



PORT OF OAKLAND

November 16, 2006

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

RE: RO#0000010 and RO#0000185_Technical Memorandum - Results of Low Vacuum Enhancement Pilot Study - Port of Oakland, Harbor Facilities Complex, 2277 and 2225 Seventh Street, Oakland, CA_2006-11-16

Dear Mr. Chan:

Please find enclosed the Technical Memorandum entitled *Results of Low Vacuum Enhancement Pilot Study, 2277 and 2225 Seventh Street, Oakland, CA ("Tech Memo")* dated November 16, 2006, prepared by Baseline Environmental Consulting ("Baseline") on behalf of the Port of Oakland ("Port"). This Tech Memo is being submitted in accordance with Alameda County Health Care Services Agency ("County") requirements, as specified in a County letter dated March 23, 2006.¹

The Port retained Baseline to maintain the free product recovery system that was installed at the Harbor Facilities Complex in 2004. As part of this maintenance program, Baseline performed this pilot study to determine the benefit of applying a low vacuum to the product recovery wells to increase product recovery. The results of this pilot study are contained in the enclosed Tech Memo. If you have any questions or comments regarding the results, please contact Jeff Rubin at (510) 627-1134.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report prepared by Baseline are true and correct to the best of my knowledge. Please note that the report is stamped by a Registered Professional Engineer in the State of California.

Sincerely,

Jeffrey R. Jones
Supervisor
Environmental Programs and Safety

Jeffrey L. Rubin, CPSS, REA
Port Associate Environmental Scientist
Environmental Programs and Safety

Enclosure: noted

Cc (w encl.): Michele Heffes

Cc (w/o encl.): Roberta Reinstein
James McCarty (Baseline Environmental)
Yane Nordhav (Baseline Environmental)

¹ Letter from Mr. Barney Chan (County) to Mr. Jeff Rubin (Port), regarding *Fuel Leak Cases RO0000010 and RO0000185, 2277 and 2225 7th St., Oakland, CA 94607*, dated March 23, 2006.

TECHNICAL MEMORANDUM
Low Vacuum Enhancement Pilot Study

Date: 16 November 2006

Job No.: Y5395-03.00530

To: Jeff Rubin, Port of Oakland

cc: Michele Heffes, Port of Oakland

From: James McCarty, P.E., BASELINE Environmental Consulting



Subject: Results of Low Vacuum Enhancement Pilot Study, Port of Oakland, 2277 and 2225 Seventh Street, Oakland, California

This memorandum presents the results of a low vacuum enhancement pilot study at the Port of Oakland's ("Port") Harbor Facilities Complex in Oakland, California. The Port owns two contiguous properties, 2277 and 2225 Seventh Street in Oakland, California, portions of which have been developed as the Port's Harbor Facilities Complex (Figure 1). Groundwater at the two properties has been impacted by petroleum releases from operation of underground storage tanks ("USTs") in the past. The USTs were removed between 1989 and 1993. Alameda County Health Care Services ("ACHCS") is providing environmental regulatory oversight under the Local Oversight Program ("LOP"). The ACHCS LOP case numbers for 2277 Seventh Street and for 2225 Seventh Street are RO0000010 and RO0000185, respectively. BASELINE Environmental Consulting ("BASELINE") recommended a pilot test be conducted in the January 2006 Fourth Quarter Groundwater Monitoring Report for the Site. The ACHCS concurred with the recommendation in a letter to the Port dated 23 March 2006. This technical memorandum presents the result of the pilot study.

In 2004, in accordance with the condition set forth in ACHCS's 27 March 2003 letter approving removal of a pre-existing product recovery system, the Port installed a new free product recovery system at the Harbor Facilities Complex. The pre-existing system was removed to allow site development. A new system was installed, which includes nine recovery wells, RW-1 through RW-9 (Figure 2). The Port installed a utility box around each wellhead, which included plumbing for an air line, product discharge line, and vacuum line. Five of the recovery wells; RW-3, RW-4, RW-6, RW-7, and RW-8 are equipped with air-actuated skimmer pumps manufactured by Xitech Instruments, Inc. (Figure 3). The skimmer pumps have a hydrophobic¹ filter float with a maximum vertical movement ("travel") range of two feet. If the product thickness in the well exceeds four inches (the length of the filter), product enters the pump without passing through the filter but through an opening at the top of the filter float.

¹ The hydrophobic filter allows product to enter the pump but not water.

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The skimmer pump operation is set by a programmable controller, which can control the operation of up to eight skimmer pumps simultaneously. The programmable controller allows the user to input for the frequency and duration of operation of each skimmer pump. The skimmers discharge product into a 500-gallon concrete-encased aboveground storage tank ("convault") equipped with primary and secondary containment. The convault is also equipped with a sensor that activates a warning light and shuts off air supply to the skimmers if the tank is full.

The purpose of this pilot study was to determine the benefit of applying a low vacuum to the product recovery wells to increase, or enhance, product recovery. For the purpose of discussion in this memorandum, a low vacuum is defined as a vacuum of less than 30 inches of water ("in/H₂O"). This pilot study was also designed to provide information on air-flow rates from the recovery wells and the type and quantities of volatile organic compound ("VOC") emissions that would be expected from full-scale implementation of low vacuum enhancement. Emissions of VOCs in excess of one pound per day require abatement and a permit from the Bay Area Air Quality Management District ("BAAQMD").

The design of the system does not allow for the quantification of product recovery from individual wells under normal operating conditions. Two recovery wells, RW-3 and RW-6, were chosen for the pilot study based on measurements of product thickness in the recovery wells during regular operation and maintenance visits. Prior to conducting the pilot study, the product recharge rates for these two recovery wells were evaluated by turning off the skimmer pumps and measuring the rate of product recharge in the recovery wells. The result of this evaluation is presented in Table 1. The product recharge rate, without application of a low vacuum, was estimated to be 0.14 gallon per day for RW-3 and 0.02 gallon per day for RW-6.

PILOT STUDY

The low vacuum was applied to the two recovery wells (RW-3 and RW-6) using a one-half horsepower regenerating blower with a vacuum capacity of 40 in/H₂O and a maximum air-flow rate of 55 standard cubic feet per minute ("scfm"). The discharge from the blower was treated prior to discharge to the atmosphere using two vessels containing vapor-phase granular activated carbon ("GAC") arranged in series (Figure 4).

On 31 July 2006, BASELINE applied a vacuum of 10 in/H₂O (measured at the well heads) to recovery wells RW-3 and RW-6. The vacuum was applied for approximately 48 hours. The vacuum measured at the blower during the test was 35 in/H₂O. Based on the manufacturer's vacuum performance curve for the blower, the blower air-flow rate during the pilot study was 20 scfm. The programmable controller was set to operate the skimmer pump in RW-3 twice a day for one hour and RW-6 once a day for ten minutes. At the end of the test, BASELINE recorded the amount of product recovered from each recovery well.

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Recovery well RW-3 skimmer pump recovered approximately three gallons of fluid, however, approximately 80 percent of the fluid was groundwater. Therefore, approximately 0.6 gallon of product was recovered, which indicated the low vacuum increased the recharge rate of product into the well; 0.3 gallon of product per day was recovered with a low vacuum compared to the estimated 0.14 gallon of product recovery per day without a vacuum. The high percentage of water recovered was the result of the vacuum lifting the groundwater surface above the maximum reach of the filter float (Figure 3). Minimal product recovery was observed from RW-6. At the end of the 48-hour test, the product level was measured in each well. Neither recovery well had measurable product.

On 2 August 2006, BASELINE modified the vacuum on the recovery wells (RW-3 and RW-6) to five in/H₂O. This test was conducted for approximately 24 hours. The programmable controller was set to operate the skimmer pump in RW-3 twice a day for one hour and RW-6 once a day for ten minutes. The fluid recovered from RW-3 continued to contain significant amounts of water and limited product recovery was observed from RW-6.

On 3 August 2006, a third test was conducted. BASELINE applied a vacuum of 10 in/H₂O on the recovery wells RW-3 and RW-7. The vacuum measured at the blower was 40 in/H₂O, which the performance curve indicates is an air-flow rate of 15 scfm. Recovery well RW-7 was used because of the limited results observed at RW-6. The vacuum was applied to the recovery wells for approximately 30 hours. The programmable controller was set to operate the skimmer pump in RW-3 twice a day for one hour and RW-7 once a day for ten minutes. Approximately 0.1 gallon of product was recovered from RW-7. Past product thickness measurements in RW-7 indicate this well is similar to RW-6; therefore, it appears that application of the vacuum increased the recovery rate in RW-7. In addition, field personnel noted that the vacuum on RW-7 was slow to equilibrate to atmospheric conditions after the blower was turned off, indicating low permeability soils, which may be constraining the flow of product into the wells under normal operating conditions. The lower air-flow rate during this test is further evidence of less permeable soil at RW-7. Recovery from RW-3 continued to contain significant amounts of water.

AIR EMISSION TREATMENT

As part of the pilot study, BASELINE treated the air emissions from the blower in accordance with the requirements of BAAQMD and collected air samples to evaluate treatment efficiency. A copy of a letter to the BAAQMD, dated 29 June 2006, regarding the pilot study is attached (Attachment A).

