylpentane	5.5	1400	26	6400
Benzene	5.5	15	18	49
1,2-Dichloroethane	5.5	Not Detected	22	Not Detected
Heptane	5.5	37	22	150
Trichloroethene	5.5	Not Detected	30	Not Detected
1,2-Dichloropropane	5.5	Not Detected	25	Not Detected
1,4-Dioxane	22	Not Detected	79	Not Detected
Bromodichloromethane	5.5	Not Detected	37	Not Detected
cis-1,3-Dichloropropene	5.5	Not Detected	25	Not Detected
4-Methyl-2-pentanone	5.5	Not Detected	22	Not Detected
Toluene	5.5	14	21	54
trans-1,3-Dichloropropene	5.5	Not Detected	25	Not Detected
1,1,2-Trichloroethane	5.5	Not Detected	30	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-6

Lab ID#: 0610051A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100422	Date of Collection:	10/05/05
Oil Field:	113	Date of Analysis:	10/05/05 01:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	5.5	Not Detected	37	Not Detected
2-Hexanone	22	Not Detected	90	Not Detected
Dibromochloromethane	5.5	Not Detected	47	Not Detected
1,2-Dibromoethane (EDB)	5.5	Not Detected	42	Not Detected
Chlorobenzene	5.5	Not Detected	25	Not Detected
Ethyl Benzene	5.5	Not Detected	24	Not Detected
m,p-Xylene	5.5	11	24	47
o-Xylene	5.5	Not Detected	24	Not Detected
Styrene	5.5	Not Detected	23	Not Detected
Bromoform	5.5	Not Detected	57	Not Detected
Cumene	5.5	Not Detected	27	Not Detected
1,1,2,2-Tetrachloroethane	5.5	Not Detected	38	Not Detected
Propylbenzene	5.5	Not Detected	27	Not Detected
4-Ethyltoluene	5.5	Not Detected	27	Not Detected
1,3,5-Trimethylbenzene	5.5	Not Detected	27	Not Detected
1,2,4-Trimethylbenzene	5.5	Not Detected	27	Not Detected
1,3-Dichlorobenzene	5.5	Not Detected	33	Not Detected
1,4-Dichlorobenzene	5.5	Not Detected	33	Not Detected
alpha-Chlorotoluene	5.5	Not Detected	28	Not Detected
1,2-Dichlorobenzene	5.5	Not Detected	33	Not Detected
1,2,4-Trichlorobenzene	22	Not Detected	160	Not Detected
Hexachlorobutadiene	22	Not Detected	230	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	91	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	104	70-130



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0610051A-06A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100467	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/4/06 03:46 PM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected U J	1.5	Not Detected U J
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected





# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0610051A-06A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100407	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/4/08 03:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	106	70-130



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0610051A-07A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100402	Date of Collection: NA
DR Factor:	1.00	Date of Analysis: 10/05 12:04 PM

Compound	%Recovery
Freon 12	98
Freon 114	125
Chloromethane	83
Vinyl Chloride	81
1,3-Butadiene	71
Bromomethane	109
Chloroethane	85
Freon 11	115
Ethanol	79
Freon 113	123
1,1-Dichloroethene	90
Acetone	74
2-Propanol	80
Carbon Disulfide	88
3-Chloropropene	91
Methylene Chloride	87
Methyl tert-butyl ether	83
trans-1,2-Dichloroethene	98
Hexane	78
1,1-Dichloroethane	88
2-Butanone (Methyl Ethyl Ketone)	80
cis-1,2-Dichloroethene	84
Tetrahydrofuran	69 Q
Chloroform	93
1,1,1-Trichloroethane	98
Cyclohexane	85
Carbon Tetrachloride	118
2,2,4-Trimethylpentane	83
Benzene	87
1,2-Dichloroethane	112
Heptane	108
Trichloroethene	100
1,2-Dichloropropane	83
1,4-Dioxane	90
Bromodichloromethane	99
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	77
Toluene	101
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	102



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0610051A-07A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100402	Date of Collection: NA
Q11 Factor:	1.00	Date of Analysis: 10/4/09 12:04 PM

Compound	%Recovery
Tetrachloroethene	118
2-Hexanone	72
Dibromochloromethane	111
1,2-Dibromoethane (EDB)	109
Chlorobenzene	107
Ethyl Benzene	107
m,p-Xylene	112
o-Xylene	104
Styrene	99
Bromoform	112
Cumene	114
1,1,2,2-Tetrachloroethane	92
Propylbenzene	101
4-Ethyltoluene	99
1,3,5-Trimethylbenzene	119
1,2,4-Trimethylbenzene	108
1,3-Dichlorobenzene	110
1,4-Dichlorobenzene	107
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	111
1,2,4-Trichlorobenzene	106
Hexachlorobutadiene	103

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	106	70-130



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0610051A-08A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	S100403	Date of Collection: NA
DR Factor:	1.00	Date of Analysis: 10/4/06 12:36 PM

Compound	%Recovery
Freon 12	98
Freon 114	123
Chloromethane	81
Vinyl Chloride	80
1,3-Butadiene	87
Bromomethane	110
Chloroethane	89
Freon 11	109
Ethanol	78
Freon 113	118
1,1-Dichloroethene	85
Acetone	75
2-Propanol	78
Carbon Disulfide	92
3-Chloropropene	86
Methylene Chloride	84
Methyl tert-butyl ether	82
trans-1,2-Dichloroethene	100
Hexane	77
1,1-Dichloroethane	83
2-Butanone (Methyl Ethyl Ketone)	84
cis-1,2-Dichloroethene	83
Tetrahydrofuran	67
Chloroform	89
1,1,1-Trichloroethane	96
Cyclohexane	83
Carbon Tetrachloride	114
2,2,4-Trimethylpentane	77
Benzene	86
1,2-Dichloroethane	107
Heptane	101
Trichloroethene	98
1,2-Dichloropropane	83
1,4-Dioxane	89
Bromodichloromethane	88
cis-1,3-Dichloropropene	66 Q
4-Methyl-2-pentanone	80
Toluene	98
trans-1,3-Dichloropropene	101
1,1,2-Trichloroethane	100



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AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0610051A-08A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	5100408	Date of Collection:	NA
Lab. Factor:	1.00	Date of Analysis:	10/06/12 12:15 PM

Compound	%Recovery
Tetrachloroethene	119
2-Hexanone	80
Dibromochloromethane	95
1,2-Dibromoethane (EDB)	106
Chlorobenzene	107
Ethyl Benzene	108
m,p-Xylene	104
o-Xylene	88
Styrene	104
Bromoform	78
Cumene	101
1,1,2,2-Tetrachloroethane	93
Propylbenzene	94
4-Ethyltoluene	89
1,3,5-Trimethylbenzene	98
1,2,4-Trimethylbenzene	72
1,3-Dichlorobenzene	110
1,4-Dichlorobenzene	107
alpha-Chlorotoluene	98
1,2-Dichlorobenzene	110
1,2,4-Trichlorobenzene	93
Hexachlorobutadiene	90

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	103	70-130



# **AIR TOXICS LTD.**

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This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

**WORK ORDER #: 0610051C**

## Work Order Summary

**CLIENT:** Mr. Obi Nzewi  
Fugro West Inc.  
1000 Broadway  
Suite 200  
Oakland, CA 94607

**PHONE:** 510-267-4413

**FAX:** 510-268-0137

**DATE RECEIVED:** 10/04/2006

**DATE COMPLETED:** 10/05/2006

**BILL TO:** Mr. Obi Nzewi  
Fugro West Inc.  
1000 Broadway  
Suite 200  
Oakland, CA 94607

**P.O. #**

**PROJECT #** 1803.001 Trapac-Berth 30

**CONTACT:** Kyle Vagadori

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC/PRES.</u>
01A	B-1	Modified TO-3	4.5 "Hg
02A	Duplicate-1	Modified TO-3	3.0 "Hg
02AA	Duplicate-1 Duplicate	Modified TO-3	3.0 "Hg
03A	B-2	Modified TO-3	2.5 "Hg
04A	B-3	Modified TO-3	2.0 "Hg
05A	B-6	Modified TO-3	2.5 "Hg
06A	Lab Blank	Modified TO-3	NA
07A	LCS	Modified TO-3	NA

CERTIFIED BY:

Laboratory Director

DATE: 10/05/06

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AJ 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/06, Expiration date: 06/30/07

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## LABORATORY NARRATIVE Modified TO-3 Fugro West Inc. Workorder# 0610051C

Five 1 Liter Summa Canister samples were received on October 04, 2006. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with flame ionization detection. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. The TPH (Gasoline Range) results are calculated using the response factor of Gasoline and correspond to the range of hydrocarbons from C5 to C10. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L. See the data sheets for the reporting limits for each compound.

Method modifications taken to run these samples include:

<i>Requirement</i>	<i>TO-3</i>	<i>ATL Modifications</i>
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch $\leq$ 20 samples
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation $DL = A + 3.3S$ , where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

### Receiving Notes

There were no receiving discrepancies.

### Analytical Notes

There were no analytical discrepancies.

### Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.





# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## Summary of Detected Compounds MODIFIED EPA METHOD TO-3 GC/FID

Client Sample ID: B-1

Lab ID#: 0610051C-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.060	0.24	0.52	2.1

Client Sample ID: Duplicate-1

Lab ID#: 0610051C-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	4.5	18	1100	4500

Client Sample ID: Duplicate-1 Duplicate

Lab ID#: 0610051C-02AA

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	16	65	1100	4700

Client Sample ID: B-2

Lab ID#: 0610051C-03A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	4.4	18	1100	4400

Client Sample ID: B-3

Lab ID#: 0610051C-04A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.054	0.22	1.4	5.8

Client Sample ID: B-6

Lab ID#: 0610051C-05A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.055	0.22	15	61



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-1

Lab ID#: 0610051C-01A

## MODIFIED EPA METHOD TO-3 GC/FID

File Name:	6100408	Date of Collection:	10/2/06
Dil Factor:	2.38	Date of Analysis:	10/4/06 02:01 PM

Compound	Rot. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.060	0.24	0.52	2.1

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	101	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Duplicate-1

Lab ID#: 0610051C-02A

MODIFIED EPA METHOD TO-3 GC/FID

File Name	6100405	Date of Collection	10/2006	
Det. Factor	179	Date of Analysis	10/4/06 03:21 PM	
Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	4.5	18	1100	4500
Container Type: 1 Liter Summa Canister				Method Limits
Surrogates	%Recovery		Method Limits	
Fluorobenzene (FID)	133		75-150	



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Duplicate-1 Duplicate

Lab ID#: 0610051C-02AA

MODIFIED EPA METHOD TO-3 GC/FID

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	16	65	1100	4700
<b>Container Type: 1 Liter Summa Canister</b>				
Surrogates	%Recovery		Method Limits	
Fluorobenzene (FID)	114		75-150	



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-2

Lab ID#: 0610051C-03A

## MODIFIED EPA METHOD TO-3 GC/FID

File Name:	6100406	Date of Collection:	10/2/06
Dil. Factor:	176	Date of Analysis:	10/4/06 03:07 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	4.4	18	1100	4400

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	129	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-3

Lab ID#: 0610051C-04A

**MODIFIED EPA METHOD TO-3 GC/FID**

File Name:	6100407	Date of Collection:	10/2/05
DR Factor:	2.76	Date of Analysis:	10/4/05 04:31 PM

Compound	Rot. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.054	0.22	1.4	5.8

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	112	75-150



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-6

Lab ID#: 0610051C-05A

## MODIFIED EPA METHOD TO-3 GC/FID

File Name:	6100408	Date of Collection:	10/2006
Dil Factor:	2.20	Date of Analysis:	10/2006 05:07 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.055	0.22	15	61

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	136	75-150



# @ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0610051C-06A

MODIFIED EPA METHOD TO-3 GC/FID

File Name	6100403	Date of Collection: NA		
DR Factor	1.00	Date of Analysis: 10/4/05 12:53 PM		
Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected
Container Type: NA - Not Applicable				Method Limits
Surrogates	%Recovery		Limits	
Fluorobenzene (FID)	100		75-150	



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0610051C-07A

## MODIFIED EPA METHOD TO-3 GC/FID

File Name:	8100410	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/06/09 09:00 PM

Compound	%Recovery	
TPH (Gasoline Range)	114	
Container Type: NA - Not Applicable		
Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	121	75-150



# **AIR TOXICS LTD.**

AN ENVIRONMENTAL ANALYTICAL LABORATORY

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- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## WORK ORDER #: 0610051B

### Work Order Summary

<b>CLIENT:</b>	Mr. Obi Nzewi Fugro West Inc. 1000 Broadway Suite 200 Oakland, CA 94607	<b>BILL TO:</b>	Mr. Obi Nzewi Fugro West Inc. 1000 Broadway Suite 200 Oakland, CA 94607
<b>PHONE:</b>	510-267-4413	<b>P.O. #</b>	
<b>FAX:</b>	510-268-0137	<b>PROJECT #</b>	1803.001 Trapac-Berth 30
<b>DATE RECEIVED:</b>	10/04/2006	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/05/2006		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC/PRES.</u>
01A	B-1	Modified ASTM D-1946	4.5 "Hg
02A	Duplicate-1	Modified ASTM D-1946	3.0 "Hg
03A	B-2	Modified ASTM D-1946	2.5 "Hg
04A	B-3	Modified ASTM D-1946	2.0 "Hg
05A	B-6	Modified ASTM D-1946	2.5 "Hg
06A	Lab Blank	Modified ASTM D-1946	NA
07A	LCS	Modified ASTM D-1946	NA

CERTIFIED BY: *Sandra D. Freeman*

DATE: 10/05/06

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/06, Expiration date: 06/30/07  
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE**  
**Modified ASTM D-1946**  
**Fugro West Inc.**  
**Workorder# 0610051B**

Five 1 Liter Summa Canister samples were received on October 04, 2006. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane in air using GC/FID. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples include:

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 \times$ the RL.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

There were no analytical discrepancies.



