

FUGRO WEST, INC.

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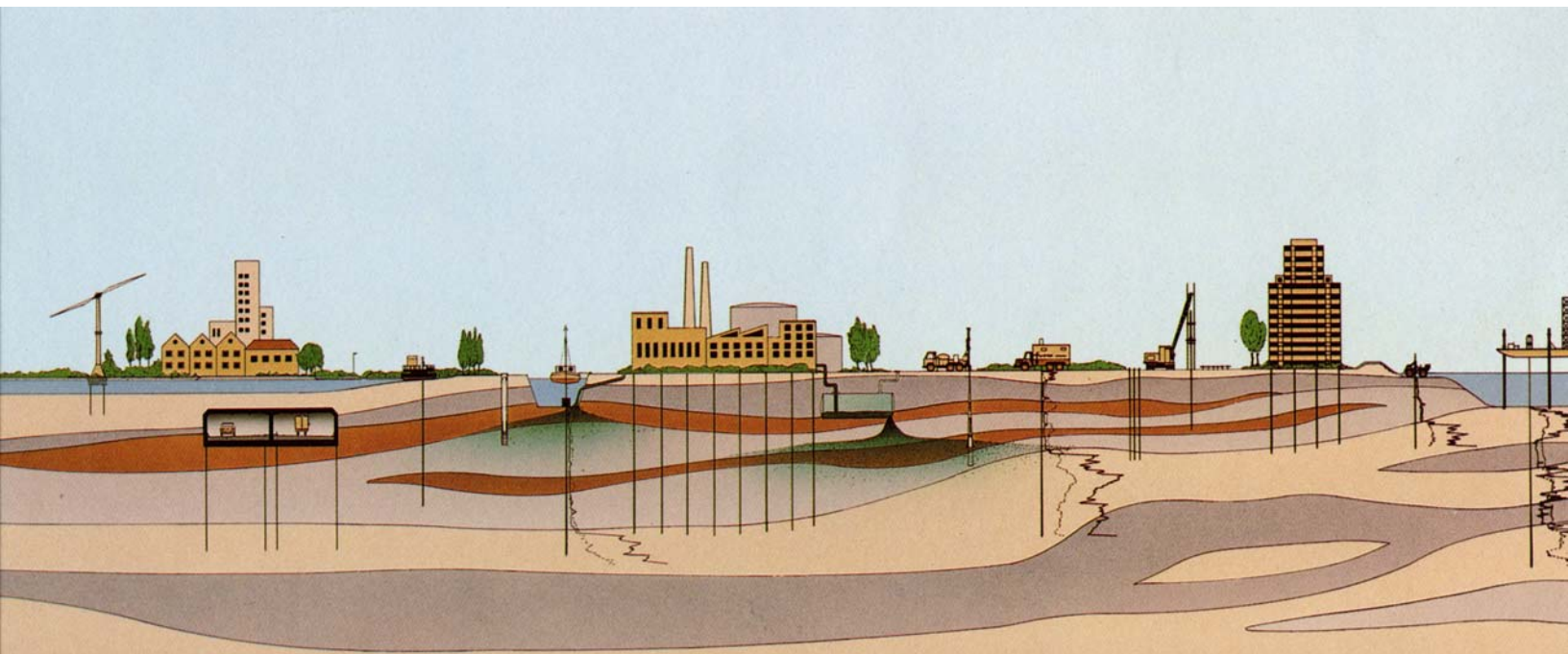


**SOIL-GAS INVESTIGATION REPORT
ARROW RENTALS PROPERTY
187 NORTH "L" STREET
LIVERMORE, CALIFORNIA**

Prepared for:
CITY OF LIVERMORE
REDEVELOPMENT AGENCY

DECEMBER 2005

Project No. 1121.009





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December 16, 2005
Project No. 1121.009

City of Livermore
Economic Development Department
1052 S. Livermore Avenue
Livermore, California 94550-4899

RECEIVED
By loprojectop at 8:44 am, Dec 21, 2005

Attention: Ms. Chris Davidson

Subject: Soil-Gas Investigation
Arrow Rentals Property
187 North L Street
Livermore, California


Dear Ms. Davidson:

Fugro West, Inc., (Fugro) presents this summary of the results of the soil-gas investigation for the Arrow Rentals facility in Livermore, California. We understand that the City of Livermore is facilitating the redevelopment of this property for high-density residential buildings with no underground parking or other subterranean structures. The purpose of the survey is to evaluate whether gasoline compounds are present in the soil-gas beneath the property and, if detected, to evaluate soil vapor concentrations represent a risk to future residential site users.

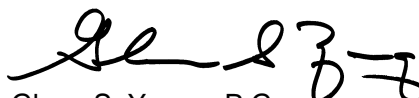
This investigation was completed in general conformance with Fugro's Work Plan dated November 1, 2005, which was approved by the Alameda County Environmental Health Services in its November 3, 2005 letter.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,
FUGRO WEST, INC.


Melissa L. Pleva
Staff Engineer and Geologist




Glenn S. Young, P.G.
Principal Geologist

MLP/GSY:rp

Copies Submitted: (2) Addressee
Mr. Jerry Wickham (Alameda County Health Care Services Agency, Environmental Health Services – 1)
Rita Sullins (Arrow Rentals –1)
Rebecca Sterbentz (Aquifer Sciences, Inc. –1)



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1.0 INTRODUCTION

This report was prepared to assist the City of Livermore Redevelopment Agency (Agency) with the planning, redevelopment, and construction activities at the Arrow Rentals property located at 187 North "L" Street in downtown, Livermore, California. We understand that the City of Livermore is facilitating the redevelopment of this property for high-density residential buildings with no underground parking or subterranean structures other than foundations and utilities. This investigation was completed in general conformance with Fugro's Work Plan dated November 1, 2005, which was approved by the Alameda County Environmental Health Services (County) in its November 3, 2005 letter.

Fugro conducted the investigation to evaluate soil-gas concentrations near the former fuel dispenser island and the underground storage tanks (USTs) as requested by County during our meeting on October 17, 2005, and subsequent letter dated November 3, 2005. The purpose of this study is to address County concerns regarding residual soil-gas concentrations near former gasoline source areas and evaluate whether residual soil-gas concentrations present a potential risk to future residential site users via indoor inhalation pathways.

2.0 BACKGROUND

Based on our review of available reports, a Mobile service station operated at the site between 1951 and 1968. Arrow Rentals purchased the property in 1972. In 1972, three 1,500-gallon USTs were removed from the site after they failed integrity tests. In 1985, one 1,000-gallon gasoline UST with vapor well was installed in the southeastern portion of the site. In 1986, the two other remaining USTs were removed. In June 1985, approximately 600 gallons of gasoline were accidentally dispensed into the vapor well. In January 1992, fuel pipelines and valve boxes located between the USTs and dispenser islands were removed by Mobile's contractor¹. We understand that the 1,000-gallon UST has also been removed from the site.

Several soil and groundwater investigations were conducted between 1988 and the present, including soil and groundwater investigations, a dual-phase extraction pilot test, and regular groundwater monitoring from several onsite and offsite shallow monitoring wells. Investigation reports suggest that the extent of soil and groundwater impact from the UST operations were limited to within 60 feet below ground surface (bgs) and up to 100 feet offsite. Groundwater monitoring reports indicate that no free-phase hydrocarbons have been observed since November 2001 when 0.14 feet of hydrocarbons were measured in Well W-1s, located approximately 40 feet downgradient of the vapor well. Results of those investigations were presented to the County, which has been providing regulatory oversight for this property, presumably dating back to 1984 or earlier.

On behalf of the property owner, Aquifer Science Inc. (ASI) has been providing environmental services. ASI has requested case closure on two occasions; April 26, 2005, and August 8, 2005. The County's letter dated August 16, 2005, denied ASI's request for case

¹ Additional Soil Exploration Report by Woodward-Clyde Consultants dated April 17, 1992



closure indicated a number of concerns about the site. Technical Comment No. 2 described a concern that previous soil-gas sampling may not have been collected directly within the areas of fuel discharges to soil and therefore may not represent the highest soil-gas concentrations that may be encountered at the Site. In our meeting on October 17, 2005, the County requested soil-gas sampling at four locations, including the former fuel dispenser island, and the three former UST areas. In the County's Work Plan approval letter dated November 3, 2005, the County approved the Work Plan but requested sampling from two additional soil-gas samples collected adjacent to boring B-G and the former valve box.

The following summarizes previous soil-gas studies as well as the findings from Fugro's soil-gas investigation.

3.0 PREVIOUS SOIL-GAS STUDIES

Two previous soil-gas studies have been completed at the site, including one by Tracer Research in 1990 and another by Gribi Associates in 1998. The following summarizes those previous findings.

3.1 TRACER RESEARCH SOIL-GAS STUDY

It appears that Tracer Research (Tracer) conducted a soil-gas study at the site in 1990. Although a full report was not available for our review, we presume that Tracer's study was similar to other Tracer Research studies observed by this author. If so, Tracer's soil-gas study was used to evaluate the lateral extent of gasoline impacts at the site by collecting soil-gas concentrations for chemical testing in the field. Typically, Tracer's work involved driving galvanized steel rods to selected depths in the vadose zone, purging 3 to 10 air volumes from the rods using a vacuum pump attached to the top of the rods using surgical tubing or equivalent, then inserting a syringe into the purge tubing to collect a soil-gas sample. That sample would then be inserted into a field Gas Chromatograph for chemical testing.

We understand that Tracer's soil-gas study involved 24 probes; 21 probes at the site and three at the adjacent property to the south (ASI 2005a). Samples were collected from approximately 8 to 10 feet bgs. Detected concentrations of total petroleum hydrocarbons as gasoline (TPHg) reportedly ranged from 200 ug/m³ to 2,000 ug/m³. Tracer detected no benzene, toluene, ethylbenzene, and xylenes (BTEX) constituents above laboratory reporting limits in any of the 24 samples tested. Comparing Tracer's findings to the Environmental Screening Levels (ESL) for residential indoor air established by the Regional Water Quality Control Board (RWQCB), analyses detected no TPHg or BTEX concentrations exceeding ESL criteria for indoor air. The results of Tracer's soil-gas testing are presented in Table 1 and the Tracer Research summary information is presented in Appendix A.

