

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160D

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-3 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160D

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

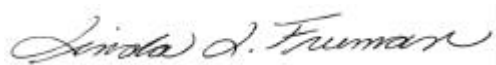
DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-SP43-VMP10	Modified TO-3	5.2 "Hg	15psi
02A	HAFB-SP43-VMP11	Modified TO-3	5.0 "Hg	15psi
03A	HAFB-SP43-VMP12	Modified TO-3	4.5 "Hg	15psi
04A	HAFB-SP43-VMP16	Modified TO-3	6.0 "Hg	15psi
05A	HAFB-SP43-VMP17	Modified TO-3	5.5 "Hg	15psi
06A	FV-GP01-HDOH#2	Modified TO-3	4.0 "Hg	15psi
07A	FV-GP08-HDOH#2	Modified TO-3	5.0 "Hg	15psi
08A	FV-GP16R-HDOH#2	Modified TO-3	5.5 "Hg	15psi
09A	JP8#1	Modified TO-3	4.0 "Hg	15psi
10A	Lab Blank	Modified TO-3	NA	NA
11A	LCS	Modified TO-3	NA	NA
11AA	LCSD	Modified TO-3	NA	NA
11B	LCS	Modified TO-3	NA	NA
11BB	LCSD	Modified TO-3	NA	NA

CERTIFIED BY:



DATE: 10/21/11

Laboratory Director

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

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 TO-3
Tetra Tech EM, Inc.
Workorder# 1110160D

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with photo ionization and 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. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L.

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

<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

There were no receiving discrepancies.

Analytical Notes

The detection of Benzene may have been masked in sample HAFB-SP43-VMP10 due to complex hydrocarbon interference.

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

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160D-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Toluene	0.32	1.2	23	87
Ethyl Benzene	0.32	1.4	13 M	58 M
m,p-Xylene	0.32	1.4	37 M	160 M
o-Xylene	0.32	1.4	7.2 M	31 M
TPH (Gasoline Range)	8.1	33	5500	22000

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160D-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.32	1.0	3.1 M	10 M
Toluene	0.32	1.2	32	120
Ethyl Benzene	0.32	1.4	24	110
m,p-Xylene	0.32	1.4	46 M	200 M
o-Xylene	0.32	1.4	7.1	31
TPH (Gasoline Range)	8.1	33	7400	30000

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160D-03A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Toluene	0.0024	0.0090	0.0036	0.014
Ethyl Benzene	0.0024	0.010	0.0027 M	0.012 M
m,p-Xylene	0.0024	0.010	0.0063 M	0.027 M
TPH (Gasoline Range)	0.060	0.24	0.78	3.2

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160D-04A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Toluene	1.0	3.8	100	400

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160D-04A

Ethyl Benzene	1.0	4.4	24	110
m,p-Xylene	1.0	4.4	54 M	230 M
o-Xylene	1.0	4.4	5.5	24
TPH (Gasoline Range)	25	100	20000	82000

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160D-05A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.099	0.32	3.1 M	9.8 M
Toluene	0.099	0.37	9.6	36
Ethyl Benzene	0.099	0.43	4.9	21
m,p-Xylene	0.099	0.43	11	49
o-Xylene	0.099	0.43	2.0	8.9
TPH (Gasoline Range)	2.5	10	2000	8000

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160D-06A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0023	0.0074	0.030	0.096
Ethyl Benzene	0.0023	0.010	0.061	0.26
m,p-Xylene	0.0023	0.010	0.053 M	0.23 M
o-Xylene	0.0023	0.010	0.0083 M	0.036 M
TPH (Gasoline Range)	0.058	0.24	9.5	39

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160D-07A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.032	0.10	0.76	2.4
Toluene	0.032	0.12	0.86	3.3
Ethyl Benzene	0.032	0.14	1.8	8.0

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

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160D-07A

m,p-Xylene	0.032	0.14	4.1	18
o-Xylene	0.032	0.14	1.2	5.3
TPH (Gasoline Range)	0.81	3.3	540	2200

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160D-08A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.099	0.32	0.70	2.2
Toluene	0.099	0.37	0.11 M	0.42 M
Ethyl Benzene	0.099	0.43	10	44
m,p-Xylene	0.099	0.43	4.1 M	18 M
o-Xylene	0.099	0.43	4.4 M	19 M
TPH (Gasoline Range)	2.5	10	1500	6100

Client Sample ID: JP8#1

Lab ID#: 1110160D-09A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.12	0.37	6.0	19
Toluene	0.12	0.44	18	67
Ethyl Benzene	0.12	0.50	4.8	21
m,p-Xylene	0.12	0.50	16	67
o-Xylene	0.12	0.50	7.3	32
TPH (Gasoline Range)	2.9	12	1800	7200

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160D-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101307	Date of Collection: 10/5/11 2:05:00 PM
Dil. Factor:	325	Date of Analysis: 10/13/11 09:25 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.32	1.0	Not Detected M	Not Detected M
Toluene	0.32	1.2	23	87
Ethyl Benzene	0.32	1.4	13 M	58 M
m,p-Xylene	0.32	1.4	37 M	160 M
o-Xylene	0.32	1.4	7.2 M	31 M
TPH (Gasoline Range)	8.1	33	5500	22000

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	95	75-150
Fluorobenzene (PID)	85	75-125

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160D-02A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101308	Date of Collection: 10/5/11 1:15:00 PM
Dil. Factor:	323	Date of Analysis: 10/13/11 10:17 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.32	1.0	3.1 M	10 M
Toluene	0.32	1.2	32	120
Ethyl Benzene	0.32	1.4	24	110
m,p-Xylene	0.32	1.4	46 M	200 M
o-Xylene	0.32	1.4	7.1	31
TPH (Gasoline Range)	8.1	33	7400	30000

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	110	75-150
Fluorobenzene (PID)	98	75-125

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160D-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101309	Date of Collection: 10/5/11 12:44:00 PM
Dil. Factor:	2.38	Date of Analysis: 10/13/11 11:08 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0024	0.0076	Not Detected	Not Detected
Toluene	0.0024	0.0090	0.0036	0.014
Ethyl Benzene	0.0024	0.010	0.0027 M	0.012 M
m,p-Xylene	0.0024	0.010	0.0063 M	0.027 M
o-Xylene	0.0024	0.010	Not Detected	Not Detected
TPH (Gasoline Range)	0.060	0.24	0.78	3.2

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	96	75-150
Fluorobenzene (PID)	82	75-125

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160D-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101311	Date of Collection: 10/5/11 1:42:00 PM
Dil. Factor:	1010	Date of Analysis: 10/14/11 07:07 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	1.0	3.2	Not Detected	Not Detected
Toluene	1.0	3.8	100	400
Ethyl Benzene	1.0	4.4	24	110
m,p-Xylene	1.0	4.4	54 M	230 M
o-Xylene	1.0	4.4	5.5	24
TPH (Gasoline Range)	25	100	20000	82000

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	98	75-150
Fluorobenzene (PID)	88	75-125

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160D-05A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101312	Date of Collection: 10/5/11 11:52:00 AM
Dil. Factor:	98.8	Date of Analysis: 10/14/11 07:50 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.099	0.32	3.1 M	9.8 M
Toluene	0.099	0.37	9.6	36
Ethyl Benzene	0.099	0.43	4.9	21
m,p-Xylene	0.099	0.43	11	49
o-Xylene	0.099	0.43	2.0	8.9
TPH (Gasoline Range)	2.5	10	2000	8000

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	97	75-150
Fluorobenzene (PID)	86	75-125

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160D-06A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101318	Date of Collection: 10/6/11 1:45:00 PM
Dil. Factor:	2.33	Date of Analysis: 10/14/11 12:09 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0023	0.0074	0.030	0.096
Toluene	0.0023	0.0088	Not Detected	Not Detected
Ethyl Benzene	0.0023	0.010	0.061	0.26
m,p-Xylene	0.0023	0.010	0.053 M	0.23 M
o-Xylene	0.0023	0.010	0.0083 M	0.036 M
TPH (Gasoline Range)	0.058	0.24	9.5	39

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	102	75-150
Fluorobenzene (PID)	86	75-125

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160D-07A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101317	Date of Collection: 10/6/11 1:06:00 PM
Dil. Factor:	32.3	Date of Analysis: 10/14/11 11:26 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.032	0.10	0.76	2.4
Toluene	0.032	0.12	0.86	3.3
Ethyl Benzene	0.032	0.14	1.8	8.0
m,p-Xylene	0.032	0.14	4.1	18
o-Xylene	0.032	0.14	1.2	5.3
TPH (Gasoline Range)	0.81	3.3	540	2200

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	97	75-150
Fluorobenzene (PID)	78	75-125

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160D-08A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101315	Date of Collection: 10/6/11 12:19:00 PM
Dil. Factor:	98.8	Date of Analysis: 10/14/11 09:57 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.099	0.32	0.70	2.2
Toluene	0.099	0.37	0.11 M	0.42 M
Ethyl Benzene	0.099	0.43	10	44
m,p-Xylene	0.099	0.43	4.1 M	18 M
o-Xylene	0.099	0.43	4.4 M	19 M
TPH (Gasoline Range)	2.5	10	1500	6100

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	97	75-150
Fluorobenzene (PID)	76	75-125

Client Sample ID: JP8#1

Lab ID#: 1110160D-09A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101313	Date of Collection: 10/6/11 3:15:00 PM
Dil. Factor:	116	Date of Analysis: 10/14/11 08:35 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.12	0.37	6.0	19
Toluene	0.12	0.44	18	67
Ethyl Benzene	0.12	0.50	4.8	21
m,p-Xylene	0.12	0.50	16	67
o-Xylene	0.12	0.50	7.3	32
TPH (Gasoline Range)	2.9	12	1800	7200

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	113	75-150
Fluorobenzene (PID)	84	75-125

Client Sample ID: Lab Blank

Lab ID#: 1110160D-10A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101305	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/11 07:26 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0043	Not Detected	Not Detected
m,p-Xylene	0.0010	0.0043	Not Detected	Not Detected
o-Xylene	0.0010	0.0043	Not Detected	Not Detected
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	108	75-150
Fluorobenzene (PID)	94	75-125

Client Sample ID: LCS

Lab ID#: 1110160D-11A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101304b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/11 06:34 PM

Compound	%Recovery
Benzene	88
Toluene	83
Ethyl Benzene	78
m,p-Xylene	80
o-Xylene	85

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	91	75-125

Client Sample ID: LCSD

Lab ID#: 1110160D-11AA

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101323b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/11 04:02 PM

Compound	%Recovery
Benzene	86
Toluene	84
Ethyl Benzene	77
m,p-Xylene	78
o-Xylene	82

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	92	75-125

Client Sample ID: LCS

Lab ID#: 1110160D-11B

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/11 05:17 PM

Compound	%Recovery
TPH (Gasoline Range)	97

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	119	75-150

Client Sample ID: LCSD

Lab ID#: 1110160D-11BB

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d101321	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/11 02:35 PM

Compound	%Recovery
TPH (Gasoline Range)	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	105	75-150

11/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-3 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413C

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/02/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)	Modified TO-3	4.0 "Hg	5 psi
02A	HAFB-VP26-B05(24)	Modified TO-3	3.5 "Hg	5 psi
03A	HAFB-VP26-B07(20)	Modified TO-3	2.5 "Hg	5 psi
04A	HAFB-VP26-B07(25)	Modified TO-3	4.5 "Hg	5 psi
05A	HAFB-ST03-B58(347)	Modified TO-3	4.4 "Hg	5 psi
06A	HAFB-ST03-B58(422)	Modified TO-3	5.0 "Hg	5 psi
07A	HAFB-ST03-B58(492)	Modified TO-3	4.6 "Hg	5 psi
08A	HAFB-ST03-B59(388)	Modified TO-3	5.0 "Hg	5 psi
09A	HH-OU1C-MW10SG	Modified TO-3	6.0 "Hg	5 psi
10A	HH-OU1C-MW22R	Modified TO-3	5.4 "Hg	5 psi
11A	HH-OU1C-OTNS1	Modified TO-3	4.2 "Hg	5 psi
12A	GASOLINE#2	Modified TO-3	2.6 "Hg	5 psi
13A	DIESEL#3	Modified TO-3	3.2 "Hg	5 psi
14A	GASOLINE-EXHAUST	Modified TO-3	3.2 "Hg	5 psi
15A	DIESEL-EXHAUST	Modified TO-3	3.0 "Hg	5 psi
16A	Lab Blank	Modified TO-3	NA	NA
16B	Lab Blank	Modified TO-3	NA	NA

Continued on next page

WORK ORDER #: 1110413C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/02/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
17A	LCS	Modified TO-3	NA	NA
17AA	LCSD	Modified TO-3	NA	NA
17B	LCS	Modified TO-3	NA	NA
17BB	LCSD	Modified TO-3	NA	NA
17C	LCS	Modified TO-3	NA	NA
17CC	LCSD	Modified TO-3	NA	NA
17D	LCS	Modified TO-3	NA	NA
17DD	LCSD	Modified TO-3	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 11/02/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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
Tetra Tech EM, Inc.
Workorder# 1110413C

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with photo ionization and 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. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L.

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

<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

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

The Chain of Custody contained incorrect method information. ATL proceeded with the analysis as per the original contract or verbal agreement.

Analytical Notes

The recovery of surrogate Fluorobenzene in samples HAFB-VP26-B05(24), HH-OU1C-MW10SG, and HH-OU1C-MW22R was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

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

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413C-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.62	2.0	46 M	150 M
Toluene	0.62	2.3	52	200
Ethyl Benzene	0.62	2.7	5.7	25
m,p-Xylene	0.62	2.7	8.1	35
o-Xylene	0.62	2.7	1.8 M	7.8 M
TPH (Gasoline Range)	16	63	11000	46000

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413C-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	3.0	9.7	320	1000
Toluene	3.0	11	32	120
TPH (Gasoline Range)	76	310	77000	320000

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413C-03A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.58	1.9	58 M	180 M
Toluene	0.58	2.2	35	130
Ethyl Benzene	0.58	2.5	5.6	24
m,p-Xylene	0.58	2.5	3.5	15
TPH (Gasoline Range)	15	60	10000	42000

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413C-04A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	2.0	6.3	220	700
Toluene	2.0	7.5	42	160

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413C-04A

m,p-Xylene	2.0	8.6	2.2	9.5
TPH (Gasoline Range)	50	200	35000	140000

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413C-05A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Toluene	0.026	0.099	0.89	3.4
m,p-Xylene	0.026	0.11	4.7 M	20 M
o-Xylene	0.026	0.11	1.4	5.9
TPH (Gasoline Range)	0.66	2.7	350	1400

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413C-06A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.022	0.069	0.16 M	0.50 M
Toluene	0.022	0.081	1.1	4.0
m,p-Xylene	0.022	0.093	5.2 M	23 M
o-Xylene	0.022	0.093	1.5	6.4
TPH (Gasoline Range)	0.54	2.2	410	1700

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413C-07A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.026	0.084	0.24 M	0.75 M
Toluene	0.026	0.099	1.1	4.1
m,p-Xylene	0.026	0.11	5.2 M	23 M
o-Xylene	0.026	0.11	1.5	6.3
TPH (Gasoline Range)	0.66	2.7	410	1700

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413C-08A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0034	0.011	0.18	0.58
Toluene	0.0034	0.013	0.17	0.64
Ethyl Benzene	0.0034	0.014	0.067 M	0.29 M
m,p-Xylene	0.0034	0.014	0.62	2.7
o-Xylene	0.0034	0.014	0.21	0.90
TPH (Gasoline Range)	0.084	0.34	43	180

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413C-09A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	1.7	5.4	110 M	360 M
Toluene	1.7	6.3	65	250
Ethyl Benzene	1.7	7.3	6.7	29
m,p-Xylene	1.7	7.3	12 M	53 M
o-Xylene	1.7	7.3	1.8	8.0
TPH (Gasoline Range)	42	170	25000	100000

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413C-10A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.65	2.1	42 M	130 M
Toluene	0.65	2.4	19	70
Ethyl Benzene	0.65	2.8	3.5	15
m,p-Xylene	0.65	2.8	7.3 M	32 M
o-Xylene	0.65	2.8	1.8	7.8
TPH (Gasoline Range)	16	67	9500	39000

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413C-11A

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413C-11A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0021	0.0067	0.011 M	0.034 M
TPH (Gasoline Range)	0.052	0.21	0.51	2.1

Client Sample ID: GASOLINE#2

Lab ID#: 1110413C-12A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.15	0.47	8.7	28
Toluene	0.15	0.55	24	92
Ethyl Benzene	0.15	0.64	1.7	7.5
m,p-Xylene	0.15	0.64	6.6	29
o-Xylene	0.15	0.64	2.2	9.5
TPH (Gasoline Range)	3.7	15	920	3800

Client Sample ID: DIESEL#3

Lab ID#: 1110413C-13A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0076	0.024	0.64 M	2.0 M
Toluene	0.0076	0.029	1.6	6.2
Ethyl Benzene	0.0076	0.033	0.56 M	2.4 M
m,p-Xylene	0.0076	0.033	0.99	4.3
o-Xylene	0.0076	0.033	0.39	1.7
TPH (Gasoline Range)	0.19	0.78	130	540

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413C-14A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0040	0.013	1.7	5.4
Toluene	0.0040	0.015	2.1	8.0

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

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413C-14A

Ethyl Benzene	0.0040	0.017	0.31	1.3
m,p-Xylene	0.0040	0.017	0.96	4.2
o-Xylene	0.0040	0.017	0.51	2.2
TPH (Gasoline Range)	0.10	0.41	32	130

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413C-15A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0018	0.0058	0.011	0.036
Toluene	0.0018	0.0068	0.0039	0.015
m,p-Xylene	0.0018	0.0078	0.0024	0.010
o-Xylene	0.0018	0.0078	0.0020	0.0088
TPH (Gasoline Range)	0.045	0.18	0.25	1.0

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413C-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102505	Date of Collection: 10/13/11 10:12:00 A
Dil. Factor:	620	Date of Analysis: 10/25/11 09:47 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.62	2.0	46 M	150 M
Toluene	0.62	2.3	52	200
Ethyl Benzene	0.62	2.7	5.7	25
m,p-Xylene	0.62	2.7	8.1	35
o-Xylene	0.62	2.7	1.8 M	7.8 M
TPH (Gasoline Range)	16	63	11000	46000

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	110	75-150
Fluorobenzene (PID)	94	75-125

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413C-02A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102609	Date of Collection: 10/13/11 10:46:00 A
Dil. Factor:	3040	Date of Analysis: 10/26/11 01:37 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	3.0	9.7	320	1000
Toluene	3.0	11	32	120
Ethyl Benzene	3.0	13	Not Detected	Not Detected
m,p-Xylene	3.0	13	Not Detected	Not Detected
o-Xylene	3.0	13	Not Detected	Not Detected
TPH (Gasoline Range)	76	310	77000	320000

Q = Exceeds Quality Control limits, due to matrix effects. Matrix effects confirmed by re-analysis.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	155 Q	75-150
Fluorobenzene (PID)	114	75-125

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413C-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102506	Date of Collection: 10/13/11 11:23:00 A
Dil. Factor:	584	Date of Analysis: 10/25/11 10:42 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.58	1.9	58 M	180 M
Toluene	0.58	2.2	35	130
Ethyl Benzene	0.58	2.5	5.6	24
m,p-Xylene	0.58	2.5	3.5	15
o-Xylene	0.58	2.5	Not Detected	Not Detected
TPH (Gasoline Range)	15	60	10000	42000

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	113	75-150
Fluorobenzene (PID)	96	75-125

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413C-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102606	Date of Collection: 10/13/11 11:49:00 A
Dil. Factor:	1980	Date of Analysis: 10/26/11 11:37 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	2.0	6.3	220	700
Toluene	2.0	7.5	42	160
Ethyl Benzene	2.0	8.6	Not Detected	Not Detected
m,p-Xylene	2.0	8.6	2.2	9.5
o-Xylene	2.0	8.6	Not Detected	Not Detected
TPH (Gasoline Range)	50	200	35000	140000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	119	75-150
Fluorobenzene (PID)	100	75-125

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413C-05A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102508	Date of Collection: 10/14/11 9:35:00 AM
Dil. Factor:	26.2	Date of Analysis: 10/25/11 12:05 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.026	0.084	Not Detected	Not Detected
Toluene	0.026	0.099	0.89	3.4
Ethyl Benzene	0.026	0.11	Not Detected M	Not Detected M
m,p-Xylene	0.026	0.11	4.7 M	20 M
o-Xylene	0.026	0.11	1.4	5.9
TPH (Gasoline Range)	0.66	2.7	350	1400

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	100	75-150
Fluorobenzene (PID)	80	75-125

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413C-06A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102510	Date of Collection: 10/14/11 10:19:00 A
Dil. Factor:	21.5	Date of Analysis: 10/25/11 01:35 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.022	0.069	0.16 M	0.50 M
Toluene	0.022	0.081	1.1	4.0
Ethyl Benzene	0.022	0.093	Not Detected M	Not Detected M
m,p-Xylene	0.022	0.093	5.2 M	23 M
o-Xylene	0.022	0.093	1.5	6.4
TPH (Gasoline Range)	0.54	2.2	410	1700

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	102	75-150
Fluorobenzene (PID)	80	75-125

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413C-07A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102513	Date of Collection: 10/14/11 10:36:00 A
Dil. Factor:	26.3	Date of Analysis: 10/25/11 03:50 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.026	0.084	0.24 M	0.75 M
Toluene	0.026	0.099	1.1	4.1
Ethyl Benzene	0.026	0.11	Not Detected M	Not Detected M
m,p-Xylene	0.026	0.11	5.2 M	23 M
o-Xylene	0.026	0.11	1.5	6.3
TPH (Gasoline Range)	0.66	2.7	410	1700

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	101	75-150
Fluorobenzene (PID)	83	75-125

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413C-08A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102512	Date of Collection: 10/14/11 11:03:00 A
Dil. Factor:	3.35	Date of Analysis: 10/25/11 03:09 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0034	0.011	0.18	0.58
Toluene	0.0034	0.013	0.17	0.64
Ethyl Benzene	0.0034	0.014	0.067 M	0.29 M
m,p-Xylene	0.0034	0.014	0.62	2.7
o-Xylene	0.0034	0.014	0.21	0.90
TPH (Gasoline Range)	0.084	0.34	43	180

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	120	75-150
Fluorobenzene (PID)	97	75-125

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413C-09A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102608	Date of Collection: 10/18/11 11:43:00 A
Dil. Factor:	1680	Date of Analysis: 10/26/11 12:48 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	1.7	5.4	110 M	360 M
Toluene	1.7	6.3	65	250
Ethyl Benzene	1.7	7.3	6.7	29
m,p-Xylene	1.7	7.3	12 M	53 M
o-Xylene	1.7	7.3	1.8	8.0
TPH (Gasoline Range)	42	170	25000	100000

M = Reported value may be biased due to apparent matrix interferences.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	211 Q	75-150
Fluorobenzene (PID)	161 Q	75-125

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413C-10A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102515	Date of Collection: 10/18/11 11:09:00 A
Dil. Factor:	652	Date of Analysis: 10/25/11 05:21 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.65	2.1	42 M	130 M
Toluene	0.65	2.4	19	70
Ethyl Benzene	0.65	2.8	3.5	15
m,p-Xylene	0.65	2.8	7.3 M	32 M
o-Xylene	0.65	2.8	1.8	7.8
TPH (Gasoline Range)	16	67	9500	39000

M = Reported value may be biased due to apparent matrix interferences.