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

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## Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- rl-File was requantified for the purpose of reissue



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## Summary of Detected Compounds NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: B-1

Lab ID#: 0610051B-01A

No Detections Were Found.

Client Sample ID: Duplicate-1

Lab ID#: 0610051B-02A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	3.7

Client Sample ID: B-2

Lab ID#: 0610051B-03A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	3.6

Client Sample ID: B-3

Lab ID#: 0610051B-04A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	0.00050

Client Sample ID: B-6

Lab ID#: 0610051B-05A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	0.0039



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-1

Lab ID#: 0610051B-01A

## NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	010041B	Date of Collection:	10/20/96
Dil. Factor:	2.38	Date of Analysis:	10/4/96 05:47 PM

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00024	Not Detected

Container Type: 1 Liter Summa Canister





# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Duplicate-1

Lab ID#: 0610051B-02A

## NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	310041B	Date of Collection:	10/2/05
Dil. Factor:	2.24	Date of Analysis:	10/4/05 04:16 PM

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	3.7

Container Type: 1 Liter Summa Canister



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-2

Lab ID#: 0610051B-03A

## NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	0100422	Date of Collection:	10/2/06
DIST Factor:	2.20	Date of Analysis:	10/2/06 06:05 PM

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	3.6

Container Type: 1 Liter Summa Canister



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-3

Lab ID#: 0610051B-04A

## NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name	0100424	Date of Collection	10/2/05
File Factor	2.16	Date of Analysis	10/4/06 07:08 PM

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	0.00050

Container Type: 1 Liter Summa Canister



# AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B-6

Lab ID#: 0610051B-05A

## NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	2100421	Date of Collection:	10/2/06
Dil. Factor:	2.70	Date of Analysis:	10/4/06 05:11 PM

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00022	0.0039

Container Type: 1 Liter Summa Canister



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0610051B-06A

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

3100404  
1.00  
Date of Collection: NA  
Date of Analysis: 10/4/06 09:06 AM

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0610051B-07A

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name:	9100431	Date of Collection:	NA
Dil Factor:	1.00	Date of Analysis:	10/4/05 10:25 PM

Compound	%Recovery
Methane	100

Container Type: NA - Not Applicable



Mr. Kurt Ettinger  
IHI Environmental  
1260 45th Street  
Suite L  
Emeryville, CA 94608

October 05, 2006

DOH ELAP# 11626

Account# 14407

Login# L141094

Dear Mr. Ettinger:

Enclosed are the analytical results of the samples received by our laboratory October 04, 2006. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to items tested. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Heidi Fruhlinger at (877) 386-0035, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

A handwritten signature in black ink that reads "F. Joseph Unangst". The signature is written in a cursive style with a large, prominent "F" and "U".

F. Joseph Unangst  
Laboratory Director

Enclosure(s)



6601 Kirkville Road  
 East Syracuse, NY 13057  
 (315) 432-5227  
 FAX: (315) 437-0571  
 www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : IHI Environmental  
 Site : Fugro-P00 Berth 30  
 Project No. : 06B-2260  
 Date Sampled : 02-OCT-06 - 03-OCT-06  
 Date Received : 04-OCT-06  
 Date Analyzed : 04-OCT-06 - 05-OCT-06  
 Report ID : 515862  
 Account No.: 14407  
 Login No. : L141094

**Benzene**

Sample ID	Lab ID	Air Vol liter	Front ug	Back ug	Total ug	Conc mg/m3	ppm
10/2-01 B-1 (B.Z.)	L141094-1	25.3	<3	<3	<3	<0.12	<0.037
10/2-02 B-1A	L141094-2	5.13	<3	<3	<3	<0.58	<0.18
10/2-03 B-2 (B.Z.)	L141094-3	34.7	<3	<3	<3	<0.086	<0.027
10/2-04 B-3 (B.Z.)	L141094-4	31.2	<3	<3	<3	<0.096	<0.030
10/2-05 B-2A	L141094-5	5.0	<3	<3	<3	<0.60	<0.19
10/2-06 B-3 (B.Z.)	L141094-6	25.8	<3	<3	<3	<0.12	<0.036
10/2-07 B-3A	L141094-7	5.0	<3	<3	<3	<0.60	<0.19
10/2-08 B-4	L141094-8	5.13	<3	<3	<3	<0.58	<0.18
10/2-09 B-7	L141094-9	5.0	<3	<3	<3	<0.60	<0.19
10/2-10 FIELD BLANK	L141094-10	NA	<3	<3	<3	NA	NA

**COMMENTS:** Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 3 ug  
 Analytical Method : mod. NIOSH 1501; GC/FID  
 OSHA PEL (TWA) : 1 ppm  
 Collection Media : Charcoal  
 Submitted by: NKP  
 Approved by : jmt  
 Date : 05-OCT-06 NYS DOH # : 11626  
 QC by: Tony D'Amico

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms  
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified  
 NA -Not Applicable ND -Not Detected ppm -Parts per Million





LABORATORY FOOTNOTE REPORT

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East Syracuse, NY 13057  
(315) 432-5227  
FAX: (315) 437-0571  
www.galsonlabs.com

Client Name : IHI Environmental  
Site : Fugro-P00 Berth 30  
Project No. : 06B-2260  
Date Sampled : 02-OCT-06-03-OCT-06 Account No.: 14407  
Date Received: 04-OCT-06 Login No. : L141094  
Date Analyzed: 04-OCT-06 - 05-OCT-06

Unless otherwise noted below, all quality control results associated with the samples were within established control limits and/or do not adversely affect the sample results.

L141094 (Report ID: 515862) : Total ug corrected for a desorption efficiency of 107%  
Results are considered accurate to within 94.6% +/-18.8 based on a 95% confidence interval. The estimated uncertainty relates only to the analytical procedure and does not account for the uncertainty associated with the sampling process.

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< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

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6601 Kirkville Rd  
 East Syracuse, NY 13057-9672  
 Tel: 315-437-5227  
 888-432-LABS(5227)  
 Fax: 315-437-0571  
 www.galsonlabs.com

Check if change of address   
 New Client? yes   
 no   
 Client Account #: \_\_\_\_\_

Report To: IHI Environmental Invoice To: \_\_\_\_\_  
1260 45th Street  
Emeryville, CA 94608  
 Phone No.: (510) 923-1661 Phone No.: \_\_\_\_\_  
 Fax No.: \_\_\_\_\_

(RV)

Site Name: Fugro-P00 Berth 30 Project: 068-2260 Sampled By: Kurt Ettinger

Need Results By: (surcharge)  
 5 Business Days 0%  
 4 Business Days 35%  
 3 Business Days 50%  
 2 Business Days 75%  
 Next Day by 6pm 100%  
 Next Day by Noon 150%  
 Same day 200%

Verbal Authorization: \_\_\_\_\_  
 Purchase Order No.: \_\_\_\_\_  
 Credit Card No.: \_\_\_\_\_ Card Holder Name: \_\_\_\_\_ Exp.: \_\_\_\_\_  
 Fax Results To: Kurt Ettinger Fax No.: (510) 923-1468  
 Email Results To: ettinger@ihi-env.com

Sample Identification	Date Sampled	Collection Medium	*Air Volume (liters)/ Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed	
10/2-01 B-1 (B.Z)	10/2/06	Charcoal Tube	25.3	Benzene in Air	NIOSH 1501		
10/2-02 B-1A	10/2/06	↓	5.13	↓	↓		
10/2-03 B-2 (B.Z)	10/2/06		34.7				
10/2-04 B-3 (B.Z)	10/2/06		31.2				
10/2-05 B-2A	10/2/06		5.0				
10/2-06 B-3 (B.Z)	10/2/06		25.8				
10/2-07 B-3A	10/3/06		5.0				
10/2-08 B-4	10/3/06		5.13				
10/2-09 B-7	10/3/06		5.0				
10/2-10 Field Blank							

IF YOU DO NOT WANT A LABORATORY BLANK ADDED PLEASE CHECK BOX. If blanks are not submitted or box is not checked, our policy states that a laboratory blank will be added for each analyte and it will be charged at normal rate.

List description of industry or process/ interferences present in sampling area: \_\_\_\_\_

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by:	<u>Kurt Ettinger</u>	<u>Kurt Ettinger</u>	<u>10/2/06</u>
Received by LAB:	<u>m. Krause</u>	<u>m. Krause</u>	<u>10/4/06 @ 9:25</u>

Login #: L141094 Samples received after 3pm will be considered as next day's business \*Collection Time(min) X LPM = Air Vol. (L)

LAB ORIGINAL



**STL**

## **ANALYTICAL REPORT**

Job Number: 720-5771-1

Job Description: Trapac Berth30 Gate Improvement

For:  
Fugro West Incorporated  
1000 Broadway, Suite 200  
Oakland, CA 94607

Attention: Mr. Obi Nzewi

A handwritten signature in black ink, appearing to read "Afsaneh Salimpour".

---

Afsaneh Salimpour  
Project Manager I  
asalimpour@stl-inc.com  
10/10/2006

Project Manager: Dimple Sharma

## EXECUTIVE SUMMARY - Detections

Client: Fugro West Incorporated

Job Number: 720-5771-1

Lab Sample ID	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>720-5771-2</b>	<b>B-1 @ 2.0</b>				
Diesel Range Organics [C10-C28]		18	1.0	mg/Kg	8015B
Motor Oil Range Organics [C24-C36]		120	50	mg/Kg	8015B
Arsenic		2.5	1.0	mg/Kg	6010B
Barium		43	1.0	mg/Kg	6010B
Chromium		25	1.0	mg/Kg	6010B
Cobalt		5.4	1.0	mg/Kg	6010B
Copper		10	1.0	mg/Kg	6010B
Lead		17	1.0	mg/Kg	6010B
Nickel		23	1.0	mg/Kg	6010B
Vanadium		21	1.0	mg/Kg	6010B
Zinc		55	1.0	mg/Kg	6010B
Mercury		0.092	0.048	mg/Kg	7471A
<b>720-5771-5</b>	<b>B-2 @ 2.0</b>				
Diesel Range Organics [C10-C28]		18	1.0	mg/Kg	8015B
Motor Oil Range Organics [C24-C36]		100	50	mg/Kg	8015B
Arsenic		4.4	0.95	mg/Kg	6010B
Barium		56	0.95	mg/Kg	6010B
Chromium		24	0.95	mg/Kg	6010B
Cobalt		6.1	0.95	mg/Kg	6010B
Copper		11	0.95	mg/Kg	6010B
Lead		14	0.95	mg/Kg	6010B
Nickel		21	0.95	mg/Kg	6010B
Vanadium		19	0.95	mg/Kg	6010B
Zinc		32	0.95	mg/Kg	6010B
Mercury		0.088	0.050	mg/Kg	7471A
<b>720-5771-7</b>	<b>B-3 @ 1.0</b>				
Diesel Range Organics [C10-C28]		41	5.0	mg/Kg	8015B
Motor Oil Range Organics [C24-C36]		280	250	mg/Kg	8015B
Arsenic		5.6	0.96	mg/Kg	6010B
Barium		68	0.96	mg/Kg	6010B
Chromium		23	0.96	mg/Kg	6010B
Cobalt		11	0.96	mg/Kg	6010B
Copper		15	0.96	mg/Kg	6010B
Lead		18	0.96	mg/Kg	6010B
Nickel		27	0.96	mg/Kg	6010B
Vanadium		25	0.96	mg/Kg	6010B
Zinc		43	0.96	mg/Kg	6010B
Mercury		0.095	0.049	mg/Kg	7471A