3.2 GRIBI ASSOCIATES SOIL-GAS STUDY

In 1998, Gribi Associates (Gribi) conducted a limited soil-gas study at the site (Gribi 1998). Gribi's study involved sampling from two probe locations; VS-1 inside the Arrow Rentals building and VS-2 approximately 80 feet downgradient of the 1,000-gallon UST. Gribi's samples



were collected over a period of 70 minutes each and from depths of 34 to 36 inches below grade. Gribi's analyses detected the following:

- Benzene concentrations ranging from 11 to 16 ug/m³;
- Toluene concentrations ranging from 24 to 46 ug/m³;
- Ethylbenzene concentrations ranging from 9.7 to 11 ug/m³; and
- Total xylene concentrations ranging from 53 to 66 ug/m³.

These concentrations are significantly lower than respective Risk-Based Screening Levels established by the RWQCB. Gribi concluded that no significant BTEX concentrations were detected in those soil-gas samples. The results of the Gribi soil-gas testing are presented in Table 2 because sampling protocols were similar to those used for this investigation. A copy of the Gribi Associates report is presented in Appendix B.

4.0 SCOPE OF WORK

On November 16, 2005, Fugro conducted a soil-gas investigation at the subject site. Prior to our fieldwork, Fugro conducted an underground utility survey at the proposed probe locations and procured drilling permits from Alameda County Zone 7 Water Agency. Fugro's work was completed in general conformance with our Work Plan dated November 1, 2005, and County requirements listed in their letter dated November 3, 2005, with the following exceptions:

- The sampling manifold at SG-6 was clogged at one of the "T" fittings. The T-fitting was replaced. However, the SUMA canister was compromised and, therefore, not used for this study. During our second sampling effort at SG-6, Fugro observed that our driller had incorrectly attached SG-2 to the sampling manifold and collected soil-gas from SG-6 for a period of 5 to 10 minutes. Fugro elected to consider this sample compromised but elected to test this sample anyway for QC purposes.
- Fugro was unable to collect a soil-gas sample from SG-5. The SUMA canister initially allocated for SG-5 was used to replace the compromised sample at SG-6.
- Fugro attempted to use the designated trip blank canister to collect sample SG-5. However, the Trip Blank was apparently under positive pressure and we were unable to extract a soil-gas sample from SG-5. Accordingly, we considered the Trip Blank canister to be compromised so that sample was not tested.

Excluding the exceptions listed above, Fugro collected soil-gas samples from five locations (SG-1 thorough SG-4 and SG-6) in accordance with our Work Plan dated November 1, 2005. Plate 1 shows the soil-gas sampling locations. SG-1 was positioned within the footprint of the former fuel dispenser. SG-2 was positioned within the footprint of the former 1,000-gallon gasoline UST. SG-3 was positioned within the footprint of the three former 1,500-gallon gasoline tanks. SG-4 was positioned adjacent to boring B-1 within the footprint of the 4,000-gallon and 6,000-gallon gasoline tanks. SG-6 was positioned adjacent to boring B-G per the County's request. Fugro collected a field duplicate sample (DUP-1) of SG-2. In



addition, the chemical laboratory analyzed a soil-gas samples that was a duplicate of SG-3 named SG-3 duplicate.

5.0 ANALYTICAL PROGRAM

A total of five soil-gas samples were submitted for chemical analysis, not including one field duplicate sample and one lab duplicate sample. Samples were submitted under chain-of-custody documentation to Air Toxics Inc (ATL), a state-certified air sampling laboratory, and were analyzed for some or all of the following:

- Total Petroleum Hydrocarbons as gasoline (TPHg), using EPA Method TO-3;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX), using EPA Method TO-15;
- Naphthalene, Methyl tert butyl ether (MTBE), by EPA Method TO-15;
- Isopropyl alcohol (2-propanol), by EPA Method TO-15, used as a leak check compound; and
- Oxygen, carbon dioxide, and methane by ASTM Method 1946.

The samples were also analyzed for concentrations of natural gases by ASTM D-1946 so that we could evaluate if the soil-gas was associated with the ambient air at the sample locations.

6.0 RESULTS OF CHEMICAL ANALYSES

The results of analyses on the five soil-gas samples is summarized Table 3. The laboratory reports are included in Appendix C.

Analyses detected no 2-propanol, the leak check compound used during field sampling. Analyses detected oxygen concentrations ranging from 16 to 20 percent, slightly less than the ambient oxygen concentration of 21 percent. Detected carbon dioxide concentrations ranged from 1.2 to 3.3 percent. In four of the five samples, detected carbon dioxide concentrations exceeded the ambient carbon dioxide concentration of .033 percent. Additionally, the relative percent difference (RPD) between SG-2 and DUP-1 ranged from 5.1 to 22.2 percent, and the RPD for the laboratory duplicate and SG-3 ranged from 0.0 to 6.5 percent. Because the RPDs indicate relatively consistent data, analyses detected no leak check compound, and the detected oxygen and carbon dioxide concentrations do not appear to reflect ambient air concentrations, it is Fugro's opinion that the soil-gas samples collected during our investigation are representative of actual soil-gas at the site. Therefore, results of analyses are considered valid for the purposes of comparison to ESL criteria.

Analyses detected TPHg concentrations ranging from 300 to 660 $\mu\text{g}/\text{m}^3$ in four of the five samples tested. Analyses detected no TPHg in SG-6 and no BTEX concentrations in any of the five samples tested. The detected TPHg are well below 26,000 $\mu\text{g}/\text{m}^3$, the ESLs established by the RWQCB for residential indoor air. The ESLs are concentrations below, which the RWQCB believes that no significant threat to human health and the environment exist.



7.0 CONCLUSIONS

Compared to current ESL criteria for a residential scenario, the previous soil-gas investigations detected no significant TPHg or BTEX concentrations. Furthermore, this soil-gas investigation detected no BTEX concentrations in the five soil-gas samples collected. However, analyses detected relatively low TPHg concentrations in soil-gas at the site. Fugro concludes that detected concentrations of TPHg are well below the ESLs established by the RWQCB, indicating that residual hydrocarbon concentrations in soil-gas do not pose a significant risk to residential or construction workers at the site. Based on these findings, it is Fugro's opinion that the site can be used for the high-density residential buildings being considered for the site. We recommend that copies of this report are made available to the prospective developer and their contractor. If redevelopment plans involve soil excavation from more than 5 feet below ground surface, additional site characterization may be required and special soil handling and/or offsite disposal at a permitted landfill may be warranted.

On behalf of the City of Livermore and Arrow Rentals, we request County concurrence that no remediation or other mitigation for impacted soil and soil-gas is required prior to or as part of the planned site redevelopment activities.

8.0 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 wherein to be factual, but no guarantee is made or implied. This report has been prepared for the benefit of the City of Livermore Redevelopment Agency.

9.0 REFERENCES

- ASI, 2005a. Aquifer Science, Inc., *Request for Case Closure, Arrow Rentals, 187 North L Street, Livermore, California*, August 8.
- ASI 2005b. Aquifer Science, Inc., *Request for Case Closure, Arrow Rentals, 187 North L Street, Livermore, California*, April 26.
- Fugro West, Inc. (2005), *Sampling and Analysis Plan, Petroleum Hydrocarbon Properties, Livermore, California*, August 8.
- Gribi (1998), *Report of Soil Vapor Sampling. Arrow Rentals UST Site*, November 6.
- Woodward-Clyde Consultants 1991, *Soil and Groundwater Characterization Study, 197 North L Street, Livermore, California*, June 12.
- San Francisco Bay Regional Water Quality Control Board 2005. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater-Interim Final – February.



TABLES

TABLE 1
RESULTS OF TRACER RESEARCH SOIL-GAS INVESTIGATION
ARROW RENTALS PROPERTY
187 NORTH "L" STREET
LIVERMORE, CALIFORNIA
JOB NO. 1121.009

Analyte	Units	T-1 ³	T-2 ³	T-3 ³	T-4 ³	T-5 ³	T-6 ³	T-7 ³	T-8 ³	T-9 ³	T-10 ³	T-11 ³	T-12 ³	ESLs
														Residential (ug/m ³)
	Depth (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
	Date	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	
TPHg	ug/m ³	400	1000	2000	<100	<100	600	<100	<100	<100	<100	700	<50	26,000
Benzene	ug/m ³	<40	<80	<40	<80	<80	<40	<80	<80	<80	<80	<80	<40	85
Toluene	ug/m ³	<50	<100	<50	<100	<100	<50	<100	<100	<100	<100	<100	<50	63,000
Ethylbenzene	ug/m ³	<50	<100	<50	<100	<100	<50	<100	<100	<100	<100	<100	<60	420,000
Xylenes	ug/m ³	<70	<100	<70	<100	<100	<70	<100	<100	<100	<100	<100	<60	15,000
MTBE	ug/m ³	--	--	--	--	--	--	--	--	--	--	--	--	9,400
Napthalene	ug/m ³	--	--	--	--	--	--	--	--	--	--	--	--	71
Oxygen	%	--	--	--	--	--	--	--	--	--	--	--	--	NE
Methane	%	--	--	--	--	--	--	--	--	--	--	--	--	NE
Carbon Dioxide	%	--	--	--	--	--	--	--	--	--	--	--	--	NE
Leak Check														
2-Propanol	ug/m ³	--	--	--	--	--	--	--	--	--	--	--	--	NA

Notes

¹ = Collected by Fugro West, Inc.(November 16, 2005)

-- = Not tested

Detected Concentration shown in **bold**

NA = Not applicable

NE= not established

ESL= Environmental Screening Levels, for Evaluation of Potential Indoor-Air Impacts Table E-2 Established by The Regional Water Quality Control Board and updated in February 2005.