Q = Exceeds Quality Control limits, due to matrix effects. Matrix effects confirmed by re-analysis.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	198 Q	75-150
Fluorobenzene (PID)	151 Q	75-125

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413C-11A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102517	Date of Collection: 10/18/11 10:31:00 A
Dil. Factor:	2.09	Date of Analysis: 10/25/11 07:21 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0021	0.0067	0.011 M	0.034 M
Toluene	0.0021	0.0079	Not Detected	Not Detected
Ethyl Benzene	0.0021	0.0091	Not Detected	Not Detected
m,p-Xylene	0.0021	0.0091	Not Detected	Not Detected
o-Xylene	0.0021	0.0091	Not Detected	Not Detected
TPH (Gasoline Range)	0.052	0.21	0.51	2.1

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	110	75-150
Fluorobenzene (PID)	92	75-125

Client Sample ID: GASOLINE#2

Lab ID#: 1110413C-12A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102516	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	147	Date of Analysis: 10/25/11 06:02 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.15	0.47	8.7	28
Toluene	0.15	0.55	24	92
Ethyl Benzene	0.15	0.64	1.7	7.5
m,p-Xylene	0.15	0.64	6.6	29
o-Xylene	0.15	0.64	2.2	9.5
TPH (Gasoline Range)	3.7	15	920	3800

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	115	75-150
Fluorobenzene (PID)	98	75-125

Client Sample ID: DIESEL#3

Lab ID#: 1110413C-13A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102519	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	7.62	Date of Analysis: 10/25/11 08:36 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0076	0.024	0.64 M	2.0 M
Toluene	0.0076	0.029	1.6	6.2
Ethyl Benzene	0.0076	0.033	0.56 M	2.4 M
m,p-Xylene	0.0076	0.033	0.99	4.3
o-Xylene	0.0076	0.033	0.39	1.7
TPH (Gasoline Range)	0.19	0.78	130	540

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	117	75-150
Fluorobenzene (PID)	90	75-125

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413C-14A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102610	Date of Collection: 10/18/11 8:50:00 AM
Dil. Factor:	4.00	Date of Analysis: 10/26/11 02:09 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0040	0.013	1.7	5.4
Toluene	0.0040	0.015	2.1	8.0
Ethyl Benzene	0.0040	0.017	0.31	1.3
m,p-Xylene	0.0040	0.017	0.96	4.2
o-Xylene	0.0040	0.017	0.51	2.2
TPH (Gasoline Range)	0.10	0.41	32	130

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	119	75-150
Fluorobenzene (PID)	96	75-125

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413C-15A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102611	Date of Collection: 10/18/11 8:45:00 AM
Dil. Factor:	1.80	Date of Analysis: 10/26/11 03:05 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0018	0.0058	0.011	0.036
Toluene	0.0018	0.0068	0.0039	0.015
Ethyl Benzene	0.0018	0.0078	Not Detected	Not Detected
m,p-Xylene	0.0018	0.0078	0.0024	0.010
o-Xylene	0.0018	0.0078	0.0020	0.0088
TPH (Gasoline Range)	0.045	0.18	0.25	1.0

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	110	75-150
Fluorobenzene (PID)	94	75-125

Client Sample ID: Lab Blank

Lab ID#: 1110413C-16A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 09:06 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0043	Not Detected	Not Detected
m,p-Xylene	0.0010	0.0043	Not Detected	Not Detected
o-Xylene	0.0010	0.0043	Not Detected	Not Detected
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	113	75-150
Fluorobenzene (PID)	97	75-125

Client Sample ID: Lab Blank

Lab ID#: 1110413C-16B

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102605	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 10:54 AM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0043	Not Detected	Not Detected
m,p-Xylene	0.0010	0.0043	Not Detected	Not Detected
o-Xylene	0.0010	0.0043	Not Detected	Not Detected
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	112	75-150
Fluorobenzene (PID)	97	75-125

Client Sample ID: LCS

Lab ID#: 1110413C-17A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102523b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 10:45 PM

Compound	%Recovery
Benzene	82
Toluene	90
Ethyl Benzene	82
m,p-Xylene	82
o-Xylene	86

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	91	75-125

Client Sample ID: LCSD

Lab ID#: 1110413C-17AA

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102524b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 11:10 PM

Compound	%Recovery
Benzene	86
Toluene	89
Ethyl Benzene	83
m,p-Xylene	83
o-Xylene	87

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	89	75-125

Client Sample ID: LCS

Lab ID#: 1110413C-17B

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102602b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 08:58 AM

Compound	%Recovery
Benzene	93
Toluene	87
Ethyl Benzene	81
m,p-Xylene	82
o-Xylene	87

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	99	75-125

Client Sample ID: LCSD

Lab ID#: 1110413C-17BB

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102622b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 10:07 PM

Compound	%Recovery
Benzene	91
Toluene	91
Ethyl Benzene	88
m,p-Xylene	90
o-Xylene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	90	75-125

Client Sample ID: LCS

Lab ID#: 1110413C-17C

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 07:50 AM

Compound	%Recovery
TPH (Gasoline Range)	103

Container Type: NA - Not Applicable

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

Client Sample ID: LCSD

Lab ID#: 1110413C-17CC

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102522	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 10:10 PM

Compound	%Recovery
TPH (Gasoline Range)	89

Container Type: NA - Not Applicable

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

Client Sample ID: LCS

Lab ID#: 1110413C-17D

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 10:03 AM

Compound	%Recovery
TPH (Gasoline Range)	96

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	115	75-150

Client Sample ID: LCSD

Lab ID#: 1110413C-17DD

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d102621	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 09:19 PM

Compound	%Recovery
TPH (Gasoline Range)	96

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	103	75-150

6/9/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Fishing Village
Project #:
Workorder #: 1105519B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 5/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1105519B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Fishing Village

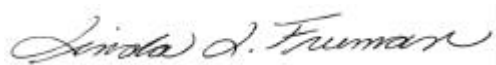
DATE RECEIVED: 05/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/09/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	FV-GP-01-HDOH	Modified TO-15	5.5 "Hg	15 psi
02A	FV-GP-06R-HDOH	Modified TO-15	4.5 "Hg	15 psi
02AA	FV-GP-06R-HDOH Lab Duplicate	Modified TO-15	4.5 "Hg	15 psi
03A	FV-GP-08-HDOH	Modified TO-15	2.0 "Hg	15 psi
04A	FV-GP-16R-HDOH	Modified TO-15	5.5 "Hg	15 psi
05A	FV-GP-17-HDOH	Modified TO-15	5.5 "Hg	15 psi
06A	G-IPB20-HDOH	Modified TO-15	6.5 "Hg	15 psi
07A	G-IPH11-HDOH	Modified TO-15	4.0 "Hg	15 psi
08A	G-IPL19-HDOH	Modified TO-15	5.0 "Hg	15 psi
09A	G-IP28-HDOH	Modified TO-15	9.5 "Hg	15 psi
10A	G-SG12-HDOH	Modified TO-15	4.0 "Hg	15 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
12B	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13B	LCS	Modified TO-15	NA	NA

CERTIFIED BY:



DATE: 06/09/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1105519B**

Ten 1 Liter Summa Canister (MA APH Certified) samples were received on May 26, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples FV-GP-08-HDOH, G-IPB20-HDOH, G-IPH11-HDOH and G-IP28-HDOH due to the presence of high level target species.

Dilution was performed on samples FV-GP-01-HDOH, FV-GP-16R-HDOH and G-SG12-HDOH due to the presence of high level non-target species.

All Quality Control Limit exceedences and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519B-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	37	780	110	2300
Benzene	37	10000	120	34000
Toluene	37	1600	140	5900
m,p-Xylene	37	98	160	430
o-Xylene	37	47	160	200
Styrene	37	67	160	280

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519B-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	12000	3000000	37000	9700000
Heptane	12000	16000	48000	64000
Toluene	12000	12000	44000	46000
Ethyl Benzene	12000	19000	50000	81000

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloromethane	4.8	11	10	22
Ethanol	4.8	13	9.1	25
Acetone	4.8	77	11	180
Carbon Disulfide	4.8	15	15	47
Methylene Chloride	1.2	1.4	4.2	4.7
2-Butanone (Methyl Ethyl Ketone)	4.8	24	14	72
Tetrahydrofuran	1.2	330	3.6	970
Cyclohexane	1.2	1.2	4.2	4.3
Benzene	1.2	150	3.9	480
Toluene	1.2	14	4.6	51
Ethyl Benzene	1.2	2.7	5.2	12

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

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

m,p-Xylene	1.2	5.2	5.2	23
o-Xylene	1.2	3.0	5.2	13
Styrene	1.2	3.1	5.2	13
1,2,4-Trimethylbenzene	1.2	1.3	5.9	6.4

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519B-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	20000	6800000	63000	22000000
Toluene	20000	160000	74000	620000

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519B-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	13	16	32	39
Methyl tert-butyl ether	3.3	4.3	12	15
Cyclohexane	3.3	19	11	66
Tetrachloroethene	3.3	4.2	22	28

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060223	Date of Collection: 5/20/11 7:52:00 AM
Dil. Factor:	73.7	Date of Analysis: 6/2/11 08:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	37	Not Detected	180	Not Detected
Freon 114	37	Not Detected	260	Not Detected
Chloromethane	150	Not Detected	300	Not Detected
Vinyl Chloride	150	Not Detected	380	Not Detected
1,3-Butadiene	37	Not Detected	82	Not Detected
Bromomethane	37	Not Detected	140	Not Detected
Chloroethane	150	Not Detected	390	Not Detected
Freon 11	37	Not Detected	210	Not Detected
Ethanol	150	Not Detected	280	Not Detected
Freon 113	37	Not Detected	280	Not Detected
1,1-Dichloroethene	37	Not Detected	150	Not Detected
Acetone	150	Not Detected	350	Not Detected
2-Propanol	150	Not Detected	360	Not Detected
Carbon Disulfide	150	Not Detected	460	Not Detected
3-Chloropropene	150	Not Detected	460	Not Detected
Methylene Chloride	37	Not Detected	130	Not Detected
Methyl tert-butyl ether	37	Not Detected	130	Not Detected
trans-1,2-Dichloroethene	37	Not Detected	150	Not Detected
Hexane	37	Not Detected	130	Not Detected
1,1-Dichloroethane	37	Not Detected	150	Not Detected
2-Butanone (Methyl Ethyl Ketone)	150	Not Detected	430	Not Detected
cis-1,2-Dichloroethene	37	Not Detected	150	Not Detected
Tetrahydrofuran	37	780	110	2300
Chloroform	37	Not Detected	180	Not Detected
1,1,1-Trichloroethane	37	Not Detected	200	Not Detected
Cyclohexane	37	Not Detected	130	Not Detected
Carbon Tetrachloride	37	Not Detected	230	Not Detected
2,2,4-Trimethylpentane	37	Not Detected	170	Not Detected
Benzene	37	10000	120	34000
1,2-Dichloroethane	37	Not Detected	150	Not Detected
Heptane	37	Not Detected	150	Not Detected
Trichloroethene	37	Not Detected	200	Not Detected
1,2-Dichloropropane	37	Not Detected	170	Not Detected
1,4-Dioxane	150	Not Detected	530	Not Detected
Bromodichloromethane	37	Not Detected	250	Not Detected
cis-1,3-Dichloropropene	37	Not Detected	170	Not Detected
4-Methyl-2-pentanone	37	Not Detected	150	Not Detected
Toluene	37	1600	140	5900
trans-1,3-Dichloropropene	37	Not Detected	170	Not Detected
1,1,2-Trichloroethane	37	Not Detected	200	Not Detected
Tetrachloroethene	37	Not Detected	250	Not Detected

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060223	Date of Collection: 5/20/11 7:52:00 AM
Dil. Factor:	73.7	Date of Analysis: 6/2/11 08:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	150	Not Detected	600	Not Detected
Dibromochloromethane	37	Not Detected	310	Not Detected
1,2-Dibromoethane (EDB)	37	Not Detected	280	Not Detected
Chlorobenzene	37	Not Detected	170	Not Detected
Ethyl Benzene	37	Not Detected	160	Not Detected
m,p-Xylene	37	98	160	430
o-Xylene	37	47	160	200
Styrene	37	67	160	280
Bromoform	37	Not Detected	380	Not Detected
Cumene	37	Not Detected	180	Not Detected
1,1,2,2-Tetrachloroethane	37	Not Detected	250	Not Detected
Propylbenzene	37	Not Detected	180	Not Detected
4-Ethyltoluene	37	Not Detected	180	Not Detected
1,3,5-Trimethylbenzene	37	Not Detected	180	Not Detected
1,2,4-Trimethylbenzene	37	Not Detected	180	Not Detected
1,3-Dichlorobenzene	37	Not Detected	220	Not Detected
1,4-Dichlorobenzene	37	Not Detected	220	Not Detected
alpha-Chlorotoluene	37	Not Detected	190	Not Detected
1,2-Dichlorobenzene	37	Not Detected	220	Not Detected
1,2,4-Trichlorobenzene	150	Not Detected	1100	Not Detected
Hexachlorobutadiene	150	Not Detected	1600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060226	Date of Collection: 5/20/11 7:37:00 AM
Dil. Factor:	23300	Date of Analysis: 6/2/11 10:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	12000	Not Detected	58000	Not Detected
Freon 114	12000	Not Detected	81000	Not Detected
Chloromethane	47000	Not Detected	96000	Not Detected
Vinyl Chloride	47000	Not Detected	120000	Not Detected
1,3-Butadiene	12000	Not Detected	26000	Not Detected
Bromomethane	12000	Not Detected	45000	Not Detected
Chloroethane	47000	Not Detected	120000	Not Detected
Freon 11	12000	Not Detected	65000	Not Detected
Ethanol	47000	Not Detected	88000	Not Detected
Freon 113	12000	Not Detected	89000	Not Detected
1,1-Dichloroethene	12000	Not Detected	46000	Not Detected
Acetone	47000	Not Detected	110000	Not Detected
2-Propanol	47000	Not Detected	110000	Not Detected
Carbon Disulfide	47000	Not Detected	140000	Not Detected
3-Chloropropene	47000	Not Detected	140000	Not Detected
Methylene Chloride	12000	Not Detected	40000	Not Detected
Methyl tert-butyl ether	12000	Not Detected	42000	Not Detected
trans-1,2-Dichloroethene	12000	Not Detected	46000	Not Detected
Hexane	12000	Not Detected	41000	Not Detected
1,1-Dichloroethane	12000	Not Detected	47000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	47000	Not Detected	140000	Not Detected
cis-1,2-Dichloroethene	12000	Not Detected	46000	Not Detected
Tetrahydrofuran	12000	Not Detected	34000	Not Detected
Chloroform	12000	Not Detected	57000	Not Detected
1,1,1-Trichloroethane	12000	Not Detected	64000	Not Detected
Cyclohexane	12000	Not Detected	40000	Not Detected
Carbon Tetrachloride	12000	Not Detected	73000	Not Detected
2,2,4-Trimethylpentane	12000	Not Detected	54000	Not Detected
Benzene	12000	3000000	37000	9700000
1,2-Dichloroethane	12000	Not Detected	47000	Not Detected
Heptane	12000	16000	48000	64000
Trichloroethene	12000	Not Detected	63000	Not Detected
1,2-Dichloropropane	12000	Not Detected	54000	Not Detected
1,4-Dioxane	47000	Not Detected	170000	Not Detected
Bromodichloromethane	12000	Not Detected	78000	Not Detected
cis-1,3-Dichloropropene	12000	Not Detected	53000	Not Detected
4-Methyl-2-pentanone	12000	Not Detected	48000	Not Detected
Toluene	12000	12000	44000	46000
trans-1,3-Dichloropropene	12000	Not Detected	53000	Not Detected
1,1,2-Trichloroethane	12000	Not Detected	64000	Not Detected
Tetrachloroethene	12000	Not Detected	79000	Not Detected

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060226	Date of Collection: 5/20/11 7:37:00 AM
Dil. Factor:	23300	Date of Analysis: 6/2/11 10:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	47000	Not Detected	190000	Not Detected
Dibromochloromethane	12000	Not Detected	99000	Not Detected
1,2-Dibromoethane (EDB)	12000	Not Detected	90000	Not Detected
Chlorobenzene	12000	Not Detected	54000	Not Detected
Ethyl Benzene	12000	19000	50000	81000
m,p-Xylene	12000	Not Detected	50000	Not Detected
o-Xylene	12000	Not Detected	50000	Not Detected
Styrene	12000	Not Detected	50000	Not Detected
Bromoform	12000	Not Detected	120000	Not Detected
Cumene	12000	Not Detected	57000	Not Detected
1,1,2,2-Tetrachloroethane	12000	Not Detected	80000	Not Detected
Propylbenzene	12000	Not Detected	57000	Not Detected
4-Ethyltoluene	12000	Not Detected	57000	Not Detected
1,3,5-Trimethylbenzene	12000	Not Detected	57000	Not Detected
1,2,4-Trimethylbenzene	12000	Not Detected	57000	Not Detected
1,3-Dichlorobenzene	12000	Not Detected	70000	Not Detected
1,4-Dichlorobenzene	12000	Not Detected	70000	Not Detected
alpha-Chlorotoluene	12000	Not Detected	60000	Not Detected
1,2-Dichlorobenzene	12000	Not Detected	70000	Not Detected
1,2,4-Trichlorobenzene	47000	Not Detected	340000	Not Detected
Hexachlorobutadiene	47000	Not Detected	500000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	109	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060309	Date of Collection: 5/20/11 8:38:00 AM
Dil. Factor:	2.42	Date of Analysis: 6/3/11 11:13 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	4.8	11	10	22
Vinyl Chloride	4.8	Not Detected	12	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	1.2	Not Detected	4.7	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.8	Not Detected
Ethanol	4.8	13	9.1	25
Freon 113	1.2	Not Detected	9.3	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	4.8	77	11	180
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	15	15	47
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	1.2	1.4	4.2	4.7
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.3	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	24	14	72
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	330	3.6	970
Chloroform	1.2	Not Detected	5.9	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Cyclohexane	1.2	1.2	4.2	4.3
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	150	3.9	480
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Heptane	1.2	Not Detected	5.0	Not Detected
Trichloroethene	1.2	Not Detected	6.5	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.6	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.1	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	14	4.6	51
trans-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.2	Not Detected

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060309	Date of Collection: 5/20/11 8:38:00 AM
Dil. Factor:	2.42	Date of Analysis: 6/3/11 11:13 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	4.8	Not Detected	20	Not Detected
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.3	Not Detected
Chlorobenzene	1.2	Not Detected	5.6	Not Detected
Ethyl Benzene	1.2	2.7	5.2	12
m,p-Xylene	1.2	5.2	5.2	23
o-Xylene	1.2	3.0	5.2	13
Styrene	1.2	3.1	5.2	13
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.3	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.9	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	1.3	5.9	6.4
1,3-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.3	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	52	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

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

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060312	Date of Collection: 5/20/11 8:35:00 AM
Dil. Factor:	39500	Date of Analysis: 6/3/11 01:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	20000	Not Detected	98000	Not Detected
Freon 114	20000	Not Detected	140000	Not Detected
Chloromethane	79000	Not Detected	160000	Not Detected
Vinyl Chloride	79000	Not Detected	200000	Not Detected
1,3-Butadiene	20000	Not Detected	44000	Not Detected
Bromomethane	20000	Not Detected	77000	Not Detected
Chloroethane	79000	Not Detected	210000	Not Detected
Freon 11	20000	Not Detected	110000	Not Detected
Ethanol	79000	Not Detected	150000	Not Detected
Freon 113	20000	Not Detected	150000	Not Detected
1,1-Dichloroethene	20000	Not Detected	78000	Not Detected
Acetone	79000	Not Detected	190000	Not Detected
2-Propanol	79000	Not Detected	190000	Not Detected
Carbon Disulfide	79000	Not Detected	250000	Not Detected
3-Chloropropene	79000	Not Detected	250000	Not Detected
Methylene Chloride	20000	Not Detected	69000	Not Detected
Methyl tert-butyl ether	20000	Not Detected	71000	Not Detected
trans-1,2-Dichloroethene	20000	Not Detected	78000	Not Detected
Hexane	20000	Not Detected	70000	Not Detected
1,1-Dichloroethane	20000	Not Detected	80000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	79000	Not Detected	230000	Not Detected
cis-1,2-Dichloroethene	20000	Not Detected	78000	Not Detected
Tetrahydrofuran	20000	Not Detected	58000	Not Detected
Chloroform	20000	Not Detected	96000	Not Detected
1,1,1-Trichloroethane	20000	Not Detected	110000	Not Detected
Cyclohexane	20000	Not Detected	68000	Not Detected
Carbon Tetrachloride	20000	Not Detected	120000	Not Detected
2,2,4-Trimethylpentane	20000	Not Detected	92000	Not Detected
Benzene	20000	6800000	63000	22000000
1,2-Dichloroethane	20000	Not Detected	80000	Not Detected
Heptane	20000	Not Detected	81000	Not Detected
Trichloroethene	20000	Not Detected	110000	Not Detected
1,2-Dichloropropane	20000	Not Detected	91000	Not Detected
1,4-Dioxane	79000	Not Detected	280000	Not Detected
Bromodichloromethane	20000	Not Detected	130000	Not Detected
cis-1,3-Dichloropropene	20000	Not Detected	90000	Not Detected
4-Methyl-2-pentanone	20000	Not Detected	81000	Not Detected
Toluene	20000	160000	74000	620000
trans-1,3-Dichloropropene	20000	Not Detected	90000	Not Detected
1,1,2-Trichloroethane	20000	Not Detected	110000	Not Detected
Tetrachloroethene	20000	Not Detected	130000	Not Detected

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060312	Date of Collection: 5/20/11 8:35:00 AM
Dil. Factor:	39500	Date of Analysis: 6/3/11 01:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	79000	Not Detected	320000	Not Detected
Dibromochloromethane	20000	Not Detected	170000	Not Detected
1,2-Dibromoethane (EDB)	20000	Not Detected	150000	Not Detected
Chlorobenzene	20000	Not Detected	91000	Not Detected
Ethyl Benzene	20000	Not Detected	86000	Not Detected
m,p-Xylene	20000	Not Detected	86000	Not Detected
o-Xylene	20000	Not Detected	86000	Not Detected
Styrene	20000	Not Detected	84000	Not Detected
Bromoform	20000	Not Detected	200000	Not Detected
Cumene	20000	Not Detected	97000	Not Detected
1,1,2,2-Tetrachloroethane	20000	Not Detected	140000	Not Detected
Propylbenzene	20000	Not Detected	97000	Not Detected
4-Ethyltoluene	20000	Not Detected	97000	Not Detected
1,3,5-Trimethylbenzene	20000	Not Detected	97000	Not Detected
1,2,4-Trimethylbenzene	20000	Not Detected	97000	Not Detected
1,3-Dichlorobenzene	20000	Not Detected	120000	Not Detected
1,4-Dichlorobenzene	20000	Not Detected	120000	Not Detected
alpha-Chlorotoluene	20000	Not Detected	100000	Not Detected
1,2-Dichlorobenzene	20000	Not Detected	120000	Not Detected
1,2,4-Trichlorobenzene	79000	Not Detected	590000	Not Detected
Hexachlorobutadiene	79000	Not Detected	840000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	111	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060315	Date of Collection: 5/20/11 9:21:00 AM
Dil. Factor:	6.66	Date of Analysis: 6/3/11 02:56 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.3	Not Detected	16	Not Detected
Freon 114	3.3	Not Detected	23	Not Detected
Chloromethane	13	Not Detected	28	Not Detected
Vinyl Chloride	13	Not Detected	34	Not Detected
1,3-Butadiene	3.3	Not Detected	7.4	Not Detected
Bromomethane	3.3	Not Detected	13	Not Detected
Chloroethane	13	Not Detected	35	Not Detected
Freon 11	3.3	Not Detected	19	Not Detected
Ethanol	13	Not Detected	25	Not Detected
Freon 113	3.3	Not Detected	26	Not Detected
1,1-Dichloroethene	3.3	Not Detected	13	Not Detected
Acetone	13	16	32	39
2-Propanol	13	Not Detected	33	Not Detected
Carbon Disulfide	13	Not Detected	41	Not Detected
3-Chloropropene	13	Not Detected	42	Not Detected
Methylene Chloride	3.3	Not Detected	12	Not Detected
Methyl tert-butyl ether	3.3	4.3	12	15
trans-1,2-Dichloroethene	3.3	Not Detected	13	Not Detected
Hexane	3.3	Not Detected	12	Not Detected
1,1-Dichloroethane	3.3	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	39	Not Detected
cis-1,2-Dichloroethene	3.3	Not Detected	13	Not Detected
Tetrahydrofuran	3.3	Not Detected	9.8	Not Detected
Chloroform	3.3	Not Detected	16	Not Detected
1,1,1-Trichloroethane	3.3	Not Detected	18	Not Detected
Cyclohexane	3.3	19	11	66
Carbon Tetrachloride	3.3	Not Detected	21	Not Detected
2,2,4-Trimethylpentane	3.3	Not Detected	16	Not Detected
Benzene	3.3	Not Detected	11	Not Detected
1,2-Dichloroethane	3.3	Not Detected	13	Not Detected
Heptane	3.3	Not Detected	14	Not Detected
Trichloroethene	3.3	Not Detected	18	Not Detected
1,2-Dichloropropane	3.3	Not Detected	15	Not Detected
1,4-Dioxane	13	Not Detected	48	Not Detected
Bromodichloromethane	3.3	Not Detected	22	Not Detected
cis-1,3-Dichloropropene	3.3	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.3	Not Detected	14	Not Detected
Toluene	3.3	Not Detected	12	Not Detected
trans-1,3-Dichloropropene	3.3	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.3	Not Detected	18	Not Detected
Tetrachloroethene	3.3	4.2	22	28

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060315	Date of Collection: 5/20/11 9:21:00 AM
Dil. Factor:	6.66	Date of Analysis: 6/3/11 02:56 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	13	Not Detected	54	Not Detected
Dibromochloromethane	3.3	Not Detected	28	Not Detected
1,2-Dibromoethane (EDB)	3.3	Not Detected	26	Not Detected
Chlorobenzene	3.3	Not Detected	15	Not Detected
Ethyl Benzene	3.3	Not Detected	14	Not Detected
m,p-Xylene	3.3	Not Detected	14	Not Detected
o-Xylene	3.3	Not Detected	14	Not Detected
Styrene	3.3	Not Detected	14	Not Detected
Bromoform	3.3	Not Detected	34	Not Detected
Cumene	3.3	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.3	Not Detected	23	Not Detected
Propylbenzene	3.3	Not Detected	16	Not Detected
4-Ethyltoluene	3.3	Not Detected	16	Not Detected
1,3,5-Trimethylbenzene	3.3	Not Detected	16	Not Detected
1,2,4-Trimethylbenzene	3.3	Not Detected	16	Not Detected
1,3-Dichlorobenzene	3.3	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.3	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.3	Not Detected	17	Not Detected
1,2-Dichlorobenzene	3.3	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	99	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060208	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 10:58 AM

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	2.0	Not Detected	5.1	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	2.0	Not Detected	5.3	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	2.0	Not Detected	6.2	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)	2.0	Not Detected	5.9	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
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060208	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 10:58 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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	99	70-130
1,2-Dichloroethane-d4	113	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060306	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 09:11 AM

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	2.0	Not Detected	5.1	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	2.0	Not Detected	5.3	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	2.0	Not Detected	6.2	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)	2.0	Not Detected	5.9	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
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060306	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 09:11 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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	121	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: CCV

Lab ID#: 1105519B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 08:02 AM

Compound	%Recovery
Freon 12	100
Freon 114	99
Chloromethane	94
Vinyl Chloride	95
1,3-Butadiene	92
Bromomethane	94
Chloroethane	82
Freon 11	104
Ethanol	101
Freon 113	96
1,1-Dichloroethene	88
Acetone	99
2-Propanol	108
Carbon Disulfide	94
3-Chloropropene	90
Methylene Chloride	93
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	91
Hexane	82
1,1-Dichloroethane	86
2-Butanone (Methyl Ethyl Ketone)	83
cis-1,2-Dichloroethene	84
Tetrahydrofuran	92
Chloroform	93
1,1,1-Trichloroethane	96
Cyclohexane	90
Carbon Tetrachloride	100
2,2,4-Trimethylpentane	85
Benzene	88
1,2-Dichloroethane	98
Heptane	89
Trichloroethene	91
1,2-Dichloropropane	82
1,4-Dioxane	90
Bromodichloromethane	98
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	94
Toluene	82
trans-1,3-Dichloropropene	110
1,1,2-Trichloroethane	91
Tetrachloroethene	95

Client Sample ID: CCV

Lab ID#: 1105519B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 08:02 AM

Compound	%Recovery
2-Hexanone	95
Dibromochloromethane	101
1,2-Dibromoethane (EDB)	99
Chlorobenzene	92
Ethyl Benzene	90
m,p-Xylene	86
o-Xylene	89
Styrene	93
Bromoform	108
Cumene	94
1,1,2,2-Tetrachloroethane	94
Propylbenzene	88
4-Ethyltoluene	91
1,3,5-Trimethylbenzene	84
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	92
1,4-Dichlorobenzene	88
alpha-Chlorotoluene	113
1,2-Dichlorobenzene	86
1,2,4-Trichlorobenzene	82
Hexachlorobutadiene	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	110	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: CCV

Lab ID#: 1105519B-12B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 07:50 AM