STL San Francisco

### EXECUTIVE SUMMARY - Detections

Client: Fugro West Incorporated

Job Number: 720-5771-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>720-5771-9</b>	<b>B-4 @ 2.0</b>				
Arsenic		2.4	0.96	mg/Kg	6010B
Barium		35	0.96	mg/Kg	6010B
Chromium		21	0.96	mg/Kg	6010B
Cobalt		4.9	0.96	mg/Kg	6010B
Copper		7.7	0.96	mg/Kg	6010B
Lead		10	0.96	mg/Kg	6010B
Nickel		19	0.96	mg/Kg	6010B
Vanadium		16	0.96	mg/Kg	6010B
Zinc		21	0.96	mg/Kg	6010B
Mercury		0.063	0.049	mg/Kg	7471A
<b>720-5771-10</b>	<b>B-7 @ 3.5</b>				
Diesel Range Organics [C10-C28]		22	1.0	mg/Kg	8015B
Motor Oil Range Organics [C24-C36]		120	50	mg/Kg	8015B
Arsenic		7.3	0.97	mg/Kg	6010B
Barium		44	0.97	mg/Kg	6010B
Chromium		24	0.97	mg/Kg	6010B
Cobalt		4.9	0.97	mg/Kg	6010B
Copper		11	0.97	mg/Kg	6010B
Lead		16	0.97	mg/Kg	6010B
Nickel		21	0.97	mg/Kg	6010B
Vanadium		22	0.97	mg/Kg	6010B
Zinc		31	0.97	mg/Kg	6010B
<b>720-5771-12</b>	<b>B-7 @ 4.5</b>				
Diesel Range Organics [C10-C28]		2.8	1.0	mg/Kg	8015B
Arsenic		4.5	1.0	mg/Kg	6010B
Barium		34	1.0	mg/Kg	6010B
Chromium		20	1.0	mg/Kg	6010B
Cobalt		4.2	1.0	mg/Kg	6010B
Copper		6.6	1.0	mg/Kg	6010B
Lead		13	1.0	mg/Kg	6010B
Nickel		16	1.0	mg/Kg	6010B
Vanadium		15	1.0	mg/Kg	6010B
Zinc		25	1.0	mg/Kg	6010B
Mercury		0.058	0.048	mg/Kg	7471A

### EXECUTIVE SUMMARY - Detections

Client: Fugro West Incorporated

Job Number: 720-5771-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-5771-13	B-7 @ 5.5				
Arsenic		8.7	1.0	mg/Kg	6010B
Barium		59	1.0	mg/Kg	6010B
Chromium		26	1.0	mg/Kg	6010B
Cobalt		6.1	1.0	mg/Kg	6010B
Copper		16	1.0	mg/Kg	6010B
Lead		23	1.0	mg/Kg	6010B
Nickel		23	1.0	mg/Kg	6010B
Vanadium		31	1.0	mg/Kg	6010B
Zinc		41	1.0	mg/Kg	6010B
Mercury		0.54	0.049	mg/Kg	7471A

## METHOD SUMMARY

Client: Fugro West Incorporated

Job Number: 720-5771-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Solid</b>			
Volatile Organic Compounds by GC/MS Purge and Trap for Solids	STL SF STL SF	SW846 8260B	SW846 5030B
Volatile Organic Compounds by GC/MS (Low Level) Purge and Trap for Solids	STL SF STL SF	SW846 8260B	SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Ultrasonic Extraction	STL SF STL SF	SW846 8270C	SW846 3550B
Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) Ultrasonic Extraction Silica Gel Cleanup	STL SF STL SF STL SF	SW846 8015B	SW846 3550B SW846 3630C
Inductively Coupled Plasma - Atomic Emission Spectrometry Acid Digestion of Sediments, Sludges, and Soils	STL SF STL SF	SW846 6010B	SW846 3050B
Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) Mercury in Solid or Semi-Solid Waste (Manual	STL SF STL SF	SW846 7471A	SW846 7471A

### LAB REFERENCES:

STL SF = STL San Francisco

### METHOD REFERENCES:

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986  
And its Updates.

## METHOD / ANALYST SUMMARY

Client: Fugro West Incorporated

Job Number: 720-5771-1

Method	Analyst	Analyst ID
SW846 8260B	Lee, Michael	ML
SW846 8260B	Lew, Matthew	MLEW
SW846 8270C	Zhao, June	JZ
SW846 8015B	Mackenzie, Dang	DM
SW846 6010B	Barekzai, Shafi	SB
SW846 7471A	Barekzai, Shafi	SB



### SAMPLE SUMMARY

Client: Fugro West Incorporated

Job Number: 720-5771-1

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Client Matrix</u>	<u>Date/Time Sampled</u>	<u>Date/Time Received</u>
720-5771-2	B-1 @ 2.0	Solid	10/02/2006 0000	10/03/2006 1545
720-5771-5	B-2 @ 2.0	Solid	10/02/2006 0000	10/03/2006 1545
720-5771-7	B-3 @ 1.0	Solid	10/03/2006 0000	10/03/2006 1545
720-5771-9	B-4 @ 2.0	Solid	10/03/2006 0000	10/03/2006 1545
720-5771-10	B-7 @ 3.5	Solid	10/03/2006 0000	10/03/2006 1545
720-5771-12	B-7 @ 4.5	Solid	10/03/2006 0000	10/03/2006 1545
720-5771-13	B-7 @ 5.5	Solid	10/03/2006 0000	10/03/2006 1545

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-1 @ 2.0

Lab Sample ID: 720-5771-2

Client Matrix: Solid

Date Sampled: 10/02/2006 0000

Date Received: 10/03/2006 1545

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**8260B Volatile Organic Compounds by GC/MS**

Method: 8260B

Analysis Batch: 720-14025

Instrument ID: Saturn 2100

Preparation: 5030B

Lab File ID: c:\saturnws\data\200610\10

Dilution: 1.0

Initial Weight/Volume: 5.20 g

Date Analyzed: 10/07/2006 1938

Final Weight/Volume: 10 mL

Date Prepared: 10/07/2006 1938

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.24
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		68		60 - 140
Toluene-d8 (Surr)		84		70 - 130

## Analytical Data

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-1 @ 2.0

Lab Sample ID: 720-5771-2

Date Sampled: 10/02/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

### 8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-13960	Instrument ID: Varian 3900G
Preparation:	5030B		Lab File ID: c:\saturnws\data\200610\10
Dilution:	1.0		Initial Weight/Volume: 5.12 g
Date Analyzed:	10/05/2006 1907		Final Weight/Volume: 10 mL
Date Prepared:	10/05/2006 1907		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND		4.9
Acetone		ND		4.9
Benzene		ND		4.9
Dichlorobromomethane		ND		4.9
Bromobenzene		ND		4.9
Chlorobromomethane		ND		20
Bromoform		ND		4.9
Bromomethane		ND		9.8
Methyl Ethyl Ketone		ND		4.9
n-Butylbenzene		ND		4.9
sec-Butylbenzene		ND		4.9
tert-Butylbenzene		ND		4.9
Carbon disulfide		ND		4.9
Carbon tetrachloride		ND		4.9
Chlorobenzene		ND		4.9
Chloroethane		ND		9.8
Chloroform		ND		4.9
Chloromethane		ND		9.8
2-Chlorotoluene		ND		4.9
4-Chlorotoluene		ND		4.9
Chlorodibromomethane		ND		4.9
1,2-Dichlorobenzene		ND		4.9
1,3-Dichlorobenzene		ND		4.9
1,4-Dichlorobenzene		ND		4.9
1,3-Dichloropropane		ND		4.9
1,1-Dichloropropene		ND		4.9
1,2-Dibromo-3-Chloropropane		ND		4.9
Ethylene Dibromide		ND		4.9
Dibromomethane		ND		9.8
Dichlorodifluoromethane		ND		9.8
1,1-Dichloroethane		ND		4.9
1,2-Dichloroethane		ND		4.9
1,1-Dichloroethene		ND		4.9
cis-1,2-Dichloroethene		ND		4.9
trans-1,2-Dichloroethene		ND		4.9
1,2-Dichloropropane		ND		4.9
cis-1,3-Dichloropropene		ND		4.9
trans-1,3-Dichloropropene		ND		4.9
Ethylbenzene		ND		4.9
Hexachlorobutadiene		ND		4.9
Isopropylbenzene		ND		4.9
4-Isopropyltoluene		ND		4.9
Methylene Chloride		ND		9.8

## Analytical Data

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-1 @ 2.0

Lab Sample ID: 720-5771-2

Date Sampled: 10/02/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

### 8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-13960	Instrument ID: Varian 3900G
Preparation:	-5030B.		Lab File ID: c:\saturnws\data\200610\10
Dilution:	1.0		Initial Weight/Volume: 5.12 g
Date Analyzed:	10/05/2006 1907		Final Weight/Volume: 10 mL
Date Prepared:	10/05/2006 1907		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
methyl isobutyl ketone		ND		49
Naphthalene		ND		9.8
N-Propylbenzene		ND		4.9
Styrene		ND		4.9
1,1,1,2-Tetrachloroethane		ND		4.9
1,1,2,2-Tetrachloroethane		ND		4.9
Tetrachloroethene		ND		4.9
Toluene		ND		4.9
1,2,3-Trichlorobenzene		ND		4.9
1,2,4-Trichlorobenzene		ND		4.9
1,1,1-Trichloroethane		ND		4.9
1,1,2-Trichloroethane		ND		4.9
Trichloroethene		ND		4.9
Trichlorofluoromethane		ND		4.9
1,2,3-Trichloropropane		ND		4.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		4.9
1,2,4-Trimethylbenzene		ND		4.9
1,3,5-Trimethylbenzene		ND		4.9
Vinyl acetate		ND		49
Vinyl chloride		ND		4.9
Xylenes, Total		ND		9.8
2,2-Dichloropropane		ND		4.9
<b>Surrogate</b>		<b>%Rec</b>		<b>Acceptance Limits</b>
4-Bromofluorobenzene		82		60 - 140
1,2-Dichloroethane-d4 (Surr)		85		60 - 140
Toluene-d8 (Surr)		83		70 - 130

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-2 @ 2.0

Lab Sample ID: 720-5771-5

Client Matrix: Solid

Date Sampled: 10/02/2006 0000

Date Received: 10/03/2006 1545

**B260B Volatile Organic Compounds by GC/MS**

Method: 8260B  
Preparation: 5030B  
Dilution: 1.0  
Date Analyzed: 10/07/2006 2004  
Date Prepared: 10/07/2006 2004

Analysis Batch: 720-14025

Instrument ID: Saturn 2100  
Lab File ID: c:\saturnws\data\200610\10  
Initial Weight/Volume: 5.37 g  
Final Weight/Volume: 10 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.0047
Toluene		ND		0.0047
Ethylbenzene		ND		0.0047
MTBE		ND		0.0047
Xylenes, Total		ND		0.0093
Gasoline Range Organics (GRO)-C5-C12		ND		0.23
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		65		60 - 140
Toluene-d8 (Surr)		85		70 - 130

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-3 @ 1.0

Lab Sample ID: 720-5771-7

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8260B Volatile Organic Compounds by GC/MS**

Method: 8260B

Analysis Batch: 720-14025

Instrument ID: Saturn 2100

Preparation: 5030B

Lab File ID: c:\saturmws\data\200610\10

Dilution: 1.0

Initial Weight/Volume: 5.95 g

Date Analyzed: 10/07/2006 2030

Final Weight/Volume: 10 mL

Date Prepared: 10/07/2006 2030

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.0042
Toluene		ND		0.0042
Ethylbenzene		ND		0.0042
MTBE		ND		0.0042
Xylenes, Total		ND		0.0084
Gasoline Range Organics (GRO)-C5-C12		ND		0.21
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		68		60 - 140
Toluene-d8 (Surr)		83		70 - 130

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-4 @ 2.0

Lab Sample ID: 720-5771-9

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8260B Volatile Organic Compounds by GC/MS**

Method: 8260B

Analysis Batch: 720-14090

Instrument ID: Varian 3900A

Preparation: 5030B

Lab File ID: c:\saturnws\data\200610\10

Dilution: 1.0

Initial Weight/Volume: 5.35 g

Date Analyzed: 10/10/2006 1659

Final Weight/Volume: 10 mL

Date Prepared: 10/10/2006 1659

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.23
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		83		60 - 140
Toluene-d8 (Surr)		88		70 - 130

## Analytical Data

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-4 @ 2.0

Lab Sample ID: 720-5771-9

Date Sampled: 10/03/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

### 8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-13960	Instrument ID: Varian 3900G
Preparation:	5030B		Lab File ID: c:\saturnws\data\200610\10
Dilution:	1.0		Initial Weight/Volume: 5.10 g
Date Analyzed:	10/05/2006 1941		Final Weight/Volume: 10 mL
Date Prepared:	10/05/2006 1941		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND		4.9
Acetone		ND		4.9
Benzene		ND		4.9
Dichlorobromomethane		ND		4.9
Bromobenzene		ND		4.9
Chlorobromomethane		ND		20
Bromoform		ND		4.9
Bromomethane		ND		9.8
Methyl Ethyl Ketone		ND		4.9
n-Butylbenzene		ND		4.9
sec-Butylbenzene		ND		4.9
tert-Butylbenzene		ND		4.9
Carbon disulfide		ND		4.9
Carbon tetrachloride		ND		4.9
Chlorobenzene		ND		4.9
Chloroethane		ND		9.8
Chloroform		ND		4.9
Chloromethane		ND		9.8
2-Chlorotoluene		ND		4.9
4-Chlorotoluene		ND		4.9
Chlorodibromomethane		ND		4.9
1,2-Dichlorobenzene		ND		4.9
1,3-Dichlorobenzene		ND		4.9
1,4-Dichlorobenzene		ND		4.9
1,3-Dichloropropane		ND		4.9
1,1-Dichloropropane		ND		4.9
1,2-Dibromo-3-Chloropropane		ND		4.9
Ethylene Dibromide		ND		4.9
Dibromomethane		ND		9.8
Dichlorodifluoromethane		ND		9.8
1,1-Dichloroethane		ND		4.9
1,2-Dichloroethane		ND		4.9
1,1-Dichloroethene		ND		4.9
cis-1,2-Dichloroethene		ND		4.9
trans-1,2-Dichloroethene		ND		4.9
1,2-Dichloropropane		ND		4.9
cis-1,3-Dichloropropene		ND		4.9
trans-1,3-Dichloropropene		ND		4.9
Ethylbenzene		ND		4.9
Hexachlorobutadiene		ND		4.9
Isopropylbenzene		ND		4.9
4-Isopropyltoluene		ND		4.9
Methylene Chloride		ND		9.8