TABLE 1
RESULTS OF TRACER RESEARCH SOIL-GAS INVESTIGATION
ARROW RENTALS PROPERTY
187 NORTH "L" STREET
LIVERMORE, CALIFORNIA
JOB NO. 1121.009

Analyte	T-13 ³	T-14 ³	T-15 ³	T-16 ³	T-17 ³	T-18 ³	T-19 ³	T-20 ³	T-21 ³	T-22 ³	T-23 ³	T-24 ³	ESLs
	10	10	8	10	10	10	10	10	10	10	10	10	Residential (ug/m ³)
	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	Aug-90	
TPHg	<50	<50	1000	<50	200	<50	<50	500	800	400	400	200	26,000
Benzene	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	85
Toluene	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	63,000
Ethylbenzene	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	420,000
Xylenes	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	15,000
MTBE	--	--	--	--	--	--	--	--	--	--	--	--	9,400
Napthalene	--	--	--	--	--	--	--	--	--	--	--	--	71
Oxygen	--	--	--	--	--	--	--	--	--	--	--	--	NE
Methane	--	--	--	--	--	--	--	--	--	--	--	--	NE
Carbon Dioxide	--	--	--	--	--	--	--	--	--	--	--	--	NE
Leak Check													
2-Propanol	--	--	--	--	--	--	--	--	--	--	--	--	NA

Notes

¹ = Collected by Fugro West, Inc.(November 16, 2005)

-- = Not tested

Detected Concentration shown in **bold**

NA = Not applicable

NE= not established

ESL= Environmental Screening Levels, for Evaluation of Potential Indoor-Air Impacts Table E-2 Established by The Regional Water Quality Control Board and updated in February 2005.



TABLE 2
SUMMARY OF SOIL-GAS INVESTIGATION - ARROW RENTALS PROPERTY
187 NORTH "L" STREET
LIVERMORE, CALIFORNIA
JOB NO. 1121.009

Analyte	Units	SG-1 ¹	SG-2 ¹	SG-3 ¹	SG-4 ¹	SG-6 ¹	DUP-1 ¹	SG-3 Duplicate ¹	VS-1 ²	VS-2 ²	VS-2 ² (dup)	ESLs
												Residential (ug/m ³)
	Depth (ft)	4	4	4	4	4	4	4	3	3	3	
	Date	11.16.05	11.16.05	11.16.05	11.16.05	11.16.05	11.16.05	11.16.05	8.27.98	8.27.98	8.27.98	
TPHg	ug/m ³	660	540	300	360	<180	640	320	--	--	--	26,000
Benzene	ug/m ³	<27	<31	<26	<25	<28	<26	<26	11	16	16	85
Toluene	ug/m ³	<32	<37	<31	<30	<33	<30	<31	46	24	25	63,000
Ethylbenzene	ug/m ³	<37	<42	<36	<34	<38	<35	<36	9.7	9.7	11	420,000
Xylenes	ug/m ³	<74	<84	<72	<68	<76	<70	<72	53	56	66	15,000
MTBE	ug/m ³	<31	<35	<30	<28	<32	<29	<30	--	--	--	9,400
Napthalene	ug/m ³	<180	<200	<170	<160	<180	<170	<170	--	--	--	71
Oxygen	%	20	19	17	16	17	20	17	--	--	--	NE
Methane	%	0.0012	0.00081	0.0007	0.00058	<0.00018	0.00095	0.00072	--	--	--	NE
Carbon Dioxide	%	1.4	1.5	2.4	3.3	3.0	1.2	2.4	--	--	--	NE
Leak Check												
2-Propanol	ug/m ³	<84	<96	<81	<78	<86	<79	<81	--	--	--	NA

Notes

¹ = Collected by Fugro West, Inc.(November 16, 2005)

² = Collected by Gribi Associates (November 1998)

-- = Not tested

Detected Concentration shown in **bold**

NA = Not applicable

NE= not established

ESL= Environmental Screening Levels, for Evaluation of Potential Indoor-Air Impacts Table E-2 Established by The Regional Water Quality Control Board and updated in February 2005.



TABLE 3
QUALITY CONTROL SUMMARY
ARROW RENTALS PROPERTY
187 NORTH "L" STREET
LIVERMORE CALIFORNIA
JOB NO. 1121.009

Sample	SG-2 (ug/m ³)	DUP-1* (ug/m ³)	RPD (%)	SG-3 (ug/m ³)	SG-3 Duplicate** (ug/m ³)	RPD (%)
TPHg	540	640	16.9	300	320	6.5
Oxygen	19	20	5.1	17	17	0.0
Methane	0.00081	0.00095	15.9	0.0007	0.00072	2.8
Carbon dioxide	1.5	1.2	22.2	2.4	2.4	0.0
QC Goal			20			

RPD = Relative Percent Difference

* = Field duplicate

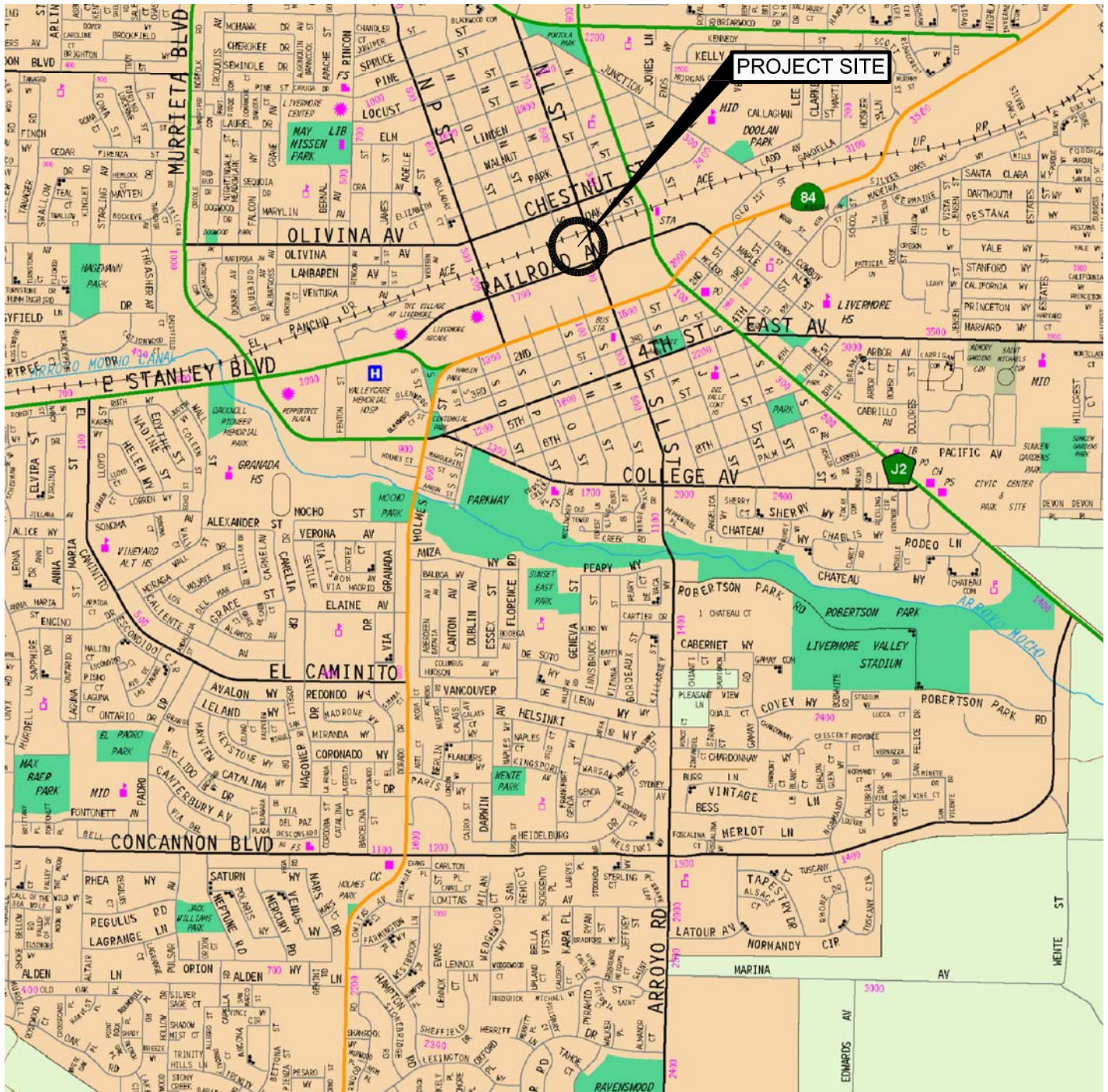
** - Laboratory duplicate



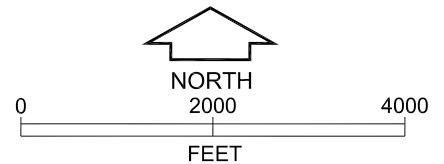
PLATES



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SOURCE: This Site Vicinity Map is based on The Thomas Guide Digital Edition 2003, Bay Area Metro, Alameda, Contra Costa, Marin, San Francisco, San Mateo, and Santa Clara Counties.



VICINITY MAP
 Soil-Gas Investigation
 Arrow Rentals Property
 187 N. "L" Street
 Livermore, California



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SOURCE: This Site Plan was based on aerial photo, May 2001, provided by City of Livermore.

NOTE: Former dispenser and UST locations based on site map from Aquifer Sciences Inc. dated August 8, 2005.

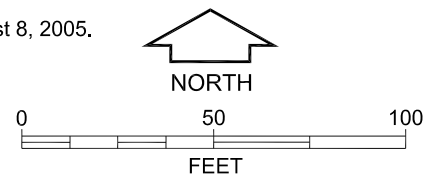
LEGEND

● 24 Soil-Gas Probe (Tracer, 1990)

□ Property Boundary

TRACER PROBE LOCATIONS

Soil-Gas Investigation
 Arrow Rentals Property
 187 N. "L" Street
 Livermore, California






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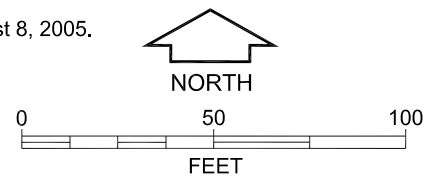


SOURCE: This Site Plan was based on aerial photo, May 2001, provided by City of Livermore.

NOTE: Former dispenser and UST locations based on site map from Aquifer Sciences Inc. dated August 8, 2005.

- LEGEND**
-  Soil-Gas Probe
 -  Soil-Gas Probe (Gribi Associates, 1998)
 -  Property Boundary

SITE PLAN
 Soil-Gas Investigation
 Arrow Rentals Property
 187 N. "L" Street
 Livermore, California



**APPENDIX A
TRACER RESEARCH DATA**

AQUIFER SCIENCES, INC.