Compound	%Recovery
Freon 12	99
Freon 114	97
Chloromethane	96
Vinyl Chloride	98
1,3-Butadiene	91
Bromomethane	93
Chloroethane	86
Freon 11	102
Ethanol	107
Freon 113	94
1,1-Dichloroethene	87
Acetone	101
2-Propanol	109
Carbon Disulfide	96
3-Chloropropene	96
Methylene Chloride	97
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	86
Hexane	84
1,1-Dichloroethane	89
2-Butanone (Methyl Ethyl Ketone)	80
cis-1,2-Dichloroethene	82
Tetrahydrofuran	92
Chloroform	91
1,1,1-Trichloroethane	95
Cyclohexane	88
Carbon Tetrachloride	99
2,2,4-Trimethylpentane	86
Benzene	90
1,2-Dichloroethane	103
Heptane	101
Trichloroethene	92
1,2-Dichloropropane	84
1,4-Dioxane	90
Bromodichloromethane	100
cis-1,3-Dichloropropene	100
4-Methyl-2-pentanone	96
Toluene	85
trans-1,3-Dichloropropene	105
1,1,2-Trichloroethane	90
Tetrachloroethene	89

Client Sample ID: CCV

Lab ID#: 1105519B-12B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 07:50 AM

Compound	%Recovery
2-Hexanone	95
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	93
Chlorobenzene	88
Ethyl Benzene	84
m,p-Xylene	80
o-Xylene	85
Styrene	90
Bromoform	105
Cumene	89
1,1,2,2-Tetrachloroethane	88
Propylbenzene	86
4-Ethyltoluene	86
1,3,5-Trimethylbenzene	81
1,2,4-Trimethylbenzene	86
1,3-Dichlorobenzene	87
1,4-Dichlorobenzene	83
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	84
1,2,4-Trichlorobenzene	78
Hexachlorobutadiene	83

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1105519B-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 08:37 AM

Compound	%Recovery
Freon 12	132 Q
Freon 114	124
Chloromethane	125
Vinyl Chloride	131 Q
1,3-Butadiene	124
Bromomethane	122
Chloroethane	113
Freon 11	137 Q
Ethanol	133
Freon 113	120
1,1-Dichloroethene	118
Acetone	131
2-Propanol	138
Carbon Disulfide	136
3-Chloropropene	132
Methylene Chloride	111
Methyl tert-butyl ether	128
trans-1,2-Dichloroethene	127
Hexane	106
1,1-Dichloroethane	114
2-Butanone (Methyl Ethyl Ketone)	107
cis-1,2-Dichloroethene	113
Tetrahydrofuran	111
Chloroform	121
1,1,1-Trichloroethane	124
Cyclohexane	120
Carbon Tetrachloride	128
2,2,4-Trimethylpentane	109
Benzene	114
1,2-Dichloroethane	127
Heptane	116
Trichloroethene	121
1,2-Dichloropropane	109
1,4-Dioxane	114
Bromodichloromethane	123
cis-1,3-Dichloropropene	130
4-Methyl-2-pentanone	115
Toluene	106
trans-1,3-Dichloropropene	128
1,1,2-Trichloroethane	113
Tetrachloroethene	111

Client Sample ID: LCS

Lab ID#: 1105519B-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 08:37 AM

Compound	%Recovery
2-Hexanone	114
Dibromochloromethane	118
1,2-Dibromoethane (EDB)	121
Chlorobenzene	110
Ethyl Benzene	105
m,p-Xylene	106
o-Xylene	104
Styrene	114
Bromoform	127
Cumene	113
1,1,2,2-Tetrachloroethane	112
Propylbenzene	112
4-Ethyltoluene	107
1,3,5-Trimethylbenzene	101
1,2,4-Trimethylbenzene	104
1,3-Dichlorobenzene	110
1,4-Dichlorobenzene	105
alpha-Chlorotoluene	137 Q
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	99
Hexachlorobutadiene	102

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	110	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: LCS

Lab ID#: 1105519B-13B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060305	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 08:27 AM

Compound	%Recovery
Freon 12	128
Freon 114	124
Chloromethane	125
Vinyl Chloride	128
1,3-Butadiene	121
Bromomethane	116
Chloroethane	109
Freon 11	131 Q
Ethanol	125
Freon 113	122
1,1-Dichloroethene	120
Acetone	130
2-Propanol	139
Carbon Disulfide	143 Q
3-Chloropropene	141 Q
Methylene Chloride	115
Methyl tert-butyl ether	127
trans-1,2-Dichloroethene	122
Hexane	103
1,1-Dichloroethane	112
2-Butanone (Methyl Ethyl Ketone)	104
cis-1,2-Dichloroethene	108
Tetrahydrofuran	115
Chloroform	118
1,1,1-Trichloroethane	120
Cyclohexane	114
Carbon Tetrachloride	124
2,2,4-Trimethylpentane	105
Benzene	109
1,2-Dichloroethane	124
Heptane	115
Trichloroethene	112
1,2-Dichloropropane	104
1,4-Dioxane	102
Bromodichloromethane	120
cis-1,3-Dichloropropene	123
4-Methyl-2-pentanone	115
Toluene	101
trans-1,3-Dichloropropene	129
1,1,2-Trichloroethane	107
Tetrachloroethene	108

Client Sample ID: LCS

Lab ID#: 1105519B-13B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2060305	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 08:27 AM

Compound	%Recovery
2-Hexanone	109
Dibromochloromethane	116
1,2-Dibromoethane (EDB)	117
Chlorobenzene	107
Ethyl Benzene	102
m,p-Xylene	102
o-Xylene	102
Styrene	108
Bromoform	122
Cumene	110
1,1,2,2-Tetrachloroethane	106
Propylbenzene	102
4-Ethyltoluene	100
1,3,5-Trimethylbenzene	96
1,2,4-Trimethylbenzene	100
1,3-Dichlorobenzene	106
1,4-Dichlorobenzene	97
alpha-Chlorotoluene	129
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	92
Hexachlorobutadiene	94

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	115	70-130
4-Bromofluorobenzene	104	70-130

9/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214BR1

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214BR1

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

DATE RECEIVED: 06/09/2011

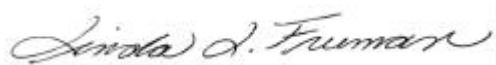
CONTACT: Kelly Buettner

DATE COMPLETED: 06/21/2011

DATE REISSUED: 09/01/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	A-SV04-HDOH	Modified TO-15	3.0 "Hg	15 psi
02A	A-SV013-HDOH	Modified TO-15	3.5 "Hg	15 psi
03A	A-AS4-HDOH	Modified TO-15	1.5 "Hg	15 psi
04A	Diesel#1-HDOH	Modified TO-15	5.0 "Hg	15 psi
04AA	Diesel#1-HDOH Lab Duplicate	Modified TO-15	5.0 "Hg	15 psi
05A	Ambient#1-HDOH	Modified TO-15	4.5 "Hg	15 psi
06A	Lab Blank	Modified TO-15	NA	NA
07A	CCV	Modified TO-15	NA	NA
08A	LCS	Modified TO-15	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 09/01/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1106214BR1**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample Diesel#1-HDOH due to the presence of high level non-target species.

Dilution was performed on sample Ambient#1-HDOH due to matrix interference.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

THE WORKORDER WAS REISSUED ON SEPTEMBER 01, 2011 TO REPORT SAMPLE AMBIENT#1-HDOH.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214BR1-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	56	230	230	940

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214BR1-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	57	130	230	530

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214BR1-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	53	76	220	310

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214BR1-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	14000	430	49000
TPH ref. to Gasoline (MW=100)	6000	910000	25000	3700000

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214BR1-04AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	24	15000 E	85	53000 E
TPH ref. to Gasoline (MW=100)	1200	900000	4900	3700000

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214BR1-05A

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

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214BR1-05A

No Detections Were Found.

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214BR1-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061508	Date of Collection: 6/3/11 8:15:00 AM
Dil. Factor:	2.24	Date of Analysis: 6/15/11 12:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	Not Detected	3.9	Not Detected
TPH ref. to Gasoline (MW=100)	56	230	230	940

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214BR1-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061509	Date of Collection: 6/3/11 8:58:00 AM
Dil. Factor:	2.29	Date of Analysis: 6/15/11 01:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	Not Detected	4.0	Not Detected
TPH ref. to Gasoline (MW=100)	57	130	230	530

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214BR1-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061510	Date of Collection: 6/3/11 8:44:00 AM
Dil. Factor:	2.13	Date of Analysis: 6/15/11 01:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	Not Detected	3.8	Not Detected
TPH ref. to Gasoline (MW=100)	53	76	220	310

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214BR1-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061512	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	242	Date of Analysis: 6/15/11 03:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	14000	430	49000
TPH ref. to Gasoline (MW=100)	6000	910000	25000	3700000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214BR1-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061511	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	48.4	Date of Analysis: 6/15/11 02:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	24	15000 E	85	53000 E
TPH ref. to Gasoline (MW=100)	1200	900000	4900	3700000

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214BR1-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061521	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	4.76	Date of Analysis: 6/15/11 09:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	2.4	Not Detected	8.4	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	490	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	83	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: Lab Blank

Lab ID#: 1106214BR1-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061507	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 11:57 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	91	70-130

Client Sample ID: CCV

Lab ID#: 1106214BR1-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 10:10 AM

Compound	%Recovery
Hexane	88
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1106214BR1-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 10:45 AM

Compound	%Recovery
Hexane	95
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	85	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

6/22/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

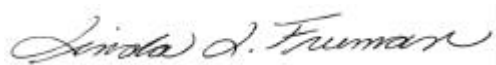
DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/21/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	A-SV04-HDOH	Modified TO-15	3.0 "Hg	15 psi
02A	A-SV013-HDOH	Modified TO-15	3.5 "Hg	15 psi
03A	A-AS4-HDOH	Modified TO-15	1.5 "Hg	15 psi
04A	Diesel#1-HDOH	Modified TO-15	5.0 "Hg	15 psi
04AA	Diesel#1-HDOH Lab Duplicate	Modified TO-15	5.0 "Hg	15 psi
05A	Ambient#1-HDOH	Modified TO-15	4.5 "Hg	15 psi
06A	Lab Blank	Modified TO-15	NA	NA
07A	CCV	Modified TO-15	NA	NA
08A	LCS	Modified TO-15	NA	NA

CERTIFIED BY:



DATE: 06/21/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1106214B**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample Diesel#1-HDOH due to the presence of high level non-target species.

Dilution was performed on sample Ambient#1-HDOH due to matrix interference.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	56	230	230	940

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	57	130	230	530

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	53	76	220	310

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	14000	430	49000
TPH ref. to Gasoline (MW=100)	6000	910000	25000	3700000

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214B-04AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	24	15000 E	85	53000 E
TPH ref. to Gasoline (MW=100)	1200	900000	4900	3700000

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061508	Date of Collection: 6/3/11 8:15:00 AM
Dil. Factor:	2.24	Date of Analysis: 6/15/11 12:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	Not Detected	3.9	Not Detected
TPH ref. to Gasoline (MW=100)	56	230	230	940

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061509	Date of Collection: 6/3/11 8:58:00 AM
Dil. Factor:	2.29	Date of Analysis: 6/15/11 01:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	Not Detected	4.0	Not Detected
TPH ref. to Gasoline (MW=100)	57	130	230	530

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061510	Date of Collection: 6/3/11 8:44:00 AM
Dil. Factor:	2.13	Date of Analysis: 6/15/11 01:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	Not Detected	3.8	Not Detected
TPH ref. to Gasoline (MW=100)	53	76	220	310

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061512	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	242	Date of Analysis: 6/15/11 03:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	14000	430	49000
TPH ref. to Gasoline (MW=100)	6000	910000	25000	3700000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214B-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061511	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	48.4	Date of Analysis: 6/15/11 02:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	24	15000 E	85	53000 E
TPH ref. to Gasoline (MW=100)	1200	900000	4900	3700000

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 1106214B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061507	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 11:57 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	91	70-130

Client Sample ID: CCV

Lab ID#: 1106214B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 10:10 AM

Compound	%Recovery
Hexane	88
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1106214B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2061505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 10:45 AM

Compound	%Recovery
Hexane	95
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	85	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

7/8/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1106457B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/21/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 / 2 lists are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106457B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

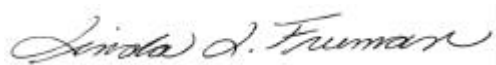
DATE RECEIVED: 06/21/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 07/08/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)-HDOH	Modified TO-15 / 2 lists	5.0 "Hg	15 psi
02A	HAFB-VP26-B05(24)-HDOH	Modified TO-15 / 2 lists	5.0 "Hg	15 psi
03A	HAFB-VP26-B07(20)-HDOH	Modified TO-15 / 2 lists	3.5 "Hg	15 psi
03AA	HAFB-VP26-B07(20)-HDOH Lab Duplic	Modified TO-15 / 2 lists	3.5 "Hg	15 psi
04A	HAFB-VP26-B07(25)-HDOH	Modified TO-15 / 2 lists	3.5 "Hg	15 psi
05A	HAFB-VP26-B08(21)-HDOH	Modified TO-15 / 2 lists	4.0 "Hg	15 psi
06A	Lab Blank	Modified TO-15 / 2 lists	NA	NA
07A	CCV	Modified TO-15 / 2 lists	NA	NA
08A	LCS	Modified TO-15 / 2 lists	NA	NA

CERTIFIED BY:



DATE: 07/08/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1106457B**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 21, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-VP26-B05(18)-HDOH, HAFB-VP26-B05(24)-HDOH, HAFB-VP26-B07(20)-HDOH, HAFB-VP26-B07(20)-HDOH Lab Duplicate, HAFB-VP26-B07(25)-HDOH and HAFB-VP26-B08(21)-HDOH due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1200	8600	4300	30000
TPH ref. to Gasoline (MW=100)	60000	8700000	250000	36000000

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	60000	3500000	210000	12000000
TPH ref. to Gasoline (MW=100)	3000000	72000000	12000000	290000000

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	57	1000	200	3700
TPH ref. to Gasoline (MW=100)	2800	5400000	12000	22000000

Client Sample ID: HAFB-VP26-B07(20)-HDOH Lab Duplicate

Lab ID#: 1106457B-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	15	1200	54	4100
TPH ref. to Gasoline (MW=100)	760	3900000	3100	16000000

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1100	66000	4000	230000
TPH ref. to Gasoline (MW=100)	57000	25000000	230000	100000000

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

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	16	6500 E	55	23000 E
TPH ref. to Gasoline (MW=100)	780	4800000	3200	20000000

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062817	Date of Collection: 6/16/11 11:44:00 AM
Dil. Factor:	2420	Date of Analysis: 6/29/11 06:53 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1200	8600	4300	30000
TPH ref. to Gasoline (MW=100)	60000	8700000	250000	36000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062820	Date of Collection: 6/16/11 12:32:00 PM
Dil. Factor:	121000	Date of Analysis: 6/29/11 09:09 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichloroethane	60000	Not Detected	240000	Not Detected
1,2-Dibromoethane (EDB)	60000	Not Detected	460000	Not Detected
Hexane	60000	3500000	210000	12000000
TPH ref. to Gasoline (MW=100)	3000000	72000000	12000000	290000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062825	Date of Collection: 6/16/11 12:42:00 PM
Dil. Factor:	114	Date of Analysis: 6/29/11 12:11 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	57	1000	200	3700
TPH ref. to Gasoline (MW=100)	2800	5400000	12000	22000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: HAFB-VP26-B07(20)-HDOH Lab Duplicate

Lab ID#: 1106457B-03AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062823	Date of Collection: 6/16/11 12:42:00 PM
Dil. Factor:	30.5	Date of Analysis: 6/29/11 10:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	15	1200	54	4100
TPH ref. to Gasoline (MW=100)	760	3900000	3100	16000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	129	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062822	Date of Collection: 6/16/11 1:25:00 PM
Dil. Factor:	2290	Date of Analysis: 6/29/11 10:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1100	66000	4000	230000
TPH ref. to Gasoline (MW=100)	57000	25000000	230000	100000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062826	Date of Collection: 6/16/11 11:18:00 AM
Dil. Factor:	31.1	Date of Analysis: 6/29/11 12:48 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	16	6500 E	55	23000 E
TPH ref. to Gasoline (MW=100)	780	4800000	3200	20000000

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	122	70-130

Client Sample ID: Lab Blank

Lab ID#: 1106457B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062810	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/28/11 07:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	91	70-130

Client Sample ID: CCV

Lab ID#: 1106457B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/28/11 03:54 PM

Compound	%Recovery
1,2-Dichloroethane	90
1,2-Dibromoethane (EDB)	92
Hexane	94
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCS

Lab ID#: 1106457B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2062807	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/28/11 05:43 PM

Compound	%Recovery
1,2-Dichloroethane	84
1,2-Dibromoethane (EDB)	85
Hexane	85
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

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

8/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1107310B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 7/19/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1107310B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

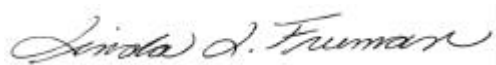
DATE RECEIVED: 07/19/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/02/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-ST03-B58 (347)	Modified TO-15	5.5"Hg	15 psi
02A	HAFB-ST03-B58 (422)	Modified TO-15	4.0"Hg	15 psi
03A	HAFB-ST03-B58 (492)	Modified TO-15	5.0"Hg	15 psi
04A	HAFB-ST03-B58 (388)	Modified TO-15	4.5"Hg	15 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 08/02/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1107310B**

Four 1 Liter Summa Canister (MA APH Certified) samples were received on July 19, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) information for samples HAFB-ST03-B58 (347) and HAFB-ST03-B58 (492) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-ST03-B58 (347), HAFB-ST03-B58 (422), HAFB-ST03-B58 (492) and HAFB-ST03-B58 (388) due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	4.9	74	17	260
TPH ref. to Gasoline (MW=100)	250	69000	1000	280000

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	3.1	38	11	130
TPH ref. to Gasoline (MW=100)	160	32000	630	130000

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	16	170	57	600
TPH ref. to Gasoline (MW=100)	810	210000	3300	860000

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	16	69	56	240
TPH ref. to Gasoline (MW=100)	790	200000	3200	820000

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072127	Date of Collection:	7/14/11 10:47:00 AM
Dil. Factor:	9.88	Date of Analysis:	7/21/11 09:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	4.9	74	17	260
TPH ref. to Gasoline (MW=100)	250	69000	1000	280000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072128	Date of Collection: 7/14/11 11:00:00 AM
Dil. Factor:	6.21	Date of Analysis: 7/21/11 10:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	3.1	38	11	130
TPH ref. to Gasoline (MW=100)	160	32000	630	130000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072125	Date of Collection: 7/14/11 11:55:00 AM
Dil. Factor:	32.3	Date of Analysis: 7/21/11 08:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	16	170	57	600
TPH ref. to Gasoline (MW=100)	810	210000	3300	860000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072126	Date of Collection: 7/14/11 12:08:00 PM
Dil. Factor:	31.7	Date of Analysis: 7/21/11 09:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	16	69	56	240
TPH ref. to Gasoline (MW=100)	790	200000	3200	820000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	115	70-130

Client Sample ID: Lab Blank

Lab ID#: 1107310B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072110	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 11:14 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: CCV

Lab ID#: 1107310B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 06:45 AM

Compound	%Recovery
Hexane	80
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCS

Lab ID#: 1107310B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 07:13 AM

Compound	%Recovery
Hexane	85
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: LCSD

Lab ID#: 1107310B-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2072104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 07:42 AM

Compound	%Recovery
Hexane	87
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	110	70-130

9/9/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108544B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108544B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

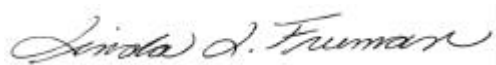
DATE RECEIVED: 08/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 09/09/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HDOH-GASOLINE#1	Modified TO-15	4.5 "Hg	15 psi
02A	HDOH-DIESEL#2	Modified TO-15	4.0 "Hg	15 psi
02AA	HDOH-DIESEL#2 Lab Duplicate	Modified TO-15	4.0 "Hg	15 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 09/09/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1108544B**

Two 1 Liter Summa Canister (MA APH Certified) samples were received on August 26, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HDOH-GASOLINE#1, HDOH-DIESEL#2 and HDOH-DIESEL#2 Lab Duplicate due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	24000	4200000	84000	15000000
TPH ref. to Gasoline (MW=100)	1200000	240000000	4900000	980000000

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	29	2200	100	7800
TPH ref. to Gasoline (MW=100)	1400	550000	6000	2200000

Client Sample ID: HDOH-DIESEL#2 Lab Duplicate

Lab ID#: 1108544B-02AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	29	2000	100	7000
TPH ref. to Gasoline (MW=100)	1400	500000	6000	2000000

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083020	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	47600	Date of Analysis: 8/30/11 09:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	24000	4200000	84000	15000000
TPH ref. to Gasoline (MW=100)	1200000	240000000	4900000	980000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083021	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	58.2	Date of Analysis: 8/30/11 11:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	29	2200	100	7800
TPH ref. to Gasoline (MW=100)	1400	550000	6000	2200000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: HDOH-DIESEL#2 Lab Duplicate

Lab ID#: 1108544B-02AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083022	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	58.2	Date of Analysis: 8/31/11 12:07 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	29	2000	100	7000
TPH ref. to Gasoline (MW=100)	1400	500000	6000	2000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: Lab Blank

Lab ID#: 1108544B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083008	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 09:51 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

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

Client Sample ID: CCV

Lab ID#: 1108544B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 05:47 AM

Compound	%Recovery
----------	-----------

Hexane	92
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 1108544B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 06:27 AM

Compound	%Recovery
Hexane	90
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: LCSD

Lab ID#: 1108544B-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2083004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 06:57 AM

Compound	%Recovery
Hexane	90
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	107	70-130

8/26/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108300B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108300B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

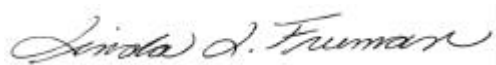
DATE RECEIVED: 08/15/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/26/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HH-OUIC-MW10SG	Modified TO-15	4.0 "Hg	15 psi
02A	HH-OUIC-MW22R	Modified TO-15	5.0 "Hg	15 psi
03A	HH-OUIC-OTNS1	Modified TO-15	3.2 "Hg	15 psi
03AA	HH-OUIC-OTNS1 Lab Duplicate	Modified TO-15	3.2 "Hg	15 psi
04A	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 08/26/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1108300B**

Three 1 Liter Summa Canister (MA APH Certified) samples were received on August 15, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HH-OUIC-MW10SG, HH-OUIC-MW22R, HH-OUIC-OTNS1 and HH-OUIC-OTNS1 Lab Duplicate due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	780	150000	2700	520000
TPH ref. to Gasoline (MW=100)	39000	32000000	160000	130000000

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	480	73000	1700	260000
TPH ref. to Gasoline (MW=100)	24000	11000000	99000	45000000

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	76	540	270	1900
TPH ref. to Gasoline (MW=100)	3800	390000	15000	1600000

Client Sample ID: HH-OUIC-OTNS1 Lab Duplicate

Lab ID#: 1108300B-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	76	460	270	1600
TPH ref. to Gasoline (MW=100)	3800	340000	15000	1400000

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081927	Date of Collection: 8/11/11 2:03:00 PM
Dil. Factor:	1550	Date of Analysis: 8/19/11 11:20 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	780	150000	2700	520000
TPH ref. to Gasoline (MW=100)	39000	32000000	160000	130000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081917	Date of Collection: 8/11/11 1:38:00 PM
Dil. Factor:	968	Date of Analysis: 8/19/11 03:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	480	73000	1700	260000
TPH ref. to Gasoline (MW=100)	24000	11000000	99000	45000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081916	Date of Collection: 8/11/11 2:38:00 PM
Dil. Factor:	151	Date of Analysis: 8/19/11 02:38 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	76	540	270	1900
TPH ref. to Gasoline (MW=100)	3800	390000	15000	1600000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: HH-OUIC-OTNS1 Lab Duplicate

Lab ID#: 1108300B-03AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081921	Date of Collection: 8/11/11 2:38:00 PM
Dil. Factor:	151	Date of Analysis: 8/19/11 06:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	76	460	270	1600
TPH ref. to Gasoline (MW=100)	3800	340000	15000	1400000

Container Type: 1 Liter Summa Canister (MA APH Certified)

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

Client Sample ID: Lab Blank

Lab ID#: 1108300B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081909	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/11 10:25 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

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

Client Sample ID: CCV

Lab ID#: 1108300B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081906	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/11 08:45 AM

Compound	%Recovery
Hexane	82
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	111	70-130

Client Sample ID: LCS

Lab ID#: 1108300B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2081907	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/11 09:13 AM

Compound	%Recovery
Hexane	86
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

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

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #


DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-SP43-VMP10	Modified TO-15	5.2 "Hg	15psi
01AA	HAFB-SP43-VMP10 Lab Duplicate	Modified TO-15	5.2 "Hg	15psi
02A	HAFB-SP43-VMP11	Modified TO-15	5.0 "Hg	15psi
03A	HAFB-SP43-VMP12	Modified TO-15	4.5 "Hg	15psi
04A	HAFB-SP43-VMP16	Modified TO-15	6.0 "Hg	15psi
05A	HAFB-SP43-VMP17	Modified TO-15	5.5 "Hg	15psi
06A	FV-GP01-HDOH#2	Modified TO-15	4.0 "Hg	15psi
07A	FV-GP08-HDOH#2	Modified TO-15	5.0 "Hg	15psi
08A	FV-GP16R-HDOH#2	Modified TO-15	5.5 "Hg	15psi
09A	JP8#1	Modified TO-15	4.0 "Hg	15psi
10A	Lab Blank	Modified TO-15	NA	NA
11A	CCV	Modified TO-15	NA	NA
12A	LCS	Modified TO-15	NA	NA
12AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 10/21/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1110160B**

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-SP43-VMP10, HAFB-SP43-VMP10 Lab Duplicate, HAFB-SP43-VMP11, HAFB-SP43-VMP16, HAFB-SP43-VMP17, FV-GP08-HDOH#2, FV-GP16R-HDOH#2 and JP8#1 due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	6100	9900000	25000	40000000

Client Sample ID: HAFB-SP43-VMP10 Lab Duplicate

Lab ID#: 1110160B-01AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	6100	9500000	25000	39000000

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	6000	11000000	25000	45000000

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	60	1500	240	6100

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	6300	21000000	26000	86000000

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	6200	2600000	25000	11000000

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160B-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.2	4.0	4.1	14
TPH ref. to Gasoline (MW=100)	58	13000	240	53000

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160B-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	600	660000	2500	2700000

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160B-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	6200	3200000	25000	13000000

Client Sample ID: JP8#1

Lab ID#: 1110160B-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	27000	410	94000
TPH ref. to Gasoline (MW=100)	5800	3400000	24000	14000000

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101216	Date of Collection: 10/5/11 2:05:00 PM
Dil. Factor:	244	Date of Analysis: 10/12/11 04:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	Not Detected	430	Not Detected
TPH ref. to Gasoline (MW=100)	6100	9900000	25000	40000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: HAFB-SP43-VMP10 Lab Duplicate