Analytical Data

Client: Fugro West incorporated

Job Number: 720-5771-1

Client Sample ID: B-4 @ 2.0

Lab Sample ID: 720-5771-9

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B Analysis Batch: 720-13980 Instrument ID: Varian 3900G  
 Preparation: 5030B Lab File ID: c:\saturnws\data\200610\10  
 Dilution: 1.0 Initial Weight/Volume: 5.10 g  
 Date Analyzed: 10/05/2006 1941 Final Weight/Volume: 10 mL  
 Date Prepared: 10/05/2006 1941

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
methyl isobutyl ketone		ND		49
Naphthalene		ND		9.8
N-Propylbenzene		ND		4.9
Styrene		ND		4.9
1,1,1,2-Tetrachloroethane		ND		4.9
1,1,2,2-Tetrachloroethane		ND		4.9
Tetrachloroethene		ND		4.9
Toluene		ND		4.9
1,2,3-Trichlorobenzene		ND		4.9
1,2,4-Trichlorobenzene		ND		4.9
1,1,1-Trichloroethane		ND		4.9
1,1,2-Trichloroethane		ND		4.9
Trichloroethene		ND		4.9
Trichlorofluoromethane		ND		4.9
1,2,3-Trichloropropane		ND		4.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		4.9
1,2,4-Trimethylbenzene		ND		4.9
1,3,5-Trimethylbenzene		ND		4.9
Vinyl acetate		ND		4.9
Vinyl chloride		ND		9.8
Xylenes, Total		ND		4.9
2,2-Dichloropropane		ND		4.9
Surrogate		%Rec		Acceptance Limits
4-Bromofluorobenzene		85		60 - 140
1,2-Dichloroethane-d4 (Surr)		90		60 - 140
Toluene-d8 (Surr)		88		70 - 130

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-7 @ 3.5

Lab Sample ID: 720-5771-10

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8260B Volatile Organic Compounds by GC/MS**

Method: 8260B

Analysis Batch: 720-14025

Instrument ID: Saturn 2100

Preparation: 5030B

Lab File ID: c:\saturnws\data\200610\10

Dilution: 1.0

Initial Weight/Volume: 5.40 g

Date Analyzed: 10/07/2006 2057

Final Weight/Volume: 10 mL

Date Prepared: 10/07/2006 2057

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.23
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		95		60 - 140
Toluene-d8 (Surr)		95		70 - 130

## Analytical Data

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-7 @ 3.5

Lab Sample ID: 720-5771-10

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

### 8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-13960	Instrument ID: Varian 3900G
Preparation:	5030B		Lab File ID: c:\satumws\data\200610\10
Dilution:	1.0		Initial Weight/Volume: 5.10 g
Date Analyzed:	10/05/2006 2015		Final Weight/Volume: 10 mL
Date Prepared:	10/05/2006 2015		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND		4.9
Acetone		ND		4.9
Benzene		ND		4.9
Dichlorobromomethane		ND		4.9
Bromobenzene		ND		4.9
Chlorobromomethane		ND		20
Bromoform		ND		4.9
Bromomethane		ND		9.8
Methyl Ethyl Ketone		ND		4.9
n-Butylbenzene		ND		4.9
sec-Butylbenzene		ND		4.9
tert-Butylbenzene		ND		4.9
Carbon disulfide		ND		4.9
Carbon tetrachloride		ND		4.9
Chlorobenzene		ND		4.9
Chloroethane		ND		9.8
Chloroform		ND		4.9
Chloromethane		ND		9.8
2-Chlorotoluene		ND		4.9
4-Chlorotoluene		ND		4.9
Chlorodibromomethane		ND		4.9
1,2-Dichlorobenzene		ND		4.9
1,3-Dichlorobenzene		ND		4.9
1,4-Dichlorobenzene		ND		4.9
1,3-Dichloropropane		ND		4.9
1,1-Dichloropropene		ND		4.9
1,2-Dibromo-3-Chloropropane		ND		4.9
Ethylene Dibromide		ND		4.9
Dibromomethane		ND		9.8
Dichlorodifluoromethane		ND		9.8
1,1-Dichloroethane		ND		4.9
1,2-Dichloroethane		ND		4.9
1,1-Dichloroethene		ND		4.9
cis-1,2-Dichloroethene		ND		4.9
trans-1,2-Dichloroethene		ND		4.9
1,2-Dichloropropane		ND		4.9
cis-1,3-Dichloropropene		ND		4.9
trans-1,3-Dichloropropene		ND		4.9
Ethylbenzene		ND		4.9
Hexachlorobutadiene		ND		4.9
Isopropylbenzene		ND		4.9
4-Isopropyltoluene		ND		4.9
Methylene Chloride		ND		9.8

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-7 @ 3.5

Lab Sample ID: 720-5771-10

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8260B Volatile Organic Compounds by GC/MS (Low Level)**

Method: 8260B  
 Preparation: 5030B  
 Dilution: 1.0  
 Date Analyzed: 10/05/2006 2015  
 Date Prepared: 10/05/2006 2015

Analysis Batch: 720-13960

Instrument ID: Varian 3900G  
 Lab File ID: c:\saturnws\data\200610\10  
 Initial Weight/Volume: 5.10 g  
 Final Weight/Volume: 10 mL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
methyl isobutyl ketone		ND		49
Naphthalene		ND		9.8
N-Propylbenzene		ND		4.9
Styrene		ND		4.9
1,1,1,2-Tetrachloroethane		ND		4.9
1,1,2,2-Tetrachloroethane		ND		4.9
Tetrachloroethene		ND		4.9
Toluene		ND		4.9
1,2,3-Trichlorobenzene		ND		4.9
1,2,4-Trichlorobenzene		ND		4.9
1,1,1-Trichloroethane		ND		4.9
1,1,2-Trichloroethane		ND		4.9
Trichloroethene		ND		4.9
Trichlorofluoromethane		ND		4.9
1,2,3-Trichloropropane		ND		4.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		4.9
1,2,4-Trimethylbenzene		ND		4.9
1,3,5-Trimethylbenzene		ND		49
Vinyl acetate		ND		4.9
Vinyl chloride		ND		9.8
Xylenes, Total		ND		4.9
2,2-Dichloropropane		ND		
Surrogate		%Rec		Acceptance Limits
4-Bromofluorobenzene		87		60 - 140
1,2-Dichloroethane-d4 (Surr)		85		60 - 140
Toluene-d8 (Surr)		89		70 - 130

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-7 @ 4.5

Lab Sample ID: 720-5771-12

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8260B Volatile Organic Compounds by GC/MS**

Method: 8260B  
Preparation: 5030B  
Dilution: 1.0  
Date Analyzed: 10/07/2006 2123  
Date Prepared: 10/07/2006 2123

Analysis Batch: 720-14025

Instrument ID: Saturn 2100  
Lab File ID: c:\saturmws\data\200610\10  
Initial Weight/Volume: 5.35 g  
Final Weight/Volume: 10 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.0047
Toluene		ND		0.0047
Ethylbenzene		ND		0.0047
MTBE		ND		0.0093
Xylenes, Total		ND		0.23
Gasoline Range Organics (GRO)-C5-C12		ND		
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		84		60 - 140
Toluene-d8 (Surr)		84		70 - 130

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-7 @ 5.5

Lab Sample ID: 720-5771-13

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8260B Volatile Organic Compounds by GC/MS**

Method: 8260B  
Preparation: 5030B  
Dilution: 1.0  
Date Analyzed: 10/07/2006 2149  
Date Prepared: 10/07/2006 2149

Analysis Batch: 720-14025

Instrument ID: Saturn 2100  
Lab File ID: c:\saturnws\data\200610\10  
Initial Weight/Volume: 5.13 g  
Final Weight/Volume: 10 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.0049
Toluene		ND		0.0049
Ethylbenzene		ND		0.0049
MTBE		ND		0.0049
Xylenes, Total		ND		0.0097
Gasoline Range Organics (GRO)-C5-C12		ND		0.24
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		65		60 - 140
Toluene-d8 (Surr)		90		70 - 130

## Analytical Data

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-1 @ 2.0

Lab Sample ID: 720-5771-2

Date Sampled: 10/02/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C	Analysis Batch: 720-14084	Instrument ID: Sat 2K1	
Preparation: 35508	Prep Batch: 720-13998	Lab File ID: d:\data\200610\100906\720-	
Dilution: 10		Initial Weight/Volume: 30.30 g	
Date Analyzed: 10/09/2006 1422		Final Weight/Volume: 1 mL	
Date Prepared: 10/09/2006 0545		Injection Volume:	

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Phenol		ND		0.66
Bis(2-chloroethyl)ether		ND		0.66
2-Chlorophenol		ND		0.66
1,3-Dichlorobenzene		ND		0.66
1,4-Dichlorobenzene		ND		0.66
Benzyl alcohol		ND		1.7
1,2-Dichlorobenzene		ND		0.66
2-Methylphenol		ND		0.66
4-Methylphenol		ND		0.66
N-Nitrosodi-n-propylamine		ND		0.66
Hexachloroethane		ND		0.66
Nitrobenzene		ND		0.66
Isophorone		ND		0.66
2-Nitrophenol		ND		0.66
2,4-Dimethylphenol		ND		0.66
Bis(2-chloroethoxy)methane		ND		1.7
2,4-Dichlorophenol		ND		0.66
1,2,4-Trichlorobenzene		ND		0.66
Naphthalene		ND		0.66
4-Chloroaniline		ND		0.66
Hexachlorobutadiene		ND		0.66
4-Chloro-3-methylphenol		ND		1.7
2-Methylnaphthalene		ND		0.66
Hexachlorocyclopentadiene		ND		1.7
2,4,6-Trichlorophenol		ND		0.66
2,4,5-Trichlorophenol		ND		0.66
2-Chloronaphthalene		ND		0.66
2-Nitroaniline		ND		3.3
Dimethyl phthalate		ND		1.7
Acenaphthylene		ND		0.66
3-Nitroaniline		ND		1.7
Acenaphthene		ND		0.66
2,4-Dinitrophenol		ND		3.3
4-Nitrophenol		ND		3.3
Dibenzofuran		ND		0.66
2,4-Dinitrotoluene		ND		0.66
2,6-Dinitrotoluene		ND		0.66
Diethyl phthalate		ND		1.7
4-Chlorophenyl phenyl ether		ND		1.7
Fluorene		ND		0.66
4-Nitroaniline		ND		3.3
2-Methyl-4,6-dinitrophenol		ND		3.3
N-Nitrosodiphenylamine		ND		0.66

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-1 @ 2.0

Lab Sample ID: 720-5771-2

Client Matrix: Solid

Date Sampled: 10/02/2006 0000

Date Received: 10/03/2006 1545

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

Method:	8270C	Analysis Batch: 720-14084	Instrument ID: Sat 2K1
Preparation:	3550B	Prep Batch: 720-13996	Lab File ID: d:\data\200610\100906\720-
Dilution:	10		Initial Weight/Volume: 30.30 g
Date Analyzed:	10/09/2006 1422		Final Weight/Volume: 1 mL
Date Prepared:	10/09/2006 0545		Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
4-Bromophenyl phenyl ether		ND		1.7
Hexachlorobenzene		ND		0.66
Pentachlorophenol		ND		3.3
Phenanthrene		ND		0.66
Anthracene		ND		0.66
Di-n-butyl phthalate		ND		1.7
Fluoranthene		ND		0.66
Pyrene		ND		0.66
Butyl benzyl phthalate		ND		1.7
3,3'-Dichlorobenzidine		ND		1.7
Benzo[a]anthracene		ND		0.66
Bis(2-ethylhexyl) phthalate		ND		3.3
Chrysene		ND		0.66
Di-n-octyl phthalate		ND		9.9
Benzo[b]fluoranthene		ND		0.66
Benzo[a]pyrene		ND		0.66
Benzo[k]fluoranthene		ND		0.66
Indeno[1,2,3-cd]pyrene		ND		0.66
Benzo[g,h,i]perylene		ND		0.66
Benzoic acid		ND		3.3
Azobenzene		ND		0.66
Dibenz(a,h)anthracene		ND		0.66
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		78		23 - 120
2-Fluorobiphenyl		83		30 - 115
Terphenyl-d14		72		18 - 137
2-Fluorophenol		74		25 - 121
Phenol-d5		70		24 - 113
2,4,6-Tribromophenol		73		19 - 122