- soil gas

REQUEST FOR CASE CLOSURE
187 NORTH L STREET
LIVERMORE, CALIFORNIA

Prepared for

Don-Sul, Inc.
187 North L Street
Livermore, California 94550

by

Aquifer Sciences, Inc.
3680-A Mt. Diablo Blvd.
Lafayette, California 94549

August 8, 2005

Table 2. SUMMARY OF ANALYTICAL DATA FOR SOIL VAPOR
187 North L Street, Livermore, California

Sampling Location	Depth (feet)	TPH-gasoline ($\mu\text{g}/\text{m}^3$)	Benzene ($\mu\text{g}/\text{m}^3$)	Toluene ($\mu\text{g}/\text{m}^3$)	Ethylbenzene ($\mu\text{g}/\text{m}^3$)	Total Xylenes ($\mu\text{g}/\text{m}^3$)
SG1-10	10	400	< 40	< 50	< 50	< 70
SG2-10	10	1,000	< 80	< 100	< 100	< 100
SG3-10	10	2,000	< 40	< 50	< 50	< 70
SG4-10	10	< 100	< 80	< 100	< 100	< 100
SG5-10	10	< 100	< 80	< 100	< 100	< 100
SG6-10	10	600	< 40	< 50	< 50	< 70
SG7-10	10	< 100	< 80	< 100	< 100	< 100
SG8-10	10	< 100	< 80	< 100	< 100	< 100
SG9-10	10	< 100	< 80	< 100	< 100	< 100
SG10-10	10	< 100	< 80	< 100	< 100	< 100
SG11-10	10	700	< 80	< 100	< 100	< 100
SG12-10	10	< 50	< 40	< 50	< 60	< 60
SG13-10	10	< 50	< 40	< 50	< 60	< 60
SG14-10	10	< 50	< 40	< 50	< 60	< 60
SG15-8	8	1,000	< 40	< 50	< 60	< 60
SG16-10	10	< 50	< 40	< 50	< 60	< 60
SG17-10	10	200	< 40	< 50	< 60	< 60
SG18-10	10	< 50	< 40	< 50	< 60	< 60
SG19-10	10	< 50	< 40	< 50	< 60	< 60
SG20-10	10	500	< 40	< 50	< 60	< 60
SG21-10	10	800	< 40	< 50	< 60	< 60
SG22-10	10	400	< 40	< 50	< 60	< 60
SG23-10	10	400	< 40	< 50	< 60	< 60
SG24-10	10	200	< 40	< 50	< 60	< 60
VS-1	3	NA	11	46	9.7	53
VS-2	3	NA	16	24	9.7	56
VS-2 (dup)	3	NA	16	25	11	66
CIESL	--	72,000	290	180,000	1,200,000	410,000
RESL	--	26,000	85	63,000	420,000	150,000

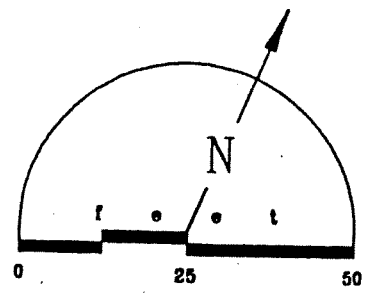
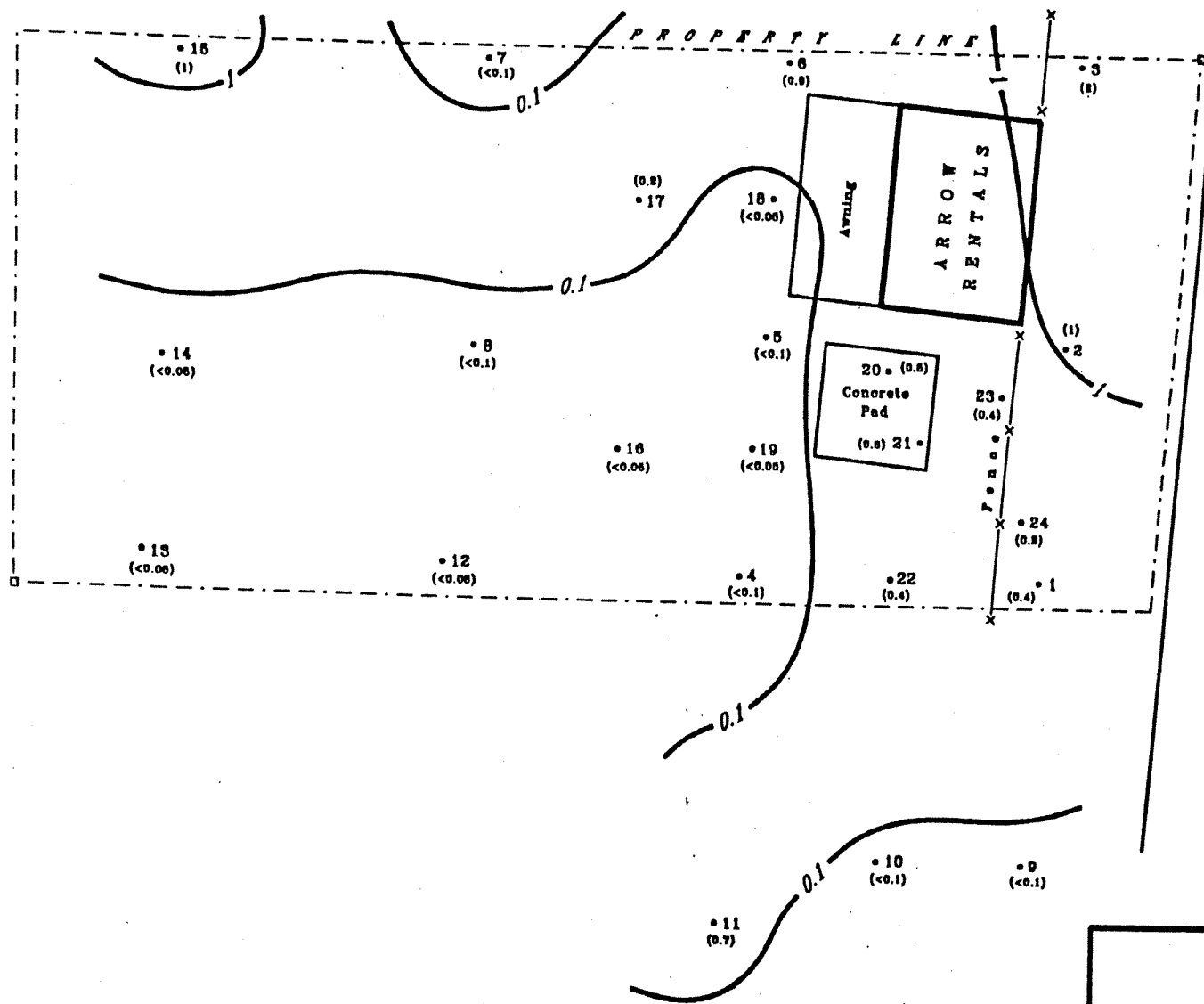
$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline or total hydrocarbons (THC)

(dup) = duplicate sample

CIESL = Commercial/Industrial Environmental Screening Level, Table E Shallow Soil Gas, RWQCB, February 2005

RESL = Residential Environmental Screening Level, Table E Shallow Soil Gas, RWQCB, February 2005



EXPLANATION

- 7 Soil Gas Sampling Location
- (<0.1) Soil Gas Sample Value (µg/l)
- ~ 0.1 ~ Isoconcentration Line (µg/l)

ARROW RENTALS
 187 NORTH "L" STREET
 LIVERMORE, CALIFORNIA

TOTAL HYDROCARBONS (THC)

AUGUST 1990

Figure 2

APPENDIX B
GRIBI ASSOCIATES REPORT DATED NOVEMBER 1998

November 4, 1998

UST Local Oversight Program
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Attention: Ms. Eva Chu

Subject: Report of Soil Vapor Sampling
Arrow Rentals UST Site
187 North L Street
Livermore, California
Alameda County Site ID: 4132
GA Project No.: 143-01-01

Ladies and Gentlemen:

This report documents recent soil vapor sampling at the Arrow Rentals underground storage tank (UST) site located at 187 North L Street in Livermore, California (see Figure 1 and Figure 2). Sampling activities included collecting soil vapor samples at two locations downgradient (west) from former project site USTs. The purpose of these activities was to assess potential risk associated with possible hydrocarbon vapor inhalation at the site.

The services provided under this contract as described in this report include professional opinions and judgments based on data collected. These services have been provided according to generally accepted environmental protocol.

DESCRIPTION OF FIELD ACTIVITIES

Soil vapor sampling activities were conducted by Mr. Jim Gribi on Thursday, August 27, 1998.

Location of Soil Vapor Probes

Locations of the soil vapor probes, VS-1 and VS-2, are shown on Figure 2. Vapor probe VS-1 was sited inside the Arrow Rentals building, and VS-2 was sited immediately west from the Arrow Rentals building, between former project site USTs and the project site building. These vapor probes were sited in order to assess possible hydrocarbon vapor migration into the Arrow Rentals building.

Soil Vapor Sampling

The two soil vapor samples, VS-1 and VS-2, were each collected using the following method:

- An AMS Gas Vapor Probe was driven 36-1/2 inches into subsurface soils, and then retracted to 34 inches, exposing approximately two inches of screen on the bottom of the vapor probe to allow for vapor sampling
- The vapor probe was purged and a vapor sample was collected using a six-liter, laboratory clean-certified Summa Canister™ supplied by Air Toxics, Ltd. The Summa Canister was evacuated at the laboratory to about 29 inches of mercury (Hg) vacuum pressure, and, during sampling, the vacuum pressure was lowered to about six inches Hg vacuum as soil vapors entered the Summa Canister. To insure collection of an adequate volume of soil vapors in the six-liter Summa Canister, it is necessary to reduce the vacuum pressure during sampling to at least eight inches Hg (a higher final vacuum pressure indicates less vapor intake, and thus would require dilution during laboratory analysis to make a six-liter sample, resulting in a higher detection limit for the sample analysis). A flow controller calibrated and supplied by the analytical laboratory was used to achieve this reduction in pressure over at least one hour of sampling. Field sampling logs for the two vapor samples are contained in Appendix A.
- The two Summa Canister vapor samples were transported to the analytical laboratory under formal chain-of-custody.

Laboratory Analysis of Soil and Soil Vapor Samples

The two soil vapor samples were analyzed for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX by EPA Method TO-14). This method provides for a benzene detection level of at least 0.13 parts per billion by volume (ppbv). Vapor samples were analyzed by Air Toxics, Ltd., a California-certified analytical laboratory.