Lab ID#: 1110160B-01AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101217	Date of Collection:	10/5/11 2:05:00 PM
Dil. Factor:	244	Date of Analysis:	10/12/11 04:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	Not Detected	430	Not Detected
TPH ref. to Gasoline (MW=100)	6100	9500000	25000	39000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101218	Date of Collection:	10/5/11 1:15:00 PM
Dil. Factor:	242	Date of Analysis:	10/12/11 05:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	Not Detected	430	Not Detected
TPH ref. to Gasoline (MW=100)	6000	11000000	25000	45000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101222	Date of Collection:	10/5/11 12:44:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/12/11 08:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.2	Not Detected	4.2	Not Detected
TPH ref. to Gasoline (MW=100)	60	1500	240	6100

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101219	Date of Collection:	10/5/11 1:42:00 PM
Dil. Factor:	252	Date of Analysis:	10/12/11 06:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	130	Not Detected	440	Not Detected
TPH ref. to Gasoline (MW=100)	6300	21000000	26000	86000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101214	Date of Collection:	10/5/11 11:52:00 AM
Dil. Factor:	247	Date of Analysis:	10/12/11 01:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	Not Detected	440	Not Detected
TPH ref. to Gasoline (MW=100)	6200	2600000	25000	11000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	113	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101223	Date of Collection: 10/6/11 1:45:00 PM
Dil. Factor:	2.33	Date of Analysis: 10/12/11 09:15 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.2	4.0	4.1	14
TPH ref. to Gasoline (MW=100)	58	13000	240	53000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101215	Date of Collection:	10/6/11 1:06:00 PM
Dil. Factor:	24.2	Date of Analysis:	10/12/11 03:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	12	Not Detected	43	Not Detected
TPH ref. to Gasoline (MW=100)	600	660000	2500	2700000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	115	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101224	Date of Collection: 10/6/11 12:19:00 PM
Dil. Factor:	247	Date of Analysis: 10/12/11 09:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	Not Detected	440	Not Detected
TPH ref. to Gasoline (MW=100)	6200	3200000	25000	13000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: JP8#1

Lab ID#: 1110160B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101220	Date of Collection: 10/6/11 3:15:00 PM
Dil. Factor:	233	Date of Analysis: 10/12/11 06:55 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	120	27000	410	94000
TPH ref. to Gasoline (MW=100)	5800	3400000	24000	14000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110160B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101213	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 01:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	84	70-130

Client Sample ID: CCV

Lab ID#: 1110160B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101206	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 07:49 AM

Compound	%Recovery
Hexane	105
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: LCS

Lab ID#: 1110160B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101207	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 08:37 AM

Compound	%Recovery
Hexane	106
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: LCSD

Lab ID#: 1110160B-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2101208	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 09:11 AM

Compound	%Recovery
Hexane	104
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	95	70-130

11/3/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413B

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/03/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)	Modified TO-15	4.0 "Hg	5 psi
02A	HAFB-VP26-B05(24)	Modified TO-15	3.5 "Hg	5 psi
03A	HAFB-VP26-B07(20)	Modified TO-15	2.5 "Hg	5 psi
04A	HAFB-VP26-B07(25)	Modified TO-15	4.5 "Hg	5 psi
05A	HAFB-ST03-B58(347)	Modified TO-15	4.4 "Hg	5 psi
05AA	HAFB-ST03-B58(347) Lab Duplicate	Modified TO-15	4.4 "Hg	5 psi
06A	HAFB-ST03-B58(422)	Modified TO-15	5.0 "Hg	5 psi
07A	HAFB-ST03-B58(492)	Modified TO-15	4.6 "Hg	5 psi
08A	HAFB-ST03-B59(388)	Modified TO-15	5.0 "Hg	5 psi
09A	HH-OU1C-MW10SG	Modified TO-15	6.0 "Hg	5 psi
10A	HH-OU1C-MW22R	Modified TO-15	5.4 "Hg	5 psi
11A	HH-OU1C-OTNS1	Modified TO-15	4.2 "Hg	5 psi
12A	GASOLINE#2	Modified TO-15	2.6 "Hg	5 psi
12AA	GASOLINE#2 Lab Duplicate	Modified TO-15	2.6 "Hg	5 psi
13A	DIESEL#3	Modified TO-15	3.2 "Hg	5 psi
13AA	DIESEL#3 Lab Duplicate	Modified TO-15	3.2 "Hg	5 psi
14A	GASOLINE-EXHAUST	Modified TO-15	3.2 "Hg	5 psi

Continued on next page

WORK ORDER #: 1110413B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #


DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/03/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
15A	DIESEL-EXHAUST	Modified TO-15	3.0 "Hg	5 psi
16A	Lab Blank	Modified TO-15	NA	NA
16B	Lab Blank	Modified TO-15	NA	NA
16C	Lab Blank	Modified TO-15	NA	NA
17A	CCV	Modified TO-15	NA	NA
17B	CCV	Modified TO-15	NA	NA
17C	CCV	Modified TO-15	NA	NA
18A	LCS	Modified TO-15	NA	NA
18AA	LCSD	Modified TO-15	NA	NA
18B	LCS	Modified TO-15	NA	NA
18BB	LCSD	Modified TO-15	NA	NA
18C	LCS	Modified TO-15	NA	NA
18CC	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 11/03/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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

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

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1110413B**

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

The Chain of Custody contained incorrect method information. ATL proceeded with the analysis as per the original contract or verbal agreement.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-VP26-B05(24), DIESEL#3, DIESEL#3 Lab Duplicate and GASOLINE-EXHAUST due to the presence of high level target species.

Dilution was performed on samples HAFB-VP26-B05(18), HAFB-VP26-B07(20), HAFB-VP26-B07(25), HAFB-ST03-B58(347), HAFB-ST03-B58(347) Lab Duplicate, HAFB-ST03-B58(422), HAFB-ST03-B58(492), HAFB-ST03-B59(388), HH-OU1C-MW10SG, HH-OU1C-MW22R, GASOLINE#2 and GASOLINE#2 Lab Duplicate due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

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

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	520	3100	1800	11000
TPH ref. to Gasoline (MW=100)	26000	32000000	100000	130000000

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	13000	2500000	44000	8800000
TPH ref. to Gasoline (MW=100)	630000	67000000	2600000	270000000

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	730	57000	2600	200000
TPH ref. to Gasoline (MW=100)	36000	26000000	150000	110000000

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1600	80000	5600	280000
TPH ref. to Gasoline (MW=100)	79000	73000000	320000	300000000

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	7.8	91	28	320
TPH ref. to Gasoline (MW=100)	390	380000	1600	1600000

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

Client Sample ID: HAFB-ST03-B58(347) Lab Duplicate

Lab ID#: 1110413B-05AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	7.8	87	28	300
TPH ref. to Gasoline (MW=100)	390	440000	1600	1800000

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413B-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	11	140	38	500
TPH ref. to Gasoline (MW=100)	540	590000	2200	2400000

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413B-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	10	140	37	500
TPH ref. to Gasoline (MW=100)	530	630000	2200	2600000

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413B-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.4	140	4.9	490
TPH ref. to Gasoline (MW=100)	69	54000	280	220000

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413B-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1700	130000	5900	450000
TPH ref. to Gasoline (MW=100)	84000	53000000	340000	220000000

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

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413B-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	4100	120000	14000	430000
TPH ref. to Gasoline (MW=100)	200000	43000000	830000	180000000

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413B-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	39	520	160	2100

Client Sample ID: GASOLINE#2

Lab ID#: 1110413B-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1200	59000	4300	210000
TPH ref. to Gasoline (MW=100)	61000	5600000	250000	23000000

Client Sample ID: GASOLINE#2 Lab Duplicate

Lab ID#: 1110413B-12AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	3700	63000	13000	220000
TPH ref. to Gasoline (MW=100)	180000	6300000	750000	26000000

Client Sample ID: DIESEL#3

Lab ID#: 1110413B-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	5.0	1800	18	6400
TPH ref. to Gasoline (MW=100)	250	140000	1000	570000

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

Client Sample ID: DIESEL#3 Lab Duplicate

Lab ID#: 1110413B-13AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	5.0	1700	18	6000
TPH ref. to Gasoline (MW=100)	250	130000	1000	530000

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413B-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	7.5	500	26	1800
TPH ref. to Gasoline (MW=100)	380	26000	1500	110000

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413B-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	37	130	150	530

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102425	Date of Collection: 10/13/11 10:12:00 A
Dil. Factor:	1030	Date of Analysis: 10/25/11 06:18 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	520	3100	1800	11000
TPH ref. to Gasoline (MW=100)	26000	32000000	100000	130000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

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

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102422	Date of Collection: 10/13/11 10:46:00 A
Dil. Factor:	25300	Date of Analysis: 10/24/11 10:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	13000	2500000	44000	8800000
TPH ref. to Gasoline (MW=100)	630000	67000000	2600000	270000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102416	Date of Collection: 10/13/11 11:23:00 A
Dil. Factor:	1460	Date of Analysis: 10/24/11 05:47 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	730	57000	2600	200000
TPH ref. to Gasoline (MW=100)	36000	26000000	150000	110000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	88	70-130

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102417	Date of Collection: 10/13/11 11:49:00 A
Dil. Factor:	3160	Date of Analysis: 10/24/11 06:32 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1600	80000	5600	280000
TPH ref. to Gasoline (MW=100)	79000	73000000	320000	300000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	88	70-130

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102113	Date of Collection:	10/14/11 9:35:00 AM
Dil. Factor:	15.7	Date of Analysis:	10/21/11 04:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	7.8	91	28	320
TPH ref. to Gasoline (MW=100)	390	380000	1600	1600000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	93	70-130

Client Sample ID: HAFB-ST03-B58(347) Lab Duplicate

Lab ID#: 1110413B-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102114	Date of Collection:	10/14/11 9:35:00 AM
Dil. Factor:	15.7	Date of Analysis:	10/21/11 05:20 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	7.8	87	28	300
TPH ref. to Gasoline (MW=100)	390	440000	1600	1800000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102115	Date of Collection: 10/14/11 10:19:00 A
Dil. Factor:	21.5	Date of Analysis: 10/21/11 06:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	11	140	38	500
TPH ref. to Gasoline (MW=100)	540	590000	2200	2400000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102116	Date of Collection: 10/14/11 10:36:00 A
Dil. Factor:	21.1	Date of Analysis: 10/21/11 06:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	10	140	37	500
TPH ref. to Gasoline (MW=100)	530	630000	2200	2600000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102120	Date of Collection: 10/14/11 11:03:00 A
Dil. Factor:	2.77	Date of Analysis: 10/21/11 10:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.4	140	4.9	490
TPH ref. to Gasoline (MW=100)	69	54000	280	220000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102419	Date of Collection: 10/18/11 11:43:00 A
Dil. Factor:	3360	Date of Analysis: 10/24/11 08:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1700	130000	5900	450000
TPH ref. to Gasoline (MW=100)	84000	53000000	340000	220000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	88	70-130

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102510	Date of Collection: 10/18/11 11:09:00 A
Dil. Factor:	8150	Date of Analysis: 10/25/11 12:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	4100	120000	14000	430000
TPH ref. to Gasoline (MW=100)	200000	43000000	830000	180000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	83	70-130

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102117	Date of Collection: 10/18/11 10:31:00 A
Dil. Factor:	1.56	Date of Analysis: 10/21/11 07:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.78	Not Detected	2.7	Not Detected
TPH ref. to Gasoline (MW=100)	39	520	160	2100

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: GASOLINE#2

Lab ID#: 1110413B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102512	Date of Collection:	10/18/11 8:35:00 AM
Dil. Factor:	2450	Date of Analysis:	10/25/11 01:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1200	59000	4300	210000
TPH ref. to Gasoline (MW=100)	61000	5600000	250000	23000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	82	70-130

Client Sample ID: GASOLINE#2 Lab Duplicate

Lab ID#: 1110413B-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102511	Date of Collection:	10/18/11 8:35:00 AM
Dil. Factor:	7350	Date of Analysis:	10/25/11 01:06 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	3700	63000	13000	220000
TPH ref. to Gasoline (MW=100)	180000	6300000	750000	26000000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: DIESEL#3

Lab ID#: 1110413B-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102412	Date of Collection:	10/18/11 8:35:00 AM
Dil. Factor:	10.0	Date of Analysis:	10/24/11 02:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	5.0	1800	18	6400
TPH ref. to Gasoline (MW=100)	250	140000	1000	570000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: DIESEL#3 Lab Duplicate

Lab ID#: 1110413B-13AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102413	Date of Collection:	10/18/11 8:35:00 AM
Dil. Factor:	10.0	Date of Analysis:	10/24/11 02:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	5.0	1700	18	6000
TPH ref. to Gasoline (MW=100)	250	130000	1000	530000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413B-14A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102411	Date of Collection: 10/18/11 8:50:00 AM
Dil. Factor:	15.0	Date of Analysis: 10/24/11 01:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	7.5	500	26	1800
TPH ref. to Gasoline (MW=100)	380	26000	1500	110000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	89	70-130

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413B-15A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102118	Date of Collection: 10/18/11 8:45:00 AM
Dil. Factor:	1.49	Date of Analysis: 10/21/11 08:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.74	Not Detected	2.6	Not Detected
TPH ref. to Gasoline (MW=100)	37	130	150	530

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	87	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110413B-16A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102108	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 12:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110413B-16B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102409	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 11:33 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110413B-16C

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102509	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 11:49 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	0.50	Not Detected	1.8	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	82	70-130

Client Sample ID: CCV

Lab ID#: 1110413B-17A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 07:54 AM

Compound	%Recovery
Hexane	119
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: CCV

Lab ID#: 1110413B-17B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 08:59 AM

Compound	%Recovery
Hexane	118
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: CCV

Lab ID#: 1110413B-17C

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 08:25 AM

Compound	%Recovery
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Hexane	114
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: LCS

Lab ID#: 1110413B-18A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 08:40 AM

Compound	%Recovery
Hexane	107
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: LCSD

Lab ID#: 1110413B-18AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 09:16 AM

Compound	%Recovery
Hexane	105
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCS

Lab ID#: 1110413B-18B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102406	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 09:37 AM

Compound	%Recovery
Hexane	109
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: LCSD

Lab ID#: 1110413B-18BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102407	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 10:13 AM

Compound	%Recovery
Hexane	109
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: LCS

Lab ID#: 1110413B-18C

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 08:58 AM

Compound	%Recovery
Hexane	105
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: LCSD

Lab ID#: 1110413B-18CC

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2102505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 09:30 AM

Compound	%Recovery
Hexane	112
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	92	70-130

6/22/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Fishing Village
Project #:
Workorder #: 1105519A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 5/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1105519A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Fishing Village

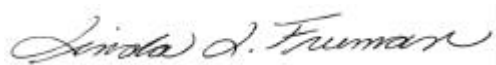
DATE RECEIVED: 05/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/20/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	FV-GP-01-HDOH	Massachusetts APH	5.5 "Hg	15 psi
02A	FV-GP-06R-HDOH	Massachusetts APH	4.5 "Hg	15 psi
02AA	FV-GP-06R-HDOH Lab Duplicate	Massachusetts APH	4.5 "Hg	15 psi
03A	FV-GP-08-HDOH	Massachusetts APH	2.0 "Hg	15 psi
04A	FV-GP-16R-HDOH	Massachusetts APH	5.5 "Hg	15 psi
05A	FV-GP-17-HDOH	Massachusetts APH	5.5 "Hg	15 psi
06A	G-IPB20-HDOH	Massachusetts APH	6.5 "Hg	15 psi
07A	G-IPH11-HDOH	Massachusetts APH	4.0 "Hg	15 psi
08A	G-IPL19-HDOH	Massachusetts APH	5.0 "Hg	15 psi
09A	G-IP28-HDOH	Massachusetts APH	9.5 "Hg	15 psi
10A	G-SG12-HDOH	Massachusetts APH	4.0 "Hg	15 psi
11A	Lab Blank	Massachusetts APH	NA	NA
11B	Lab Blank	Massachusetts APH	NA	NA
12A	CCV	Massachusetts APH	NA	NA
12B	CCV	Massachusetts APH	NA	NA
13A	LCS	Massachusetts APH	NA	NA
13B	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 06/21/11

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

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1105519A

Ten 1 Liter Summa Canister (MA APH Certified) samples were received on May 26, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

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 CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

A dilution was performed on samples FV-GP-01-HDOH, FV-GP-08-HDOH, FV-GP-16R-HDOH, G-IPB20-HDOH, G-IPH11-HDOH, G-IP28-HDOH and G-SG12-HDOH due to the presence of high level target species.

The per analytical batch duplicate analysis for samples analyzed on 06/03/2011 required for this project is associated with work order 1105583D.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: FV-GP-01-HDOH

Lab ID#: 1105519A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060214a	Date of Collection: 5/19/11 10:55:00 AM
Dil. Factor:	14.1	Date of Analysis: 6/2/11 02:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	13	Not Detected	28	Not Detected
Methyl tert-butyl ether	7.8	Not Detected	28	Not Detected
Benzene	8.9	Not Detected	28	Not Detected
Toluene	7.5	Not Detected	28	Not Detected
Ethyl Benzene	6.5	Not Detected	28	Not Detected
o-Xylene	6.5	Not Detected	28	Not Detected
m,p-Xylene	6.5	Not Detected	28	Not Detected
Naphthalene	28	Not Detected	150	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: FV-GP-06R-HDOH

Lab ID#: 1105519A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060216a	Date of Collection: 5/19/11 11:43:00 AM
Dil. Factor:	2.38	Date of Analysis: 6/2/11 03:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.1	Not Detected	4.7	Not Detected
Methyl tert-butyl ether	1.3	Not Detected	4.7	Not Detected
Benzene	1.5	Not Detected	4.8	Not Detected
Toluene	1.3	Not Detected	4.8	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
o-Xylene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	1.1	Not Detected	4.8	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	125	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: FV-GP-06R-HDOH Lab Duplicate

Lab ID#: 1105519A-02AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060215a	Date of Collection: 5/19/11 11:43:00 AM
Dil. Factor:	7.32	Date of Analysis: 6/2/11 03:20 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	6.6	Not Detected	14	Not Detected
Methyl tert-butyl ether	4.0	Not Detected	14	Not Detected
Benzene	4.6	Not Detected	15	Not Detected
Toluene	3.9	Not Detected	15	Not Detected
Ethyl Benzene	3.4	Not Detected	15	Not Detected
o-Xylene	3.4	Not Detected	15	Not Detected
m,p-Xylene	3.4	Not Detected	15	Not Detected
Naphthalene	15	Not Detected	77	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: FV-GP-08-HDOH

Lab ID#: 1105519A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060217a	Date of Collection: 5/19/11 10:27:00 AM
Dil. Factor:	18.8	Date of Analysis: 6/2/11 04:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	17	Not Detected	37	Not Detected
Methyl tert-butyl ether	10	Not Detected	37	Not Detected
Benzene	12	16	38	50
Toluene	10	18	38	67
Ethyl Benzene	8.6	25	38	110
o-Xylene	8.6	Not Detected	38	Not Detected
m,p-Xylene	8.6	Not Detected	38	Not Detected
Naphthalene	38	120	200	600

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: FV-GP-16R-HDOH

Lab ID#: 1105519A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060219a	Date of Collection: 5/19/11 9:41:00 AM
Dil. Factor:	247	Date of Analysis: 6/2/11 05:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	490	Not Detected
Methyl tert-butyl ether	140	Not Detected	490	Not Detected
Benzene	160	Not Detected	500	Not Detected
Toluene	130	Not Detected	490	Not Detected
Ethyl Benzene	110	Not Detected	490	Not Detected
o-Xylene	110	Not Detected	490	Not Detected
m,p-Xylene	110	Not Detected	490	Not Detected
Naphthalene	490	Not Detected	2600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: FV-GP-17-HDOH

Lab ID#: 1105519A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060308a	Date of Collection: 5/19/11 11:24:00 AM
Dil. Factor:	2.47	Date of Analysis: 6/3/11 10:36 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.2	Not Detected	4.9	Not Detected
Methyl tert-butyl ether	1.4	Not Detected	4.9	Not Detected
Benzene	1.6	Not Detected	5.0	Not Detected
Toluene	1.3	Not Detected	4.9	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
o-Xylene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	1.1	Not Detected	4.9	Not Detected
Naphthalene	4.9	Not Detected	26	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	126	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060223a	Date of Collection: 5/20/11 7:52:00 AM
Dil. Factor:	73.7	Date of Analysis: 6/2/11 08:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	66	Not Detected	150	Not Detected
Methyl tert-butyl ether	40	Not Detected	150	Not Detected
Benzene	46	10000	150	34000
Toluene	39	1600	150	5900
Ethyl Benzene	34	36	150	160
o-Xylene	34	47	150	200
m,p-Xylene	34	98	150	430
Naphthalene	150	Not Detected	770	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060226a	Date of Collection: 5/20/11 7:37:00 AM
Dil. Factor:	23300	Date of Analysis: 6/2/11 10:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	21000	Not Detected	46000	Not Detected
Methyl tert-butyl ether	13000	Not Detected	46000	Not Detected
Benzene	15000	3000000	47000	9700000
Toluene	12000	Not Detected	46000	Not Detected
Ethyl Benzene	11000	19000	46000	81000
o-Xylene	11000	Not Detected	46000	Not Detected
m,p-Xylene	11000	Not Detected	46000	Not Detected
Naphthalene	47000	Not Detected	240000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060309a	Date of Collection: 5/20/11 8:38:00 AM
Dil. Factor:	2.42	Date of Analysis: 6/3/11 11:13 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.2	Not Detected	4.8	Not Detected
Methyl tert-butyl ether	1.3	Not Detected	4.8	Not Detected
Benzene	1.5	150	4.9	480
Toluene	1.3	14	4.8	51
Ethyl Benzene	1.1	2.7	4.8	12
o-Xylene	1.1	3.0	4.8	13
m,p-Xylene	1.1	5.2	4.8	23
Naphthalene	4.8	Not Detected	25	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

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

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519A-09A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060312a	Date of Collection: 5/20/11 8:35:00 AM
Dil. Factor:	39500	Date of Analysis: 6/3/11 01:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	36000	Not Detected	79000	Not Detected
Methyl tert-butyl ether	22000	Not Detected	78000	Not Detected
Benzene	25000	6800000	79000	22000000
Toluene	21000	160000	79000	620000
Ethyl Benzene	18000	Not Detected	79000	Not Detected
o-Xylene	18000	Not Detected	79000	Not Detected
m,p-Xylene	18000	Not Detected	79000	Not Detected
Naphthalene	79000	Not Detected	410000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519A-10A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060315a	Date of Collection: 5/20/11 9:21:00 AM
Dil. Factor:	6.66	Date of Analysis: 6/3/11 02:56 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	6.0	Not Detected	13	Not Detected
Methyl tert-butyl ether	3.7	4.3	13	15
Benzene	4.2	Not Detected	13	Not Detected
Toluene	3.5	Not Detected	13	Not Detected
Ethyl Benzene	3.1	Not Detected	13	Not Detected
o-Xylene	3.1	Not Detected	13	Not Detected
m,p-Xylene	3.1	Not Detected	13	Not Detected
Naphthalene	13	Not Detected	70	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: Lab Blank

Lab ID#: 1105519A-11A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060206a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 09:28 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 1105519A-11B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060306a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 09:11 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	121	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: CCV

Lab ID#: 1105519A-12A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 08:02 AM

Compound	%Recovery
1,3-Butadiene	92
Methyl tert-butyl ether	96
Benzene	88
Toluene	82
Ethyl Benzene	90
o-Xylene	89
m,p-Xylene	86
Naphthalene	94
C5-C8 Aliphatic Hydrocarbons	90
C9-C12 Aliphatic Hydrocarbons	86
C9-C10 Aromatic Hydrocarbons	72

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: CCV

Lab ID#: 1105519A-12B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 07:50 AM

Compound	%Recovery
1,3-Butadiene	91
Methyl tert-butyl ether	100
Benzene	90
Toluene	85
Ethyl Benzene	84
o-Xylene	85
m,p-Xylene	80
Naphthalene	89
C5-C8 Aliphatic Hydrocarbons	92
C9-C12 Aliphatic Hydrocarbons	89
C9-C10 Aromatic Hydrocarbons	78

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1105519A-13A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 08:37 AM

Compound	%Recovery
1,3-Butadiene	124
Methyl tert-butyl ether	128
Benzene	114
Toluene	106
Ethyl Benzene	105
o-Xylene	104
m,p-Xylene	106
Naphthalene	97
C5-C8 Aliphatic Hydrocarbons	90
C9-C12 Aliphatic Hydrocarbons	95
C9-C10 Aromatic Hydrocarbons	80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: LCS

Lab ID#: 1105519A-13B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2060305	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/3/11 08:27 AM

Compound	%Recovery
1,3-Butadiene	121
Methyl tert-butyl ether	127
Benzene	109
Toluene	101
Ethyl Benzene	102
o-Xylene	102
m,p-Xylene	102
Naphthalene	81
C5-C8 Aliphatic Hydrocarbons	93
C9-C12 Aliphatic Hydrocarbons	94
C9-C10 Aromatic Hydrocarbons	79