Analytical Data

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-4 @ 2.0

Lab Sample ID: 720-5771-9

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C  
Preparation: 3550B  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1451  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720-  
Initial Weight/Volume: 30.40 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Phenol		ND		0.33
Bis(2-chloroethyl)ether		ND		0.33
2-Chlorophenol		ND		0.33
1,3-Dichlorobenzene		ND		0.33
1,4-Dichlorobenzene		ND		0.84
Benzyl alcohol		ND		0.33
1,2-Dichlorobenzene		ND		0.33
2-Methylphenol		ND		0.33
4-Methylphenol		ND		0.33
N-Nitrosodi-n-propylamine		ND		0.33
Hexachloroethane		ND		0.33
Nitrobenzene		ND		0.33
Isophorone		ND		0.33
2-Nitrophenol		ND		0.33
2,4-Dimethylphenol		ND		0.84
Bis(2-chloroethoxy)methane		ND		0.33
2,4-Dichlorophenol		ND		0.33
1,2,4-Trichlorobenzene		ND		0.33
Naphthalene		ND		0.33
4-Chloroaniline		ND		0.84
Hexachlorobutadiene		ND		0.33
4-Chloro-3-methylphenol		ND		0.84
2-Methylnaphthalene		ND		0.33
Hexachlorocyclopentadiene		ND		0.33
2,4,6-Trichlorophenol		ND		0.33
2,4,5-Trichlorophenol		ND		1.6
2-Chloronaphthalene		ND		0.84
2-Nitroaniline		ND		0.33
Dimethyl phthalate		ND		0.84
Acenaphthylene		ND		0.33
3-Nitroaniline		ND		1.6
Acenaphthene		ND		1.6
2,4-Dinitrophenol		ND		0.33
4-Nitrophenol		ND		0.33
Dibenzofuran		ND		0.33
2,4-Dinitrotoluene		ND		0.84
2,6-Dinitrotoluene		ND		0.84
Diethyl phthalate		ND		0.33
4-Chlorophenyl phenyl ether		ND		1.6
Fluorene		ND		1.6
4-Nitroaniline		ND		0.33
2-Methyl-4,6-dinitrophenol		ND		
N-Nitrosodiphenylamine		ND		

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-4 @ 2.0  
 Lab Sample ID: 720-5771-9  
 Client Matrix: Solid

Date Sampled: 10/03/2006 0000  
 Date Received: 10/03/2006 1545

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

Method: 8270C  
 Preparation: 3550B  
 Dilution: 5.0  
 Date Analyzed: 10/09/2006 1451  
 Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
 Prep Batch: 720-13996

Instrument ID: Sat 2K1  
 Lab File ID: d:\data\200610\100906\720-  
 Initial Weight/Volume: 30.40 g  
 Final Weight/Volume: 1 mL  
 Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
4-Bromophenyl phenyl ether		ND		0.84
Hexachlorobenzene		ND		0.33
Pentachlorophenol		ND		1.6
Phenanthrene		ND		0.33
Anthracene		ND		0.33
Di-n-butyl phthalate		ND		0.84
Fluoranthene		ND		0.33
Pyrene		ND		0.84
Butyl benzyl phthalate		ND		0.33
3,3'-Dichlorobenzidine		ND		1.6
Benzo[a]anthracene		ND		0.33
Bis(2-ethylhexyl) phthalate		ND		4.9
Chrysene		ND		0.33
Di-n-octyl phthalate		ND		0.33
Benzo[b]fluoranthene		ND		0.33
Benzo[a]pyrene		ND		0.33
Benzo[k]fluoranthene		ND		0.33
Indeno[1,2,3-cd]pyrene		ND		1.6
Benzo[g,h,i]perylene		ND		0.33
Benzoic acid		ND		0.33
Azobenzene		ND		
Dibenz(a,h)anthracene		ND		
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		62		23 - 120
2-Fluorobiphenyl		69		30 - 115
Terphenyl-d14		71		18 - 137
2-Fluorophenol		66		25 - 121
Phenol-d5		66		24 - 113
2,4,6-Tribromophenol		70		19 - 122

Analytical Data

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-7 @ 3.5

Lab Sample ID: 720-5771-10

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C  
Preparation: 3550B  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1618  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720-  
Initial Weight/Volume: 30.25 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Phenol		ND		0.33
Bis(2-chloroethyl)ether		ND		0.33
2-Chlorophenol		ND		0.33
1,3-Dichlorobenzene		ND		0.33
1,4-Dichlorobenzene		ND		0.84
Benzyl alcohol		ND		0.33
1,2-Dichlorobenzene		ND		0.33
2-Methylphenol		ND		0.33
4-Methylphenol		ND		0.33
N-Nitrosodi-n-propylamine		ND		0.33
Hexachloroethane		ND		0.33
Nitrobenzene		ND		0.33
Isophorone		ND		0.33
2-Nitrophenol		ND		0.33
2,4-Dimethylphenol		ND		0.84
Bis(2-chloroethoxy)methane		ND		0.33
2,4-Dichlorophenol		ND		0.33
1,2,4-Trichlorobenzene		ND		0.33
Naphthalene		ND		0.33
4-Chloroaniline		ND		0.33
Hexachlorobutadiene		ND		0.84
4-Chloro-3-methylphenol		ND		0.33
2-Methylnaphthalene		ND		0.84
Hexachlorocyclopentadiene		ND		0.33
2,4,6-Trichlorophenol		ND		0.33
2,4,5-Trichlorophenol		ND		0.33
2-Chloronaphthalene		ND		1.6
2-Nitroaniline		ND		0.84
Dimethyl phthalate		ND		0.33
Acenaphthylene		ND		0.84
3-Nitroaniline		ND		0.33
Acenaphthene		ND		1.6
2,4-Dinitrophenol		ND		1.6
4-Nitrophenol		ND		0.33
Dibenzofuran		ND		0.33
2,4-Dinitrotoluene		ND		0.33
2,6-Dinitrotoluene		ND		0.84
Diethyl phthalate		ND		0.84
4-Chlorophenyl phenyl ether		ND		0.33
Fluorene		ND		1.6
4-Nitroaniline		ND		1.6
2-Methyl-4,6-dinitrophenol		ND		0.33
N-Nitrosodiphenylamine		ND		

## Analytical Data

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-7 @ 3.5

Lab Sample ID: 720-5771-10

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C  
 Preparation: 3550B  
 Dilution: 5.0  
 Date Analyzed: 10/09/2006 1618  
 Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
 Prep Batch: 720-13996

Instrument ID: Sat 2K1  
 Lab File ID: d:\data\200610\100906\720-  
 Initial Weight/Volume: 30.25 g  
 Final Weight/Volume: 1 mL  
 Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
4-Bromophenyl phenyl ether		ND		0.84
Hexachlorobenzene		ND		0.33
Pentachlorophenol		ND		1.6
Phenanthrene		ND		0.33
Anthracene		ND		0.33
Di-n-butyl phthalate		ND		0.84
Fluoranthene		ND		0.33
Pyrene		ND		0.33
Butyl benzyl phthalate		ND		0.84
3,3'-Dichlorobenzidine		ND		0.33
Benzo[a]anthracene		ND		1.6
Bis(2-ethylhexyl) phthalate		ND		0.33
Chrysene		ND		5.0
Di-n-octyl phthalate		ND		0.33
Benzo[b]fluoranthene		ND		0.33
Benzo[a]pyrene		ND		0.33
Benzo[k]fluoranthene		ND		0.33
Indeno[1,2,3-cd]pyrene		ND		0.33
Benzo[g,h,i]perylene		ND		1.6
Benzoic acid		ND		0.33
Azobenzene		ND		0.33
Dibenz[a,h]anthracene		ND		0.33
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		64		23 - 120
2-Fluorobiphenyl		68		30 - 115
Terphenyl-d14		69		18 - 137
2-Fluorophenol		63		25 - 121
Phenol-d5		63		24 - 113
2,4,6-Tribromophenol		68		19 - 122

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-1 @ 2.0

Lab Sample ID: 720-5771-2

Date Sampled: 10/02/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

**8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)**

Method:	8015B	Analysis Batch: 720-14063	Instrument ID:	HP DRO5
Preparation:	3550B	Prep Batch: 720-14003	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	30.02 g
Date Analyzed:	10/10/2006 0128		Final Weight/Volume:	5 mL
Date Prepared:	10/09/2006 0824		Injection Volume:	
			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		18		1.0
Motor Oil Range Organics [C24-C36]		120		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		75		50 - 130
Capric Acid (Sur)		0		0 - 5

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-2 @ 2.0

Lab Sample ID: 720-5771-5

Client Matrix: Solid

Date Sampled: 10/02/2006 0000

Date Received: 10/03/2006 1545

**8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)**

Method: 8015B  
Preparation: 3550B  
Dilution: 1.0  
Date Analyzed: 10/10/2006 0223  
Date Prepared: 10/09/2006 0824

Analysis Batch: 720-14063  
Prep Batch: 720-14003

Instrument ID: HP DRO5  
Lab File ID: N/A  
Initial Weight/Volume: 30.06 g  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		18		1.0
Motor Oil Range Organics [C24-C36]		100		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		78		50 - 130
Capric Acid (Surr)		0		0 - 5

**Analytical Data**

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-3 @ 1.0

Lab Sample ID: 720-5771-7

Date Sampled: 10/03/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

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**8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)**

Method:	8015B	Analysis Batch: 720-14063	Instrument ID:	HP DRO5
Preparation:	3550B	Prep Batch: 720-14003	Lab File ID:	N/A
Dilution:	5.0		Initial Weight/Volume:	30.08 g
Date Analyzed:	10/10/2006 0725		Final Weight/Volume:	5 mL
Date Prepared:	10/09/2006 0824		Injection Volume:	
			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		41		5.0
Motor Oil Range Organics [C24-C36]		280		250
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		0	D	50 - 130
Capric Acid (Surr)		0		0 - 5

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-4 @ 2.0

Lab Sample ID: 720-5771-9

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)**

Method: 8015B  
Preparation: 3550B  
Dilution: 1.0  
Date Analyzed: 10/10/2006 0535  
Date Prepared: 10/09/2006 0824

Analysis Batch: 720-14063  
Prep Batch: 720-14003

Instrument ID: HP DRO5  
Lab File ID: N/A  
Initial Weight/Volume: 30.17 g  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		ND		0.99
Motor Oil Range Organics [C24-C36]		ND		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		83		50 - 130
Capric Acid (Surr)		0		0 - 5



Analytical Data

Client: Fugro West Incorporated

Job Number: 720-5771-1

Client Sample ID: B-7 @ 3.5

Lab Sample ID: 720-5771-10

Date Sampled: 10/03/2006 0000

Client Matrix: Solid

Date Received: 10/03/2006 1545

8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:	8015B	Analysis Batch: 720-14063	Instrument ID:	HP DRO5
Preparation:	3550B	Prep Batch: 720-14003	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	30.08 g
Date Analyzed:	10/10/2006 0318		Final Weight/Volume:	5 mL
Date Prepared:	10/09/2006 0824		Injection Volume:	
			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		22		1.0
Motor Oil Range Organics [C24-C36]		120		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		83		50 - 130
Capric Acid (Surr)		0		0 - 5

**Analytical Data**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-7 @ 4.5

Lab Sample ID: 720-5771-12

Client Matrix: Solid

Date Sampled: 10/03/2006 0000

Date Received: 10/03/2006 1545

**8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)**

Method: 8015B  
Preparation: 3550B  
Dilution: 1.0  
Date Analyzed: 10/10/2006 0440  
Date Prepared: 10/09/2006 0824

Analysis Batch: 720-14063  
Prep Batch: 720-14003

Instrument ID: HP DRO5  
Lab File ID: N/A  
Initial Weight/Volume: 30.10 g  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		2.8		1.0
Motor Oil Range Organics [C24-C36]		ND		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		75		50 - 130
Capric Acid (Surr)		0		0 - 5

Analytical Data

Job Number: 720-5771-1

Client: Fugro West Incorporated

Client Sample ID: B-4 @ 2.0

Lab Sample ID: 720-5771-9  
Client Matrix: Solid

Date Sampled: 10/03/2006 0000  
Date Received: 10/03/2006 1545

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B  
Preparation: 3050B  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0927  
Date Prepared: 10/05/2006 1459

Analysis Batch: 720-13966  
Prep Batch: 720-13930

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.04 g  
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Antimony		ND		1.9
Arsenic		2.4		0.96
Barium		35		0.96
Beryllium		ND		0.48
Cadmium		ND		0.48
Chromium		21		0.96
Cobalt		4.9		0.96
Copper		7.7		0.96
Lead		10		0.96
Molybdenum		ND		0.96
Nickel		19		0.96
Selenium		ND		1.9
Silver		ND		0.96
Thallium		ND		0.96
Vanadium		16		0.96
Zinc		21		0.96

7471A Mercury In Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A  
Preparation: 7471A  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0853  
Date Prepared: 10/05/2006 1323

Analysis Batch: 720-13956  
Prep Batch: 720-13921

Instrument ID: FIMS 100  
Lab File ID: N/A  
Initial Weight/Volume: 1.02 g  
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Mercury		0.063		0.049