RESULTS OF INVESTIGATION

Results of Laboratory Analyses

Soil vapor analytical results are summarized in Table 1. Laboratory data reports for soil samples and soil vapor samples are contained in Appendix B.

<i>Sample ID</i>	<i>Sample Depth</i>	<i>Constituent (ppbv)</i>			
		<i>B</i>	<i>T</i>	<i>E</i>	<i>X</i>
VS-1	3.0 ft	3.4	12	2.2	12.0
VS-2	3.0 ft	4.9	6.3	2.2	12.8
Vapor RSBL		11.6	27,000	69,000	505,000

Ppbv - Parts per billion by volume.

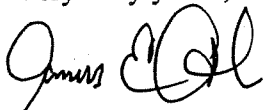
Vapor RSBL - Risk-Based Screening Levels for vapors in soil at three feet below ground surface, with no building slab (residential receptors), San Francisco Bay Regional Water Quality Control Board. Concentrations for benzene are based on carcinogenic risk of 10^{-6} ; and concentrations for toluene, ethylbenzene, and xylenes are based on non-carcinogenic chronic hazard quotient of 1.0.

4.0 CONCLUSIONS

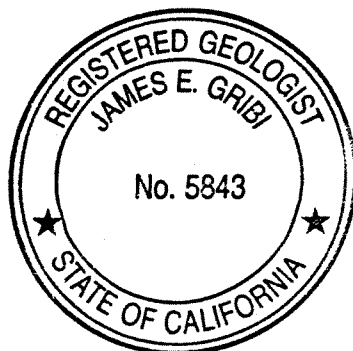
Results of this investigation clearly indicate that significant concentrations of hydrocarbon vapors are not present in soils at shallow depths beneath the Arrow Rentals building. The soil vapor analytical results from vapor samples VS-1 and VS-2 are much lower than the Risk-Based Screening Levels (RBSLs) established by the San Francisco Bay Regional Water Quality Control Board, clearly showing no significant risk of indoor benzene vapor exposure in the Arrow Rentals building.

We appreciate the opportunity to present this report for your review. Please call if you have questions or require additional information.

Very truly yours,



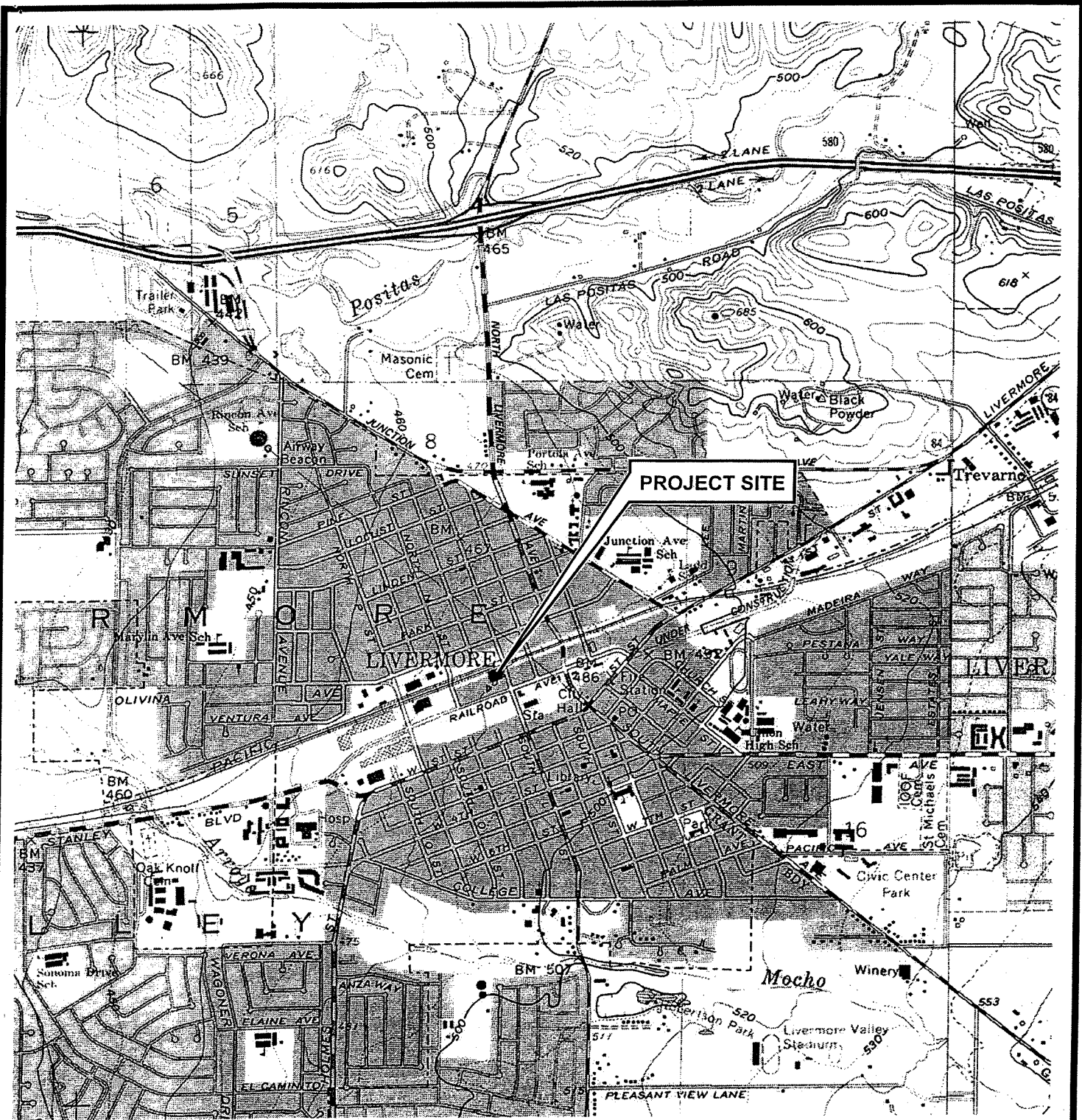
James E. Gribi
Registered Geologist
California No. 5843



JEG/ct
Enclosures

c Rita Sullins, Arrow Rentals

FIGURES



TOPOGRAPHY FROM USGS LIVERMORE, CALIFORNIA
7.5-MINUTE QUADRANGLE MAPS, (TOPO! 1997).

DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE: 1:24,000
PROJECT NO: 143-01-01	

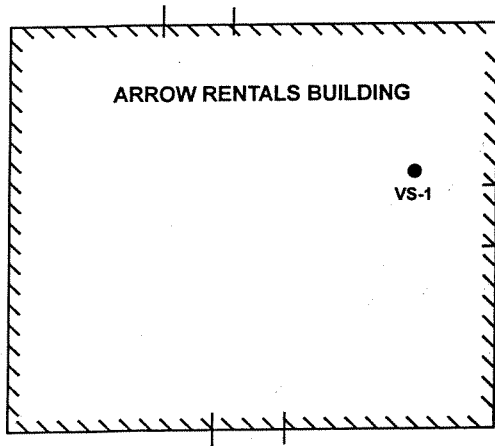
SITE VICINITY MAP

ARROW RENTALS UST SITE
187 NORTH L STREET
LIVERMORE, CALIFORNIA

DATE: 11/03/98	FIGURE: 1
----------------	-----------

GRIBI Associates

NORTH L STREET



VS-1

W-1s

FORMER USTS

UST

VS-2

FORMER USTS

W-Bs

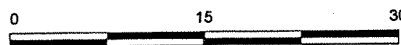
LEGEND



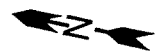
- GROUNDWATER MONITORING WELL



- VAPOR SAMPLE LOCATION



APPROX. SCALE IN FEET



DESIGNED BY:

CHECKED BY:

SITE PLAN

DATE: 11/09/98

FIGURE: 2

DRAWN BY: JG

SCALE:

187 NORTH L STREET UST SITE
LIVERMORE, CALIFORNIA

PROJECT NO: 143-01-01

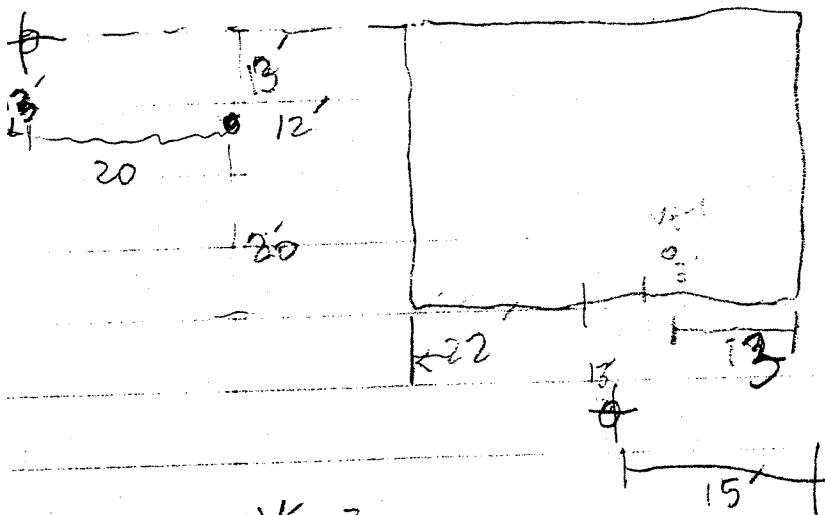
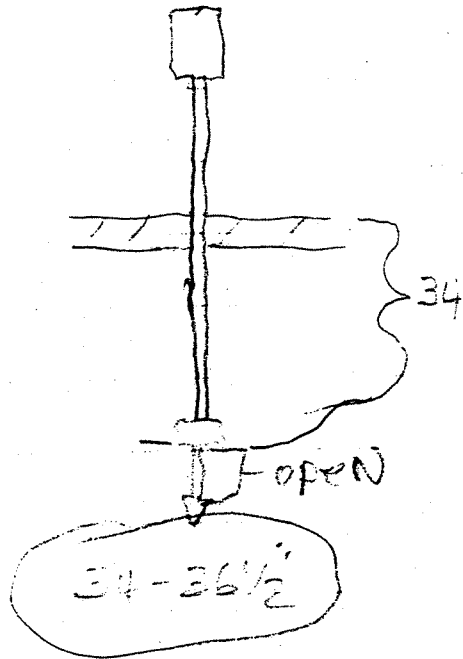
GRIBI Associates