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	104	70-130

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.0% 1, 4-Difluorobenzene: %D from CCV: 3.4% Chlorobenzene-d5: %D from CCV: 11% MS Tuning Standard: Bromofluorobenzene	Client ID	FV-GP-01-HDOH	NA			
	Lab ID	1105519A-01A	NA			
	Date Collected	5/19/2011	NA			
	Date Received	5/26/2011	NA			
	Date Analyzed	6/2/2011	NA			
	Pre-Sample Vacuum (field)	28 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	5.5 in. Hg	NA in. Hg			
	Dilution Factor	14.1	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	28	13	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	28	7.8	ND	ND	NA	NA
Benzene	28	8.8	ND	ND	NA	NA
Toluene	28	7.5	ND	ND	NA	NA
Ethylbenzene	28	6.5	ND	ND	NA	NA
m- & p- Xylenes	28	6.5	ND	ND	NA	NA
o-Xylene	28	6.5	ND	ND	NA	NA
Naphthalene	150	28	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	170	N/A	9400	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	170	N/A	79000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	140	N/A	1200	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 5.5% 1, 4-Difluorobenzene: %D from CCV: 0.040% Chlorobenzene-d5: %D from CCV: 3.3% MS Tuning Standard: Bromofluorobenzene	Client ID	FV-GP-06R-HDOH	NA			
	Lab ID	1105519A-02A	NA			
	Date Collected	5/19/2011	NA			
	Date Received	5/26/2011	NA			
	Date Analyzed	6/2/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.5 in. Hg	NA in. Hg			
	Dilution Factor	2.38	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.8	2.2	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.8	1.3	ND	ND	NA	NA
Benzene	4.8	1.5	ND	ND	NA	NA
Toluene	4.8	1.3	ND	ND	NA	NA
Ethylbenzene	4.8	1.1	ND	ND	NA	NA
m- & p- Xylenes	4.8	1.1	ND	ND	NA	NA
o-Xylene	4.8	1.1	ND	ND	NA	NA
Naphthalene	25	4.8	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	28	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	28	N/A	610	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	24	N/A	72	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 0.25% 1, 4-Difluorobenzene: %D from CCV: 1.0% Chlorobenzene-d5: %D from CCV: 4.3% MS Tuning Standard: Bromofluorobenzene	Client ID	FV-GP-06R-HDOH Lab Du	NA			
	Lab ID	1105519A-02AA	NA			
	Date Collected	5/19/2011	NA			
	Date Received	5/26/2011	NA			
	Date Analyzed	6/2/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.5 in. Hg	NA in. Hg			
	Dilution Factor	7.32	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	15	6.6	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	15	4.0	ND	ND	NA	NA
Benzene	15	4.6	ND	ND	NA	NA
Toluene	15	3.9	ND	ND	NA	NA
Ethylbenzene	15	3.4	ND	ND	NA	NA
m- & p- Xylenes	15	3.4	ND	ND	NA	NA
o-Xylene	15	3.4	ND	ND	NA	NA
Naphthalene	77	15	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	88	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	88	N/A	130	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	73	N/A	82	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 0.58% 1, 4-Difluorobenzene: %D from CCV: 5.6% Chlorobenzene-d5: %D from CCV: 5.8% MS Tuning Standard: Bromofluorobenzene	Client ID	FV-GP-08-HDOH	NA			
	Lab ID	1105519A-03A	NA			
	Date Collected	5/19/2011	NA			
	Date Received	5/26/2011	NA			
	Date Analyzed	6/2/2011	NA			
	Pre-Sample Vacuum (field)	29 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	0 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	2.0 in. Hg	NA in. Hg			
	Dilution Factor	18.8	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	38	17	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	38	10	ND	ND	NA	NA
Benzene	38	12	50	16	NA	NA
Toluene	38	10	67	18	NA	NA
Ethylbenzene	38	8.7	110	25	NA	NA
m- & p- Xylenes	38	8.7	ND	ND	NA	NA
o-Xylene	38	8.7	ND	ND	NA	NA
Naphthalene	200	38	600	120	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	220	N/A	520000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	220	N/A	3200000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	190	N/A	61000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 34% 1, 4-Difluorobenzene: %D from CCV: 30% Chlorobenzene-d5: %D from CCV: 34% MS Tuning Standard: Bromofluorobenzene	Client ID		FV-GP-16R-HDOH		NA	
	Lab ID		1105519A-04A		NA	
	Date Collected		5/19/2011		NA	
	Date Received		5/26/2011		NA	
	Date Analyzed		6/2/2011		NA	
	Pre-Sample Vacuum (field)		26	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		5	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		5.5	in. Hg	NA	in. Hg
Dilution Factor		247		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	490	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	490	140	ND	ND	NA	NA
Benzene	490	150	ND	ND	NA	NA
Toluene	490	130	ND	ND	NA	NA
Ethylbenzene	490	110	ND	ND	NA	NA
m- & p- Xylenes	490	110	ND	ND	NA	NA
o-Xylene	490	110	ND	ND	NA	NA
Naphthalene	2600	490	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	3000	N/A	1100000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	3000	N/A	4800000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2500	N/A	23000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

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Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.5% 1, 4-Difluorobenzene: %D from CCV: 1.6% Chlorobenzene-d5: %D from CCV: 2.0% MS Tuning Standard: Bromofluorobenzene	Client ID	FV-GP-17-HDOH	NA			
	Lab ID	1105519A-05A	NA			
	Date Collected	5/19/2011	NA			
	Date Received	5/26/2011	NA			
	Date Analyzed	6/3/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	5.5 in. Hg	NA in. Hg			
	Dilution Factor	2.47	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.9	2.2	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.9	1.4	ND	ND	NA	NA
Benzene	4.9	1.5	ND	ND	NA	NA
Toluene	4.9	1.3	ND	ND	NA	NA
Ethylbenzene	4.9	1.1	ND	ND	NA	NA
m- & p- Xylenes	4.9	1.1	ND	ND	NA	NA
o-Xylene	4.9	1.1	ND	ND	NA	NA
Naphthalene	26	4.9	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	30	N/A	7000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	30	N/A	11000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	25	N/A	310	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 33% 1, 4-Difluorobenzene: %D from CCV: 30% Chlorobenzene-d5: %D from CCV: 39% MS Tuning Standard: Bromofluorobenzene	Client ID		G-IPB20-HDOH		NA	
	Lab ID		1105519A-06A		NA	
	Date Collected		5/20/2011		NA	
	Date Received		5/26/2011		NA	
	Date Analyzed		6/2/2011		NA	
	Pre-Sample Vacuum (field)		29	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		5	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		6.5	in. Hg	NA	in. Hg
Dilution Factor		73.7		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	150	67	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	150	40	ND	ND	NA	NA
Benzene	150	46	34000	10000	NA	NA
Toluene	150	39	5900	1600	NA	NA
Ethylbenzene	150	34	160	36	NA	NA
m- & p- Xylenes	150	34	430	98	NA	NA
o-Xylene	150	34	200	47	NA	NA
Naphthalene	770	150	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	880	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	880	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	740	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

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POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 3.1% 1, 4-Difluorobenzene: %D from CCV: 0.43% Chlorobenzene-d5: %D from CCV: 3.7% MS Tuning Standard: Bromofluorobenzene	Client ID		G-IPH11-HDOH		NA	
	Lab ID		1105519A-07A		NA	
	Date Collected		5/20/2011		NA	
	Date Received		5/26/2011		NA	
	Date Analyzed		6/2/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		5	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.0	in. Hg	NA	in. Hg
Dilution Factor		23300		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	47000	21000	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	47000	13000	ND	ND	NA	NA
Benzene	47000	14000	9700000	3000000	NA	NA
Toluene	47000	12000	ND	ND	NA	NA
Ethylbenzene	47000	11000	81000	19000	NA	NA
m- & p- Xylenes	47000	11000	ND	ND	NA	NA
o-Xylene	47000	11000	ND	ND	NA	NA
Naphthalene	240000	47000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	280000	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	280000	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	230000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

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POSITION: Laboratory Director

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DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 1.3% Chlorobenzene-d5: %D from CCV: 4.1% MS Tuning Standard: Bromofluorobenzene	Client ID		G-IPL19-HDOH		NA	
	Lab ID		1105519A-08A		NA	
	Date Collected		5/20/2011		NA	
	Date Received		5/26/2011		NA	
	Date Analyzed		6/3/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		5	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		5.0	in. Hg	NA	in. Hg
Dilution Factor		2.42		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.8	2.2	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.8	1.3	ND	ND	NA	NA
Benzene	4.8	1.5	480	150	NA	NA
Toluene	4.8	1.3	51	14	NA	NA
Ethylbenzene	4.8	1.1	12	2.7	NA	NA
m- & p- Xylenes	4.8	1.1	23	5.2	NA	NA
o-Xylene	4.8	1.1	13	3.0	NA	NA
Naphthalene	25	4.8	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	29	N/A	540	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	29	N/A	120	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	24	N/A	29	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

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³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 12% 1, 4-Difluorobenzene: %D from CCV: 8.5% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene	Client ID		G-IP28-HDOH		NA	
	Lab ID		1105519A-09A		NA	
	Date Collected		5/20/2011		NA	
	Date Received		5/26/2011		NA	
	Date Analyzed		6/3/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		8	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		9.5	in. Hg	NA	in. Hg
	Dilution Factor		39500		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	79000	36000	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	79000	22000	ND	ND	NA	NA
Benzene	79000	25000	22000000	6800000	NA	NA
Toluene	79000	21000	620000	160000	NA	NA
Ethylbenzene	79000	18000	ND	ND	NA	NA
m- & p- Xylenes	79000	18000	ND	ND	NA	NA
o-Xylene	79000	18000	ND	ND	NA	NA
Naphthalene	410000	79000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	470000	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	470000	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	400000	N/A	ND	N/A	NA	N/A

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Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 14% 1, 4-Difluorobenzene: %D from CCV: 10% Chlorobenzene-d5: %D from CCV: 11% MS Tuning Standard: Bromofluorobenzene	Client ID	G-SG12-HDOH	NA			
	Lab ID	1105519A-10A	NA			
	Date Collected	5/20/2011	NA			
	Date Received	5/26/2011	NA			
	Date Analyzed	6/3/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.0 in. Hg	NA in. Hg			
	Dilution Factor	6.66	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	13	6.0	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	13	3.7	15	4.3	NA	NA
Benzene	13	4.2	ND	ND	NA	NA
Toluene	13	3.5	ND	ND	NA	NA
Ethylbenzene	13	3.1	ND	ND	NA	NA
m- & p- Xylenes	13	3.1	ND	ND	NA	NA
o-Xylene	13	3.1	ND	ND	NA	NA
Naphthalene	70	13	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	80	N/A	2300	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	80	N/A	1600	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	67	N/A	320	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

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SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 4.8% 1, 4-Difluorobenzene: %D from CCV: 2.4% Chlorobenzene-d5: %D from CCV: 0.74% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1105519A-11A		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		6/2/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

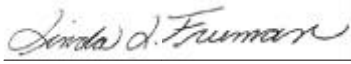
Internal Standards: Bromochloroethane: %D from CCV: 5.2% 1, 4-Difluorobenzene: %D from CCV: 2.9% Chlorobenzene-d5: %D from CCV: 4.0% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1105519A-11B		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		6/3/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were all performance/acceptance standards for required QA/QC procedures achieved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were any significant modifications made to the APH method, as specified in Sect 11.1.2?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes - Details Attached
<p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p>		
SIGNATURE: 	POSITION: Laboratory Director	
PRINTED NAME: Linda L. Freeman	DATE: 06/21/2011	

6/27/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street


DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/24/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	A-SV04-HDOH	Massachusetts APH	3.0 "Hg	15 psi
02A	A-SVO13-HDOH	Massachusetts APH	3.5" Hg	15 psi
03A	A-AS4-HDOH	Massachusetts APH	1.5" Hg	15 psi
04A	Diesel#1-HDOH	Massachusetts APH	5.0 "Hg	15 psi
04AA	Diesel#1-HDOH Lab Duplicate	Massachusetts APH	5.0 "Hg	15 psi
05A	Ambient#1-HDOH	Massachusetts APH	4.5 "Hg	15 psi
06A	Lab Blank	Massachusetts APH	NA	NA
07A	CCV	Massachusetts APH	NA	NA
08A	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 06/27/11

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
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1106214A**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

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 CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

A dilution was performed on samples Diesel#1-HDOH and Diesel#1-HDOH Lab Duplicate due to the presence of high level target species.

Dilution was performed on sample Ambient#1-HDOH due to the presence of high level non-target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061508a	Date of Collection: 6/3/11 8:15:00 AM
Dil. Factor:	2.24	Date of Analysis: 6/15/11 12:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.0	Not Detected	4.4	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Benzene	1.4	Not Detected	4.5	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
Ethyl Benzene	1.0	Not Detected	4.5	Not Detected
o-Xylene	1.0	Not Detected	4.5	Not Detected
m,p-Xylene	1.0	Not Detected	4.5	Not Detected
Naphthalene	4.5	Not Detected	23	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: A-SVO13-HDOH

Lab ID#: 1106214A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061509a	Date of Collection: 6/3/11 8:44:00 AM
Dil. Factor:	2.29	Date of Analysis: 6/15/11 01:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.1	Not Detected	4.6	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Benzene	1.4	3.2	4.6	10
Toluene	1.2	Not Detected	4.6	Not Detected
Ethyl Benzene	1.0	1.4	4.6	6.3
o-Xylene	1.0	Not Detected	4.6	Not Detected
m,p-Xylene	1.0	2.5	4.6	11
Naphthalene	4.6	Not Detected	24	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061510a	Date of Collection: 6/3/11 8:58:00 AM
Dil. Factor:	2.13	Date of Analysis: 6/15/11 01:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.9	Not Detected	4.2	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.2	Not Detected
Benzene	1.3	Not Detected	4.3	Not Detected
Toluene	1.1	Not Detected	4.2	Not Detected
Ethyl Benzene	0.98	Not Detected	4.2	Not Detected
o-Xylene	0.98	Not Detected	4.2	Not Detected
m,p-Xylene	0.98	Not Detected	4.2	Not Detected
Naphthalene	4.3	Not Detected	22	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061512a	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	242	Date of Analysis: 6/15/11 03:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	480	Not Detected
Methyl tert-butyl ether	130	Not Detected	480	Not Detected
Benzene	150	5100	490	16000
Toluene	130	11000	480	42000
Ethyl Benzene	110	2200	480	9700
o-Xylene	110	2300	480	9800
m,p-Xylene	110	5200	480	22000
Naphthalene	480	Not Detected	2500	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214A-04AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061511a	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	48.4	Date of Analysis: 6/15/11 02:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	44	Not Detected	96	Not Detected
Methyl tert-butyl ether	27	Not Detected	96	Not Detected
Benzene	30	5400	97	17000
Toluene	26	11000 E	97	41000 E
Ethyl Benzene	22	2600	97	11000
o-Xylene	22	2800	97	12000
m,p-Xylene	22	6000	97	26000
Naphthalene	97	140	510	730

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061521a	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	4.76	Date of Analysis: 6/15/11 09:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	4.3	Not Detected	9.5	Not Detected
Methyl tert-butyl ether	2.6	Not Detected	9.4	Not Detected
Benzene	3.0	Not Detected	9.6	Not Detected
Toluene	2.5	Not Detected	9.5	Not Detected
Ethyl Benzene	2.2	Not Detected	9.5	Not Detected
o-Xylene	2.2	Not Detected	9.5	Not Detected
m,p-Xylene	2.2	Not Detected	9.5	Not Detected
Naphthalene	9.5	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	83	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: Lab Blank

Lab ID#: 1106214A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061507d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 11:57 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	91	70-130

Client Sample ID: CCV

Lab ID#: 1106214A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 10:10 AM

Compound	%Recovery
1,3-Butadiene	81
Methyl tert-butyl ether	91
Benzene	98
Toluene	98
Ethyl Benzene	101
o-Xylene	100
m,p-Xylene	104
Naphthalene	123
C5-C8 Aliphatic Hydrocarbons	72
C9-C12 Aliphatic Hydrocarbons	79
C9-C10 Aromatic Hydrocarbons	91

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1106214A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2061505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/15/11 10:45 AM

Compound	%Recovery
1,3-Butadiene	91
Methyl tert-butyl ether	102
Benzene	111
Toluene	110
Ethyl Benzene	111
o-Xylene	111
m,p-Xylene	114
Naphthalene	125
C5-C8 Aliphatic Hydrocarbons	74
C9-C12 Aliphatic Hydrocarbons	78
C9-C10 Aromatic Hydrocarbons	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	85	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other	0 0 0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical <input checked="" type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other	
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input checked="" type="checkbox"/> <=20% <input type="checkbox"/> >20%	

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.4% 1, 4-Difluorobenzene: %D from CCV: 4.6% Chlorobenzene-d5: %D from CCV: 4.5% MS Tuning Standard: Bromofluorobenzene	Client ID	A-SV04-HDOH	NA			
	Lab ID	1106214A-01A	NA			
	Date Collected	6/3/2011	NA			
	Date Received	6/9/2011	NA			
	Date Analyzed	6/15/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	3 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	3.0 in. Hg	NA	in. Hg		
	Dilution Factor	2.24	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.5	2.0	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.5	1.2	ND	ND	NA	NA
Benzene	4.5	1.4	ND	ND	NA	NA
Toluene	4.5	1.2	ND	ND	NA	NA
Ethylbenzene	4.5	1.0	ND	ND	NA	NA
m- & p- Xylenes	4.5	1.0	ND	ND	NA	NA
o-Xylene	4.5	1.0	ND	ND	NA	NA
Naphthalene	4.5	0.86	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	27	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	27	N/A	27	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	22	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/27/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

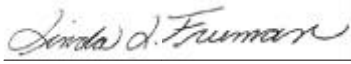
Internal Standards: Bromochloroethane: %D from CCV: 9.0% 1, 4-Difluorobenzene: %D from CCV: 3.3% Chlorobenzene-d5: %D from CCV: 2.9% MS Tuning Standard: Bromofluorobenzene	Client ID	A-SVO13-HDOH		NA		
	Lab ID	1106214A-02A		NA		
	Date Collected	6/3/2011		NA		
	Date Received	6/9/2011		NA		
	Date Analyzed	6/15/2011		NA		
	Pre-Sample Vacuum (field)	30.	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4.5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.5	in. Hg	NA	in. Hg	
	Dilution Factor	2.29		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.6	2.1	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.6	1.2	ND	ND	NA	NA
Benzene	4.6	1.4	10	3.2	NA	NA
Toluene	4.6	1.2	ND	ND	NA	NA
Ethylbenzene	4.6	1.0	6.3	1.4	NA	NA
m- & p- Xylenes	4.6	1.0	11	2.5	NA	NA
o-Xylene	4.6	1.0	ND	ND	NA	NA
Naphthalene	24	4.6	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	27	N/A	41	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	27	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	23	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were all performance/acceptance standards for required QA/QC procedures achieved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were any significant modifications made to the APH method, as specified in Sect 11.1.2?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes - Details Attached
<p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p>		
SIGNATURE: 	POSITION: Laboratory Director	
PRINTED NAME: Linda L. Freeman	DATE: 06/24/2011	

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 5.5% Chlorobenzene-d5: %D from CCV: 3.8%	Client ID	A-AS4-HDOH	NA			
	Lab ID	1106214A-03A	NA			
	Date Collected	6/3/2011	NA			
	Date Received	6/9/2011	NA			
	Date Analyzed	6/15/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	3 in. Hg	NA in. Hg			
	MS Tuning Standard: Bromofluorobenzene	Lab Receipt Vacuum	1.5 in. Hg	NA in. Hg		
Dilution Factor		2.13	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.3	1.9	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.3	1.2	ND	ND	NA	NA
Benzene	4.3	1.3	ND	ND	NA	NA
Toluene	4.3	1.1	ND	ND	NA	NA
Ethylbenzene	4.3	0.98	ND	ND	NA	NA
m- & p- Xylenes	4.3	0.98	ND	ND	NA	NA
o-Xylene	4.3	0.98	ND	ND	NA	NA
Naphthalene	22	4.3	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	26	N/A	38	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	26	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	21	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 2.1% 1, 4-Difluorobenzene: %D from CCV: 3.3% Chlorobenzene-d5: %D from CCV: 0.69% MS Tuning Standard: Bromofluorobenzene	Client ID	Diesel#1-HDOH		NA		
	Lab ID	1106214A-04A		NA		
	Date Collected	6/3/2011		NA		
	Date Received	6/9/2011		NA		
	Date Analyzed	6/15/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.0	in. Hg	NA	in. Hg	
	Dilution Factor	242		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	480	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	480	130	ND	ND	NA	NA
Benzene	480	150	16000	5100	NA	NA
Toluene	480	130	42000	11000	NA	NA
Ethylbenzene	480	110	9700	2200	NA	NA
m- & p- Xylenes	480	110	22000	5200	NA	NA
o-Xylene	480	110	9800	2300	NA	NA
Naphthalene	2500	480	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	2900	N/A	1000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	2900	N/A	170000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2400	N/A	25000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.1% 1, 4-Difluorobenzene: %D from CCV: 3.2% Chlorobenzene-d5: %D from CCV: 7.8% MS Tuning Standard: Bromofluorobenzene	Client ID	Diesel#1-HDOH Lab Dupl	NA			
	Lab ID	1106214A-04AA	NA			
	Date Collected	6/3/2011	NA			
	Date Received	6/9/2011	NA			
	Date Analyzed	6/15/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	4 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	5.0 in. Hg	NA in. Hg			
	Dilution Factor	48.4	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results	Sample Results		
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	97	44	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	97	27	ND	ND	NA	NA
Benzene	97	30	17000	5400	NA	NA
Toluene	97	26	41000 E	11000 E	NA	NA
Ethylbenzene	97	22	11000	2600	NA	NA
m- & p- Xylenes	97	22	26000	6000	NA	NA
o-Xylene	97	22	12000	2800	NA	NA
Naphthalene	510	97	730	140	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	580	N/A	1000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	580	N/A	230000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	480	N/A	34000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 17% Chlorobenzene-d5: %D from CCV: 18% MS Tuning Standard: Bromofluorobenzene	Client ID	Ambient#1-HDOH	NA			
	Lab ID	1106214A-05A	NA			
	Date Collected	6/3/2011	NA			
	Date Received	6/9/2011	NA			
	Date Analyzed	6/15/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	4 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.5 in. Hg	NA in. Hg			
	Dilution Factor	4.76	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	9.5	4.3	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	9.5	2.6	ND	ND	NA	NA
Benzene	9.5	3.0	ND	ND	NA	NA
Toluene	9.5	2.5	ND	ND	NA	NA
Ethylbenzene	9.5	2.2	ND	ND	NA	NA
m- & p- Xylenes	9.5	2.2	ND	ND	NA	NA
o-Xylene	9.5	2.2	ND	ND	NA	NA
Naphthalene	50	9.5	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	57	N/A	58	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	57	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	48	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 4.2% Chlorobenzene-d5: %D from CCV: 2.0% MS Tuning Standard: Bromofluorobenzene	Client ID	Lab Blank	NA
	Lab ID	1106214A-06A	NA
	Date Collected	NA	NA
	Date Received	NA	NA
	Date Analyzed	6/15/2011	NA
	Pre-Sample Vacuum (field)	NA in. Hg	NA in. Hg
	Post-Sample Vacuum (field)	NA in. Hg	NA in. Hg
	Lab Receipt Vacuum	NA in. Hg	NA in. Hg
Target APH Analytes & Hydrocarbon Ranges	Dilution Factor	1	NA
	Reporting Limit	Sample Results	Sample Results
	µg/m3	ppb v/v	µg/m3
	ppb v/v	µg/m3	ppb v/v
	1,3-Butadiene	2.0	0.90
	Methyl tertiary butyl ether (MTBE)	2.0	0.55
	Benzene	2.0	0.63
	Toluene	2.0	0.53
Ethylbenzene m- & p- Xylenes o-Xylene Naphthalene C5-C8 Aliphatic Hydrocarbons ^{1 2} C9-C12 Aliphatic Hydrocarbons ^{1 3} C9-C10 Aromatic Hydrocarbons	2.0	0.46	ND
	2.0	0.46	ND
	10	2.0	ND
	12	N/A	ND
	12	N/A	ND
	10	N/A	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 2.1% 1, 4-Difluorobenzene: %D from CCV: 3.3% Chlorobenzene-d5: %D from CCV: 0.69% MS Tuning Standard: Bromofluorobenzene	Client ID	Diesel#1-HDOH		NA		
	Lab ID	1106214A-04A		NA		
	Date Collected	6/3/2011		NA		
	Date Received	6/9/2011		NA		
	Date Analyzed	6/15/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.0	in. Hg	NA	in. Hg	
	Dilution Factor	242		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	480	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	480	130	ND	ND	NA	NA
Benzene	480	150	16000	5100	NA	NA
Toluene	480	130	42000	11000	NA	NA
Ethylbenzene	480	110	9700	2200	NA	NA
m- & p- Xylenes	480	110	22000	5200	NA	NA
o-Xylene	480	110	9800	2300	NA	NA
Naphthalene	2500	480	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	2900	N/A	1000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	2900	N/A	170000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2400	N/A	25000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.1% 1, 4-Difluorobenzene: %D from CCV: 3.2% Chlorobenzene-d5: %D from CCV: 7.8% MS Tuning Standard: Bromofluorobenzene	Client ID	Diesel#1-HDOH Lab Dupli		NA		
	Lab ID	1106214A-04AA		NA		
	Date Collected	6/3/2011		NA		
	Date Received	6/9/2011		NA		
	Date Analyzed	6/15/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.0	in. Hg	NA	in. Hg	
	Dilution Factor	48.4		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	97	44	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	97	27	ND	ND	NA	NA
Benzene	97	30	17000	5400	NA	NA
Toluene	97	26	41000 E	11000 E	NA	NA
Ethylbenzene	97	22	11000	2600	NA	NA
m- & p- Xylenes	97	22	26000	6000	NA	NA
o-Xylene	97	22	12000	2800	NA	NA
Naphthalene	510	97	730	140	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	580	N/A	1000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	580	N/A	230000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	480	N/A	34000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

7/11/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1106457A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/21/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106457A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

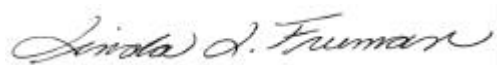
DATE RECEIVED: 06/21/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 07/11/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)-HDOH	Massachusetts APH	5.0 "Hg	15 psi
02A	HAFB-VP26-B05(24)-HDOH	Massachusetts APH	5.0 "Hg	15 psi
03A	HAFB-VP26-B07(20)-HDOH	Massachusetts APH	3.5 "Hg	15 psi
03AA	HAFB-VP26-B07(20)-HDOH Lab Duplic	Massachusetts APH	3.5 "Hg	15 psi
04A	HAFB-VP26-B07(25)-HDOH	Massachusetts APH	3.5 "Hg	15 psi
05A	HAFB-VP26-B08(21)-HDOH	Massachusetts APH	4.0 "Hg	15 psi
06A	Lab Blank	Massachusetts APH	NA	NA
07A	CCV	Massachusetts APH	NA	NA
08A	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 07/11/11

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
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1106457A

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 21, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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

Dilution was performed on samples HAFB-VP26-B05(18)-HDOH, HAFB-VP26-B05(24)-HDOH, HAFB-VP26-B07(20)-HDOH, HAFB-VP26-B07(20)-HDOH Lab Duplicate, HAFB-VP26-B07(25)-HDOH and HAFB-VP26-B08(21)-HDOH due to the presence of high level target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062817a	Date of Collection: 6/16/11 11:44:00 AM
Dil. Factor:	2420	Date of Analysis: 6/29/11 06:53 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2200	Not Detected	4800	Not Detected
Methyl tert-butyl ether	1300	Not Detected	4800	Not Detected
Benzene	1500	9100	4900	29000
Toluene	1300	Not Detected	4800	Not Detected
Ethyl Benzene	1100	3300	4800	14000
o-Xylene	1100	Not Detected	4800	Not Detected
m,p-Xylene	1100	Not Detected	4800	Not Detected
Naphthalene	4800	Not Detected	25000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062820a	Date of Collection: 6/16/11 12:32:00 PM
Dil. Factor:	121000	Date of Analysis: 6/29/11 09:09 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	110000	Not Detected	240000	Not Detected
Methyl tert-butyl ether	66000	Not Detected	240000	Not Detected
Benzene	76000	150000	240000	470000
Toluene	64000	Not Detected	240000	Not Detected
Ethyl Benzene	56000	Not Detected	240000	Not Detected
o-Xylene	56000	Not Detected	240000	Not Detected
m,p-Xylene	56000	Not Detected	240000	Not Detected
Naphthalene	240000	Not Detected	1300000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062825a	Date of Collection: 6/16/11 12:42:00 PM
Dil. Factor:	114	Date of Analysis: 6/29/11 12:11 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	100	Not Detected	230	Not Detected
Methyl tert-butyl ether	63	Not Detected	230	Not Detected
Benzene	72	18000	230	58000
Toluene	60	Not Detected	230	Not Detected
Ethyl Benzene	52	9200	230	40000
o-Xylene	52	Not Detected	230	Not Detected
m,p-Xylene	52	99	230	430
Naphthalene	230	Not Detected	1200	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: HAFB-VP26-B07(20)-HDOH Lab Duplicate