BASELINE monitored the air discharged from the blower and the two carbon vessels during the pilot study with a photo-ionization detector (PID) calibrated with isobutylene and set to measure in equivalent benzene concentrations. BASELINE also collected air samples in Tedlar bags from the blower discharge, first carbon discharge, and the final carbon discharge. Samples were collected on the second day (2 August 2006) and on the last day of the pilot study (4 August

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2006). The air samples were analyzed for VOCs using EPA Method TO-15. The laboratory reports are attached (Attachment B).

Field measurements with the PID of the air discharge ranged from 20.0 to 35.0 parts per million on the blower exhaust, and were not detectable in the discharge from the first and second carbon vessel during the pilot study. Based on the analytical results of the air samples collected, BASELINE calculated the mass of VOCs in the blower discharge and the effluent from both the first and second GAC vessels (Tables 2 and 3). The discharge from the second and final carbon vessel represents the mass emitted to the atmosphere during the pilot study. The results indicated that the first GAC vessel was able to remove 99.9 percent of the VOCs prior to discharge to the atmosphere.

The analytical result from the air samples indicated that the mass of VOCs when 10-in/H₂O vacuum was applied to recovery wells was 0.24 pound per day (Tables 2 and 3). Assuming that applying a vacuum to eight wells (the maximum capacity of the programmable controller) would result in a four-fold increase in emissions, the maximum emissions that are expected for full-scale application of low-vacuum enhancement range from 1.0 to 1.3 pounds per day. The BAAQMD requires abatement of emissions of VOCs in excess of one pound per day.² Use of abatement equipment requires an Authority to Construct and a Permit to Operate from the BAAQMD. The Port could petition the BAAQMD for exemption from these requirements if emissions were maintained at less than one pound per day, but a health risk assessment would need to be prepared and submitted to the BAAQMD. The requirements would depend on the findings of the BAAQMD's review of the pilot study data.

CONCLUSION

The pilot study indicated that the application of a low vacuum of approximately 10 in/H₂O vacuum would result in the following:

- Flow rates of five to ten scfm from each well;
- Increased recovery of product in wells, particularly in wells installed in low permeability materials;
- A rise in the groundwater levels in the wells, making it difficult to correctly position the pumps given that the skimmer pump float range is two feet; and
- Emissions from the blower exhaust containing volatile organic compounds, which are regulated by the BAAQMD.

In addition, it was observed during the pilot study that the rate at which product penetrates the hydrophobic filter may be the limiting factor on product recovery rates, i.e., the pumps have the ability to remove product faster than the product can move through the filter.

² Regulation 8 – Organic compounds, Rule 47 – Air Stripping and Soil Vapor Extraction Operations.

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RECOMMENDATION

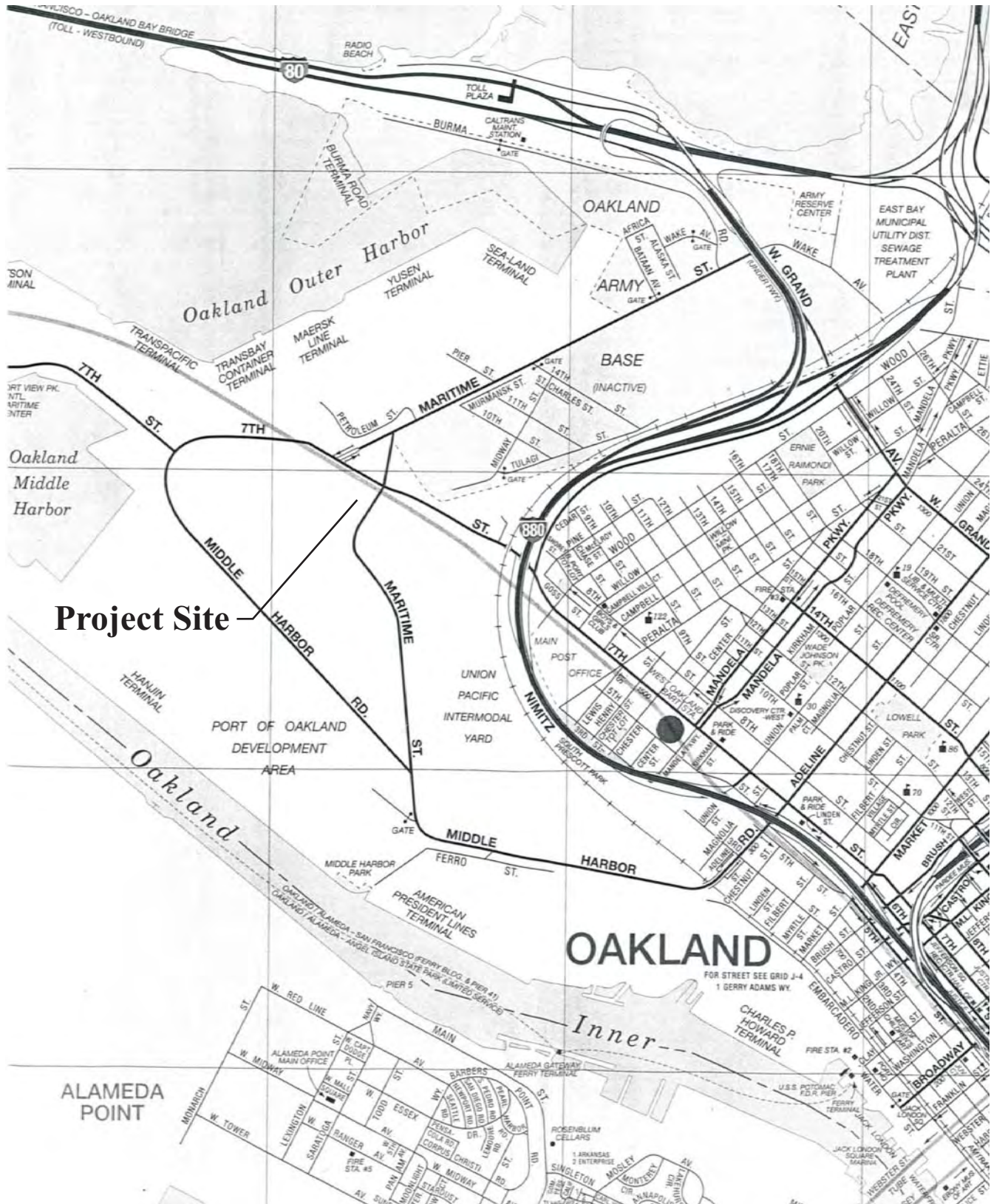
Based on the result of the pilot study, the following actions are recommended:

- Purchase a skid mounted one-horsepower regenerating blower capable of maintaining a flow rate of 80 scfm and equipped with moisture knockout tank;
 - Retrofit the existing two-inch skimmer pumps with the extended filter float travel (five feet);
 - Purchase a four-inch skimmer pump for RW-3, which will increase the surface area of the hydrophobic filter to allow higher filter penetration rates; and
 - Apply for the applicable permits from the BAAQMD.
-