APPENDIX A

VAPOR SAMPLING FIELD LOGS

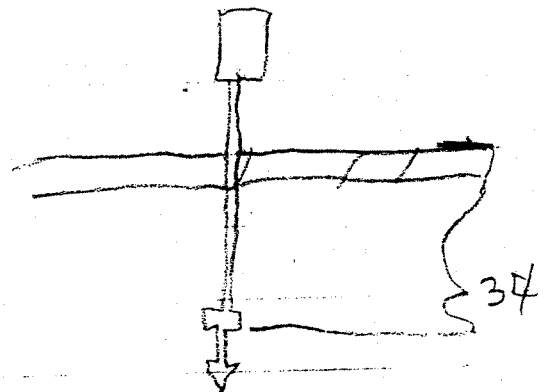
VS 1 - INSIDE bldg

11:22	22" Hg
11:42	16
12:02	11
12:22	6.5
12:32	4.5



VS-2

12:43	28" Hg
12:58	23
13:13	18
13:28	14
13:43	10
13:53	8.0



34-36 1/2

APPENDIX B

LABORATORY DATA REPORT

@AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9808423

Work Order Summary

CLIENT: Mr. Jim Gribi
Gribi and Associates
884 Vintage Ave.
Suisun, CA 94585

BILL TO: Same

PHONE: 707-864-5543
FAX: 707-864-5543
DATE RECEIVED: 8/28/98
DATE COMPLETED: 9/28/98

P.O. # NR
PROJECT # Sullins Site

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	VS-1	TO-14-S	6.5 "Hg
02A	VS-2	TO-14-S	10.0 "Hg
02AA	VS-2 Duplicate	TO-14-S	10.0 "Hg
03A	Method Spike	TO-14-S	NA
04A	Lab Blank	TO-14-S	NA
04B	Lab Blank	TO-14-S	NA

CERTIFIED BY

Anda S. Fumare

Laboratory Director

DATE:

9/29/98

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME : VS-1

ID#: 9808423-01A

EPA METHOD TO-14 GC/MS SIM

File Name:	j092418	Date of Collection: 8/27/98
Dil. Factor:	1.71	Date of Analysis: 9/24/98

Compound	Det. Limit (ppbv)	Amount (ppbv)
Benzene	0.086	3.4
Toluene	0.086	12
Ethyl Benzene	0.086	2.2
m,p-Xylene	0.086	8.8
o-Xylene	0.086	3.2

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Octafluorotoluene	100	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	111	70-130

AIR TOXICS LTD.

SAMPLE NAME : VS-2

ID#: 9808423-02A

EPA METHOD TO-14 GC/MS SIM

File Name:	j092509	Date of Collection:	8/27/98
Dil. Factor:	2.65	Date of Analysis:	9/25/98

Compound	Det. Limit (ppbv)	Amount (ppbv)
Benzene	0.13	4.9
Toluene	0.13	6.3
Ethyl Benzene	0.13	2.2
m,p-Xylene	0.13	9.3
o-Xylene	0.13	3.5

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Octafluorotoluene	104	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	112	70-130

AIR TOXICS LTD.

SAMPLE NAME : VS-2 Duplicate

ID#: 9808423-02AA

EPA METHOD TO-14 GC/MS SIM

File Name:	j092510	Date of Collection: 8/27/98
Dil. Factor:	2.65	Date of Analysis: 9/25/98

Compound	Det. Limit (ppbv)	Amount (ppbv)
Benzene	0.13	5.0
Toluene	0.13	6.5
Ethyl Benzene	0.13	2.5
m,p-Xylene	0.13	11
o-Xylene	0.13	4.0

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Octafluorotoluene	103	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	104	70-130

AIR TOXICS LTD.

SAMPLE NAME : Method Spike

ID#: 9808423-03A

EPA METHOD TO-14 GC/MS SIM

File Name:	j092502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/25/98

Compound	Det. Limit (ppbv)	% Recovery
Benzene	0.050	112
Toluene	0.050	123
Ethyl Benzene	0.050	109
m,p-Xylene	0.050	109
o-Xylene	0.050	110

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	102	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	103	70-130

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9808423-04A

EPA METHOD TO-14 GC/MS SIM

File Name:	j092417	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/98

Compound	Det. Limit (ppbv)	Amount (ppbv)
Benzene	0.050	Not Detected
Toluene	0.050	Not Detected
Ethyl Benzene	0.050	Not Detected
m,p-Xylene	0.050	Not Detected
o-Xylene	0.050	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9808423-04B

EPA METHOD TO-14 GC/MS SIM

File Name:	j092508	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/25/98

Compound	Det. Limit (ppbv)	Amount (ppbv)
Benzene	0.050	Not Detected
Toluene	0.050	Not Detected
Ethyl Benzene	0.050	Not Detected
m,p-Xylene	0.050	Not Detected
o-Xylene	0.050	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	97	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	91	70-130



AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

No 016412

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Contact Person <u>JIM GRIBI</u> Company <u>GRIBI ASSOCIATES</u> Address <u>884 VINTAGE</u> City <u>SUISUN</u> State <u>CA</u> Zip <u>94585</u> Phone <u>707/866-5542</u> FAX <u>Sam</u> Collected By: Signature <u>[Signature]</u>	Project info: P.O. # _____ Project # _____ Project Name _____	Turn Around Time: <input type="checkbox"/> Normal <input type="checkbox"/> Rush _____ Specify _____
--	--	--

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum		
				Initial	Final	Receipt
012	VS-1	8/27 12:32	BTEX by TO-14	22	4.5	6.5
012	VS-1	8/27 12:32	BTEX by TO-14	28	8.0	10.0
022	VS-2	8/27 13:53	" " "			

Relinquished By: (Signature) <u>[Signature]</u> Date/Time <u>8/27/98 16:05</u>	Print Name <u>Jim Gribi</u>
Relinquished By: (Signature) <u>[Signature]</u> Date/Time <u>8/27/98</u>	Received By: (Signature) <u>[Signature]</u> Date/Time <u>8/27/98</u>
Relinquished By: (Signature) _____ Date/Time _____	Received By: (Signature) _____ Date/Time _____

Notes: Check Flow gauges on Flow Controllers.

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Date/Time	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>CA Overnight</u>	<u>NA</u>	<u>[Signature]</u>	<u>8/27/98 15:01</u>	<u>Ambil</u>	<u>Good</u>	Yes No <u>None</u> N/A	<u>9808423</u>

APPENDIX C
LABORATORY REPORTS FOR FUGRO INVESTIGATION



AIR TOXICS LTD.

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**

WORK ORDER #: 0511334C

Work Order Summary

CLIENT: Ms. Melissa Pleva
Fugro West Inc.
1000 Broadway
Suite 200
Oakland, CA 94607

BILL TO: Ms. Melissa Pleva
Fugro West Inc.
1000 Broadway
Suite 200
Oakland, CA 94607

PHONE: 510-267-4459

P.O. # 1121.009

FAX:

PROJECT # 1121.009 Arrow Rentals

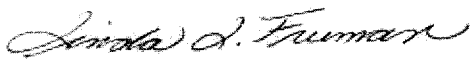
DATE RECEIVED: 11/17/2005

CONTACT: Kyle Vagadori

DATE COMPLETED: 11/22/2005

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	DUP-1	Modified ASTM D-1946	5.0 "Hg
02A	SG-1	Modified ASTM D-1946	6.5 "Hg
03A	SG-2	Modified ASTM D-1946	9.5 "Hg
04A	SG-4	Modified ASTM D-1946	4.5 "Hg
05A	SG-6	Modified ASTM D-1946	7.0 "Hg
06A	SG-3	Modified ASTM D-1946	5.5 "Hg
06AA	SG-3 Duplicate	Modified ASTM D-1946	5.5 "Hg
07A(cancelled)	Trip Blank	Modified ASTM D-1946	NA
08A	Lab Blank	Modified ASTM D-1946	NA
09A	LCS	Modified ASTM D-1946	NA
09B	LCS	Modified ASTM D-1946	NA

CERTIFIED BY:



Laboratory Director

DATE: 11/22/05

Certification numbers: AR DEQ - 03-084-0, 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: 07/01/05, Expiration date: 06/30/06

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

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Fugro West Inc.
Workorder# 0511334C

Seven 6 Liter Summa Canister samples were received on November 17, 2005. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

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 30% RPD for detections > 5 X's the RL.

Receiving Notes

Sample Trip Blank was cancelled per client's request.

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.

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.

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

Client Sample ID: DUP-1

Lab ID#: 0511334C-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	20
Methane	0.00016	0.00095
Carbon Dioxide	0.016	1.2

Client Sample ID: SG-1

Lab ID#: 0511334C-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	20
Methane	0.00017	0.0012
Carbon Dioxide	0.017	1.4

Client Sample ID: SG-2

Lab ID#: 0511334C-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.20	19
Methane	0.00020	0.00081
Carbon Dioxide	0.020	1.5

Client Sample ID: SG-4

Lab ID#: 0511334C-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Methane	0.00016	0.00058
Carbon Dioxide	0.016	3.3

Client Sample ID: SG-6

Lab ID#: 0511334C-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	17
Carbon Dioxide	0.018	3.0

Client Sample ID: SG-3

Lab ID#: 0511334C-06A

Client Sample ID: SG-3

Lab ID#: 0511334C-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Methane	0.00016	0.00070
Carbon Dioxide	0.016	2.4

Client Sample ID: SG-3 Duplicate

Lab ID#: 0511334C-06AA

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Methane	0.00016	0.00072
Carbon Dioxide	0.016	2.4

AIR TOXICS LTD.