Lab ID#: 1106457A-03AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062823a	Date of Collection: 6/16/11 12:42:00 PM
Dil. Factor:	30.5	Date of Analysis: 6/29/11 10:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	27	Not Detected	61	Not Detected
Methyl tert-butyl ether	17	Not Detected	60	Not Detected
Benzene	19	17000 E	61	54000 E
Toluene	16	27	61	100
Ethyl Benzene	14	9800 E	61	42000 E
o-Xylene	14	Not Detected	61	Not Detected
m,p-Xylene	14	110	61	480
Naphthalene	61	Not Detected	320	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	129	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062822a	Date of Collection: 6/16/11 1:25:00 PM
Dil. Factor:	2290	Date of Analysis: 6/29/11 10:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2100	Not Detected	4600	Not Detected
Methyl tert-butyl ether	1200	Not Detected	4500	Not Detected
Benzene	1400	6000	4600	19000
Toluene	1200	Not Detected	4600	Not Detected
Ethyl Benzene	1000	2100	4600	9200
o-Xylene	1000	Not Detected	4600	Not Detected
m,p-Xylene	1000	Not Detected	4600	Not Detected
Naphthalene	4600	Not Detected	24000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062826a	Date of Collection: 6/16/11 11:18:00 AM
Dil. Factor:	31.1	Date of Analysis: 6/29/11 12:48 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	28	Not Detected	62	Not Detected
Methyl tert-butyl ether	17	Not Detected	62	Not Detected
Benzene	20	180	62	570
Toluene	16	35	62	130
Ethyl Benzene	14	39	62	170
o-Xylene	14	Not Detected	62	Not Detected
m,p-Xylene	14	140	62	620
Naphthalene	62	Not Detected	330	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	122	70-130

Client Sample ID: Lab Blank

Lab ID#: 1106457A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062810e	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/28/11 07:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	91	70-130

Client Sample ID: CCV

Lab ID#: 1106457A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/28/11 03:54 PM

Compound	%Recovery
1,3-Butadiene	82
Methyl tert-butyl ether	85
Benzene	87
Toluene	88
Ethyl Benzene	86
o-Xylene	87
m,p-Xylene	85
Naphthalene	123
C5-C8 Aliphatic Hydrocarbons	70
C9-C12 Aliphatic Hydrocarbons	70
C9-C10 Aromatic Hydrocarbons	76

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCS

Lab ID#: 1106457A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2062807	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/28/11 05:43 PM

Compound	%Recovery
1,3-Butadiene	81
Methyl tert-butyl ether	80
Benzene	80
Toluene	80
Ethyl Benzene	80
o-Xylene	81
m,p-Xylene	80
Naphthalene	91
C5-C8 Aliphatic Hydrocarbons	80
C9-C12 Aliphatic Hydrocarbons	74
C9-C10 Aromatic Hydrocarbons	81

Container Type: NA - Not Applicable

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

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 7.9% 1, 4-Difluorobenzene: %D from CCV: 3.0% Chlorobenzene-d5: %D from CCV: 3.1% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-VP26-B05(18)-HDO		NA	
	Lab ID		1106457A-01A		NA	
	Date Collected		6/16/2011		NA	
	Date Received		6/21/2011		NA	
	Date Analyzed		6/29/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		5.0	in. Hg	NA	in. Hg
Dilution Factor		2420		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4800	2200	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4800	1300	ND	ND	NA	NA
Benzene	4800	1500	29000	9100	NA	NA
Toluene	4800	1300	ND	ND	NA	NA
Ethylbenzene	4800	1100	14000	3300	NA	NA
m- & p- Xylenes	4800	1100	ND	ND	NA	NA
o-Xylene	4800	1100	ND	ND	NA	NA
Naphthalene	25000	4800	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	29000	N/A	18000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	29000	N/A	330000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	24000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 16% Chlorobenzene-d5: %D from CCV: 15% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-VP26-B05(24)-HDO		NA	
	Lab ID		1106457A-02A		NA	
	Date Collected		6/16/2011		NA	
	Date Received		6/21/2011		NA	
	Date Analyzed		6/29/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		3	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		5.0	in. Hg	NA	in. Hg
Dilution Factor		121000		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	240000	110000	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	240000	66000	ND	ND	NA	NA
Benzene	240000	76000	470000	150000	NA	NA
Toluene	240000	64000	ND	ND	NA	NA
Ethylbenzene	240000	56000	ND	ND	NA	NA
m- & p- Xylenes	240000	56000	ND	ND	NA	NA
o-Xylene	240000	56000	ND	ND	NA	NA
Naphthalene	1300000	240000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	1400000	N/A	160000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	1400000	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	1200000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input checked="" type="checkbox"/> <=20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 15% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 11% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-VP26-B07(20)-HDO		NA	
	Lab ID	1106457A-03A		NA	
	Date Collected	6/16/2011		NA	
	Date Received	6/21/2011		NA	
	Date Analyzed	6/29/2011		NA	
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum	3.5	in. Hg	NA	in. Hg
Target APH Analytes & Hydrocarbon Ranges	Dilution Factor	114		NA	
	Reporting Limit			Sample Results	
		µg/m3	ppb v/v	µg/m3	ppb v/v
	1,3-Butadiene	230	100	ND	ND
	Methyl tertiary butyl ether (MTBE)	230	63	ND	ND
	Benzene	230	71	58000	18000
	Toluene	230	60	ND	ND
	Ethylbenzene	230	52	40000	9200
	m- & p- Xylenes	230	52	430	99
	o-Xylene	230	52	ND	ND
	Naphthalene	1200	230	ND	ND
	C5-C8 Aliphatic Hydrocarbons ^{1 2}	1400	N/A	12000000	N/A
	C9-C12 Aliphatic Hydrocarbons ^{1 3}	1400	N/A	220000	N/A
	C9-C10 Aromatic Hydrocarbons	1100	N/A	8000	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/11/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 14% Chlorobenzene-d5: %D from CCV: 17% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-VP26-B07(20)-HDO		NA		
	Lab ID	1106457A-03AA		NA		
	Date Collected	6/16/2011		NA		
	Date Received	6/21/2011		NA		
	Date Analyzed	6/29/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.5	in. Hg	NA	in. Hg	
	Dilution Factor	30.5		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	61	28	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	61	17	ND	ND	NA	NA
Benzene	61	19	54000	17000	NA	NA
Toluene	61	16	100	27	NA	NA
Ethylbenzene	61	14	42000	9800	NA	NA
m- & p- Xylenes	61	14	480	110	NA	NA
o-Xylene	61	14	ND	ND	NA	NA
Naphthalene	320	61	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	370	N/A	8800000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	370	N/A	260000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	300	N/A	9800	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/11/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 14% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 14% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-VP26-B07(25)-HDO		NA		
	Lab ID	1106457A-04A		NA		
	Date Collected	6/16/2011		NA		
	Date Received	6/21/2011		NA		
	Date Analyzed	6/29/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	3	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.5	in. Hg	NA	in. Hg	
	Dilution Factor	2290		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4600	2100	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4600	1200	ND	ND	NA	NA
Benzene	4600	1400	19000	6000	NA	NA
Toluene	4600	1200	ND	ND	NA	NA
Ethylbenzene	4600	1000	9200	2100	NA	NA
m- & p- Xylenes	4600	1000	ND	ND	NA	NA
o-Xylene	4600	1000	ND	ND	NA	NA
Naphthalene	24000	4600	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	27000	N/A	58000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	27000	N/A	78000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	23000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 38% 1, 4-Difluorobenzene: %D from CCV: 24% Chlorobenzene-d5: %D from CCV: 7.5% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-VP26-B08(21)-HDO		NA	
	Lab ID		1106457A-05A		NA	
	Date Collected		6/16/2011		NA	
	Date Received		6/21/2011		NA	
	Date Analyzed		6/29/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.0	in. Hg	NA	in. Hg
Dilution Factor		31.1		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	62	28	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	62	17	ND	ND	NA	NA
Benzene	62	19	570	180	NA	NA
Toluene	62	16	130	35	NA	NA
Ethylbenzene	62	14	170	39	NA	NA
m- & p- Xylenes	62	14	620	140	NA	NA
o-Xylene	62	14	ND	ND	NA	NA
Naphthalene	330	62	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	370	N/A	6700000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	370	N/A	920000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	310	N/A	10000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/11/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input checked="" type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%						

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 15% 1, 4-Difluorobenzene: %D from CCV: 9.2% Chlorobenzene-d5: %D from CCV: 7.6% MS Tuning Standard: Bromofluorobenzene	Client ID	Lab Blank	NA
	Lab ID	1106457A-06A	NA
	Date Collected	NA	NA
	Date Received	NA	NA
	Date Analyzed	6/28/2011	NA
	Pre-Sample Vacuum (field)	NA in. Hg	NA in. Hg
	Post-Sample Vacuum (field)	NA in. Hg	NA in. Hg
	Lab Receipt Vacuum	in. Hg	NA in. Hg
Target APH Analytes & Hydrocarbon Ranges	Dilution Factor	1	NA
	Reporting Limit	Sample Results	Sample Results
	µg/m3	ppb v/v	µg/m3
	ppb v/v	µg/m3	ppb v/v
	1,3-Butadiene	2.0	0.90
	Methyl tertiary butyl ether (MTBE)	2.0	0.55
	Benzene	2.0	0.63
	Toluene	2.0	0.53
Ethylbenzene m- & p- Xylenes o-Xylene Naphthalene C5-C8 Aliphatic Hydrocarbons ^{1 2} C9-C12 Aliphatic Hydrocarbons ^{1 3} C9-C10 Aromatic Hydrocarbons	2.0	0.46	ND
	2.0	0.46	ND
	10	2.0	ND
	12	N/A	ND
	12	N/A	ND
	10	N/A	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND
	2.0	0.46	ND

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:

Linda L. Freeman

POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

8/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1107310A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 7/19/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1107310A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

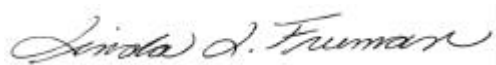
DATE RECEIVED: 07/19/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/02/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-ST03-B58 (347)	Massachusetts APH	5.5"Hg	15 psi
01AA	HAFB-ST03-B58 (347) Lab Duplicate	Massachusetts APH	5.5"Hg	15 psi
02A	HAFB-ST03-B58 (422)	Massachusetts APH	4.0"Hg	15 psi
03A	HAFB-ST03-B58 (492)	Massachusetts APH	5.0"Hg	15 psi
04A	HAFB-ST03-B58 (388)	Massachusetts APH	4.5"Hg	15 psi
05A	Lab Blank	Massachusetts APH	NA	NA
06A	CCV	Massachusetts APH	NA	NA
07A	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 08/02/11

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
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1107310A

Four 1 Liter Summa Canister (MA APH Certified) samples were received on July 19, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

The Chain of Custody (COC) information for samples HAFB-ST03-B58 (347) and HAFB-ST03-B58 (492) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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

Dilution was performed on samples HAFB-ST03-B58 (347), HAFB-ST03-B58 (347) Lab Duplicate, HAFB-ST03-B58 (422), HAFB-ST03-B58 (492) and HAFB-ST03-B58 (388) due to the presence of high level target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072127a	Date of Collection: 7/14/11 10:47:00 AM
Dil. Factor:	9.88	Date of Analysis: 7/21/11 09:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	8.9	Not Detected	20	Not Detected
Methyl tert-butyl ether	5.4	Not Detected	20	Not Detected
Benzene	6.2	6.8	20	22
Toluene	5.2	110	20	400
Ethyl Benzene	4.5	32	20	140
o-Xylene	4.5	28	20	120
m,p-Xylene	4.5	250	20	1100
Naphthalene	20	Not Detected	100	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: HAFB-ST03-B58 (347) Lab Duplicate

Lab ID#: 1107310A-01AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072124a	Date of Collection: 7/14/11 10:47:00 AM
Dil. Factor:	32.9	Date of Analysis: 7/21/11 08:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	30	Not Detected	66	Not Detected
Methyl tert-butyl ether	18	Not Detected	65	Not Detected
Benzene	21	Not Detected	66	Not Detected
Toluene	17	130	66	490
Ethyl Benzene	15	37	66	160
o-Xylene	15	30	66	130
m,p-Xylene	15	280	66	1200
Naphthalene	66	Not Detected	340	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072128a	Date of Collection: 7/14/11 11:00:00 AM
Dil. Factor:	6.21	Date of Analysis: 7/21/11 10:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	5.6	Not Detected	12	Not Detected
Methyl tert-butyl ether	3.4	Not Detected	12	Not Detected
Benzene	3.9	4.4	12	14
Toluene	3.3	55	12	210
Ethyl Benzene	2.8	12	12	54
o-Xylene	2.8	11	12	49
m,p-Xylene	2.8	64	12	280
Naphthalene	12	Not Detected	65	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072125a	Date of Collection: 7/14/11 11:55:00 AM
Dil. Factor:	32.3	Date of Analysis: 7/21/11 08:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	29	Not Detected	64	Not Detected
Methyl tert-butyl ether	18	Not Detected	64	Not Detected
Benzene	20	25	65	79
Toluene	17	180	64	680
Ethyl Benzene	15	55	64	240
o-Xylene	15	50	64	220
m,p-Xylene	15	430	64	1900
Naphthalene	65	Not Detected	340	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072126a	Date of Collection: 7/14/11 12:08:00 PM
Dil. Factor:	31.7	Date of Analysis: 7/21/11 09:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	28	Not Detected	63	Not Detected
Methyl tert-butyl ether	17	Not Detected	63	Not Detected
Benzene	20	Not Detected	64	Not Detected
Toluene	17	140	63	550
Ethyl Benzene	14	39	63	170
o-Xylene	14	38	63	160
m,p-Xylene	14	210	63	920
Naphthalene	63	Not Detected	330	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	115	70-130

Client Sample ID: Lab Blank

Lab ID#: 1107310A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072110a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 11:14 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: CCV

Lab ID#: 1107310A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 06:45 AM

Compound	%Recovery
1,3-Butadiene	83
Methyl tert-butyl ether	88
Benzene	82
Toluene	80
Ethyl Benzene	85
o-Xylene	92
m,p-Xylene	91
Naphthalene	91
C5-C8 Aliphatic Hydrocarbons	84
C9-C12 Aliphatic Hydrocarbons	81
C9-C10 Aromatic Hydrocarbons	103

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCS

Lab ID#: 1107310A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2072103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/21/11 07:13 AM

Compound	%Recovery
1,3-Butadiene	84
Methyl tert-butyl ether	99
Benzene	89
Toluene	87
Ethyl Benzene	94
o-Xylene	102
m,p-Xylene	100
Naphthalene	132
C5-C8 Aliphatic Hydrocarbons	84
C9-C12 Aliphatic Hydrocarbons	79
C9-C10 Aromatic Hydrocarbons	102

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	109	70-130

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 6.7% 1, 4-Difluorobenzene: %D from CCV: 2.7% Chlorobenzene-d5: %D from CCV: 2.8% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58 (347)		NA		
	Lab ID	1107310A-01A		NA		
	Date Collected	7/14/2011		NA		
	Date Received	7/19/2011		NA		
	Date Analyzed	7/21/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.5	in. Hg	NA	in. Hg	
	Dilution Factor	9.88		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	20	8.9	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	20	5.4	ND	ND	NA	NA
Benzene	20	6.2	22	6.8	NA	NA
Toluene	20	5.2	400	110	NA	NA
Ethylbenzene	20	4.6	140	32	NA	NA
m- & p- Xylenes	20	4.6	1100	250	NA	NA
o-Xylene	20	4.6	120	28	NA	NA
Naphthalene	100	20	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	120	N/A	130000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	120	N/A	43000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	99	N/A	340	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input checked="" type="checkbox"/> ≤20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 3.0% 1, 4-Difluorobenzene: %D from CCV: 0.80% Chlorobenzene-d5: %D from CCV: 0.60% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58 (347) Lab		NA		
	Lab ID	1107310A-01AA		NA		
	Date Collected	7/14/2011		NA		
	Date Received	7/19/2011		NA		
	Date Analyzed	7/21/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.5	in. Hg	NA	in. Hg	
	Dilution Factor	32.9		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	66	30	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	66	18	ND	ND	NA	NA
Benzene	66	20	ND	ND	NA	NA
Toluene	66	17	490	130	NA	NA
Ethylbenzene	66	15	160	37	NA	NA
m- & p- Xylenes	66	15	1200	280	NA	NA
o-Xylene	66	15	130	30	NA	NA
Naphthalene	340	66	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	390	N/A	150000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	390	N/A	38000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	330	N/A	370	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 5.4% 1, 4-Difluorobenzene: %D from CCV: 3.7% Chlorobenzene-d5: %D from CCV: 3.2% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58 (422)	NA			
	Lab ID	1107310A-02A	NA			
	Date Collected	7/14/2011	NA			
	Date Received	7/19/2011	NA			
	Date Analyzed	7/21/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	3 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	4.0 in. Hg	NA	in. Hg		
	Dilution Factor	6.21	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	12	5.6	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	12	3.4	ND	ND	NA	NA
Benzene	12	3.9	14	4.4	NA	NA
Toluene	12	3.3	210	55	NA	NA
Ethylbenzene	12	2.9	54	12	NA	NA
m- & p- Xylenes	12	2.9	280	64	NA	NA
o-Xylene	12	2.9	49	11	NA	NA
Naphthalene	65	12	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	74	N/A	64000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	74	N/A	16000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	62	N/A	200	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input checked="" type="checkbox"/> ≤20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 5.3% 1, 4-Difluorobenzene: %D from CCV: 2.0% Chlorobenzene-d5: %D from CCV: 0.50% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58 (492)		NA		
	Lab ID	1107310A-03A		NA		
	Date Collected	7/14/2011		NA		
	Date Received	7/19/2011		NA		
	Date Analyzed	7/21/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.0	in. Hg	NA	in. Hg	
	Dilution Factor	32.3		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	65	29	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	65	18	ND	ND	NA	NA
Benzene	65	20	79	25	NA	NA
Toluene	65	17	680	180	NA	NA
Ethylbenzene	65	15	240	55	NA	NA
m- & p- Xylenes	65	15	1900	430	NA	NA
o-Xylene	65	15	220	50	NA	NA
Naphthalene	340	65	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	390	N/A	420000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	390	N/A	110000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	320	N/A	850	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input checked="" type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.2% 1, 4-Difluorobenzene: %D from CCV: 2.2% Chlorobenzene-d5: %D from CCV: 1.6% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58 (388)	NA			
	Lab ID	1107310A-04A	NA			
	Date Collected	7/14/2011	NA			
	Date Received	7/19/2011	NA			
	Date Analyzed	7/21/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	5 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	4.5 in. Hg	NA	in. Hg		
	Dilution Factor	31.7	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	63	29	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	63	17	ND	ND	NA	NA
Benzene	63	20	ND	ND	NA	NA
Toluene	63	17	550	140	NA	NA
Ethylbenzene	63	15	170	39	NA	NA
m- & p- Xylenes	63	15	920	210	NA	NA
o-Xylene	63	15	160	38	NA	NA
Naphthalene	330	63	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	380	N/A	410000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	380	N/A	100000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	320	N/A	700	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 6.5% 1, 4-Difluorobenzene: %D from CCV: 3.2% Chlorobenzene-d5: %D from CCV: 5.3% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1107310A-05A		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		7/21/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

9/7/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108544A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108544A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

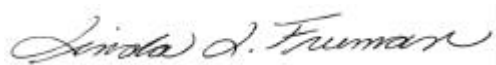
DATE RECEIVED: 08/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 09/07/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HDOH-GASOLINE#1	Massachusetts APH	4.5 "Hg	15 psi
02A	HDOH-DIESEL#2	Massachusetts APH	4.0 "Hg	15 psi
02AA	HDOH-DIESEL#2 Lab Duplicate	Massachusetts APH	4.0 "Hg	15 psi
03A	Lab Blank	Massachusetts APH	NA	NA
04A	CCV	Massachusetts APH	NA	NA
05A	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 09/07/11

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
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1108544A

Two 1 Liter Summa Canister (MA APH Certified) samples were received on August 26, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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

Dilution was performed on samples HDOH-GASOLINE#1, HDOH-DIESEL#2 and HDOH-DIESEL#2 Lab Duplicate due to the presence of high level target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2083020a	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	47600	Date of Analysis: 8/30/11 09:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	43000	Not Detected	95000	Not Detected
Methyl tert-butyl ether	26000	Not Detected	94000	Not Detected
Benzene	30000	1600000	96000	5100000
Toluene	25000	7500000	95000	28000000
Ethyl Benzene	22000	480000	95000	2100000
o-Xylene	22000	490000	95000	2100000
m,p-Xylene	22000	1700000	95000	7400000
Naphthalene	95000	Not Detected	500000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2083021a	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	58.2	Date of Analysis: 8/30/11 11:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	52	Not Detected	120	Not Detected
Methyl tert-butyl ether	32	Not Detected	120	Not Detected
Benzene	37	900	120	2900
Toluene	31	5500	120	21000
Ethyl Benzene	27	1400	120	6000
o-Xylene	27	2700	120	12000
m,p-Xylene	27	5800	120	25000
Naphthalene	120	660	610	3500

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: HDOH-DIESEL#2 Lab Duplicate

Lab ID#: 1108544A-02AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2083022a	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	58.2	Date of Analysis: 8/31/11 12:07 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	52	Not Detected	120	Not Detected
Methyl tert-butyl ether	32	Not Detected	120	Not Detected
Benzene	37	810	120	2600
Toluene	31	5000	120	19000
Ethyl Benzene	27	1200	120	5400
o-Xylene	27	2400	120	10000
m,p-Xylene	27	5300	120	23000
Naphthalene	120	600	610	3200

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: Lab Blank

Lab ID#: 1108544A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2083008e	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 09:51 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

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

Client Sample ID: CCV

Lab ID#: 1108544A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2083002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 05:47 AM

Compound	%Recovery
1,3-Butadiene	92
Methyl tert-butyl ether	76
Benzene	92
Toluene	92
Ethyl Benzene	95
o-Xylene	102
m,p-Xylene	99
Naphthalene	96
C5-C8 Aliphatic Hydrocarbons	83
C9-C12 Aliphatic Hydrocarbons	81
C9-C10 Aromatic Hydrocarbons	107

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 1108544A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2083003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/11 06:27 AM

Compound	%Recovery
1,3-Butadiene	92
Methyl tert-butyl ether	80
Benzene	95
Toluene	93
Ethyl Benzene	99
o-Xylene	108
m,p-Xylene	104
Naphthalene	118
C5-C8 Aliphatic Hydrocarbons	85
C9-C12 Aliphatic Hydrocarbons	82
C9-C10 Aromatic Hydrocarbons	103

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	109	70-130

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 12% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene	Client ID		HDOH-GASOLINE#1		NA	
	Lab ID		1108544A-01A		NA	
	Date Collected		8/25/2011		NA	
	Date Received		8/26/2011		NA	
	Date Analyzed		8/30/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		3	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.5	in. Hg	NA	in. Hg
	Dilution Factor		47600		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	95000	43000	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	95000	26000	ND	ND	NA	NA
Benzene	95000	30000	5100000	1600000	NA	NA
Toluene	95000	25000	28000000	7500000	NA	NA
Ethylbenzene	95000	22000	2100000	480000	NA	NA
m- & p- Xylenes	95000	22000	7300000	1700000	NA	NA
o-Xylene	95000	22000	2100000	490000	NA	NA
Naphthalene	500000	95000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	570000	N/A	260000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	570000	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	480000	N/A	1700000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 14% 1, 4-Difluorobenzene: %D from CCV: 22% Chlorobenzene-d5: %D from CCV: 22% MS Tuning Standard: Bromofluorobenzene	Client ID		HDOH-DIESEL#2		NA	
	Lab ID		1108544A-02A		NA	
	Date Collected		8/25/2011		NA	
	Date Received		8/26/2011		NA	
	Date Analyzed		8/30/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.0	in. Hg	NA	in. Hg
Dilution Factor		58.2		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	120	53	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	120	32	ND	ND	NA	NA
Benzene	120	36	2900	900	NA	NA
Toluene	120	31	21000	5500	NA	NA
Ethylbenzene	120	27	6000	1400	NA	NA
m- & p- Xylenes	120	27	25000	5800	NA	NA
o-Xylene	120	27	12000	2700	NA	NA
Naphthalene	610	120	3500	660	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	700	N/A	320000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	700	N/A	560000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	580	N/A	94000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 17% 1, 4-Difluorobenzene: %D from CCV: 25% Chlorobenzene-d5: %D from CCV: 25% MS Tuning Standard: Bromofluorobenzene	Client ID		HDOH-DIESEL#2 Lab Dup		NA	
	Lab ID		1108544A-02AA		NA	
	Date Collected		8/25/2011		NA	
	Date Received		8/26/2011		NA	
	Date Analyzed		8/31/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.0	in. Hg	NA	in. Hg
	Dilution Factor		58.2		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	120	53	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	120	32	ND	ND	NA	NA
Benzene	120	36	2600	810	NA	NA
Toluene	120	31	19000	5000	NA	NA
Ethylbenzene	120	27	5400	1200	NA	NA
m- & p- Xylenes	120	27	23000	5300	NA	NA
o-Xylene	120	27	10000	2400	NA	NA
Naphthalene	610	120	3200	600	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	700	N/A	290000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	700	N/A	500000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	580	N/A	83000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other	0 0 0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other	
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%	

APH ANALYTICAL RESULTS

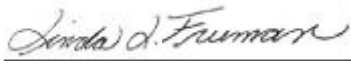
Internal Standards: Bromochloroethane: %D from CCV: 0.72% 1, 4-Difluorobenzene: %D from CCV: 3.9% Chlorobenzene-d5: %D from CCV: 4.3% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1108544A-03A		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		8/30/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were all performance/acceptance standards for required QA/QC procedures achieved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were any significant modifications made to the APH method, as specified in Sect 11.1.2?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes - Details Attached
<p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p>		
SIGNATURE: 	POSITION: <u>Laboratory Director</u>	
PRINTED NAME: <u>Linda L. Freeman</u>	DATE: <u>09/07/2011</u>	