FIGURES

REGIONAL LOCATION

Figure 1

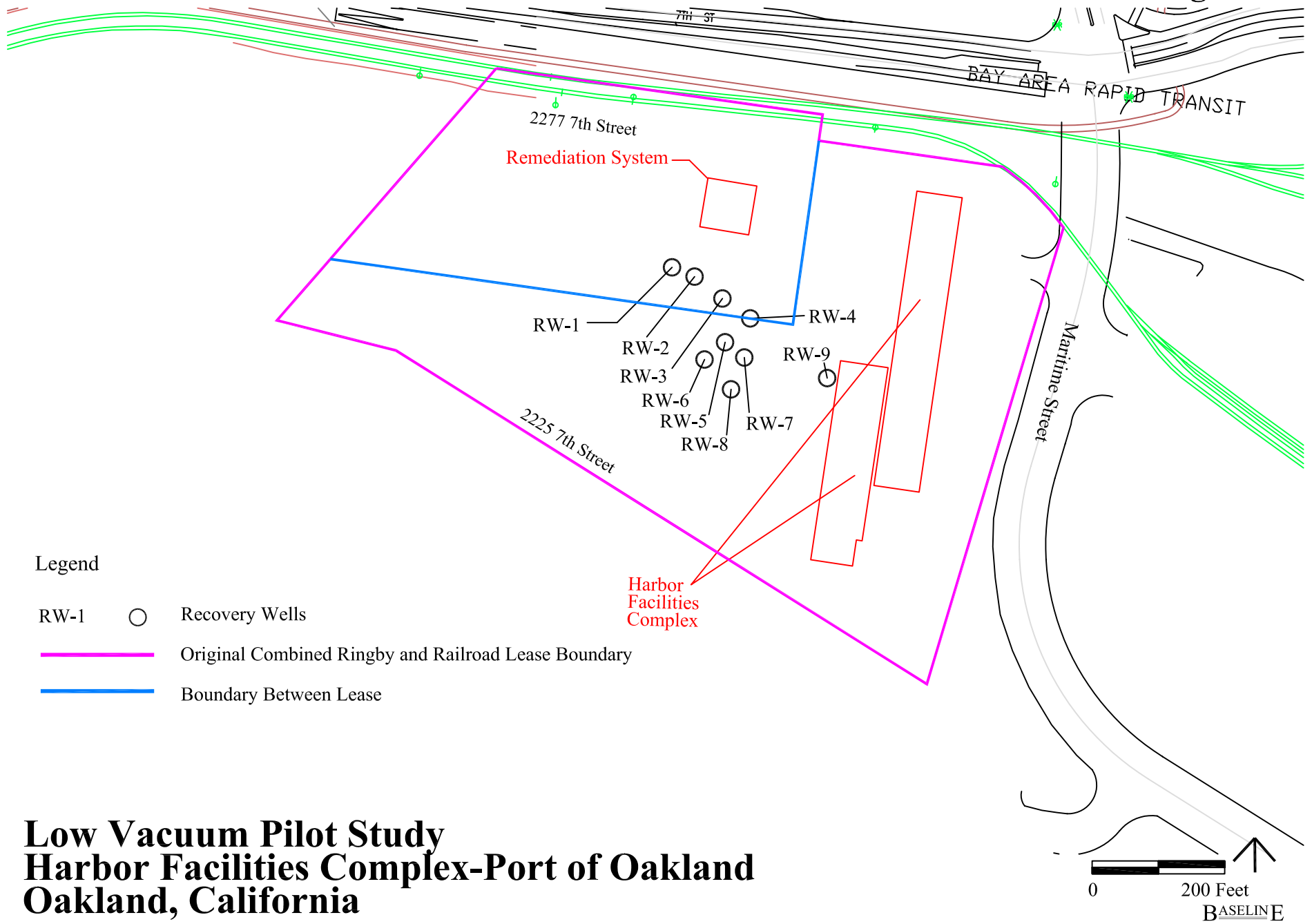


Low Vacuum Pilot Study Harbor Facilities Complex-Port of Oakland Oakland, California

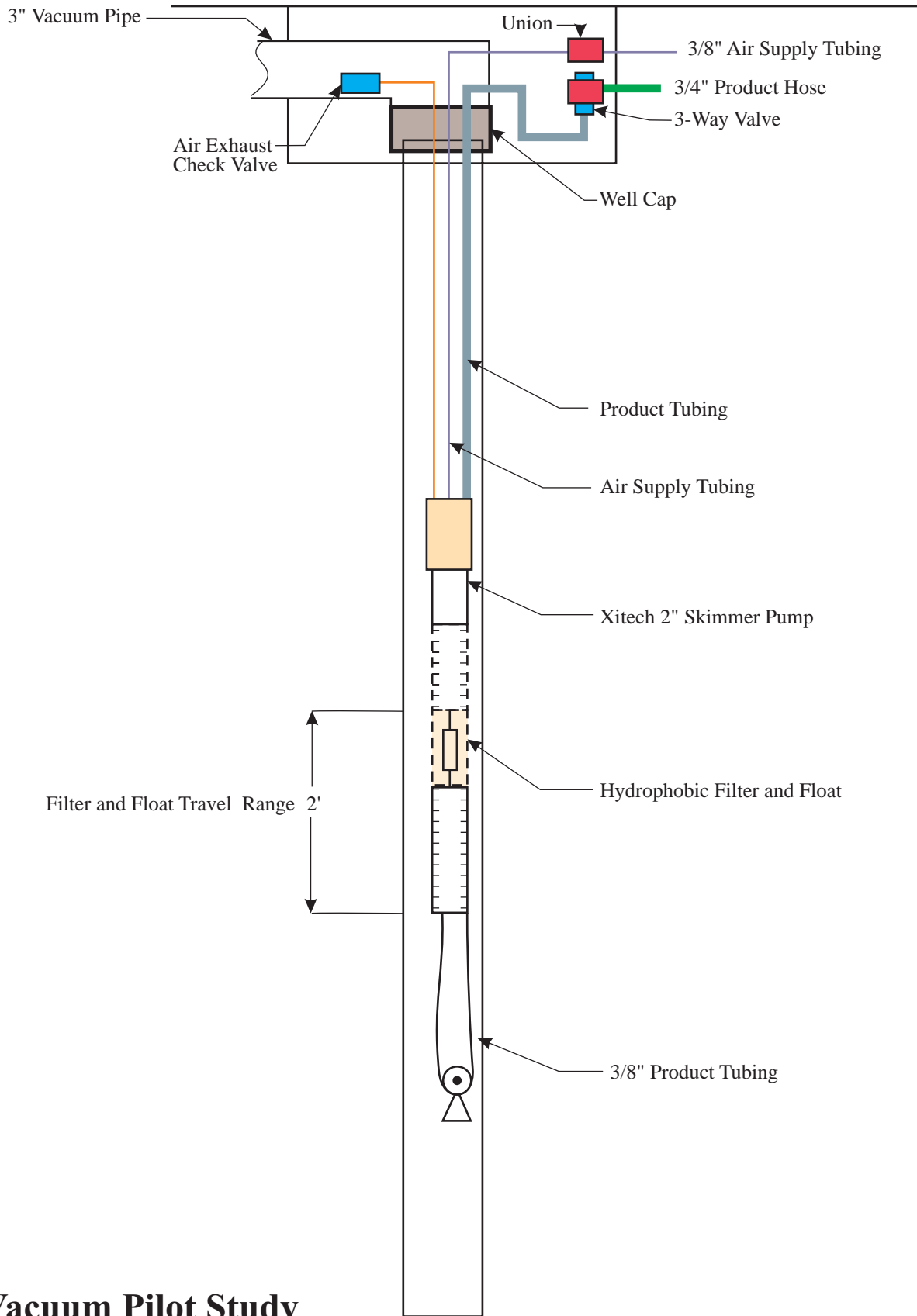


SITE PLAN

Figure 2

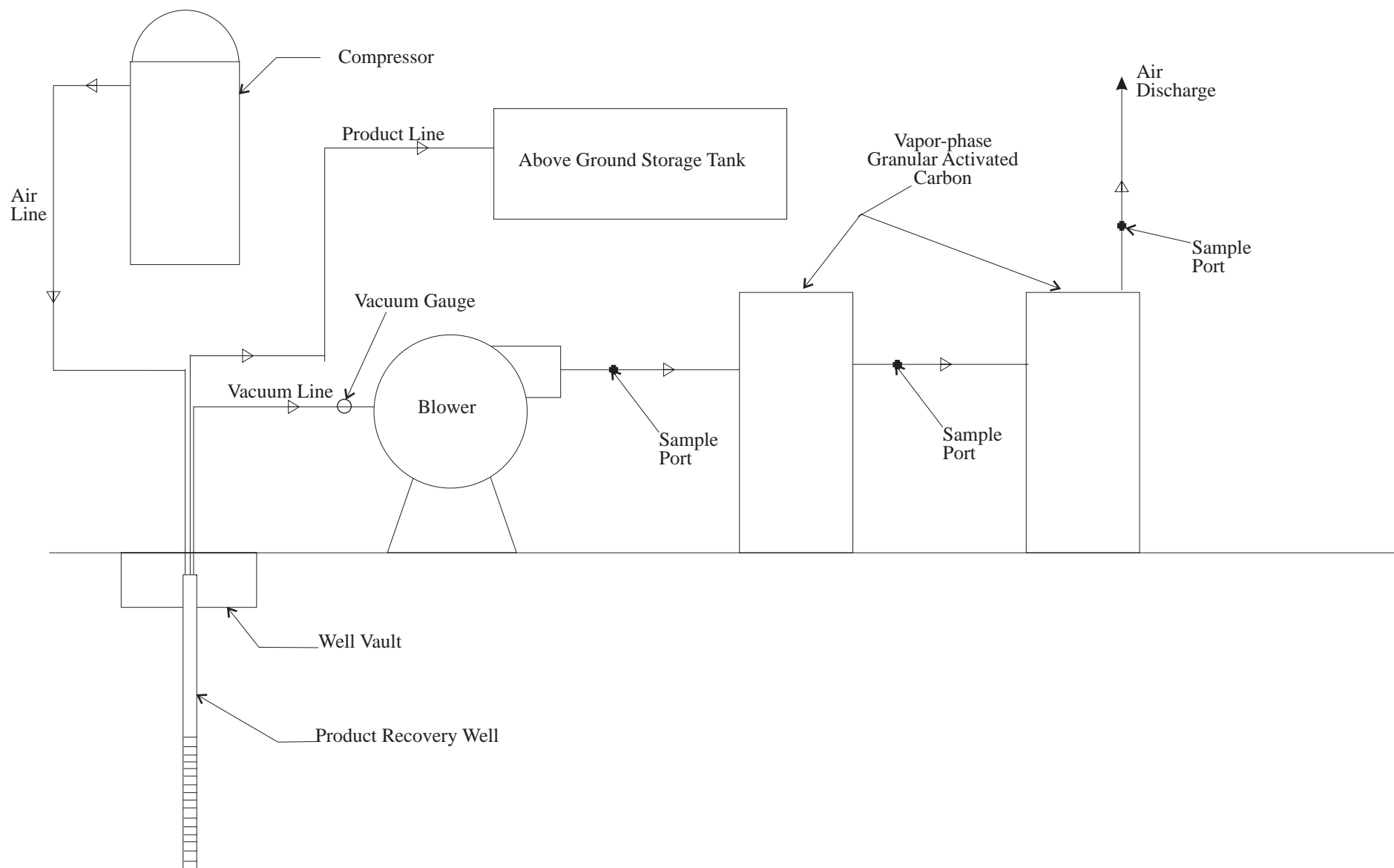


Low Vacuum Pilot Study Harbor Facilities Complex-Port of Oakland Oakland, California