Client Sample ID: DUP-1

Lab ID#: 0511334C-01A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112209	Date of Collection:	11/16/05
Dil. Factor:	1.61	Date of Analysis:	11/22/05 12:12 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	20
Methane	0.00016	0.00095
Carbon Dioxide	0.016	1.2

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: SG-1

Lab ID#: 0511334C-02A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112210	Date of Collection:	11/16/05
Dil. Factor:	1.71	Date of Analysis:	11/22/05 12:36 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	20
Methane	0.00017	0.0012
Carbon Dioxide	0.017	1.4

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: SG-2

Lab ID#: 0511334C-03A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112211	Date of Collection:	11/16/05
Dil. Factor:	1.96	Date of Analysis:	11/22/05 12:59 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.20	19
Methane	0.00020	0.00081
Carbon Dioxide	0.020	1.5

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: SG-4

Lab ID#: 0511334C-04A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112212	Date of Collection: 11/16/05
Dil. Factor:	1.58	Date of Analysis: 11/22/05 01:22 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Methane	0.00016	0.00058
Carbon Dioxide	0.016	3.3

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: SG-6

Lab ID#: 0511334C-05A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112213	Date of Collection:	11/16/05
Dil. Factor:	1.75	Date of Analysis:	11/22/05 01:44 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	17
Methane	0.00018	Not Detected
Carbon Dioxide	0.018	3.0

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: SG-3

Lab ID#: 0511334C-06A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112214	Date of Collection:	11/16/05
Dil. Factor:	1.64	Date of Analysis:	11/22/05 02:06 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Methane	0.00016	0.00070
Carbon Dioxide	0.016	2.4

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: SG-3 Duplicate

Lab ID#: 0511334C-06AA

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112215	Date of Collection:	11/16/05
Dil. Factor:	1.64	Date of Analysis:	11/22/05 02:28 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Methane	0.00016	0.00072
Carbon Dioxide	0.016	2.4

Container Type: 6 Liter Summa Canister

AIR TOXICS LTD.

Client Sample ID: Lab Blank

Lab ID#: 0511334C-08A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112207	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/05 11:23 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected

Container Type: NA - Not Applicable

AIR TOXICS LTD.

Client Sample ID: LCS

Lab ID#: 0511334C-09A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112205b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/05 09:57 AM

Compound	%Recovery
Oxygen	102
Carbon Dioxide	102

Container Type: NA - Not Applicable

AIR TOXICS LTD.

Client Sample ID: LCS

Lab ID#: 0511334C-09B

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9112206	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/05 10:53 AM

Compound	%Recovery
Methane	96

Container Type: NA - Not Applicable

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Contact Person: Melissa Pleva
Company: Fugro West, Inc Email: mpleva@fugro.com
Address: 1000 Broadway, Ste 200 City: Oakland State: CA Zip: 94607
Phone: 510-267-4459 Fax: 510-268-0137
Collected by: (signature) Melissa Pleva

Project Info:
P.O. # 1121.009
Project # 1121.009
Project Name: Arrow Rentals

Turn Around Time:
 Normal
 Rush
72 hr.
specify

Lab Use Only
Pressurized by: VPR
Date: 11/17/05
Pressurization Gas: (N₂) He

Lab I.D.	Field Sample I.D. (Location)	Can#	Date	Time	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final
01A	DUP-1	25321	11/16/05		TPHg (TO-3); BTEX, mTBE, Naphthalene, Isopropanol (TO-15); AND Ozone, CO, Methane (ASTM 1946)	-29.5	-5	5.04Hg	5.0psi
02A	SG-1	34308	11/16/05	1000	TPHg (TO-3); BTEX, mTBE, Naphthalene, isopropanol (TO-15); and Ozone, CO, Methane (ASTM 1946)	-28	-5	6.54Hg	5.0psi
03A	SG-2	3568	11/16/05	1217	TPHg (TO-3); BTEX, mTBE, Naphthalene, isopropanol (TO-15); and Ozone, CO, Methane (ASTM 1946)	-29.5	-5	9.54Hg	5.0psi
04A	SG-4	1270	11/16/05	1312	"	-30	-5	4.54Hg	5.0psi
05A	SG-5	34310	11/16/05	1400	"	-28	-5	7.04Hg	5.0psi
06A	SG-6	34310	11/16/05	1400	"	-29.5	-5	5.54Hg	5.0psi
07A	Blank	3552	11/16/05	1135	TPHg (TO-3); BTEX, mTBE, Naphthalene, isopropanol (TO-15); AND Ozone, CO, Methane (ASTM 1946)	-29.5	-5		
08A	SG-3	12651	11/16/05	1135	TPHg (TO-3); BTEX, mTBE, Naphthalene, isopropanol (TO-15); AND Ozone, CO, Methane (ASTM 1946)	-29.5	-5		
09A	Trip Blank	3552	11/16/05		① + ②				

Relinquished by (signature) Melissa Pleva Date/Time 11/16/05 1430
Received by (signature) Judy Lee Date/Time 11/17/05 0745

Relinquished by (signature) _____ Date/Time _____
Received by (signature) _____ Date/Time _____

Relinquished by (signature) _____ Date/Time _____
Received by (signature) _____ Date/Time _____

Notes:
① contact Glenn Young @ 510-267-4424 for approval to run.
② if approved run for: TPHg (TO-3); BTEX, mTBE, naphthalene, isopropanol (TO-15)

Lab Use Only: Shipper Name: FedEx Air Bill #: 8508 4413 2040 Temp (°C): - Condition: good Customer Seals Intact?: Yes No None Work Order #: 0511334



AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

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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**

WORK ORDER #: 0511334BR1

Work Order Summary

CLIENT: Ms. Melissa Pleva
Fugro West Inc.
1000 Broadway, Suite 200
Oakland, CA 94607

BILL TO: Ms. Melissa Pleva
Fugro West Inc.
1000 Broadway, Suite 200
Oakland, CA 94607

PHONE: 510-267-4459

FAX:

DATE RECEIVED: 11/17/2005

DATE COMPLETED: 11/22/2005

DATE REISSUED: 12/16/05

P.O. # 1121.009

PROJECT # 1121.009 Arrow Rentals

CONTACT: Kyle Vagadori

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	DUP-1	Modified TO-3	5.0 "Hg
02A	SG-1	Modified TO-3	6.5 "Hg
03A	SG-2	Modified TO-3	9.5 "Hg
04A	SG-4	Modified TO-3	4.5 "Hg
05A	SG-6	Modified TO-3	7.0 "Hg
06A	SG-3	Modified TO-3	5.5 "Hg
06AA	SG-3 Duplicate	Modified TO-3	5.5 "Hg
07A(cancelled)	Trip Blank	Modified TO-3	
08A	Lab Blank	Modified TO-3	NA
09A	LCS	Modified TO-3	NA

CERTIFIED BY: *Sinda S. Fumara*
Laboratory Director

DATE: 12/16/05

Certification numbers: AR DEQ - 03-084-0, 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: 07/01/05, Expiration date: 06/30/06

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 TO-3
Fugro West Inc.
Workorder# 0511334BR1

Seven 6 Liter Summa Canister samples were received on November 17, 2005. 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 TPH (Gasoline Range).

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 <=/ 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

Sample Trip Blank was cancelled per client's request.

Analytical Notes

There were no analytical discrepancies.

THE WORKORDER WAS REISSUED ON 12/16/05 TO REPORT RESULTS IN PPMV AND UG/M3 PER CLIENT'S REQUEST.

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

r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.
Summary of Detected Compounds
MODIFIED EPA METHOD TO-3 GC/FID

Client Sample ID: DUP-1

Lab ID#: 0511334BR1-01A

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.040	0.16	160	640

Client Sample ID: SG-1

Lab ID#: 0511334BR1-02A

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.043	0.16	170	660

Client Sample ID: SG-2

Lab ID#: 0511334BR1-03A

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.049	0.13	200	540

Client Sample ID: SG-4

Lab ID#: 0511334BR1-04A

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.040	0.088	160	360

Client Sample ID: SG-6

Lab ID#: 0511334BR1-05A

No Detections Were Found.

Client Sample ID: SG-3

Lab ID#: 0511334BR1-06A

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.041	0.073	170	300

Client Sample ID: SG-3 Duplicate

Lab ID#: 0511334BR1-06AA

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.041	0.077	170	320

AIR TOXICS LTD.

Client Sample ID: DUP-1

Lab ID#: 0511334BR1-01A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112204	Date of Collection: 11/16/05
Dil. Factor:	1.61	Date of Analysis: 11/22/05 08:56 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.040	0.16	160	640

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	106	75-150

AIR TOXICS LTD.

Client Sample ID: SG-1

Lab ID#: 0511334BR1-02A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112205	Date of Collection:	11/16/05
Dil. Factor:	1.71	Date of Analysis:	11/22/05 09:29 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.043	0.16	170	660

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	106	75-150

AIR TOXICS LTD.

Client Sample ID: SG-2

Lab ID#: 0511334BR1-03A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112206	Date of Collection: 11/16/05
Dil. Factor:	1.96	Date of Analysis: 11/22/05 10:02 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.049	0.13	200	540

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	109	75-150

AIR TOXICS LTD.

Client Sample ID: SG-4

Lab ID#: 0511334BR1-04A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112207	Date of Collection:	11/16/05
Dil. Factor:	1.58	Date of Analysis:	11/22/05 10:40 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.040	0.088	160	360

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	108	75-150

AIR TOXICS LTD.

Client Sample ID: SG-6

Lab ID#: 0511334BR1-05A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112208	Date of Collection:	11/16/05
Dil. Factor:	1.75	Date of Analysis:	11/22/05 11:13 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.044	Not Detected	180	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	108	75-150

AIR TOXICS LTD.

Client Sample ID: SG-3

Lab ID#: 0511334BR1-06A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112209	Date of Collection:	11/16/05
Dil. Factor:	1.64	Date of Analysis:	11/22/05 11:46 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.041	0.073	170	300

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	107	75-150

AIR TOXICS LTD.

Client Sample ID: SG-3 Duplicate

Lab ID#: 0511334BR1-06AA

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112210	Date of Collection:	11/16/05	
Dil. Factor:	1.64	Date of Analysis:	11/22/05 12:19 PM	

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.041	0.077	170	320

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	108	75-150

AIR TOXICS LTD.

Client Sample ID: Lab Blank

Lab ID#: 0511334BR1-08A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/05 08:22 AM

Compound	Rpt. Limit (ppmv)	Amount (ppmv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
TPH (Gasoline Range)	0.025	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	102	75-150

AIR TOXICS LTD.