8/23/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108300A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108300A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

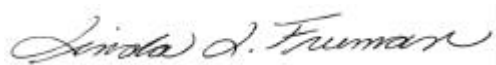
DATE RECEIVED: 08/15/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/23/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HH-OUIC-MW10SG	Massachusetts APH	4.0 "Hg	15 psi
02A	HH-OUIC-MW22R	Massachusetts APH	5.0 "Hg	15 psi
03A	HH-OUIC-OTNS1	Massachusetts APH	3.2 "Hg	15 psi
03AA	HH-OUIC-OTNS1 Lab Duplicate	Massachusetts APH	3.2 "Hg	15 psi
04A	Lab Blank	Massachusetts APH	NA	NA
05A	CCV	Massachusetts APH	NA	NA
06A	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 08/23/11

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
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1108300A**

Three 1 Liter Summa Canister (MA APH Certified) samples were received on August 15, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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

Dilution was performed on samples HH-OUIC-MW10SG, HH-OUIC-MW22R, HH-OUIC-OTNS1 and HH-OUIC-OTNS1 Lab Duplicate due to the presence of high level target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081927a	Date of Collection: 8/11/11 2:03:00 PM
Dil. Factor:	1550	Date of Analysis: 8/19/11 11:20 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1400	Not Detected	3100	Not Detected
Methyl tert-butyl ether	850	Not Detected	3100	Not Detected
Benzene	980	3700	3100	12000
Toluene	820	960	3100	3600
Ethyl Benzene	710	Not Detected	3100	Not Detected
o-Xylene	710	Not Detected	3100	Not Detected
m,p-Xylene	710	Not Detected	3100	Not Detected
Naphthalene	3100	Not Detected	16000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081917a	Date of Collection: 8/11/11 1:38:00 PM
Dil. Factor:	968	Date of Analysis: 8/19/11 03:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	870	Not Detected	1900	Not Detected
Methyl tert-butyl ether	530	Not Detected	1900	Not Detected
Benzene	610	2400	1900	7700
Toluene	510	Not Detected	1900	Not Detected
Ethyl Benzene	440	Not Detected	1900	Not Detected
o-Xylene	440	Not Detected	1900	Not Detected
m,p-Xylene	440	Not Detected	1900	Not Detected
Naphthalene	1900	Not Detected	10000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081916a	Date of Collection: 8/11/11 2:38:00 PM
Dil. Factor:	151	Date of Analysis: 8/19/11 02:38 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	140	Not Detected	300	Not Detected
Methyl tert-butyl ether	83	Not Detected	300	Not Detected
Benzene	95	Not Detected	300	Not Detected
Toluene	80	Not Detected	300	Not Detected
Ethyl Benzene	69	Not Detected	300	Not Detected
o-Xylene	69	Not Detected	300	Not Detected
m,p-Xylene	69	Not Detected	300	Not Detected
Naphthalene	300	Not Detected	1600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: HH-OUIC-OTNS1 Lab Duplicate

Lab ID#: 1108300A-03AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081921a	Date of Collection: 8/11/11 2:38:00 PM
Dil. Factor:	151	Date of Analysis: 8/19/11 06:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	140	Not Detected	300	Not Detected
Methyl tert-butyl ether	83	Not Detected	300	Not Detected
Benzene	95	Not Detected	300	Not Detected
Toluene	80	Not Detected	300	Not Detected
Ethyl Benzene	69	Not Detected	300	Not Detected
o-Xylene	69	Not Detected	300	Not Detected
m,p-Xylene	69	Not Detected	300	Not Detected
Naphthalene	300	Not Detected	1600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

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

Client Sample ID: Lab Blank

Lab ID#: 1108300A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081909e	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/11 10:25 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

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

Client Sample ID: CCV

Lab ID#: 1108300A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081906	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/11 08:45 AM

Compound	%Recovery
1,3-Butadiene	78
Methyl tert-butyl ether	71
Benzene	81
Toluene	83
Ethyl Benzene	86
o-Xylene	96
m,p-Xylene	93
Naphthalene	72
C5-C8 Aliphatic Hydrocarbons	86
C9-C12 Aliphatic Hydrocarbons	90
C9-C10 Aromatic Hydrocarbons	117

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	111	70-130

Client Sample ID: LCS

Lab ID#: 1108300A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2081907	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/11 09:13 AM

Compound	%Recovery
1,3-Butadiene	85
Methyl tert-butyl ether	80
Benzene	90
Toluene	89
Ethyl Benzene	97
o-Xylene	108
m,p-Xylene	106
Naphthalene	146
C5-C8 Aliphatic Hydrocarbons	86
C9-C12 Aliphatic Hydrocarbons	86
C9-C10 Aromatic Hydrocarbons	108

Container Type: NA - Not Applicable

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

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 13% 1, 4-Difluorobenzene: %D from CCV: 19% Chlorobenzene-d5: %D from CCV: 23% MS Tuning Standard: Bromofluorobenzene	Client ID	HH-OUIC-MW10SG		NA		
	Lab ID	1108300A-01A		NA		
	Date Collected	8/11/2011		NA		
	Date Received	8/15/2011		NA		
	Date Analyzed	8/19/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	3	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	4.0	in. Hg	NA	in. Hg	
	Dilution Factor	1550		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	3100	1400	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	3100	850	ND	ND	NA	NA
Benzene	3100	970	12000	3700	NA	NA
Toluene	3100	820	3600	960	NA	NA
Ethylbenzene	3100	710	ND	ND	NA	NA
m- & p- Xylenes	3100	710	ND	ND	NA	NA
o-Xylene	3100	710	ND	ND	NA	NA
Naphthalene	16000	3100	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	19000	N/A	62000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	19000	N/A	1800000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	16000	N/A	35000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 10% 1, 4-Difluorobenzene: %D from CCV: 14% Chlorobenzene-d5: %D from CCV: 15% MS Tuning Standard: Bromofluorobenzene	Client ID		HH-OUIC-MW22R		NA	
	Lab ID		1108300A-02A		NA	
	Date Collected		8/11/2011		NA	
	Date Received		8/15/2011		NA	
	Date Analyzed		8/19/2011		NA	
	Pre-Sample Vacuum (field)		28 in. Hg		NA	in. Hg
	Post-Sample Vacuum (field)		3 in. Hg		NA	in. Hg
	Lab Receipt Vacuum		5.0 in. Hg		NA	in. Hg
Dilution Factor		968		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	1900	880	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	1900	530	ND	ND	NA	NA
Benzene	1900	600	7700	2400	NA	NA
Toluene	1900	510	ND	ND	NA	NA
Ethylbenzene	1900	450	ND	ND	NA	NA
m- & p- Xylenes	1900	450	ND	ND	NA	NA
o-Xylene	1900	450	ND	ND	NA	NA
Naphthalene	10000	1900	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12000	N/A	22000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12000	N/A	1200000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	9700	N/A	17000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 2.9% 1, 4-Difluorobenzene: %D from CCV: 5.8% Chlorobenzene-d5: %D from CCV: 6.2% MS Tuning Standard: Bromofluorobenzene	Client ID	HH-OUIC-OTNS1	NA			
	Lab ID	1108300A-03A	NA			
	Date Collected	8/11/2011	NA			
	Date Received	8/15/2011	NA			
	Date Analyzed	8/19/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	3 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	3.2 in. Hg	NA	in. Hg		
	Dilution Factor	151	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	300	140	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	300	83	ND	ND	NA	NA
Benzene	300	94	ND	ND	NA	NA
Toluene	300	80	ND	ND	NA	NA
Ethylbenzene	300	70	ND	ND	NA	NA
m- & p- Xylenes	300	70	ND	ND	NA	NA
o-Xylene	300	70	ND	ND	NA	NA
Naphthalene	1600	300	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	1800	N/A	740000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	1800	N/A	160000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	1500	N/A	2700	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 5.4% 1, 4-Difluorobenzene: %D from CCV: 7.5% Chlorobenzene-d5: %D from CCV: 8.0% MS Tuning Standard: Bromofluorobenzene	Client ID		HH-OUIC-OTNS1 Lab Dup		NA	
	Lab ID		1108300A-03AA		NA	
	Date Collected		8/11/2011		NA	
	Date Received		8/15/2011		NA	
	Date Analyzed		8/19/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		3	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		3.2	in. Hg	NA	in. Hg
Dilution Factor		151		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	300	140	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	300	83	ND	ND	NA	NA
Benzene	300	94	ND	ND	NA	NA
Toluene	300	80	ND	ND	NA	NA
Ethylbenzene	300	70	ND	ND	NA	NA
m- & p- Xylenes	300	70	ND	ND	NA	NA
o-Xylene	300	70	ND	ND	NA	NA
Naphthalene	1600	300	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	1800	N/A	640000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	1800	N/A	120000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	1500	N/A	2500	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input type="checkbox"/> Other
Sample Container(s)	<input type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other		
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%					

APH ANALYTICAL RESULTS

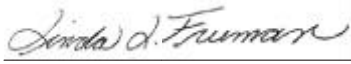
Internal Standards: Bromochloroethane: %D from CCV: 4.0% 1, 4-Difluorobenzene: %D from CCV: 8.1% Chlorobenzene-d5: %D from CCV: 6.9% MS Tuning Standard: Bromofluorobenzene	Client ID	Lab Blank	NA
	Lab ID	1108300A-04A	NA
	Date Collected	NA	NA
	Date Received	NA	NA
	Date Analyzed	8/19/2011	NA
	Pre-Sample Vacuum (field)	NA in. Hg	NA in. Hg
	Post-Sample Vacuum (field)	NA in. Hg	NA in. Hg
	Lab Receipt Vacuum	NA in. Hg	NA in. Hg
Target APH Analytes & Hydrocarbon Ranges	Dilution Factor	1	NA
	Reporting Limit	Sample Results	Sample Results
	µg/m3	ppb v/v	µg/m3
	ppb v/v	µg/m3	ppb v/v
	1,3-Butadiene	2.0	0.90
	Methyl tertiary butyl ether (MTBE)	2.0	0.55
	Benzene	2.0	0.63
	Toluene	2.0	0.53
Hydrocarbon Ranges	Ethylbenzene	2.0	0.46
	m- & p- Xylenes	2.0	0.46
	o-Xylene	2.0	0.46
	Naphthalene	10	2.0
	C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A
	C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A
	C9-C10 Aromatic Hydrocarbons	10	N/A
		ND	N/A
		ND	N/A
		ND	N/A
		ND	N/A
		ND	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were all performance/acceptance standards for required QA/QC procedures achieved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No - Details Attached
Were any significant modifications made to the APH method, as specified in Sect 11.1.2?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes - Details Attached
<p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p>		
SIGNATURE: 	POSITION: <u>Laboratory Director</u>	
PRINTED NAME: <u>Linda L. Freeman</u>	DATE: <u>08/23/2011</u>	

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/20/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-SP43-VMP10	Massachusetts APH	5.2 "Hg	15psi
01AA	HAFB-SP43-VMP10 Lab Duplicate	Massachusetts APH	5.2 "Hg	15psi
02A	HAFB-SP43-VMP11	Massachusetts APH	5.0 "Hg	15psi
03A	HAFB-SP43-VMP12	Massachusetts APH	4.5 "Hg	15psi
04A	HAFB-SP43-VMP16	Massachusetts APH	6.0 "Hg	15psi
05A	HAFB-SP43-VMP17	Massachusetts APH	5.5 "Hg	15psi
06A	FV-GP01-HDOH#2	Massachusetts APH	4.0 "Hg	15psi
07A	FV-GP08-HDOH#2	Massachusetts APH	5.0 "Hg	15psi
08A	FV-GP16R-HDOH#2	Massachusetts APH	5.0 "Hg	15psi
09A	JP8#1	Massachusetts APH	4.0 "Hg	15psi
10A	Lab Blank	Massachusetts APH	NA	NA
11A	CCV	Massachusetts APH	NA	NA
12A	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 10/21/11

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

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

**LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1110160A**

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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

The Pre and Post Sample Vacuum (field) noted for samples FV-GP08-HDOH#2, FV-GP16R-HDOH#2 and JP8#1 were not documented on the Chain of Custody, therefore this data was reported as NA on the final report.

Dilution was performed on samples HAFB-SP43-VMP10, HAFB-SP43-VMP10 Lab Duplicate, HAFB-SP43-VMP11, HAFB-SP43-VMP16, HAFB-SP43-VMP17, FV-GP08-HDOH#2, FV-GP16R-HDOH#2 and JP8#1 due to the presence of high level APH Hydrocarbons.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101216a	Date of Collection: 10/5/11 2:05:00 PM
Dil. Factor:	244	Date of Analysis: 10/12/11 04:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	480	Not Detected
Methyl tert-butyl ether	130	Not Detected	480	Not Detected
Benzene	150	500	490	1600
Toluene	130	Not Detected	490	Not Detected
Ethyl Benzene	110	1700	490	7200
o-Xylene	110	Not Detected	490	Not Detected
m,p-Xylene	110	Not Detected	490	Not Detected
Naphthalene	490	760	2600	4000

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: HAFB-SP43-VMP10 Lab Duplicate

Lab ID#: 1110160A-01AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101217a	Date of Collection: 10/5/11 2:05:00 PM
Dil. Factor:	244	Date of Analysis: 10/12/11 04:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	480	Not Detected
Methyl tert-butyl ether	130	Not Detected	480	Not Detected
Benzene	150	500	490	1600
Toluene	130	Not Detected	490	Not Detected
Ethyl Benzene	110	1600	490	6700
o-Xylene	110	Not Detected	490	Not Detected
m,p-Xylene	110	Not Detected	490	Not Detected
Naphthalene	490	780	2600	4100

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101218a	Date of Collection: 10/5/11 1:15:00 PM
Dil. Factor:	242	Date of Analysis: 10/12/11 05:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	480	Not Detected
Methyl tert-butyl ether	130	Not Detected	480	Not Detected
Benzene	150	Not Detected	490	Not Detected
Toluene	130	Not Detected	480	Not Detected
Ethyl Benzene	110	9500	480	41000
o-Xylene	110	120	480	510
m,p-Xylene	110	Not Detected	480	Not Detected
Naphthalene	480	490	2500	2600

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101222a	Date of Collection: 10/5/11 12:44:00 PM
Dil. Factor:	2.38	Date of Analysis: 10/12/11 08:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.1	Not Detected	4.7	Not Detected
Methyl tert-butyl ether	1.3	Not Detected	4.7	Not Detected
Benzene	1.5	Not Detected	4.8	Not Detected
Toluene	1.3	Not Detected	4.8	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
o-Xylene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	1.1	Not Detected	4.8	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101219a	Date of Collection: 10/5/11 1:42:00 PM
Dil. Factor:	252	Date of Analysis: 10/12/11 06:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	230	Not Detected	500	Not Detected
Methyl tert-butyl ether	140	Not Detected	500	Not Detected
Benzene	160	480	510	1500
Toluene	130	Not Detected	500	Not Detected
Ethyl Benzene	120	370	500	1600
o-Xylene	120	Not Detected	500	Not Detected
m,p-Xylene	120	Not Detected	500	Not Detected
Naphthalene	500	Not Detected	2600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101214a	Date of Collection: 10/5/11 11:52:00 AM
Dil. Factor:	247	Date of Analysis: 10/12/11 01:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	490	Not Detected
Methyl tert-butyl ether	140	Not Detected	490	Not Detected
Benzene	160	Not Detected	500	Not Detected
Toluene	130	Not Detected	490	Not Detected
Ethyl Benzene	110	1400	490	6000
o-Xylene	110	Not Detected	490	Not Detected
m,p-Xylene	110	Not Detected	490	Not Detected
Naphthalene	490	Not Detected	2600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	113	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101223a	Date of Collection: 10/6/11 1:45:00 PM
Dil. Factor:	2.33	Date of Analysis: 10/12/11 09:15 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.1	Not Detected	4.6	Not Detected
Methyl tert-butyl ether	1.3	Not Detected	4.6	Not Detected
Benzene	1.5	Not Detected	4.7	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
Ethyl Benzene	1.1	Not Detected	4.6	Not Detected
o-Xylene	1.1	Not Detected	4.6	Not Detected
m,p-Xylene	1.1	Not Detected	4.6	Not Detected
Naphthalene	4.7	Not Detected	24	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101215a	Date of Collection: 10/6/11 1:06:00 PM
Dil. Factor:	24.2	Date of Analysis: 10/12/11 03:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	22	Not Detected	48	Not Detected
Methyl tert-butyl ether	13	Not Detected	48	Not Detected
Benzene	15	15	49	49
Toluene	13	13	48	51
Ethyl Benzene	11	Not Detected	48	Not Detected
o-Xylene	11	Not Detected	48	Not Detected
m,p-Xylene	11	Not Detected	48	Not Detected
Naphthalene	48	Not Detected	250	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	115	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101224a	Date of Collection: 10/6/11 12:19:00 PM
Dil. Factor:	247	Date of Analysis: 10/12/11 09:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	220	Not Detected	490	Not Detected
Methyl tert-butyl ether	140	Not Detected	490	Not Detected
Benzene	160	Not Detected	500	Not Detected
Toluene	130	Not Detected	490	Not Detected
Ethyl Benzene	110	Not Detected	490	Not Detected
o-Xylene	110	Not Detected	490	Not Detected
m,p-Xylene	110	Not Detected	490	Not Detected
Naphthalene	490	Not Detected	2600	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: JP8#1

Lab ID#: 1110160A-09A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101220a	Date of Collection: 10/6/11 3:15:00 PM
Dil. Factor:	233	Date of Analysis: 10/12/11 06:55 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	210	Not Detected	460	Not Detected
Methyl tert-butyl ether	130	Not Detected	460	Not Detected
Benzene	150	6200	470	20000
Toluene	120	16000	460	62000
Ethyl Benzene	110	5000	460	22000
o-Xylene	110	8300	460	36000
m,p-Xylene	110	18000	460	79000
Naphthalene	470	1200	2400	6100

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110160A-10A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101213d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 01:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	84	70-130

Client Sample ID: CCV

Lab ID#: 1110160A-11A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101206	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 07:49 AM

Compound	%Recovery
1,3-Butadiene	107
Methyl tert-butyl ether	108
Benzene	89
Toluene	86
Ethyl Benzene	92
o-Xylene	97
m,p-Xylene	94
Naphthalene	69
C5-C8 Aliphatic Hydrocarbons	99
C9-C12 Aliphatic Hydrocarbons	82
C9-C10 Aromatic Hydrocarbons	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: LCS

Lab ID#: 1110160A-12A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2101207	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/12/11 08:37 AM

Compound	%Recovery
1,3-Butadiene	110
Methyl tert-butyl ether	114
Benzene	94
Toluene	88
Ethyl Benzene	92
o-Xylene	99
m,p-Xylene	95
Naphthalene	73
C5-C8 Aliphatic Hydrocarbons	116
C9-C12 Aliphatic Hydrocarbons	100
C9-C10 Aromatic Hydrocarbons	112

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	94	70-130

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 11% 1, 4-Difluorobenzene: %D from CCV: 14% Chlorobenzene-d5: %D from CCV: 20% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-SP43-VMP10		NA		
	Lab ID	1110160A-01A		NA		
	Date Collected	10/5/2011		NA		
	Date Received	10/8/2011		NA		
	Date Analyzed	10/12/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	5.2	in. Hg	NA	in. Hg	
	Dilution Factor	244		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	490	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	490	130	ND	ND	NA	NA
Benzene	490	150	1600	500	NA	NA
Toluene	490	130	ND	ND	NA	NA
Ethylbenzene	490	110	7200	1700	NA	NA
m- & p- Xylenes	490	110	ND	ND	NA	NA
o-Xylene	490	110	ND	ND	NA	NA
Naphthalene	2600	490	4000	760	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	2900	N/A	13000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	2900	N/A	6400000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2400	N/A	120000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/18/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 16% 1, 4-Difluorobenzene: %D from CCV: 19% Chlorobenzene-d5: %D from CCV: 24% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-SP43-VMP10 Lab D		NA	
	Lab ID		1110160A-01AA		NA	
	Date Collected		10/5/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		30 in. Hg		NA	in. Hg
	Post-Sample Vacuum (field)		4 in. Hg		NA	in. Hg
	Lab Receipt Vacuum		5.2 in. Hg		NA	in. Hg
Dilution Factor		244		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	490	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	490	130	ND	ND	NA	NA
Benzene	490	150	1600	500	NA	NA
Toluene	490	130	ND	ND	NA	NA
Ethylbenzene	490	110	6700	1600	NA	NA
m- & p- Xylenes	490	110	ND	ND	NA	NA
o-Xylene	490	110	ND	ND	NA	NA
Naphthalene	2600	490	4100	780	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	2900	N/A	12000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	2900	N/A	5900000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2400	N/A	110000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/18/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 21% 1, 4-Difluorobenzene: %D from CCV: 25% Chlorobenzene-d5: %D from CCV: 28% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-SP43-VMP11		NA	
	Lab ID		1110160A-02A		NA	
	Date Collected		10/5/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		30 in. Hg		NA	in. Hg
	Post-Sample Vacuum (field)		4 in. Hg		NA	in. Hg
	Lab Receipt Vacuum		5.0 in. Hg		NA	in. Hg
Dilution Factor		242		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	480	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	480	130	ND	ND	NA	NA
Benzene	480	150	ND	ND	NA	NA
Toluene	480	130	ND	ND	NA	NA
Ethylbenzene	480	110	41000	9500	NA	NA
m- & p- Xylenes	480	110	ND	ND	NA	NA
o-Xylene	480	110	510	120	NA	NA
Naphthalene	2500	480	2600	490	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	2900	N/A	14000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	2900	N/A	5900000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2400	N/A	82000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/18/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 11% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 23% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-SP43-VMP12		NA	
	Lab ID		1110160A-03A		NA	
	Date Collected		10/5/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		30 in. Hg		NA	in. Hg
	Post-Sample Vacuum (field)		4 in. Hg		NA	in. Hg
	Lab Receipt Vacuum		4.5 in. Hg		NA	in. Hg
Dilution Factor		2.38		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.8	2.2	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.8	1.3	ND	ND	NA	NA
Benzene	4.8	1.5	ND	ND	NA	NA
Toluene	4.8	1.3	ND	ND	NA	NA
Ethylbenzene	4.8	1.1	ND	ND	NA	NA
m- & p- Xylenes	4.8	1.1	ND	ND	NA	NA
o-Xylene	4.8	1.1	ND	ND	NA	NA
Naphthalene	25	4.8	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	28	N/A	1500	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	28	N/A	630	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	24	N/A	28	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 22% 1, 4-Difluorobenzene: %D from CCV: 28% Chlorobenzene-d5: %D from CCV: 33% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-SP43-VMP16		NA	
	Lab ID		1110160A-04A		NA	
	Date Collected		10/5/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		6.0	in. Hg	NA	in. Hg
Dilution Factor		252		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	500	230	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	500	140	ND	ND	NA	NA
Benzene	500	160	1500	480	NA	NA
Toluene	500	130	ND	ND	NA	NA
Ethylbenzene	500	120	1600	370	NA	NA
m- & p- Xylenes	500	120	ND	ND	NA	NA
o-Xylene	500	120	ND	ND	NA	NA
Naphthalene	2600	500	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	3000	N/A	32000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	3000	N/A	5700000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2500	N/A	130000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.7% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 2.2% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-SP43-VMP17	NA			
	Lab ID	1110160A-05A	NA			
	Date Collected	10/5/2011	NA			
	Date Received	10/8/2011	NA			
	Date Analyzed	10/12/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	4 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	5.5 in. Hg	NA	in. Hg		
	Dilution Factor	247	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	490	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	490	140	ND	ND	NA	NA
Benzene	500	160	ND	ND	NA	NA
Toluene	490	130	ND	ND	NA	NA
Ethylbenzene	490	110	6000	1400	NA	NA
m- & p- Xylenes	490	110	ND	ND	NA	NA
o-Xylene	490	110	ND	ND	NA	NA
Naphthalene	2600	490	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	3000	N/A	4600000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	3000	N/A	1900000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2500	N/A	30000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 16% 1, 4-Difluorobenzene: %D from CCV: 21% Chlorobenzene-d5: %D from CCV: 24% MS Tuning Standard: Bromofluorobenzene	Client ID	FV-GP01-HDOH#2	NA			
	Lab ID	1110160A-06A	NA			
	Date Collected	10/6/2011	NA			
	Date Received	10/8/2011	NA			
	Date Analyzed	10/12/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	4 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.0 in. Hg	NA in. Hg			
	Dilution Factor	2.33	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4.7	2.1	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4.7	1.3	ND	ND	NA	NA
Benzene	4.7	1.4	ND	ND	NA	NA
Toluene	4.7	1.2	ND	ND	NA	NA
Ethylbenzene	4.7	1.1	ND	ND	NA	NA
m- & p- Xylenes	4.7	1.1	ND	ND	NA	NA
o-Xylene	4.7	1.1	ND	ND	NA	NA
Naphthalene	24	4.7	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	28	N/A	8400	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	28	N/A	20000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	23	N/A	72	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 6.3% 1, 4-Difluorobenzene: %D from CCV: 6.1% Chlorobenzene-d5: %D from CCV: 7.0% MS Tuning Standard: Bromofluorobenzene	Client ID		FV-GP08-HDOH#2		NA	
	Lab ID		1110160A-07A		NA	
	Date Collected		10/6/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		5.0	in. Hg	NA	in. Hg
	Dilution Factor		24.2		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	48	22	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	48	13	ND	ND	NA	NA
Benzene	48	15	49	15	NA	NA
Toluene	48	13	51	13	NA	NA
Ethylbenzene	48	11	ND	ND	NA	NA
m- & p- Xylenes	48	11	ND	ND	NA	NA
o-Xylene	48	11	ND	ND	NA	NA
Naphthalene	250	48	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	290	N/A	680000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	290	N/A	920000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	240	N/A	9700	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 16% 1, 4-Difluorobenzene: %D from CCV: 17% Chlorobenzene-d5: %D from CCV: 22% MS Tuning Standard: Bromofluorobenzene	Client ID		FV-GP16R-HDOH#2		NA	
	Lab ID		1110160A-08A		NA	
	Date Collected		10/6/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		5.0	in. Hg	NA	in. Hg
Dilution Factor		247		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	490	220	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	490	140	ND	ND	NA	NA
Benzene	490	150	ND	ND	NA	NA
Toluene	490	130	ND	ND	NA	NA
Ethylbenzene	490	110	ND	ND	NA	NA
m- & p- Xylenes	490	110	ND	ND	NA	NA
o-Xylene	490	110	ND	ND	NA	NA
Naphthalene	2600	490	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	3000	N/A	1700000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	3000	N/A	5200000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2500	N/A	17000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