**Low Vacuum Pilot Study
Harbor Facilities Complex-Port of Oakland
Oakland, California**

Not to Scale
BASELINE



**Low Vacuum Pilot Study
Harbor Facilities Complex-Port of Oakland
Oakland, California**

TABLES

**TABLE 1: Recovery Well Product Recharge Rate
Harbor Facilities Complex, Port of Oakland
Low Vacuum Enhancement Pilot Study**

Date	Time	Minutes	Product Level	Water Level	Product Thickness	Daily Rate (gallons)
RW-3 Recovery Rate						
6/6/2006	7:50 AM	0	9.05	9.06	0.01	
6/6/2006	9:40 AM	110	9.04	9.1	0.06	
6/6/2006	11:40 AM	230	9.01	9.2	0.19	
6/6/2006	14:30 PM	400	9.02	9.25	0.23	0.14
RW-6 Recovery Rate						
6/6/2006	9:40 AM	0	7.38	7.39	0.01	
6/6/2006	11:40 AM	120	7.38	7.39	0.01	
6/6/2006	2:30 PM	290	7.36	7.37	0.01	
6/7/2006	7:00 AM	1,280	7.4	7.41	0.01	
6/7/2006	8:30 AM	1,370	7.35	7.46	0.11	
6/7/2006	8:50 AM	1,390	7.37	7.48	0.11	0.02

TABLE 2: VOC Results of Air Samples - 2 August 2006
Harbor Facilities Complex, Port of Oakland
Low Vacuum Enhancement Pilot Study

Sample ID Compound	PT-01			PT-02			PT-03			
	Rpt. Limit ($\mu\text{g}/\text{m}^3$)	Amount ($\mu\text{g}/\text{m}^3$)	Pre-treatment Emissions (lbs/day)	Rpt. Limit ($\mu\text{g}/\text{m}^3$)	Amount ($\mu\text{g}/\text{m}^3$)	Removal Efficiency	Rpt. Limit ($\mu\text{g}/\text{m}^3$)	Amount ($\mu\text{g}/\text{m}^3$)	Carbon 1 Removal Efficiency	System Removal Efficiency
Vinyl Chloride	85	160	0.00029	1.3	8.8	94.5%	2.0	1.3	85.2%	99.2%
Acetone	320	160	0.00029	4.8	14.0	91.3%	4.8	12	14.3%	92.5%
trans-1,2-Dichloroethene	130	170	0.00031	2.0	1.0	99.4%	2.0	1.0	0.0%	99.4%
Hexane	120	35,000	0.06293	1.8	0.9	100.0%	1.8	0.9	0.0%	100.0%
cis-1,2-Dichloroethene	130	170	0.00031	2.0	1.0	99.4%	2.0	1.0	0.0%	99.4%
Cyclohexane	110	27,000	0.04854	1.7	0.9	100.0%	1.7	0.9	0.0%	100.0%
2,2,4-Trimethylpentane	160	41,000	0.07371	2.3	1.2	100.0%	2.3	1.2	0.0%	100.0%
Benzene	110	1,500	0.00270	1.6	0.8	99.9%	1.6	0.8	0.0%	99.9%
1,2-Dichloroethane	130	140	0.00025	2.0	1.0	99.3%	2.0	1.0	0.0%	99.3%
Heptane	140	20,000	0.03596	2.0	1.0	100.0%	2.0	1.0	0.0%	100.0%
Ethylbenzene	140	2,300	0.00414	2.2	1.1	100.0%	2.2	1.1	0.0%	100.0%
m,p-Xylene	140	1,100	0.00198	2.2	1.1	99.9%	2.2	1.1	0.0%	99.9%
o-Xylene	140	240	0.00043	2.2	1.1	99.5%	2.2	1.1	0.0%	99.5%
Cumene	160	440	0.00079	2.4	1.2	99.7%	2.4	1.2	0.0%	99.7%
Propylbenzene	160	810	0.00146	2.4	1.2	99.9%	2.4	1.2	0.0%	99.9%
4-Ethyltoluene	160	880	0.00158	2.4	1.2	99.9%	2.4	1.2	0.0%	99.9%
1,3,5-Trimethylbenzene	160	420	0.00076	2.4	1.2	99.7%	2.4	1.2	0.0%	99.7%
1,2,4-Trimethylbenzene	160	1,200	0.00216	2.4	1.2	99.9%	2.4	1.2	0.0%	99.9%
Toluene	120	60	0.00011	1.9	3.0	95.0%	3.0	1.5	50.0%	97.5%
2-Propanol	330	165	0.00030	4.9	46	72.1%	4.9	37	19.6%	77.6%
Carbon Disulfide	100	50	0.00009	1.6	14	72.0%	1.6	9.7	30.7%	80.6%
TOTAL VOCs		132,965	0.24		103	99.9%		79		99.9%

Blower Air Flow Rate 20 scfm
Total VOC Emissions Blower 0.24 lb/day
Total VOC Emissions Carbon 1 0.00018 lb/day
Total VOC Emissions Carbon 2 0.00014 lb/day

Notes:

Air sample collected on 2 August 2006, vacuum applied to RW-3 and RW-6.
Laboratory reports are attached.
VOCs = volatile organic compounds
Samples collected in Tedlar bags and analyzed by EPA Method TO-15.
Only chemicals reported in at least one sample are included.
Totals emission mass calculations assumes one-half the laboratory reporting limit for chemicals not reported.

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter.
lb/day = pound per day.
scfm = standard cubic feet minute.
 m^3 = cubic meter.
 ft^3 = cubic foot.
Conversion from $\mu\text{g}/\text{m}^3$ to lb/day: concentrations ($\mu\text{g}/\text{m}^3$) x air flow rate (scfm) x 1,440 minutes/day x 2.204623E-09 lb/ μg x 0.02831685 (m^3/ft^3)

Table 3: VOC Results of Air Samples - 4 August 2006
 Harbor Facilities Complex, Port of Oakland
 Low Vacuum Enhancement Pilot Study

Sample ID Compound	PT-04			PT-05			PT-06			
	Rpt. Limit ($\mu\text{g}/\text{m}^3$)	Amount ($\mu\text{g}/\text{m}^3$)	Pre-treatment Emissions (lbs/day)	Rpt. Limit ($\mu\text{g}/\text{m}^3$)	Amount ($\mu\text{g}/\text{m}^3$)	Removal Efficiency	Rpt. Limit ($\mu\text{g}/\text{m}^3$)	Amount ($\mu\text{g}/\text{m}^3$)	Carbon 1 Removal Efficiency	System Removal Efficiency
Freon 12	200	100	0.00013	2.5	2.7	97.3%	2.5	1.3	53.7%	98.8%
Vinyl Chloride	100	130	0.00018	1.3	140	-7.7%	1.3	0.7	99.5%	99.5%
Ethanol	300	150	0.00020	3.8	3.9	97.4%	3.8	1.9	51.3%	98.7%
Acetone	380	190	0.00026	4.8	14	92.6%	4.8	15	-7.1%	92.1%
2-Propanol	390	195	0.00026	4.9	43	77.9%	4.9	39	9.3%	80.0%
Carbon Disulfide	120	60	0.00008	1.6	14	76.7%	1.6	14	0.0%	76.7%
2-Butanone (Methyl Ethyl Ketone)	120	60	0.00008	1.5	0.8	98.8%	1.5	1.6	-113.3%	97.3%
Hexane	140	45,000	0.061	1.8	1.9	100.0%	1.8	0.9	52.6%	100.0%
Toluene	150	75	0.00010	1.9	4.1	94.5%	1.9	1.0	76.8%	98.7%
Cyclohexane	140	34,000	0.046	1.7	0.9	100.0%	1.7	0.9	0.0%	100.0%
2,2,4-Trimethylpentane E	190	82,000	0.11	2.3	1.2	100.0%	2.3	1.2	0.0%	100.0%
Benzene	130	1,800	0.0024	1.6	0.8	100.0%	1.6	0.8	0.0%	100.0%
Heptane	160	12,000	0.016	2.0	1.0	100.0%	2.0	1.0	0.0%	100.0%
TOTAL VOCs		175,760	0.24		228	99.9%		79		100.0%

Blower Air Flow Rate		15 scfm
Total VOC Emissions	Blower	0.24 lbs/day
Total VOC Emissions	Carbon 1	0.00031 lbs/day
Total VOC Emissions	Carbon 2	0.00011 lbs/day

Notes:

Air sample collected on 4 August 2006, vacuum applied to RW-3 and RW-7.

Laboratory reports are attached.

VOCs = volatile organic compounds.

Samples collected in Tedlar bags and analyzed by EPA Method TO-15.

Only chemicals reported in at least one sample are included.

Totals emission mass calculations assumes one-half the laboratory reporting limit for chemicals not reported.

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

lb/day = pound per day.

scfm = standard cubic feet minute.

m^3 = cubic meter.

ft^3 = cubic foot.

Conversion from $\mu\text{g}/\text{m}^3$ to lbs/day: concentrations ($\mu\text{g}/\text{m}^3$) x air flow rate (scfm) x 1,440 minutes/day x $2.204623\text{E}-09$ lb/ μg x 0.02831685 (m^3/ft^3).