Client Sample ID: LCS

Lab ID#: 0511334BR1-09A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d112202	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/05 07:42 AM

Compound	%Recovery	
TPH (Gasoline Range)	97	
Container Type: NA - Not Applicable		
Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	124	75-150



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

WORK ORDER #: 0511334A

Work Order Summary

CLIENT:	Ms. Melissa Pleva Fugro West Inc. 1000 Broadway Suite 200 Oakland, CA 94607	BILL TO:	Ms. Melissa Pleva Fugro West Inc. 1000 Broadway Suite 200 Oakland, CA 94607
PHONE:	510-267-4459	P.O. #	1121.009
FAX:		PROJECT #	1121.009 Arrow Rentals
DATE RECEIVED:	11/17/2005	CONTACT:	Kyle Vagadori
DATE COMPLETED:	11/21/2005		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	DUP-1	Modified TO-14A/15 (5&20 p	5.0 "Hg
02A	SG-1	Modified TO-14A/15 (5&20 p	6.5 "Hg
03A	SG-2	Modified TO-14A/15 (5&20 p	9.5 "Hg
04A	SG-4	Modified TO-14A/15 (5&20 p	4.5 "Hg
05A	SG-6	Modified TO-14A/15 (5&20 p	7.0 "Hg
06A	SG-3	Modified TO-14A/15 (5&20 p	5.5 "Hg
06AA	SG-3 Duplicate	Modified TO-14A/15 (5&20 p	5.5 "Hg
07A(cancelled)	Trip Blank	Modified TO-14A/15 (5&20 p	
08A	Lab Blank	Modified TO-14A/15 (5&20 p	
09A	CCV	Modified TO-14A/15 (5&20 p	NA
10A	LCS	Modified TO-14A/15 (5&20 p	NA

CERTIFIED BY: *Sinda J. Fruman*
 Laboratory Director

DATE: 11/21/05

Certification numbers: AR DEQ - 03-084-0, 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: 07/01/05, Expiration date: 06/30/06

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 (5 & 20 ppbv)**

**Fugro West Inc.
Workorder# 0511334A**

Seven 6 Liter Summa Canister samples were received on November 17, 2005. The laboratory performed the analysis via Modified Method TO-15 using GC/MS in the full scan mode. The method involves direct injection of up to a 40 mL sample aliquot into a vapor management system. Following dehumidification the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits of each compound.

<i>Requirement</i>	<i>TO-14A/TO-15</i>	<i>ATL Modifications</i>
BFB Tune Absolute Abundance Criteria	Within 10% of that from the previous day.	CCV Internal Standard area counts are compared to ICAL, corrective action for > 40 %D.
Concentration of IS Spike	10 ppbv (TO-15)	500 ppbv
BFB Acceptance Criteria	CLP protocol (TO-15)	SW-846 protocol
Sampling Drying System	Nafion Dryer (TO-14A)	Multisorbent concentrator
Blank acceptance criteria	< 0.2 ppbv (TO-14A)	< RL.
IS Recovery	TO-15: Within 40 % of mean over ICAL for blanks, and w/in 40 % of daily CCV for samples	Within 40 % of CCV recovery for blank and samples.
Sample volume	Up to 400 mL (TO-14A)	Up to 40 mLs
Initial Calibration	+/- 30 % RSD (TO-14A)	<= 30 % RSD with 2 compounds allowed out to < 40 % RSD.
Primary Ions for Quantification	Freon 114: 85, Carbon Tetrachloride: 117, Trichloroethene: 130, Ethyl Benzene, m,p- and o-Xylene: 91	Freon 114: 135, Carbon Tetrachloride: 119, Trichloroethene: 95, Ethyl Benzene, m,p- and o-Xylene: 106
Daily CCV	+/- 30 % D	<= 30 % D with 2 allowed out up to 40%; flag associated sample results.
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
Dilutions for Initial Calibration	Dynamic dilutions or static using canisters.	Syringe dilutions, bag dilutions.

Receiving Notes

Sample Trip Blank was cancelled per client's request.

Analytical Notes

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

Definition of Data Qualifying Flags

Seven 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

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

AIR TOXICS LTD.
Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS

Client Sample ID: DUP-1

Lab ID#: 0511334A-01A

No Detections Were Found.

Client Sample ID: SG-1

Lab ID#: 0511334A-02A

No Detections Were Found.

Client Sample ID: SG-2

Lab ID#: 0511334A-03A

No Detections Were Found.

Client Sample ID: SG-4

Lab ID#: 0511334A-04A

No Detections Were Found.

Client Sample ID: SG-6

Lab ID#: 0511334A-05A

No Detections Were Found.

Client Sample ID: SG-3

Lab ID#: 0511334A-06A

No Detections Were Found.

Client Sample ID: SG-3 Duplicate

Lab ID#: 0511334A-06AA

No Detections Were Found.

AIR TOXICS LTD.

Client Sample ID: DUP-1

Lab ID#: 0511334A-01A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111822	Date of Collection: 11/16/05
Dil. Factor:	1.61	Date of Analysis: 11/18/05 10:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	8.0	Not Detected	26	Not Detected
Toluene	8.0	Not Detected	30	Not Detected
Ethyl Benzene	8.0	Not Detected	35	Not Detected
m,p-Xylene	8.0	Not Detected	35	Not Detected
o-Xylene	8.0	Not Detected	35	Not Detected
Methyl tert-butyl ether	8.0	Not Detected	29	Not Detected
2-Propanol	32	Not Detected	79	Not Detected
Naphthalene	32	Not Detected	170	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	99	70-130

AIR TOXICS LTD.

Client Sample ID: SG-1

Lab ID#: 0511334A-02A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111823	Date of Collection: 11/16/05
Dil. Factor:	1.71	Date of Analysis: 11/18/05 11:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	8.6	Not Detected	27	Not Detected
Toluene	8.6	Not Detected	32	Not Detected
Ethyl Benzene	8.6	Not Detected	37	Not Detected
m,p-Xylene	8.6	Not Detected	37	Not Detected
o-Xylene	8.6	Not Detected	37	Not Detected
Methyl tert-butyl ether	8.6	Not Detected	31	Not Detected
2-Propanol	34	Not Detected	84	Not Detected
Naphthalene	34	Not Detected	180	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	98	70-130

AIR TOXICS LTD.

Client Sample ID: SG-2

Lab ID#: 0511334A-03A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111824	Date of Collection:	11/16/05
Dil. Factor:	1.96	Date of Analysis:	11/18/05 11:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	9.8	Not Detected	31	Not Detected
Toluene	9.8	Not Detected	37	Not Detected
Ethyl Benzene	9.8	Not Detected	42	Not Detected
m,p-Xylene	9.8	Not Detected	42	Not Detected
o-Xylene	9.8	Not Detected	42	Not Detected
Methyl tert-butyl ether	9.8	Not Detected	35	Not Detected
2-Propanol	39	Not Detected	96	Not Detected
Naphthalene	39	Not Detected	200	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	93	70-130
4-Bromofluorobenzene	99	70-130

AIR TOXICS LTD.

Client Sample ID: SG-4

Lab ID#: 0511334A-04A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111825	Date of Collection:	11/16/05
Dil. Factor:	1.58	Date of Analysis:	11/19/05 12:07 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	7.9	Not Detected	25	Not Detected
Toluene	7.9	Not Detected	30	Not Detected
Ethyl Benzene	7.9	Not Detected	34	Not Detected
m,p-Xylene	7.9	Not Detected	34	Not Detected
o-Xylene	7.9	Not Detected	34	Not Detected
Methyl tert-butyl ether	7.9	Not Detected	28	Not Detected
2-Propanol	32	Not Detected	78	Not Detected
Naphthalene	32	Not Detected	160	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	100	70-130

AIR TOXICS LTD.

Client Sample ID: SG-6

Lab ID#: 0511334A-05A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111826	Date of Collection:	11/16/05
Dil. Factor:	1.75	Date of Analysis:	11/19/05 12:36 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	8.8	Not Detected	28	Not Detected
Toluene	8.8	Not Detected	33	Not Detected
Ethyl Benzene	8.8	Not Detected	38	Not Detected
m,p-Xylene	8.8	Not Detected	38	Not Detected
o-Xylene	8.8	Not Detected	38	Not Detected
Methyl tert-butyl ether	8.8	Not Detected	32	Not Detected
2-Propanol	35	Not Detected	86	Not Detected
Naphthalene	35	Not Detected	180	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	84	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	99	70-130

AIR TOXICS LTD.

Client Sample ID: SG-3

Lab ID#: 0511334A-06A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111827	Date of Collection: 11/16/05
Dil. Factor:	1.64	Date of Analysis: 11/19/05 01:06 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	8.2	Not Detected	26	Not Detected
Toluene	8.2	Not Detected	31	Not Detected
Ethyl Benzene	8.2	Not Detected	36	Not Detected
m,p-Xylene	8.2	Not Detected	36	Not Detected
o-Xylene	8.2	Not Detected	36	Not Detected
Methyl tert-butyl ether	8.2	Not Detected	30	Not Detected
2-Propanol	33	Not Detected	81	Not Detected
Naphthalene	33	Not Detected	170	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	87	70-130
Toluene-d8	93	70-130
4-Bromofluorobenzene	98	70-130

AIR TOXICS LTD.

Client Sample ID: SG-3 Duplicate

Lab ID#: 0511334A-06AA

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111829	Date of Collection:	11/16/05
Dil. Factor:	1.64	Date of Analysis:	11/19/05 09:19 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	8.2	Not Detected	26	Not Detected
Toluene	8.2	Not Detected	31	Not Detected
Ethyl Benzene	8.2	Not Detected	36	Not Detected
m,p-Xylene	8.2	Not Detected	36	Not Detected
o-Xylene	8.2	Not Detected	36	Not Detected
Methyl tert-butyl ether	8.2	Not Detected	30	Not Detected
2-Propanol	33	Not Detected	81	Not Detected
Naphthalene	33	Not Detected	170	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	85	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	100	70-130

AIR TOXICS LTD.

Client Sample ID: Lab Blank

Lab ID#: 0511334A-08A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111811	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/05 03:57 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	5.0	Not Detected	16	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Naphthalene	20	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	99	70-130

AIR TOXICS LTD.

Client Sample ID: CCV

Lab ID#: 0511334A-09A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111806	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/05 12:49 PM

Compound	%Recovery
Benzene	84
Toluene	87
Ethyl Benzene	89
m,p-Xylene	90
o-Xylene	88
Methyl tert-butyl ether	77
2-Propanol	74
Naphthalene	117

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

AIR TOXICS LTD.

Client Sample ID: LCS

Lab ID#: 0511334A-10A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	5111807	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/05 01:12 PM

Compound	%Recovery
Benzene	82
Toluene	90
Ethyl Benzene	90
m,p-Xylene	94
o-Xylene	85
Methyl tert-butyl ether	93
2-Propanol	73
Naphthalene	110

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130