## Quality Control Results

Client: Fugro West Incorporated

Job Number: 720-5771-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:720-13960</b>					
LCS 720-13960/1	Lab Control Spike	T	Solid	8260B	
MB 720-13960/2	Method Blank	T	Solid	8260B	
720-5771-2	B-1 @ 2.0	T	Solid	8260B	
720-5771-9	B-4 @ 2.0	T	Solid	8260B	
720-5771-10	B-7 @ 3.5	T	Solid	8260B	
<b>Analysis Batch:720-14025</b>					
LCS 720-14025/2	Lab Control Spike	T	Solid	8260B	
LCSD 720-14025/1	Lab Control Spike Duplicate	T	Solid	8260B	
MB 720-14025/3	Method Blank	T	Solid	8260B	
720-5771-2	B-1 @ 2.0	T	Solid	8260B	
720-5771-5	B-2 @ 2.0	T	Solid	8260B	
720-5771-7	B-3 @ 1.0	T	Solid	8260B	
720-5771-10	B-7 @ 3.5	T	Solid	8260B	
720-5771-12	B-7 @ 4.5	T	Solid	8260B	
720-5771-13	B-7 @ 5.5	T	Solid	8260B	
<b>Analysis Batch:720-14090</b>					
LCS 720-14090/2	Lab Control Spike	T	Solid	8260B	
LCSD 720-14090/1	Lab Control Spike Duplicate	T	Solid	8260B	
MB 720-14090/3	Method Blank	T	Solid	8260B	
720-5771-9	B-4 @ 2.0	T	Solid	8260B	

**Report Basis**

T = Total

## Quality Control Results

Client: Fugro West Incorporated

Job Number: 720-5771-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS Semi VOA</b>					
<b>Prep Batch: 720-13996</b>					
LCS 720-13996/2-A	Lab Control Spike	T	Solid	3550B	
LCSD 720-13996/3-A	Lab Control Spike Duplicate	T	Solid	3550B	
MB 720-13996/1-A	Method Blank	T	Solid	3550B	
720-5771-2	B-1 @ 2.0	T	Solid	3550B	
720-5771-9	B-4 @ 2.0	T	Solid	3550B	
720-5771-9MS	Matrix Spike	T	Solid	3550B	
720-5771-9MSD	Matrix Spike Duplicate	T	Solid	3550B	
720-5771-10	B-7 @ 3.5	T	Solid	3550B	
<b>Analysis Batch: 720-14084</b>					
LCS 720-13996/2-A	Lab Control Spike	T	Solid	8270C	720-13996
LCSD 720-13996/3-A	Lab Control Spike Duplicate	T	Solid	8270C	720-13996
MB 720-13996/1-A	Method Blank	T	Solid	8270C	720-13996
720-5771-2	B-1 @ 2.0	T	Solid	8270C	720-13996
720-5771-9	B-4 @ 2.0	T	Solid	8270C	720-13996
720-5771-9MS	Matrix Spike	T	Solid	8270C	720-13996
720-5771-9MSD	Matrix Spike Duplicate	T	Solid	8270C	720-13996
720-5771-10	B-7 @ 3.5	T	Solid	8270C	720-13996

**Report Basis**

T = Total

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC Semi VOA</b>					
<b>Prep Batch: 720-14003</b>					
LCS 720-14003/2-B	Lab Control Spike	T	Solid	3550B	
LCSD 720-14003/3-B	Lab Control Spike Duplicate	T	Solid	3550B	
MB 720-14003/1-B	Method Blank	T	Solid	3550B	
720-5771-2	B-1 @ 2.0	T	Solid	3550B	
720-5771-5	B-2 @ 2.0	T	Solid	3550B	
720-5771-7	B-3 @ 1.0	T	Solid	3550B	
720-5771-9	B-4 @ 2.0	T	Solid	3550B	
720-5771-10	B-7 @ 3.5	T	Solid	3550B	
720-5771-12	B-7 @ 4.5	T	Solid	3550B	
720-5771-13	B-7 @ 5.5	T	Solid	3550B	
<b>Analysis Batch: 720-14063</b>					
LCS 720-14003/2-B	Lab Control Spike	T	Solid	8015B	720-14003
LCSD 720-14003/3-B	Lab Control Spike Duplicate	T	Solid	8015B	720-14003
MB 720-14003/1-B	Method Blank	T	Solid	8015B	720-14003
720-5771-2	B-1 @ 2.0	T	Solid	8015B	720-14003
720-5771-5	B-2 @ 2.0	T	Solid	8015B	720-14003
720-5771-7	B-3 @ 1.0	T	Solid	8015B	720-14003
720-5771-9	B-4 @ 2.0	T	Solid	8015B	720-14003
720-5771-10	B-7 @ 3.5	T	Solid	8015B	720-14003
720-5771-12	B-7 @ 4.5	T	Solid	8015B	720-14003
720-5771-13	B-7 @ 5.5	T	Solid	8015B	720-14003

**Report Basis**

T = Total

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 720-13921</b>					
LCS 720-13921/2-A	Lab Control Spike	T	Solid	7471A	
LCSD 720-13921/3-A	Lab Control Spike Duplicate	T	Solid	7471A	
MB 720-13921/1-A	Method Blank	T	Solid	7471A	
720-5771-2	B-1 @ 2.0	T	Solid	7471A	
720-5771-2MS	Matrix Spike	T	Solid	7471A	
720-5771-2MSD	Matrix Spike Duplicate	T	Solid	7471A	
720-5771-5	B-2 @ 2.0	T	Solid	7471A	
720-5771-7	B-3 @ 1.0	T	Solid	7471A	
720-5771-9	B-4 @ 2.0	T	Solid	7471A	
720-5771-10	B-7 @ 3.5	T	Solid	7471A	
720-5771-12	B-7 @ 4.5	T	Solid	7471A	
720-5771-13	B-7 @ 5.5	T	Solid	7471A	
<b>Prep Batch: 720-13930</b>					
LCS 720-13930/2-A	Lab Control Spike	T	Solid	3050B	
LCSD 720-13930/3-A	Lab Control Spike Duplicate	T	Solid	3050B	
MB 720-13930/1-A	Method Blank	T	Solid	3050B	
720-5771-2	B-1 @ 2.0	T	Solid	3050B	
720-5771-5	B-2 @ 2.0	T	Solid	3050B	
720-5771-7	B-3 @ 1.0	T	Solid	3050B	
720-5771-9	B-4 @ 2.0	T	Solid	3050B	
720-5771-10	B-7 @ 3.5	T	Solid	3050B	
720-5771-12	B-7 @ 4.5	T	Solid	3050B	
720-5771-13	B-7 @ 5.5	T	Solid	3050B	
<b>Analysis Batch: 720-13956</b>					
LCS 720-13921/2-A	Lab Control Spike	T	Solid	7471A	720-13921
LCSD 720-13921/3-A	Lab Control Spike Duplicate	T	Solid	7471A	720-13921
MB 720-13921/1-A	Method Blank	T	Solid	7471A	720-13921
720-5771-2	B-1 @ 2.0	T	Solid	7471A	720-13921
720-5771-2MS	Matrix Spike	T	Solid	7471A	720-13921
720-5771-2MSD	Matrix Spike Duplicate	T	Solid	7471A	720-13921
720-5771-5	B-2 @ 2.0	T	Solid	7471A	720-13921
720-5771-7	B-3 @ 1.0	T	Solid	7471A	720-13921
720-5771-9	B-4 @ 2.0	T	Solid	7471A	720-13921
720-5771-10	B-7 @ 3.5	T	Solid	7471A	720-13921
720-5771-12	B-7 @ 4.5	T	Solid	7471A	720-13921
720-5771-13	B-7 @ 5.5	T	Solid	7471A	720-13921

## Quality Control Results

Client: Fugro West Incorporated

Job Number: 720-5771-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch: 720-13966</b>					
LCS 720-13930/2-A	Lab Control Spike	T	Solid	6010B	720-13930
LCSD 720-13930/3-A	Lab Control Spike Duplicate	T	Solid	6010B	720-13930
MB 720-13930/1-A	Method Blank	T	Solid	6010B	720-13930
720-5771-2	B-1 @ 2.0	T	Solid	6010B	720-13930
720-5771-5	B-2 @ 2.0	T	Solid	6010B	720-13930
720-5771-7	B-3 @ 1.0	T	Solid	6010B	720-13930
720-5771-9	B-4 @ 2.0	T	Solid	6010B	720-13930
720-5771-10	B-7 @ 3.5	T	Solid	6010B	720-13930
720-5771-12	B-7 @ 4.5	T	Solid	6010B	720-13930
720-5771-13	B-7 @ 5.5	T	Solid	6010B	720-13930

**Report Basis**

T = Total



## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-13960

Method: 8260B  
Preparation: 5030B

Lab Sample ID: MB 720-13960/2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 1146  
Date Prepared: 10/05/2006 1146

Analysis Batch: 720-13960  
Prep Batch: N/A  
Units: ug/Kg

Instrument ID: Varian 3900G  
Lab File ID: c:\saturnws\data\200610\10  
Initial Weight/Volume: 5.00 g  
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Methyl tert-butyl ether	ND		5.0
Acetone	ND		50
Benzene	ND		5.0
Dichlorobromomethane	ND		5.0
Bromobenzene	ND		20
Chlorobromomethane	ND		5.0
Bromoform	ND		10
Bromomethane	ND		50
Methyl Ethyl Ketone	ND		5.0
n-Butylbenzene	ND		5.0
sec-Butylbenzene	ND		5.0
tert-Butylbenzene	ND		5.0
Carbon disulfide	ND		5.0
Carbon tetrachloride	ND		5.0
Chlorobenzene	ND		10
Chloroethane	ND		5.0
Chloroform	ND		10
Chloromethane	ND		5.0
2-Chlorotoluene	ND		5.0
4-Chlorotoluene	ND		5.0
Chlorodibromomethane	ND		5.0
1,2-Dichlorobenzene	ND		5.0
1,3-Dichlorobenzene	ND		5.0
1,4-Dichlorobenzene	ND		5.0
1,3-Dichloropropane	ND		5.0
1,1-Dichloropropene	ND		50
1,2-Dibromo-3-Chloropropane	ND		5.0
Ethylene Dibromide	ND		10
Dibromomethane	ND		10
Dichlorodifluoromethane	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethane	ND		5.0
1,1-Dichloroethene	ND		5.0
cis-1,2-Dichloroethene	ND		5.0
trans-1,2-Dichloroethene	ND		5.0
1,2-Dichloropropane	ND		5.0
cis-1,3-Dichloropropene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0
Ethylbenzene	ND		5.0
Hexachlorobutadiene	ND		5.0
Isopropylbenzene	ND		5.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-13960

Method: 8260B  
Preparation: 5030B

Lab Sample ID: MB 720-13960/2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 1146  
Date Prepared: 10/05/2006 1146

Analysis Batch: 720-13960  
Prep Batch: N/A  
Units: ug/Kg

Instrument ID: Varian 3900G  
Lab File ID: c:\satumw\data\200610\110  
Initial Weight/Volume: 5.00 g  
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
4-Isopropyltoluene	ND		5.0
Methylene Chloride	ND		10
methyl isobutyl ketone	ND		50
Naphthalene	ND		10
N-Propylbenzene	ND		5.0
Styrene	ND		5.0
1,1,1,2-Tetrachloroethane	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Tetrachloroethene	ND		5.0
Toluene	ND		5.0
1,2,3-Trichlorobenzene	ND		5.0
1,2,4-Trichlorobenzene	ND		5.0
1,1,1-Trichloroethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Trichloroethene	ND		5.0
Trichlorofluoromethane	ND		5.0
1,2,3-Trichloropropane	ND		5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0
1,2,4-Trimethylbenzene	ND		5.0
1,3,5-Trimethylbenzene	ND		50
Vinyl acetate	ND		5.0
Vinyl chloride	ND		10
Xylenes, Total	ND		5.0
2,2-Dichloropropane	ND		
Surrogate	% Rec	Acceptance Limits	
4-Bromofluorobenzene	82	60 - 140	
1,2-Dichloroethane-d4 (Surr)	83	60 - 140	
Toluene-d8 (Surr)	85	70 - 130	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Lab Control Spike - Batch: 720-13960

Method: 8260B  
Preparation: 5030B

Lab Sample ID: LCS 720-13960/1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 1112  
Date Prepared: 10/05/2006 1112

Analysis Batch: 720-13960  
Prep Batch: N/A  
Units: ug/Kg

Instrument ID: Varian 3900G  
Lab File ID: c:\satumws\data\200610\10  
Initial Weight/Volume: 5.00 g  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	100	83.1	83	69 - 129	
Chlorobenzene	100	94.2	94	61 - 121	
1,1-Dichloroethene	100	86.0	86	65 - 125	
Toluene	100	84.5	85	70 - 130	
Trichloroethene	100	76.3	76	74 - 134	
Surrogate		% Rec		Acceptance Limits	
4-Bromofluorobenzene		88		60 - 140	
1,2-Dichloroethane-d4 (Surr)		82		60 - 140	
Toluene-d8 (Surr)		84		70 - 130	

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-14025

Method: 8260B  
Preparation: 5030B

Lab Sample ID: MB 720-14025/3  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/07/2006 1330  
Date Prepared: 10/07/2006 1330