ATTACHMENT 1
LETTER TO BAAQMD FROM BASELINE
DATED 29 JUNE 2006

BASELINE

ENVIRONMENTAL CONSULTING

29 June 2006
Y5395-02.00446

Robert Cave
Air Quality Engineer
Bay Area Air Quality Management
939 Ellis Street
San Francisco, CA 94109

Subject: Vacuum Enhanced Product Removal Pilot Test, 651 Maritime Street, Port of Oakland, California

Dear Mr. Cave:

This letter is to notify the Bay Area Air Quality Management District ("BAAQMD") that BASELINE Environmental Consulting ("BASELINE"), on the behalf of the Port of Oakland ("Port"), is planning to perform a vacuum enhanced product recovery pilot test at the Harbor Facilities Complex ("HFC") located at 651 Maritime Street in Oakland (Figure 1). BASELINE operates a diesel product recovery system on behalf of the Port at the HFC. The source of this residual diesel was from former leaking underground storage tanks that have been removed. Cleanup of the site is being performed under the Local Oversight Program ("LOP"), administered by the Alameda County Health Agency (Case Numbers RO#0000010 and RO#0000185). BASELINE intends to perform a pilot test to determine whether applying a low vacuum on the product recovery wellheads will increase product recovery rates.

The product recovery system consists of nine product recovery wells (four of which are active), product skimmer pumps, a pump controller, a compressor, and an aboveground storage tank. BASELINE intends to perform the test on two of the recovery wells for a period of two days each; the two wells will be tested sequentially, not concurrently. BASELINE will conduct the test on each well by applying a low vacuum (up to 30 inches of water) to the wellhead and monitoring the product recovery rate. A schematic of the pilot test equipment setup is provided on Figure 2. The vacuum will be applied using a small ¾-horsepower blower. The blower discharge will pass through two vessels containing vapor-phase granular activated carbon ("GAC"), arranged in series, prior to discharge (Figure 2). Based on the soil type and the exposed well screen interval, it is estimated that the low vacuum applied to the wellhead during the test will result in 15 to 20 standard cubic feet per minute ("scfm") air discharge.

BASELINE will monitor the air discharged from the blower and the two carbon vessels during the test with a photo-ionization detector ("PID") calibrated with isobutylene and set to measure

BASELINE

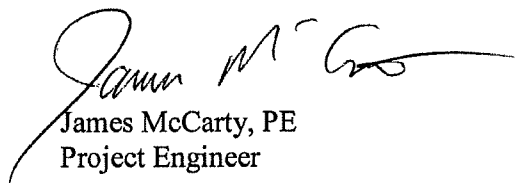
Robert Cave
29 June 2006
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equivalent benzene concentrations. The use of two carbon vessels arranged in series will ensure that the pilot test conforms to BAAQMD Regulation 8, Rule 47. The test will be terminated if the volatile organic concentration ("VOC") of the discharge from the first carbon vessel in the series (measured in parts per million ["ppm"] of benzene) and the air discharge rate indicate that the mass discharged from the first carbon vessel will exceed one pound per day.¹

BASELINE will also collect air samples in Tedlar® bags during the pilot test from the blower discharge, first carbon discharge, and the final carbon discharge. The air samples will be analyzed for VOCs using Method TO-15. BASELINE will use the data to determine the amount of hazardous air contaminants, if any, that would be expected to be emitted by the system should full scale low vacuum enhancement be implemented, and to document the quality of the air discharged during the pilot test. Samples will be collected during the second (final) day of each well test.

BASELINE expects to begin the pilot test on Monday, 31 July 2006 and to finish the testing by Friday, 4 August 2006. We will contact you a minimum of three days prior to beginning the test to confirm the proposed schedule. If you have any questions please call the undersigned at (510) 420-8686 or contact via email at jim@baseline-env.com.

Sincerely,



James McCarty, PE
Project Engineer

JGM:cr

Attachments

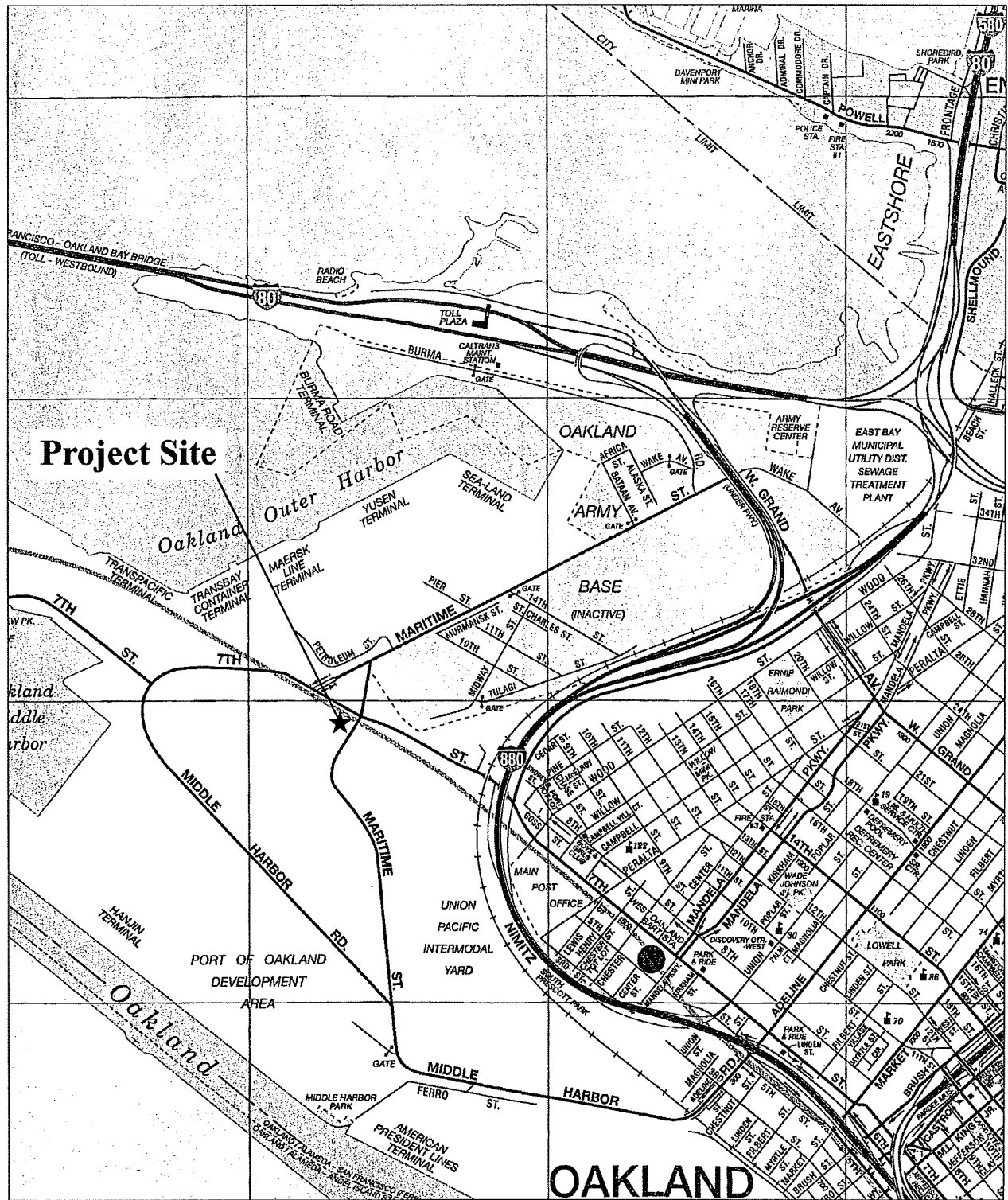
cc: Jeff Rubin, Port of Oakland
Barney Chan, Alameda County Health Agency

Y5395-02.00446-06/29/06

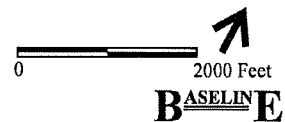
¹ Example: If the airflow rate is 15 scfm then the daily air flow would be 612 cubic meters. One pound of benzene in 612 cubic meters of air is approximately 230 parts per million.

REGIONAL LOCATION

Figure 1

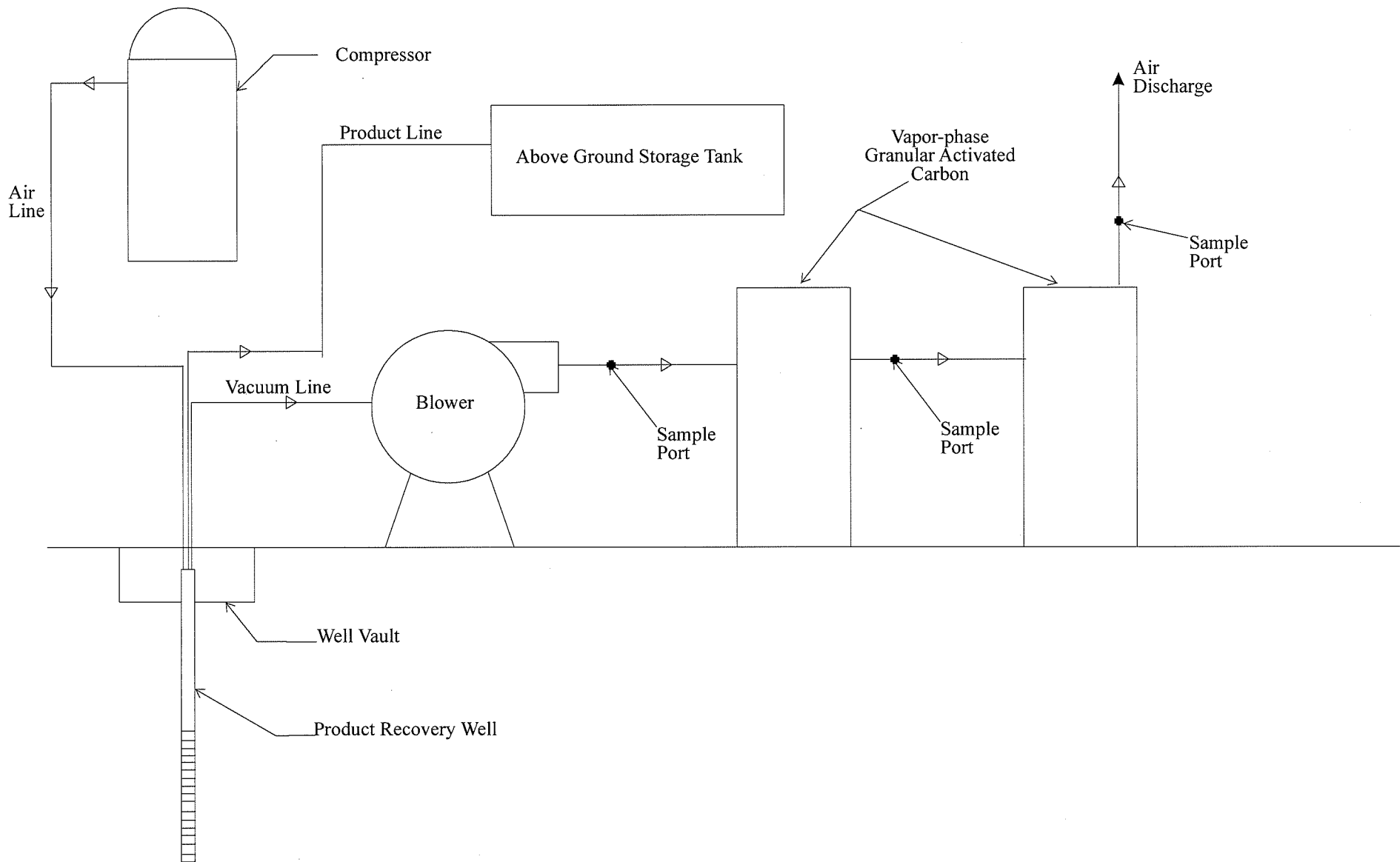


Harbor Facilities Complex - Port of Oakland
651 Maritime Street
Oakland, California



PILOT TEST SCHEMATIC

Figure 2



Harbor Facilities Complex - Port of Oakland
561 Maritime Street
Oakland, California

BASELINE

Y5395-02.00446.Fig2.cdr 6/19/06

ATTACHMENT 2
LABORATORY REPORTS

WORK ORDER #: 0608079

Work Order Summary

CLIENT: Mr. Jim McCarty
Baseline Environmental Consultants
5900 Hollis Street, Suite D
Emeryville, CA 94608

BILL TO: Mr. Jim McCarty
Baseline Environmental Consultants
5900 Hollis Street, Suite D
Emeryville, CA 94608

PHONE: 510-420-8686
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DATE RECEIVED: 08/03/2006
DATE COMPLETED: 08/16/2006

P.O. #
PROJECT # Y5395-02 SAIC/PORT HARBOR
CONTACT: FACILITIES
Kyle Vagadori

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	PT-01	Modified TO-15	Tedlar Bag
02A	PT-02	Modified TO-15	Tedlar Bag
03A	PT-03	Modified TO-15	Tedlar Bag
04A	Lab Blank	Modified TO-15	NA
05A	CCV	Modified TO-15	NA
06A	LCS	Modified TO-15	NA

CERTIFIED BY:  DATE: 08/16/06
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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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).

LABORATORY NARRATIVE
Modified TO-15
Baseline Environmental Consultants
Workorder# 0608079

Three 1 Liter Tedlar Bag samples were received on August 03, 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

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

The reported result for 4-Ethyltoluene in sample PT-01 may be biased high due to co-elution with a non target compound with similar characteristic ions. Both the primary and secondary ion for 4-Ethyltoluene exhibited potential interference.

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.



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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



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

Client Sample ID: PT-01

Lab ID#: 0608079-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	33	64	85	160
trans-1,2-Dichloroethene	33	43	130	170
Hexane	33	10000	120	35000
cis-1,2-Dichloroethene	33	44	130	170
Cyclohexane	33	7900	110	27000
2,2,4-Trimethylpentane	33	8800	160	41000
Benzene	33	480	110	1500
1,2-Dichloroethane	33	34	130	140
Heptane	33	4800	140	20000
Ethyl Benzene	33	530	140	2300
m,p-Xylene	33	250	140	1100
o-Xylene	33	55	140	240
Cumene	33	89	160	440
Propylbenzene	33	160	160	810
4-Ethyltoluene	33	180	160	880
1,3,5-Trimethylbenzene	33	85	160	420
1,2,4-Trimethylbenzene	33	250	160	1200

Client Sample ID: PT-02

Lab ID#: 0608079-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.50	3.4	1.3	8.8
Acetone	2.0	6.1	4.8	14
2-Propanol	2.0	19	4.9	46
Carbon Disulfide	0.50	4.3	1.6	14
Toluene	0.50	1.0	1.9	3.9

Client Sample ID: PT-03

Lab ID#: 0608079-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Acetone	2.0	4.9	4.8	12
2-Propanol	2.0	15	4.9	37
Carbon Disulfide	0.50	3.1	1.6	9.7
Toluene	0.50	0.79	1.9	3.0



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Client Sample ID: PT-01

Lab ID#: 0608079-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: f080412 Date of Collection: 8/2/06
Dil. Factor: 66.7 Date of Analysis: 8/4/06 05:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	33	Not Detected	160	Not Detected
Freon 114	33	Not Detected	230	Not Detected
Chloromethane	130	Not Detected	280	Not Detected
Vinyl Chloride	33	64	85	160
1,3-Butadiene	33	Not Detected	74	Not Detected
Bromomethane	33	Not Detected	130	Not Detected
Chloroethane	33	Not Detected	88	Not Detected
Freon 11	33	Not Detected	190	Not Detected
Ethanol	130	Not Detected	250	Not Detected
Freon 113	33	Not Detected	260	Not Detected
1,1-Dichloroethene	33	Not Detected	130	Not Detected
Acetone	130	Not Detected	320	Not Detected
2-Propanol	130	Not Detected	330	Not Detected
Carbon Disulfide	33	Not Detected	100	Not Detected
3-Chloropropene	130	Not Detected	420	Not Detected
Methylene Chloride	33	Not Detected	120	Not Detected
Methyl tert-butyl ether	33	Not Detected	120	Not Detected
trans-1,2-Dichloroethene	33	43	130	170
Hexane	33	10000	120	35000
1,1-Dichloroethane	33	Not Detected	130	Not Detected
2-Butanone (Methyl Ethyl Ketone)	33	Not Detected	98	Not Detected
cis-1,2-Dichloroethene	33	44	130	170
Tetrahydrofuran	33	Not Detected	98	Not Detected
Chloroform	33	Not Detected	160	Not Detected
1,1,1-Trichloroethane	33	Not Detected	180	Not Detected
Cyclohexane	33	7900	110	27000
Carbon Tetrachloride	33	Not Detected	210	Not Detected
2,2,4-Trimethylpentane	33	8800	160	41000
Benzene	33	480	110	1500
1,2-Dichloroethane	33	34	130	140
Heptane	33	4800	140	20000
Trichloroethene	33	Not Detected	180	Not Detected
1,2-Dichloropropane	33	Not Detected	150	Not Detected
1,4-Dioxane	130	Not Detected	480	Not Detected
Bromodichloromethane	33	Not Detected	220	Not Detected
cis-1,3-Dichloropropene	33	Not Detected	150	Not Detected
4-Methyl-2-pentanone	33	Not Detected	140	Not Detected
Toluene	33	Not Detected	120	Not Detected
trans-1,3-Dichloropropene	33	Not Detected	150	Not Detected
1,1,2-Trichloroethane	33	Not Detected	180	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-01

Lab ID#: 0608079-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080412	Date of Collection:	8/2/06
Dil. Factor:	66.7	Date of Analysis:	8/4/06 05:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	33	Not Detected	230	Not Detected
2-Hexanone	130	Not Detected	550	Not Detected
Dibromochloromethane	33	Not Detected	280	Not Detected
1,2-Dibromoethane (EDB)	33	Not Detected	260	Not Detected
Chlorobenzene	33	Not Detected	150	Not Detected
Ethyl Benzene	33	530	140	2300
m,p-Xylene	33	250	140	1100
o-Xylene	33	55	140	240
Styrene	33	Not Detected	140	Not Detected
Bromoform	33	Not Detected	340	Not Detected
Cumene	33	89	160	440
1,1,2,2-Tetrachloroethane	33	Not Detected	230	Not Detected
Propylbenzene	33	160	160	810
4-Ethyltoluene	33	180	160	880
1,3,5-Trimethylbenzene	33	85	160	420
1,2,4-Trimethylbenzene	33	250	160	1200
1,3-Dichlorobenzene	33	Not Detected	200	Not Detected
1,4-Dichlorobenzene	33	Not Detected	200	Not Detected
alpha-Chlorotoluene	33	Not Detected	170	Not Detected
1,2-Dichlorobenzene	33	Not Detected	200	Not Detected
1,2,4-Trichlorobenzene	130	Not Detected	990	Not Detected
Hexachlorobutadiene	130	Not Detected	1400	Not Detected