Analysis Batch: 720-14025  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: Saturn 2100  
Lab File ID: c:\saturnws\data\200610\10  
Initial Weight/Volume: 5 g  
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Benzene	ND		0.0050
Toluene	ND		0.0050
Ethylbenzene	ND		0.0050
MTBE	ND		0.010
Xylenes, Total	ND		0.25
Gasoline Range Organics (GRO)-C5-C12	ND		
Surrogate	% Rec	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	92	60 - 140	
Toluene-d8 (Surr)	96	70 - 130	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-14025**

**Method: 8260B  
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-14025/2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/07/2006 1238  
Date Prepared: 10/07/2006 1238

Analysis Batch: 720-14025  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: Saturn 2100  
Lab File ID: c:\saturnws\data\200610\1011  
Initial Weight/Volume: 5 g  
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-14025/1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/07/2006 1304  
Date Prepared: 10/07/2006 1304

Analysis Batch: 720-14025  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: Saturn 2100  
Lab File ID: c:\saturnws\data\200610\1010  
Initial Weight/Volume: 5 g  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	96	93	69 - 129	2	20		
Toluene	100	101	70 - 130	1	20		
MTBE	88	88	65 - 165	0	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
1,2-Dichloroethane-d4 (Surr)	84		86		60 - 140		
Toluene-d8 (Surr)	97		94		70 - 130		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Method Blank - Batch: 720-14090**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 720-14090/3  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/10/2006 1338  
Date Prepared: 10/10/2006 1338

Analysis Batch: 720-14090  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: Varian 3900A  
Lab File ID: c:\saturmws\data\200610\11  
Initial Weight/Volume: 5 g  
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Benzene	ND		0.0050
Toluene	ND		0.0050
Gasoline Range Organics (GRO)-C5-C12	ND		0.25
Surrogate	% Rec	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	89	60 - 140	
Toluene-d8 (Surr)	89	70 - 130	

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-14090**

**Method: 8260B  
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-14090/2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/10/2006 1253  
Date Prepared: 10/10/2006 1253

Analysis Batch: 720-14090  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: Varian 3900A  
Lab File ID: c:\saturmws\data\200610\11  
Initial Weight/Volume: 5 g  
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-14090/1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/10/2006 1316  
Date Prepared: 10/10/2006 1316

Analysis Batch: 720-14090  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: Varian 3900A  
Lab File ID: c:\saturmws\data\200610\101  
Initial Weight/Volume: 5 g  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	116	121	69 - 129	4	20		
Toluene	120	122	70 - 130	2	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
1,2-Dichloroethane-d4 (Surr)	84		87		60 - 140		
Toluene-d8 (Surr)	91		90		70 - 130		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: Fugro West Incorporated

Job Number: 720-5771-1

Method Blank - Batch: 720-13996

Method: 8270C  
Preparation: 3550B

Lab Sample ID: MB 720-13996/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 1255  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996  
Units: mg/Kg

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\MB  
Initial Weight/Volume: 30.01 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	Result	Qual	RL
Phenol	ND		0.067
Bis(2-chloroethyl)ether	ND		0.067
2-Chlorophenol	ND		0.067
1,3-Dichlorobenzene	ND		0.067
1,4-Dichlorobenzene	ND		0.17
Benzyl alcohol	ND		0.067
1,2-Dichlorobenzene	ND		0.067
2-Methylphenol	ND		0.067
4-Methylphenol	ND		0.067
N-Nitrosodi-n-propylamine	ND		0.067
Hexachloroethane	ND		0.067
Nitrobenzene	ND		0.067
Isophorone	ND		0.067
2-Nitrophenol	ND		0.067
2,4-Dimethylphenol	ND		0.17
Bis(2-chloroethoxy)methane	ND		0.067
2,4-Dichlorophenol	ND		0.067
1,2,4-Trichlorobenzene	ND		0.067
Naphthalene	ND		0.067
4-Chloroaniline	ND		0.087
Hexachlorobutadiene	ND		0.17
4-Chloro-3-methylphenol	ND		0.067
2-Methylnaphthalene	ND		0.17
Hexachlorocyclopentadiene	ND		0.067
2,4,6-Trichlorophenol	ND		0.067
2,4,5-Trichlorophenol	ND		0.067
2-Chloronaphthalene	ND		0.33
2-Nitroaniline	ND		0.17
Dimethyl phthalate	ND		0.067
Acenaphthylene	ND		0.17
3-Nitroaniline	ND		0.067
Acenaphthene	ND		0.33
2,4-Dinitrophenol	ND		0.33
4-Nitrophenol	ND		0.067
Dibenzofuran	ND		0.067
2,4-Dinitrotoluene	ND		0.067
2,6-Dinitrotoluene	ND		0.17
Diethyl phthalate	ND		0.17
4-Chlorophenyl phenyl ether	ND		0.067
Fluorene	ND		0.33
4-Nitroaniline	ND		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-13996

Method: 8270C  
Preparation: 3550B

Lab Sample ID: MB 720-13996/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 1255  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996  
Units: mg/Kg

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\MB  
Initial Weight/Volume: 30.01 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	Result	Qual	RL
2-Methyl-4,6-dinitrophenol	ND		0.33
N-Nitrosodiphenylamine	ND		0.067
4-Bromophenyl phenyl ether	ND		0.17
Hexachlorobenzene	ND		0.067
Pentachlorophenol	ND		0.33
Phenanthrene	ND		0.067
Anthracene	ND		0.067
Di-n-butyl phthalate	ND		0.17
Fluoranthene	ND		0.17
Pyrene	ND		0.067
Butyl benzyl phthalate	ND		0.067
3,3'-Dichlorobenzidine	ND		0.33
Benzo[a]anthracene	ND		0.067
Bis(2-ethylhexyl) phthalate	ND		1.0
Chrysene	ND		0.067
Di-n-octyl phthalate	ND		0.067
Benzo[b]fluoranthene	ND		0.067
Benzo[a]pyrene	ND		0.067
Benzo[k]fluoranthene	ND		0.067
Indeno[1,2,3-cd]pyrene	ND		0.33
Benzo[g,h,i]perylene	ND		0.067
Benzoic acid	ND		0.067
Azobenzene	ND		
Dibenz(a,h)anthracene	ND		

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	68	23 - 120
2-Fluorobiphenyl	91	30 - 115
Terphenyl-d14	64	18 - 137
2-Fluorophenol	64	25 - 121
Phenol-d5	63	24 - 113
2,4,6-Tribromophenol	83	19 - 122

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

### Lab Control Spike/ Lab Control Spike Duplicate Recovery Report - Batch: 720-13996

**Method: 8270C**  
**Preparation: 3550B**

LCS Lab Sample ID: LCS 720-13996/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 1324  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996  
Units: mg/Kg

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\LC  
Initial Weight/Volume: 30.10 g  
Final Weight/Volume: 1 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 720-13996/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 1353  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996  
Units: mg/Kg

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\LCSD  
Initial Weight/Volume: 30.11 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Phenol	70	63	5 - 112	10	35		
Bis(2-chloroethyl)ether	75	68	12 - 158	11	35		
2-Chlorophenol	67	60	23 - 134	11	35		
1,3-Dichlorobenzene	70	63	9 - 172	11	35		
1,4-Dichlorobenzene	64	60	20 - 124	7	35		
Benzyl alcohol	71	66	10 - 130	7	35		
1,2-Dichlorobenzene	67	61	32 - 129	9	35		
2-Methylphenol	74	64	10 - 130	15	35		
4-Methylphenol	151	140	10 - 130	8	35		
N-Nitrosodi-n-propylamine	80	71	9 - 230	13	35		
Hexachloroethane	71	63	40 - 113	12	35		
Nitrobenzene	65	56	35 - 180	14	35		
Isophorone	63	69	21 - 196	8	35		
2-Nitrophenol	66	66	29 - 182	1	35		
2,4-Dimethylphenol	67	61	32 - 119	9	35		
Bis(2-chloroethoxy)methane	69	61	33 - 184	13	35		
2,4-Dichlorophenol	67	62	10 - 130	8	35		
1,2,4-Trichlorobenzene	62	58	44 - 142	6	35		
Naphthalene	60	54	21 - 133	10	35		
4-Chloroaniline	33	33	10 - 130	1	35		
Hexachlorobutadiene	65	60	24 - 116	7	35		
4-Chloro-3-methylphenol	58	67	10 - 130	18	35		
2-Methylnaphthalene	69	61	10 - 130	12	35		
Hexachlorocyclopentadiene	76	65	10 - 130	16	35		
2,4,6-Trichlorophenol	54	63	37 - 144	16	35		
2,4,5-Trichlorophenol	66	71	10 - 130	8	35		
2-Chloronaphthalene	62	68	10 - 130	10	35		
2-Nitroaniline	74	67	10 - 130	10	35		
Dimethyl phthalate	80	90	9 - 112	11	35		
Acenaphthylene	75	82	33 - 145	8	35		
3-Nitroaniline	67	63	10 - 130	6	35		
Acenaphthene	61	69	47 - 145	13	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-13996**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 720-13996/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 1324  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996  
Units: mg/Kg

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\LCS  
Initial Weight/Volume: 30.10 g  
Final Weight/Volume: 1 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 720-13996/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 1353  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996  
Units: mg/Kg

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\LCS  
Initial Weight/Volume: 30.11 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
2,4-Dinitrophenol	58	57	9 - 191	1	35		
4-Nitrophenol	76	78	10 - 130	3	35		
Dibenzofuran	72	62	10 - 130	14	35		
2,4-Dinitrotoluene	75	81	39 - 139	8	35		
2,6-Dinitrotoluene	79	80	50 - 158	2	35		
Diethyl phthalate	76	53	9 - 114	37	35		
4-Chlorophenyl phenyl ether	73	69	25 - 158	7	35		
Fluorene	79	73	59 - 121	8	35		
4-Nitroaniline	81	75	10 - 130	9	35		
2-Methyl-4,6-dinitrophenol	74	78	9 - 181	6	35		
N-Nitrosodiphenylamine	73	78	10 - 130	7	35		
4-Bromophenyl phenyl ether	69	71	53 - 127	3	35		
Hexachlorobenzene	67	78	9 - 152	15	35		
Pentachlorophenol	67	70	14 - 176	4	35		
Phenanthrene	58	64	10 - 130	9	35		
Anthracene	56	71	27 - 133	24	35		
Di-n-butyl phthalate	59	59	10 - 130	1	35		
Fluoranthene	70	74	26 - 137	4	35		
Pyrene	71	69	52 - 115	3	35		
Butyl benzyl phthalate	62	89	10 - 130	11	35		
3,3'-Dichlorobenzidine	65	63	10 - 130	3	35		
Benzo[a]anthracene	77	78	33 - 143	1	35		
Bis(2-ethylhexyl) phthalate	69	65	8 - 158	6	35		
Chrysene	68	65	17 - 168	5	35		
Di-n-octyl phthalate	70	68	4 - 146	2	35		
Benzo[b]fluoranthene	83	81	24 - 159	3	35		
Benzo[a]pyrene	82	81	17 - 163	1	35		
Benzo[k]fluoranthene	62	60	11 - 162	3	35		
Indeno[1,2,3-cd]pyrene	82	79	9 - 171	3	35		
Benzo[g,h,i]perylene	79	78	9 - 219	2	35		
Benzoic acid	12	16	10 - 130	23	35		
Azobenzene	69	67	10 - 130	3	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-13996**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 720-13996/2-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 10/09/2006 1324  
 Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
 Prep Batch: 720-13996  
 Units: mg/Kg

Instrument ID: Sat 2K1  
 Lab File ID: d:\data\200610\100906\LC  
 Initial Weight/Volume: 30.10 g  
 Final Weight/Volume: 1 mL  
 Injection Volume:

LCSD Lab Sample ID: LCSD 720-13996/3-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 10/09/2006 1353  
 Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
 Prep Batch: 720-13996  
 Units: mg/Kg

Instrument ID: Sat 2K1  
 Lab File ID: d:\data\200610\100906\LC  
 Initial Weight/Volume: 30.11 g  
 Final Weight/Volume: 1 mL  
 Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Dibenz(a,h)anthracene	83	84	10 - 130	1	35		
Surrogate		LCS % Rec	LCSD % Rec			Acceptance Limits	
Nitrobenzene-d5		64	61			23 - 120	
2-Fluorobiphenyl		77	58			30 - 115	
Terphenyl-d14		76	74			18 - 137	
2-Fluorophenol		67	61			25 - 121	
Phenol-d5		67	65			24 - 113	
2,4,6-Tribromophenol		71	63			19 - 122	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-13996**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 720-5771-9  
Client Matrix: Solid  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1520  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720  
Initial Weight/Volume: 30.23 g  
Final Weight/Volume: 1 mL  
Injection Volume:

MSD Lab Sample ID: 720-5771-9  
Client Matrix: Solid  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1549  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720  
Initial Weight/Volume: 30.35 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Phenol	67	75	5 - 112	11	35		
Bis(2-chloroethyl)ether	69	78	12 - 158	11	35		
2-Chlorophenol	65	72	23 - 134	10	35		
1,3-Dichlorobenzene	68	76	9 - 172	11	35		
1,4-Dichlorobenzene	62	71	20 - 124	13	35		
Benzyl alcohol	72	76	10 - 130	5	35		
1,2-Dichlorobenzene	78	79	32 - 129	1	35		
2-Methylphenol	67	79	10 - 130	17	35		
4-Methylphenol	151	165	10 - 130	8	35	F	F
N-Nitrosodi-n-propylamine	72	83	9 - 230	15	35		
Hexachloroethane	67	71	40 - 113	5	35		
Nitrobenzene	68	79	35 - 180	14	35		
Isophorone	70	81	21 - 196	15	35		
2-Nitrophenol	63	75	29 - 182	18	35		
2,4-Dimethylphenol	72	85	32 - 119	17	35		
Bis(2-chloroethoxy)methane	67	85	33 - 184	23	35		
2,4-Dichlorophenol	72	88	10 - 130	19	35		
1,2,4-Trichlorobenzene	69	80	44 - 142	15	35		
Naphthalene	68	79	21 - 133	16	35		
4-Chloroaniline	27	31	10 - 130	14	35		
Hexachlorobutadiene	67	75	24 - 116	11	35		
4-Chloro-3-methylphenol	65	75	10 - 130	14	35		
2-Methylnaphthalene	66	73	10 - 130	9	35		
Hexachlorocyclopentadiene	69	69	10 - 130	1	35		
2,4,6-Trichlorophenol	62	60	37 - 144	4	35		
2,4,5-Trichlorophenol	74	74	10 - 130	0	35		
2-Chloronaphthalene	67	69	10 - 130	1	35		
2-Nitroaniline	74	75	10 - 130	2	35		
Dimethyl phthalate	90	83	9 - 112	9	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-13996**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 720-5771-9  
Client Matrix: Solid  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1520  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720  
Initial Weight/Volume: 30.23 g  
Final Weight/Volume: 1 mL  
Injection Volume:

MSD Lab Sample ID: 720-5771-9  
Client Matrix: Solid  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1549  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720  
Initial Weight/Volume: 30.35 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Acenaphthylene	78	79	33 - 145	1	35		
3-Nitroaniline	68	65	10 - 130	5	35		
Acenaphthene	74	75	47 - 145	2	35		
2,4-Dinitrophenol	51	46	9 - 191	9	35		
4-Nitrophenol	111	105	10 - 130	6	35		
Dibenzofuran	65	72	10 - 130	10	35		
2,4-Dinitrotoluene	80	84	39 - 139	4	35		
2,6-Dinitrotoluene	84	75	50 - 158	11	35		
Diethyl phthalate	95	92	9 - 114	4	35		
4-Chlorophenyl phenyl ether	67	74	25 - 158	9	35		
Fluorene	77	75	59 - 121	3	35		
4-Nitroaniline	80	72	10 - 130	11	35		
2-Methyl-4,6-dinitrophenol	63	67	9 - 181	5	35		
N-Nitrosodiphenylamine	81	85	10 - 130	4	35		
4-Bromophenyl phenyl ether	70	71	53 - 127	1	35		
Hexachlorobenzene	94	94	9 - 152	0	35		
Pentachlorophenol	77	81	14 - 176	5	35		
Phenanthrene	82	92	10 - 130	11	35		
Anthracene	82	90	27 - 133	9	35		
Di-n-butyl phthalate	84	89	10 - 130	5	35		
Fluoranthene	74	82	26 - 137	9	35		
Pyrene	64	64	52 - 115	1	35		
Butyl benzyl phthalate	84	66	10 - 130	23	35		
3,3'-Dichlorobenzidine	42	36	10 - 130	14	35		
Benzo(a)anthracene	100	67	33 - 143	39	35		F
Bis(2-ethylhexyl) phthalate	72	67	8 - 158	6	35		
Chrysene	74	64	17 - 168	14	35		
Di-n-octyl phthalate	72	67	4 - 146	7	35		
Benzo(b)fluoranthene	96	91	24 - 159	6	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-13996**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 720-5771-9  
Client Matrix: Solid  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1520  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720  
Initial Weight/Volume: 30.23 g  
Final Weight/Volume: 1 mL  
Injection Volume:

MSD Lab Sample ID: 720-5771-9  
Client Matrix: Solid  
Dilution: 5.0  
Date Analyzed: 10/09/2006 1549  
Date Prepared: 10/09/2006 0545

Analysis Batch: 720-14084  
Prep Batch: 720-13996

Instrument ID: Sat 2K1  
Lab File ID: d:\data\200610\100906\720  
Initial Weight/Volume: 30.35 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	% Rec		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzo[a]pyrene	86	92	17 - 163	7	35		
Benzo[k]fluoranthene	68	80	11 - 162	16	35		
Indeno[1,2,3-cd]pyrene	93	98	9 - 171	5	35		
Benzo[g,h,i]perylene	84	92	9 - 219	8	35		
Benzoic acid	22	23	10 - 130	NC	35		
Azobenzene	81	77	10 - 130	7	35		
Dibenz(a,h)anthracene	92	99	10 - 130	8	35		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Nitrobenzene-d5	60		76	23 - 120			
2-Fluorobiphenyl	73		67	30 - 115			
Terphenyl-d14	64		69	18 - 137			
2-Fluorophenol	61		67	25 - 121			
Phenol-d5	62		70	24 - 113			
2,4,6-Tribromophenol	76		73	19 - 122			

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-14003

Method: 8015B  
Preparation: 3550B

Lab Sample ID: MB 720-14003/1-B  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 2025  
Date Prepared: 10/09/2006 0824

Analysis Batch: 720-14063  
Prep Batch: 720-14003  
Units: mg/Kg

Instrument ID: HP DRO5  
Lab File ID: N/A  
Initial Weight/Volume: 30.03 g  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	RL
Diesel Range Organics [C10-C28]	ND		1.0
Motor Oil Range Organics [C24-C36]	ND		50
Surrogate	% Rec	Acceptance Limits	
o-Terphenyl	76	50 - 130	
Capric Acid (Surr)	0	0 - 5	

Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-14003

Method: 8015B  
Preparation: 3550B

LCS Lab Sample ID: LCS 720-14003/2-B  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 2052  
Date Prepared: 10/09/2006 0824

Analysis Batch: 720-14063  
Prep Batch: 720-14003  
Units: mg/Kg

Instrument ID: HP DRO5  
Lab File ID: N/A  
Initial Weight/Volume: 30.05 g  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 720-14003/3-B  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/09/2006 2120  
Date Prepared: 10/09/2006 0824

Analysis Batch: 720-14063  
Prep Batch: 720-14003  
Units: mg/Kg

Instrument ID: HP DRO5  
Lab File ID: N/A  
Initial Weight/Volume: 30.10 g  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Diesel Range Organics [C10-C28]	65	66	50 - 130	2	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
o-Terphenyl	73	74			50 - 130		

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-13930

Method: 6010B  
Preparation: 3050B

Lab Sample ID: MB 720-13930/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0757  
Date Prepared: 10/05/2006 1459

Analysis Batch: 720-13966  
Prep Batch: 720-13930  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1 g  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
	ND		2.0
Antimony	ND		1.0
Arsenic	ND		1.0
Barium	ND		0.50
Beryllium	ND		0.50
Cadmium	ND		1.0
Chromium	ND		1.0
Cobalt	ND		1.0
Copper	ND		1.0
Lead	ND		1.0
Molybdenum	ND		1.0
Nickel	ND		2.0
Selenium	ND		1.0
Silver	ND		1.0
Thallium	ND		1.0
Vanadium	ND		1.0
Zinc	ND		1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-13930**

**Method: 6010B  
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-13930/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0801  
Date Prepared: 10/05/2006 1459

Analysis Batch: 720-13966  
Prep Batch: 720-13930  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1 g  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-13930/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0805  
Date Prepared: 10/05/2006 1459

Analysis Batch: 720-13966  
Prep Batch: 720-13930  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1 g  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Antimony	84	86	80 - 120	2	20		
Arsenic	102	100	80 - 120	2	20		
Barium	102	100	80 - 120	2	20		
Beryllium	100	99	80 - 120	2	20		
Cadmium	101	99	80 - 120	2	20		
Chromium	102	100	80 - 120	2	20		
Cobalt	102	100	80 - 120	2	20		
Copper	100	98	80 - 120	2	20		
Lead	101	100	80 - 120	0	20		
Molybdenum	100	98	80 - 120	2	20		
Nickel	102	101	80 - 120	1	20		
Selenium	101	99	80 - 120	2	20		
Silver	101	99	80 - 120	2	20		
Thallium	101	99	80 - 120	2	20		
Vanadium	101	99	80 - 120	2	20		
Zinc	101	99	80 - 120	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Quality Control Results**

Job Number: 720-5771-1

Client: Fugro West Incorporated

Method Blank - Batch: 720-13921

Method: 7471A  
Preparation: 7471A

Lab Sample ID: MB 720-13921/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0844  
Date Prepared: 10/05/2006 1323

Analysis Batch: 720-13956  
Prep Batch: 720-13921  
Units: mg/Kg

Instrument ID: FIMS 100  
Lab File ID: N/A  
Initial Weight/Volume: 1 g  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Mercury	ND		0.050

Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-13921

Method: 7471A  
Preparation: 7471A

LCS Lab Sample ID: LCS 720-13921/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0845  
Date Prepared: 10/05/2006 1323

Analysis Batch: 720-13956  
Prep Batch: 720-13921  
Units: mg/Kg

Instrument ID: FIMS 100  
Lab File ID: N/A  
Initial Weight/Volume: 1 g  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-13921/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0846  
Date Prepared: 10/05/2006 1323

Analysis Batch: 720-13956  
Prep Batch: 720-13921  
Units: mg/Kg

Instrument ID: FIMS 100  
Lab File ID: N/A  
Initial Weight/Volume: 1 g  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Mercury	105	104	85 - 115	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Job Number: 720-5771-1

Client: Fugro West Incorporated

## Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 720-13921

Method: 7471A  
Preparation: 7471A

MS Lab Sample ID: 720-5771-2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0848  
Date Prepared: 10/05/2006 1323

Analysis Batch: 720-13956  
Prep Batch: 720-13921

Instrument ID: FIMS 100  
Lab File ID: N/A  
Initial Weight/Volume: 1.04 g  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-5771-2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/06/2006 0850  
Date Prepared: 10/05/2006 1323

Analysis Batch: 720-13956  
Prep Batch: 720-13921

Instrument ID: FIMS 100  
Lab File ID: N/A  
Initial Weight/Volume: 1.02 g  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Mercury	123	102	85 - 115	14	20	F	

Calculations are performed before rounding to avoid round-off errors in calculated results.

720-5771  
(revised)

PAGE 1 OF 1

CHAIN OF CUSTODY

PROJECT NAME: Trapac-Berth 30 Gate Improvement  
 PROJECT NO.: 1803.001  
 PROJECT CONTACT: Obi Nzewi  
 SAMPLED BY: Obi Nzewi

LAB: STL  
 TURNAROUND: Standard (5 day)

ANALYSIS REQUESTED											
TYPE: BTEX, MTBE (0.15L 5000 PPM)											
TYPE: METALS (0.15L 5000 PPM)											
TYPE: PCBs (0.15L 5000 PPM)											
TYPE: SVOCs (0.15L 5000 PPM)											
TYPE: VOCs (0.15L 5000 PPM)											
TYPE: OTHER											
Heavy Metals											

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX			CONTAINERS				PRESERVATIVE				SAMPLING DATE				NOTES				
		WATER	SOIL	AIR	VOA	LITER	PINT	TUBE	Plastic tube	HCL	4-BO	WFO	ICE	OTHER	NONE	MONTH		DAY	YEAR	TIME	
	B-1 @ 1.5	X										X			1	0	0	2	0	6	
	B-1 @ 2.0	X										X			1	0	0	2	0	6	X
	B-1 @ 2.5	X										X			1	0	0	2	0	6	X
	B-2 @ 1.5	X										X			1	0	0	2	0	6	X
	B-2 @ 2.0	X										X			1	0	0	2	0	6	X
	B-2 @ 2.5	X										X			1	0	0	2	0	6	X
	B-3 @ 1.0	X										X			1	0	0	2	0	6	X
	B-4 @ 1.5	X										X			1	0	0	3	0	6	X
	B-4 @ 2.0	X										X			1	0	0	3	0	6	X
	B-7 @ 3.5	X										X			1	0	0	3	0	6	X
	B-7 @ 4.0	X										X			1	0	0	3	0	6	X
	B-7 @ 4.5	X										X			1	0	0	3	0	6	X
	B-7 @ 5.5	X										X			1	0	0	3	0	6	X

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES
RELINQUISHED BY: (Signature) <i>Obi Nzewi</i>	DATE/TIME 10/3/06 1317	RECEIVED BY: (Signature) <i>John Alexander</i>	DATE/TIME 10/3/06 1317	
RELINQUISHED BY: (Signature) <i>John Alexander</i>	DATE/TIME 10/3/06 1317	RECEIVED BY: (Signature) <i>John Alexander</i>	DATE/TIME 10/3/06 1317	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	



FUGRO WEST, INC.  
 1000 Broadway, Suite 200  
 Oakland, California 94607  
 Tel: 510.268.0461 Fax: 510.268.0137

## LOGIN SAMPLE RECEIPT CHECK LIST

Client: Fugro West Incorporated

Job Number: 720-5771-1

Login Number: 5771

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	NO TIMES and NO dates for 5 samples used 10/02/06 for B-1@1.5, OTHERS 10/3/06
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	