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	127	70-130
4-Bromofluorobenzene	100	70-130



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Client Sample ID: PT-02

Lab ID#: 0608079-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080409	Date of Collection:	8/2/06
Dil. Factor:	1.00	Date of Analysis:	8/4/06 03:12 PM

Compound	Rpt. 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	3.4	1.3	8.8
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	6.1	4.8	14
2-Propanol	2.0	19	4.9	46
Carbon Disulfide	0.50	4.3	1.6	14
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	1.5	Not Detected
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	1.0	1.9	3.9
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected



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Client Sample ID: PT-02

Lab ID#: 0608079-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080409	Date of Collection:	8/2/06
Dil. Factor:	1.00	Date of Analysis:	8/4/06 03:12 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

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	114	70-130



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Client Sample ID: PT-03

Lab ID#: 0608079-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080410	Date of Collection:	8/2/06
Dil. Factor:	1.00	Date of Analysis:	8/4/06 04:01 PM

Compound	Rpt. 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	4.9	4.8	12
2-Propanol	2.0	15	4.9	37
Carbon Disulfide	0.50	3.1	1.6	9.7
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	1.5	Not Detected
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	0.79	1.9	3.0
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected



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Client Sample ID: PT-03

Lab ID#: 0608079-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080410	Date of Collection:	8/2/06
Dil. Factor:	1.00	Date of Analysis:	8/4/06 04:01 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

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	112	70-130



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Client Sample ID: Lab Blank

Lab ID#: 0608079-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080408	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/4/06 01:51 PM

Compound	Rpt. 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	1.5	Not Detected
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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0608079-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080408	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/4/06 01:51 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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	107	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0608079-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/4/06 08:54 AM

Compound	%Recovery
Freon 12	92
Freon 114	91
Chloromethane	102
Vinyl Chloride	92
1,3-Butadiene	97
Bromomethane	90
Chloroethane	89
Freon 11	88
Ethanol	99
Freon 113	91
1,1-Dichloroethene	92
Acetone	94
2-Propanol	99
Carbon Disulfide	89
3-Chloropropene	93
Methylene Chloride	87
Methyl tert-butyl ether	97
trans-1,2-Dichloroethene	96
Hexane	100
1,1-Dichloroethane	94
2-Butanone (Methyl Ethyl Ketone)	92
cis-1,2-Dichloroethene	96
Tetrahydrofuran	105
Chloroform	100
1,1,1-Trichloroethane	92
Cyclohexane	103
Carbon Tetrachloride	90
2,2,4-Trimethylpentane	105
Benzene	97
1,2-Dichloroethane	94
Heptane	99
Trichloroethene	96
1,2-Dichloropropane	98
1,4-Dioxane	96
Bromodichloromethane	98
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	106
Toluene	97
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	96



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0608079-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080402	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/4/06 08:54 AM

Compound	%Recovery
Tetrachloroethene	96
2-Hexanone	98
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	96
Chlorobenzene	95
Ethyl Benzene	98
m,p-Xylene	106
o-Xylene	99
Styrene	102
Bromoform	99
Cumene	107
1,1,2,2-Tetrachloroethane	99
Propylbenzene	101
4-Ethyltoluene	102
1,3,5-Trimethylbenzene	101
1,2,4-Trimethylbenzene	104
1,3-Dichlorobenzene	96
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	98
1,2,4-Trichlorobenzene	96
Hexachlorobutadiene	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	102	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0608079-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/4/06 10:19 AM

Compound	%Recovery
Freon 12	88
Freon 114	88
Chloromethane	97
Vinyl Chloride	88
1,3-Butadiene	99
Bromomethane	89
Chloroethane	88
Freon 11	86
Ethanol	101
Freon 113	89
1,1-Dichloroethene	90
Acetone	94
2-Propanol	98
Carbon Disulfide	95
3-Chloropropene	90
Methylene Chloride	85
Methyl tert-butyl ether	95
trans-1,2-Dichloroethene	98
Hexane	102
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	92
cis-1,2-Dichloroethene	95
Tetrahydrofuran	104
Chloroform	98
1,1,1-Trichloroethane	90
Cyclohexane	104
Carbon Tetrachloride	87
2,2,4-Trimethylpentane	108
Benzene	96
1,2-Dichloroethane	94
Heptane	104
Trichloroethene	98
1,2-Dichloropropane	97
1,4-Dioxane	100
Bromodichloromethane	96
cis-1,3-Dichloropropene	77
4-Methyl-2-pentanone	106
Toluene	96
trans-1,3-Dichloropropene	94
1,1,2-Trichloroethane	96



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0608079-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/4/06 10:19 AM

Compound	%Recovery
Tetrachloroethene	97
2-Hexanone	97
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	93
Chlorobenzene	94
Ethyl Benzene	102
m,p-Xylene	101
o-Xylene	87
Styrene	96
Bromoform	99
Cumene	109
1,1,2,2-Tetrachloroethane	95
Propylbenzene	104
4-Ethyltoluene	106
1,3,5-Trimethylbenzene	83
1,2,4-Trimethylbenzene	67 Q
1,3-Dichlorobenzene	92
1,4-Dichlorobenzene	92
alpha-Chlorotoluene	88
1,2-Dichlorobenzene	90
1,2,4-Trichlorobenzene	79
Hexachlorobutadiene	78

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	101	70-130

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This electronic report includes the following:

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

WORK ORDER #: 0608171

Work Order Summary

CLIENT: Mr. Jim McCarty
Baseline Environmental Consultants
5900 Hollis Street, Suite D
Emeryville, CA 94608

BILL TO: Mr. Jim McCarty
Baseline Environmental Consultants
5900 Hollis Street, Suite D
Emeryville, CA 94608

PHONE: 510-420-8686

FAX: 510-420-1707

DATE RECEIVED: 08/05/2006


DATE COMPLETED: 08/18/2006

P.O. #

PROJECT # Y5395-02 SAIC/PORT HARBOR

CONTACT: FACILITIES
Kyle Vagadori

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	PT-04	Modified TO-15	Tedlar Bag
02A	PT-05	Modified TO-15	Tedlar Bag
03A	PT-06	Modified TO-15	Tedlar Bag
03AA	PT-06 Duplicate	Modified TO-15	Tedlar Bag
04A	Lab Blank	Modified TO-15	NA
05A	CCV	Modified TO-15	NA
06A	LCS	Modified TO-15	NA

CERTIFIED BY: 

DATE: 08/18/06

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 TO-15
Baseline Environmental Consultants
Workorder# 0608171

Three 1 Liter Tedlar Bag samples were received on August 05, 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

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 no 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:



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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: PT-04

Lab ID#: 0608171-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	40	51	100	130
Hexane	40	13000	140	45000
Cyclohexane	40	9700	140	34000
2,2,4-Trimethylpentane	40	17000 E	190	82000 E
Benzene	40	550	130	1800
Heptane	40	2800	160	12000

Client Sample ID: PT-05

Lab ID#: 0608171-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	0.54	2.5	2.7
Vinyl Chloride	0.50	56	1.3	140
Ethanol	2.0	2.1	3.8	3.9
Acetone	2.0	5.9	4.8	14
2-Propanol	2.0	18	4.9	43
Carbon Disulfide	0.50	4.6	1.6	14
Hexane	0.50	0.53	1.8	1.9
Toluene	0.50	1.1	1.9	4.1

Client Sample ID: PT-06

Lab ID#: 0608171-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Acetone	2.0	6.2	4.8	15
2-Propanol	2.0	16	4.9	39
Carbon Disulfide	0.50	4.5	1.6	14
2-Butanone (Methyl Ethyl Ketone)	0.50	0.53	1.5	1.6
Toluene	0.50	1.2	1.9	4.4

Client Sample ID: PT-06 Duplicate

Lab ID#: 0608171-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Acetone	2.0	6.4	4.8	15



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

Client Sample ID: PT-06 Duplicate

Lab ID#: 0608171-03AA

2-Propanol	2.0	17	4.9	41
Carbon Disulfide	0.50	4.7	1.6	14
Toluene	0.50	1.1	1.9	4.3



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Client Sample ID: PT-04

Lab ID#: 0608171-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: f080609 Date of Collection: 8/4/06
Dil. Factor: 80.0 Date of Analysis: 8/6/06 04:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	40	Not Detected	200	Not Detected
Freon 114	40	Not Detected	280	Not Detected
Chloromethane	160	Not Detected	330	Not Detected
Vinyl Chloride	40	51	100	130
1,3-Butadiene	40	Not Detected	88	Not Detected
Bromomethane	40	Not Detected	160	Not Detected
Chloroethane	40	Not Detected	100	Not Detected
Freon 11	40	Not Detected	220	Not Detected
Ethanol	160	Not Detected	300	Not Detected
Freon 113	40	Not Detected	310	Not Detected
1,1-Dichloroethene	40	Not Detected	160	Not Detected
Acetone	160	Not Detected	380	Not Detected
2-Propanol	160	Not Detected	390	Not Detected
Carbon Disulfide	40	Not Detected	120	Not Detected
3-Chloropropene	160	Not Detected	500	Not Detected
Methylene Chloride	40	Not Detected	140	Not Detected
Methyl tert-butyl ether	40	Not Detected	140	Not Detected
trans-1,2-Dichloroethene	40	Not Detected	160	Not Detected
Hexane	40	13000	140	45000
1,1-Dichloroethane	40	Not Detected	160	Not Detected
2-Butanone (Methyl Ethyl Ketone)	40	Not Detected	120	Not Detected
cis-1,2-Dichloroethene	40	Not Detected	160	Not Detected
Tetrahydrofuran	40	Not Detected	120	Not Detected
Chloroform	40	Not Detected	200	Not Detected
1,1,1-Trichloroethane	40	Not Detected	220	Not Detected
Cyclohexane	40	9700	140	34000
Carbon Tetrachloride	40	Not Detected	250	Not Detected
2,2,4-Trimethylpentane	40	17000 E	190	82000 E
Benzene	40	550	130	1800
1,2-Dichloroethane	40	Not Detected	160	Not Detected
Heptane	40	2800	160	12000
Trichloroethene	40	Not Detected	210	Not Detected
1,2-Dichloropropane	40	Not Detected	180	Not Detected
1,4-Dioxane	160	Not Detected	580	Not Detected
Bromodichloromethane	40	Not Detected	270	Not Detected
cis-1,3-Dichloropropene	40	Not Detected	180	Not Detected
4-Methyl-2-pentanone	40	Not Detected	160	Not Detected
Toluene	40	Not Detected	150	Not Detected
trans-1,3-Dichloropropene	40	Not Detected	180	Not Detected
1,1,2-Trichloroethane	40	Not Detected	220	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-04

Lab ID#: 0608171-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080609	Date of Collection:	8/4/06
Dil. Factor:	80.0	Date of Analysis:	8/6/06 04:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	40	Not Detected	270	Not Detected
2-Hexanone	160	Not Detected	660	Not Detected
Dibromochloromethane	40	Not Detected	340	Not Detected
1,2-Dibromoethane (EDB)	40	Not Detected	310	Not Detected
Chlorobenzene	40	Not Detected	180	Not Detected
Ethyl Benzene	40	Not Detected	170	Not Detected
m,p-Xylene	40	Not Detected	170	Not Detected
o-Xylene	40	Not Detected	170	Not Detected
Styrene	40	Not Detected	170	Not Detected
Bromoform	40	Not Detected	410	Not Detected
Cumene	40	Not Detected	200	Not Detected
1,1,2,2-Tetrachloroethane	40	Not Detected	270	Not Detected
Propylbenzene	40	Not Detected	200	Not Detected
4-Ethyltoluene	40	Not Detected	200	Not Detected
1,3,5-Trimethylbenzene	40	Not Detected	200	Not Detected
1,2,4-Trimethylbenzene	40	Not Detected	200	Not Detected
1,3-Dichlorobenzene	40	Not Detected	240	Not Detected
1,4-Dichlorobenzene	40	Not Detected	240	Not Detected
alpha-Chlorotoluene	40	Not Detected	210	Not Detected
1,2-Dichlorobenzene	40	Not Detected	240	Not Detected
1,2,4-Trichlorobenzene	160	Not Detected	1200	Not Detected
Hexachlorobutadiene	160	Not Detected	1700	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	125	70-130
4-Bromofluorobenzene	100	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-05

Lab ID#: 0608171-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080610	Date of Collection:	8/4/06
Dil. Factor:	1.00	Date of Analysis:	8/6/06 04:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	0.54	2.5	2.7
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	56	1.3	140
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	2.1	3.8	3.9
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	5.9	4.8	14
2-Propanol	2.0	18	4.9	43
Carbon Disulfide	0.50	4.6	1.6	14
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	0.53	1.8	1.9
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	1.5	Not Detected
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	1.1	1.9	4.1
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-05

Lab ID#: 0608171-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080610	Date of Collection:	8/4/06
Dil. Factor:	1.00	Date of Analysis:	8/6/06 04:54 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

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	111	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-06

Lab ID#: 0608171-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080612	Date of Collection:	8/4/06
Dil. Factor:	1.00	Date of Analysis:	8/6/06 06:27 PM

Compound	Rpt. 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	6.2	4.8	15
2-Propanol	2.0	16	4.9	39
Carbon Disulfide	0.50	4.5	1.6	14
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	0.53	1.5	1.6
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
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	1.2	1.9	4.4
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-06

Lab ID#: 0608171-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080612	Date of Collection:	8/4/06
Dil. Factor:	1.00	Date of Analysis:	8/6/06 06:27 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

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	109	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-06 Duplicate

Lab ID#: 0608171-03AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080613	Date of Collection:	8/4/06
Dil. Factor:	1.00	Date of Analysis:	8/6/06 07:11 PM

Compound	Rpt. 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	6.4	4.8	15
2-Propanol	2.0	17	4.9	41
Carbon Disulfide	0.50	4.7	1.6	14
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	1.5	Not Detected
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	1.1	1.9	4.3
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: PT-06 Duplicate

Lab ID#: 0608171-03AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080613	Date of Collection:	8/4/06
Dil. Factor:	1.00	Date of Analysis:	8/6/06 07:11 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

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	111	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0608171-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080605	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/6/06 12:57 PM

Compound	Rpt. 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	1.5	Not Detected
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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0608171-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080605	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/6/06 12:57 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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	102	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0608171-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/6/06 10:33 AM

Compound	%Recovery
Freon 12	99
Freon 114	99
Chloromethane	111
Vinyl Chloride	98
1,3-Butadiene	102
Bromomethane	94
Chloroethane	96
Freon 11	96
Ethanol	103
Freon 113	97
1,1-Dichloroethene	99
Acetone	98
2-Propanol	105
Carbon Disulfide	93
3-Chloropropene	96
Methylene Chloride	92
Methyl tert-butyl ether	102
trans-1,2-Dichloroethene	99
Hexane	105
1,1-Dichloroethane	99
2-Butanone (Methyl Ethyl Ketone)	97
cis-1,2-Dichloroethene	103
Tetrahydrofuran	112
Chloroform	108
1,1,1-Trichloroethane	102
Cyclohexane	111
Carbon Tetrachloride	102
2,2,4-Trimethylpentane	111
Benzene	104
1,2-Dichloroethane	104
Heptane	110
Trichloroethene	107
1,2-Dichloropropane	107
1,4-Dioxane	105
Bromodichloromethane	109
cis-1,3-Dichloropropene	113
4-Methyl-2-pentanone	114
Toluene	108
trans-1,3-Dichloropropene	109
1,1,2-Trichloroethane	106



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0608171-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080602	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/6/06 10:33 AM

Compound	%Recovery
Tetrachloroethene	106
2-Hexanone	105
Dibromochloromethane	108
1,2-Dibromoethane (EDB)	106
Chlorobenzene	104
Ethyl Benzene	108
m,p-Xylene	115
o-Xylene	108
Styrene	111
Bromoform	109
Cumene	117
1,1,2,2-Tetrachloroethane	106
Propylbenzene	109
4-Ethyltoluene	111
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	112
1,3-Dichlorobenzene	105
1,4-Dichlorobenzene	107
alpha-Chlorotoluene	108
1,2-Dichlorobenzene	107
1,2,4-Trichlorobenzene	106
Hexachlorobutadiene	102

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	104	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0608171-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/6/06 11:35 AM

Compound	%Recovery
Freon 12	89
Freon 114	91
Chloromethane	99
Vinyl Chloride	90
1,3-Butadiene	100
Bromomethane	88
Chloroethane	90
Freon 11	88
Ethanol	101
Freon 113	90
1,1-Dichloroethene	90
Acetone	95
2-Propanol	99
Carbon Disulfide	96
3-Chloropropene	91
Methylene Chloride	85
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	99
Hexane	104
1,1-Dichloroethane	92
2-Butanone (Methyl Ethyl Ketone)	93
cis-1,2-Dichloroethene	96
Tetrahydrofuran	104
Chloroform	99
1,1,1-Trichloroethane	91
Cyclohexane	106
Carbon Tetrachloride	89
2,2,4-Trimethylpentane	108
Benzene	97
1,2-Dichloroethane	94
Heptane	104
Trichloroethene	97
1,2-Dichloropropane	98
1,4-Dioxane	98
Bromodichloromethane	96
cis-1,3-Dichloropropene	77
4-Methyl-2-pentanone	106
Toluene	96
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	98



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0608171-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	f080603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/6/06 11:35 AM

Compound	%Recovery
Tetrachloroethene	100
2-Hexanone	101
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	96
Chlorobenzene	98
Ethyl Benzene	106
m,p-Xylene	104
o-Xylene	89
Styrene	101
Bromoform	102
Cumene	111
1,1,2,2-Tetrachloroethane	97
Propylbenzene	107
4-Ethyltoluene	108
1,3,5-Trimethylbenzene	84
1,2,4-Trimethylbenzene	68 Q
1,3-Dichlorobenzene	94
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	89
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	80
Hexachlorobutadiene	78

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	102	70-130