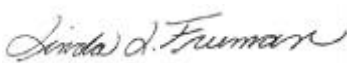
Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 23% 1, 4-Difluorobenzene: %D from CCV: 29% Chlorobenzene-d5: %D from CCV: 29% MS Tuning Standard: Bromofluorobenzene	Client ID		JP8#1		NA	
	Lab ID		1110160A-09A		NA	
	Date Collected		10/6/2011		NA	
	Date Received		10/8/2011		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		NA in. Hg		NA in. Hg	
	Post-Sample Vacuum (field)		NA in. Hg		NA in. Hg	
	Lab Receipt Vacuum		4.0 in. Hg		NA in. Hg	
	Dilution Factor		233		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	470	210	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	470	130	ND	ND	NA	NA
Benzene	470	140	20000	6200	NA	NA
Toluene	470	120	62000	16000	NA	NA
Ethylbenzene	470	110	22000	5000	NA	NA
m- & p- Xylenes	470	110	79000	18000	NA	NA
o-Xylene	470	110	36000	8300	NA	NA
Naphthalene	2400	470	6100	1200	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	2800	N/A	4500000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	2800	N/A	1300000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	2300	N/A	210000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input checked="" type="checkbox"/> Other	0 0 0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other	
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%	

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 10% 1, 4-Difluorobenzene: %D from CCV: 22% Chlorobenzene-d5: %D from CCV: 19% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1110160A-10A		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		10/12/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

11/17/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413A

Work Order Summary

CLIENT: PHONE: FAX: DATE RECEIVED: DATE COMPLETED:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 808-586-4328 808-586-7537 10/20/2011 11/09/2011	BILL TO: Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 P.O. # 1077200 PROJECT # CONTACT: Kelly Buettner
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<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)	Massachusetts APH	4.0 "Hg	5 psi
02A	HAFB-VP26-B05(24)	Massachusetts APH	3.5 "Hg	5 psi
03A	HAFB-VP26-B07(20)	Massachusetts APH	2.5 "Hg	5 psi
04A	HAFB-VP26-B07(25)	Massachusetts APH	4.5 "Hg	5 psi
05A	HAFB-ST03-B58(347)	Massachusetts APH	4.4 "Hg	5 psi
05AA	HAFB-ST03-B58(347) Lab Duplicate	Massachusetts APH	4.4 "Hg	5 psi
06A	HAFB-ST03-B58(422)	Massachusetts APH	5.0 "Hg	5 psi
07A	HAFB-ST03-B58(492)	Massachusetts APH	4.6 "Hg	5 psi
08A	HAFB-ST03-B59(388)	Massachusetts APH	5.0 "Hg	5 psi
09A	HH-OU1C-MW10SG	Massachusetts APH	6.0 "Hg	5 psi
10A	HH-OU1C-MW22R	Massachusetts APH	5.4 "Hg	5 psi
11A	HH-OU1C-OTNS1	Massachusetts APH	4.2 "Hg	5 psi
12A	GASOLINE#2	Massachusetts APH	2.6 "Hg	5 psi
12AA	GASOLINE#2 Lab Duplicate	Massachusetts APH	2.6 "Hg	5 psi
13A	DIESEL#3	Massachusetts APH	3.2 "Hg	5 psi
13AA	DIESEL#3 Lab Duplicate	Massachusetts APH	3.2 "Hg	5 psi
14A	GASOLINE-EXHAUST	Massachusetts APH	3.2 "Hg	5 psi

Continued on next page

WORK ORDER #: 1110413A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

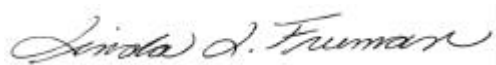
DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/09/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
15A	DIESEL-EXHAUST	Massachusetts APH	3.0 "Hg	5 psi
16A	Lab Blank	Massachusetts APH	NA	NA
16B	Lab Blank	Massachusetts APH	NA	NA
16C	Lab Blank	Massachusetts APH	NA	NA
17A	CCV	Massachusetts APH	NA	NA
17B	CCV	Massachusetts APH	NA	NA
17C	CCV	Massachusetts APH	NA	NA
18A	LCS	Massachusetts APH	NA	NA
18B	LCS	Massachusetts APH	NA	NA
18C	LCS	Massachusetts APH	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 11/17/11

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

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1110413A

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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

A dilution was performed on samples HAFB-VP26-B05(18), HAFB-VP26-B05(24), HAFB-VP26-B07(20), HAFB-VP26-B07(25), HAFB-ST03-B58(347), HAFB-ST03-B58(347) Lab Duplicate, HAFB-ST03-B58(422), HAFB-ST03-B58(492), HAFB-ST03-B59(388), HH-OU1C-MW10SG, HH-OU1C-MW22R, GASOLINE#2, GASOLINE#2 Lab Duplicate, DIESEL#3, DIESEL#3 Lab Duplicate and GASOLINE-EXHAUST due to the presence of high level target species.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102425a	Date of Collection: 10/13/11 10:12:00 A
Dil. Factor:	1030	Date of Analysis: 10/25/11 06:18 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	930	Not Detected	2000	Not Detected
Methyl tert-butyl ether	570	Not Detected	2000	Not Detected
Benzene	650	12000	2100	40000
Toluene	540	Not Detected	2000	Not Detected
Ethyl Benzene	470	4100	2000	18000
o-Xylene	470	Not Detected	2000	Not Detected
m,p-Xylene	470	Not Detected	2000	Not Detected
Naphthalene	2100	Not Detected	11000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

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

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102422a	Date of Collection: 10/13/11 10:46:00 A
Dil. Factor:	25300	Date of Analysis: 10/24/11 10:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	23000	Not Detected	50000	Not Detected
Methyl tert-butyl ether	14000	Not Detected	50000	Not Detected
Benzene	16000	88000	51000	280000
Toluene	13000	Not Detected	50000	Not Detected
Ethyl Benzene	12000	Not Detected	50000	Not Detected
o-Xylene	12000	Not Detected	50000	Not Detected
m,p-Xylene	12000	Not Detected	50000	Not Detected
Naphthalene	51000	Not Detected	260000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102416a	Date of Collection: 10/13/11 11:23:00 A
Dil. Factor:	1460	Date of Analysis: 10/24/11 05:47 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1300	Not Detected	2900	Not Detected
Methyl tert-butyl ether	800	Not Detected	2900	Not Detected
Benzene	920	26000	2900	84000
Toluene	770	Not Detected	2900	Not Detected
Ethyl Benzene	670	8600	2900	37000
o-Xylene	670	Not Detected	2900	Not Detected
m,p-Xylene	670	Not Detected	2900	Not Detected
Naphthalene	2900	Not Detected	15000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	88	70-130

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102417a	Date of Collection: 10/13/11 11:49:00 A
Dil. Factor:	3160	Date of Analysis: 10/24/11 06:32 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2800	Not Detected	6300	Not Detected
Methyl tert-butyl ether	1700	Not Detected	6300	Not Detected
Benzene	2000	14000	6400	45000
Toluene	1700	Not Detected	6300	Not Detected
Ethyl Benzene	1400	4700	6300	20000
o-Xylene	1400	Not Detected	6300	Not Detected
m,p-Xylene	1400	Not Detected	6300	Not Detected
Naphthalene	6300	Not Detected	33000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	88	70-130

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102113a	Date of Collection: 10/14/11 9:35:00 AM
Dil. Factor:	15.7	Date of Analysis: 10/21/11 04:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	14	Not Detected	31	Not Detected
Methyl tert-butyl ether	8.6	Not Detected	31	Not Detected
Benzene	9.9	Not Detected	32	Not Detected
Toluene	8.3	31	31	120
Ethyl Benzene	7.2	120	31	500
o-Xylene	7.2	290	31	1300
m,p-Xylene	7.2	2500	31	11000
Naphthalene	31	Not Detected	160	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	93	70-130

Client Sample ID: HAFB-ST03-B58(347) Lab Duplicate

Lab ID#: 1110413A-05AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102114a	Date of Collection: 10/14/11 9:35:00 AM
Dil. Factor:	15.7	Date of Analysis: 10/21/11 05:20 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	14	Not Detected	31	Not Detected
Methyl tert-butyl ether	8.6	Not Detected	31	Not Detected
Benzene	9.9	Not Detected	32	Not Detected
Toluene	8.3	30	31	110
Ethyl Benzene	7.2	120	31	510
o-Xylene	7.2	320	31	1400
m,p-Xylene	7.2	2800	31	12000
Naphthalene	31	Not Detected	160	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102115a	Date of Collection: 10/14/11 10:19:00 A
Dil. Factor:	21.5	Date of Analysis: 10/21/11 06:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	19	Not Detected	43	Not Detected
Methyl tert-butyl ether	12	Not Detected	43	Not Detected
Benzene	14	Not Detected	43	Not Detected
Toluene	11	35	43	130
Ethyl Benzene	9.9	140	43	620
o-Xylene	9.9	370	43	1600
m,p-Xylene	9.9	3300	43	14000
Naphthalene	43	Not Detected	220	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102116a	Date of Collection: 10/14/11 10:36:00 A
Dil. Factor:	21.1	Date of Analysis: 10/21/11 06:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	19	Not Detected	42	Not Detected
Methyl tert-butyl ether	12	Not Detected	42	Not Detected
Benzene	13	Not Detected	42	Not Detected
Toluene	11	41	42	160
Ethyl Benzene	9.7	170	42	720
o-Xylene	9.7	450	42	2000
m,p-Xylene	9.7	3900	42	17000
Naphthalene	42	Not Detected	220	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102120a	Date of Collection: 10/14/11 11:03:00 A
Dil. Factor:	2.77	Date of Analysis: 10/21/11 10:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2.5	Not Detected	5.5	Not Detected
Methyl tert-butyl ether	1.5	22	5.5	78
Benzene	1.7	56	5.6	180
Toluene	1.5	97	5.5	360
Ethyl Benzene	1.3	29	5.5	120
o-Xylene	1.3	96	5.5	420
m,p-Xylene	1.3	450	5.5	2000
Naphthalene	5.5	26	29	140

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413A-09A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102419a	Date of Collection: 10/18/11 11:43:00 A
Dil. Factor:	3360	Date of Analysis: 10/24/11 08:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	3000	Not Detected	6700	Not Detected
Methyl tert-butyl ether	1800	Not Detected	6700	Not Detected
Benzene	2100	4900	6800	16000
Toluene	1800	Not Detected	6700	Not Detected
Ethyl Benzene	1500	Not Detected	6700	Not Detected
o-Xylene	1500	Not Detected	6700	Not Detected
m,p-Xylene	1500	Not Detected	6700	Not Detected
Naphthalene	6700	Not Detected	35000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	88	70-130

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413A-10A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102510a	Date of Collection: 10/18/11 11:09:00 A
Dil. Factor:	8150	Date of Analysis: 10/25/11 12:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	7300	Not Detected	16000	Not Detected
Methyl tert-butyl ether	4500	Not Detected	16000	Not Detected
Benzene	5100	Not Detected	16000	Not Detected
Toluene	4300	Not Detected	16000	Not Detected
Ethyl Benzene	3700	Not Detected	16000	Not Detected
o-Xylene	3700	Not Detected	16000	Not Detected
m,p-Xylene	3700	Not Detected	16000	Not Detected
Naphthalene	16000	Not Detected	85000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	83	70-130

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413A-11A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102117a	Date of Collection: 10/18/11 10:31:00 A
Dil. Factor:	1.56	Date of Analysis: 10/21/11 07:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.4	Not Detected	3.1	Not Detected
Methyl tert-butyl ether	0.86	Not Detected	3.1	Not Detected
Benzene	0.98	Not Detected	3.1	Not Detected
Toluene	0.83	Not Detected	3.1	Not Detected
Ethyl Benzene	0.72	Not Detected	3.1	Not Detected
o-Xylene	0.72	Not Detected	3.1	Not Detected
m,p-Xylene	0.72	Not Detected	3.1	Not Detected
Naphthalene	3.1	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: GASOLINE#2

Lab ID#: 1110413A-12A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102512a	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	2450	Date of Analysis: 10/25/11 01:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	2200	Not Detected	4900	Not Detected
Methyl tert-butyl ether	1300	Not Detected	4800	Not Detected
Benzene	1500	9200	4900	29000
Toluene	1300	34000	4900	130000
Ethyl Benzene	1100	2500	4900	11000
o-Xylene	1100	2600	4900	11000
m,p-Xylene	1100	8700	4900	38000
Naphthalene	4900	Not Detected	26000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	82	70-130

Client Sample ID: GASOLINE#2 Lab Duplicate

Lab ID#: 1110413A-12AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102511a	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	7350	Date of Analysis: 10/25/11 01:06 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	6600	Not Detected	15000	Not Detected
Methyl tert-butyl ether	4000	Not Detected	14000	Not Detected
Benzene	4600	11000	15000	34000
Toluene	3900	40000	15000	150000
Ethyl Benzene	3400	Not Detected	15000	Not Detected
o-Xylene	3400	Not Detected	15000	Not Detected
m,p-Xylene	3400	9200	15000	40000
Naphthalene	15000	Not Detected	77000	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: DIESEL#3

Lab ID#: 1110413A-13A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102412a	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	10.0	Date of Analysis: 10/24/11 02:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	9.0	Not Detected	20	Not Detected
Methyl tert-butyl ether	5.5	Not Detected	20	Not Detected
Benzene	6.3	330	20	1000
Toluene	5.3	1100	20	4000
Ethyl Benzene	4.6	200	20	850
o-Xylene	4.6	250	20	1100
m,p-Xylene	4.6	630	20	2700
Naphthalene	20	24	100	120

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: DIESEL#3 Lab Duplicate

Lab ID#: 1110413A-13AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102413a	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	10.0	Date of Analysis: 10/24/11 02:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	9.0	Not Detected	20	Not Detected
Methyl tert-butyl ether	5.5	Not Detected	20	Not Detected
Benzene	6.3	310	20	1000
Toluene	5.3	990	20	3700
Ethyl Benzene	4.6	190	20	810
o-Xylene	4.6	240	20	1000
m,p-Xylene	4.6	590	20	2600
Naphthalene	20	22	100	120

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413A-14A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102411a	Date of Collection: 10/18/11 8:50:00 AM
Dil. Factor:	15.0	Date of Analysis: 10/24/11 01:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	14	83	30	180
Methyl tert-butyl ether	8.2	Not Detected	30	Not Detected
Benzene	9.4	1500	30	4700
Toluene	8.0	1700	30	6400
Ethyl Benzene	6.9	240	30	1000
o-Xylene	6.9	320	30	1400
m,p-Xylene	6.9	880	30	3800
Naphthalene	30	Not Detected	160	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	89	70-130

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413A-15A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102118a	Date of Collection: 10/18/11 8:45:00 AM
Dil. Factor:	1.49	Date of Analysis: 10/21/11 08:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.3	2.6	3.0	5.8
Methyl tert-butyl ether	0.82	Not Detected	3.0	Not Detected
Benzene	0.94	4.5	3.0	14
Toluene	0.79	1.2	3.0	4.6
Ethyl Benzene	0.68	Not Detected	3.0	Not Detected
o-Xylene	0.68	Not Detected	3.0	Not Detected
m,p-Xylene	0.68	Not Detected	3.0	Not Detected
Naphthalene	3.0	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	87	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110413A-16A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102108a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 12:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110413A-16B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102409	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 11:33 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	81	70-130

Client Sample ID: Lab Blank

Lab ID#: 1110413A-16C

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102509	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 11:49 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected
Benzene	0.63	Not Detected	2.0	Not Detected
Toluene	0.53	Not Detected	2.0	Not Detected
Ethyl Benzene	0.46	Not Detected	2.0	Not Detected
o-Xylene	0.46	Not Detected	2.0	Not Detected
m,p-Xylene	0.46	Not Detected	2.0	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	82	70-130

Client Sample ID: CCV

Lab ID#: 1110413A-17A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 07:54 AM

Compound	%Recovery
1,3-Butadiene	118
Methyl tert-butyl ether	106
Benzene	101
Toluene	101
Ethyl Benzene	106
o-Xylene	117
m,p-Xylene	112
Naphthalene	108
C5-C8 Aliphatic Hydrocarbons	101
C9-C12 Aliphatic Hydrocarbons	94
C9-C10 Aromatic Hydrocarbons	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: CCV

Lab ID#: 1110413A-17B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 08:59 AM

Compound	%Recovery
1,3-Butadiene	120
Methyl tert-butyl ether	119
Benzene	101
Toluene	94
Ethyl Benzene	104
o-Xylene	111
m,p-Xylene	110
Naphthalene	116
C5-C8 Aliphatic Hydrocarbons	99
C9-C12 Aliphatic Hydrocarbons	81
C9-C10 Aromatic Hydrocarbons	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: CCV

Lab ID#: 1110413A-17C

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 08:25 AM

Compound	%Recovery
1,3-Butadiene	112
Methyl tert-butyl ether	118
Benzene	98
Toluene	91
Ethyl Benzene	101
o-Xylene	107
m,p-Xylene	106
Naphthalene	101
C5-C8 Aliphatic Hydrocarbons	92
C9-C12 Aliphatic Hydrocarbons	85
C9-C10 Aromatic Hydrocarbons	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: LCS

Lab ID#: 1110413A-18A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/11 08:40 AM

Compound	%Recovery
1,3-Butadiene	115
Methyl tert-butyl ether	106
Benzene	97
Toluene	95
Ethyl Benzene	100
o-Xylene	112
m,p-Xylene	107
Naphthalene	87
C5-C8 Aliphatic Hydrocarbons	94
C9-C12 Aliphatic Hydrocarbons	89
C9-C10 Aromatic Hydrocarbons	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: LCS

Lab ID#: 1110413A-18B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102406	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/24/11 09:37 AM

Compound	%Recovery
1,3-Butadiene	111
Methyl tert-butyl ether	117
Benzene	96
Toluene	88
Ethyl Benzene	96
o-Xylene	106
m,p-Xylene	104
Naphthalene	93
C5-C8 Aliphatic Hydrocarbons	73
C9-C12 Aliphatic Hydrocarbons	89
C9-C10 Aromatic Hydrocarbons	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: LCS

Lab ID#: 1110413A-18C

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

File Name:	2102504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/11 08:58 AM

Compound	%Recovery
1,3-Butadiene	102
Methyl tert-butyl ether	114
Benzene	93
Toluene	85
Ethyl Benzene	93
o-Xylene	98
m,p-Xylene	98
Naphthalene	94
C5-C8 Aliphatic Hydrocarbons	85
C9-C12 Aliphatic Hydrocarbons	77
C9-C10 Aromatic Hydrocarbons	84

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 2.8% 1, 4-Difluorobenzene: %D from CCV: 9.6% Chlorobenzene-d5: %D from CCV: 14% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-VP26-B05(18)		NA		
	Lab ID	1110413A-01A		NA		
	Date Collected	10/13/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/25/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	3	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	4.0	in. Hg	NA	in. Hg	
		Dilution Factor	1030		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2000	930	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2000	570	ND	ND	NA	NA
Benzene	2100	650	40000	12000	NA	NA
Toluene	2000	540	ND	ND	NA	NA
Ethylbenzene	2000	470	18000	4100	NA	NA
m- & p- Xylenes	2000	470	ND	ND	NA	NA
o-Xylene	2000	470	ND	ND	NA	NA
Naphthalene	11000	2100	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12000	N/A	48000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12000	N/A	1400000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10000	N/A	12000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 3.0% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 7.9% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-VP26-B05(24)		NA		
	Lab ID	1110413A-02A		NA		
	Date Collected	10/13/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/24/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	4	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.5	in. Hg	NA	in. Hg	
	Dilution Factor	25300		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	50000	23000	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	50000	14000	ND	ND	NA	NA
Benzene	51000	16000	280000	88000	NA	NA
Toluene	50000	13000	ND	ND	NA	NA
Ethylbenzene	50000	12000	ND	ND	NA	NA
m- & p- Xylenes	50000	12000	ND	ND	NA	NA
o-Xylene	50000	12000	ND	ND	NA	NA
Naphthalene	260000	51000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	300000	N/A	94000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	300000	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	250000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 3.9% 1, 4-Difluorobenzene: %D from CCV: 16% Chlorobenzene-d5: %D from CCV: 16% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-VP26-B07(20)	NA			
	Lab ID	1110413A-03A	NA			
	Date Collected	10/13/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/24/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	2.5 in. Hg	NA in. Hg			
	Dilution Factor	1460	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2900	1300	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2900	800	ND	ND	NA	NA
Benzene	2900	920	84000	26000	NA	NA
Toluene	2900	770	ND	ND	NA	NA
Ethylbenzene	2900	670	37000	8600	NA	NA
m- & p- Xylenes	2900	670	ND	ND	NA	NA
o-Xylene	2900	670	ND	ND	NA	NA
Naphthalene	15000	2900	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	18000	N/A	38000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	18000	N/A	260000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	15000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 8.9% 1, 4-Difluorobenzene: %D from CCV: 20% Chlorobenzene-d5: %D from CCV: 20% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-VP26-B07(25)		NA	
	Lab ID		1110413A-04A		NA	
	Date Collected		10/13/2011		NA	
	Date Received		10/20/2011		NA	
	Date Analyzed		10/24/2011		NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.5	in. Hg	NA	in. Hg
Dilution Factor		3160		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	6300	2800	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	6300	1700	ND	ND	NA	NA
Benzene	6400	2000	45000	14000	NA	NA
Toluene	6300	1700	ND	ND	NA	NA
Ethylbenzene	6300	1400	20000	4700	NA	NA
m- & p- Xylenes	6300	1400	ND	ND	NA	NA
o-Xylene	6300	1400	ND	ND	NA	NA
Naphthalene	33000	6300	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	38000	N/A	100000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	38000	N/A	380000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	32000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 7.8% 1, 4-Difluorobenzene: %D from CCV: 11% Chlorobenzene-d5: %D from CCV: 20% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58(347)	NA			
	Lab ID	1110413A-05A	NA			
	Date Collected	10/14/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/21/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	4 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.4 in. Hg	NA in. Hg			
	Dilution Factor	15.7	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	31	14	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	31	8.6	ND	ND	NA	NA
Benzene	32	9.9	ND	ND	NA	NA
Toluene	31	8.3	120	31	NA	NA
Ethylbenzene	31	7.2	500	120	NA	NA
m- & p- Xylenes	31	7.2	11000	2500	NA	NA
o-Xylene	31	7.2	1300	290	NA	NA
Naphthalene	160	31	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	190	N/A	310000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	190	N/A	220000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	160	N/A	32000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE: 

POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 12% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 30% MS Tuning Standard: Bromofluorobenzene	Client ID		HAFB-ST03-B58(347) Lab		NA	
	Lab ID		1110413A-05AA		NA	
	Date Collected		10/14/2011		NA	
	Date Received		10/20/2011		NA	
	Date Analyzed				NA	
	Pre-Sample Vacuum (field)		30	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		4	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		4.4	in. Hg	NA	in. Hg
Dilution Factor		15.7		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	31	14	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	31	8.6	ND	ND	NA	NA
Benzene	32	9.9	ND	ND	NA	NA
Toluene	31	8.3	110	30	NA	NA
Ethylbenzene	31	7.2	510	120	NA	NA
m- & p- Xylenes	31	7.2	12000	2800	NA	NA
o-Xylene	31	7.2	1400	320	NA	NA
Naphthalene	160	31	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	190	N/A	320000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	190	N/A	260000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	160	N/A	44000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 33% Chlorobenzene-d5: %D from CCV: 44% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58(422)	NA			
	Lab ID	1110413A-06A	NA			
	Date Collected	10/14/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/21/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	4 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	5.0 in. Hg	NA in. Hg			
	Dilution Factor	21.5	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	43	19	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	43	12	ND	ND	NA	NA
Benzene	43	14	ND	ND	NA	NA
Toluene	43	11	130	35	NA	NA
Ethylbenzene	43	9.9	620	140	NA	NA
m- & p- Xylenes	43	9.9	14000	3300	NA	NA
o-Xylene	43	9.9	1600	370	NA	NA
Naphthalene	220	43	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	260	N/A	450000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	260	N/A	450000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	220	N/A	44000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 29% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B58(492)		NA		
	Lab ID	1110413A-07A		NA		
	Date Collected	10/14/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/21/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	4.6	in. Hg	NA	in. Hg	
Dilution Factor	21.1		NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	42	19	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	42	12	ND	ND	NA	NA
Benzene	42	13	ND	ND	NA	NA
Toluene	42	11	160	41	NA	NA
Ethylbenzene	42	9.7	720	170	NA	NA
m- & p- Xylenes	42	9.7	17000	3900	NA	NA
o-Xylene	42	9.7	2000	450	NA	NA
Naphthalene	220	40	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	250	N/A	460000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	250	N/A	380000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	210	N/A	58000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 19% 1, 4-Difluorobenzene: %D from CCV: 27% Chlorobenzene-d5: %D from CCV: 32% MS Tuning Standard: Bromofluorobenzene	Client ID	HAFB-ST03-B59(388)	NA			
	Lab ID	1110413A-08A	NA			
	Date Collected	10/14/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/21/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	4 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	5.0 in. Hg	NA	in. Hg		
	Dilution Factor	2.77	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	5.5	2.5	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	5.5	1.5	78	22	NA	NA
Benzene	5.6	1.7	180	56	NA	NA
Toluene	5.5	1.5	360	97	NA	NA
Ethylbenzene	5.5	1.3	120	29	NA	NA
m- & p- Xylenes	5.5	1.3	2000	450	NA	NA
o-Xylene	5.5	1.3	420	96	NA	NA
Naphthalene	29	5.5	140	26	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	33	N/A	30000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	33	N/A	32000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	28	N/A	10000	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 21% 1, 4-Difluorobenzene: %D from CCV: 32% Chlorobenzene-d5: %D from CCV: 29% MS Tuning Standard: Bromofluorobenzene	Client ID	HH-OU1C-MW10SG	NA			
	Lab ID	1110413A-09A	NA			
	Date Collected	10/18/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/24/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	3 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	6.0 in. Hg	NA	in. Hg		
	Dilution Factor	3360	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	6700	3000	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	6700	1800	ND	ND	NA	NA
Benzene	6800	2100	16000	4900	NA	NA
Toluene	6700	1800	ND	ND	NA	NA
Ethylbenzene	6700	1500	ND	ND	NA	NA
m- & p- Xylenes	6700	1500	ND	ND	NA	NA
o-Xylene	6700	1500	ND	ND	NA	NA
Naphthalene	35000	6700	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	40000	N/A	66000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	40000	N/A	1000000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	34000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 3.4% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene	Client ID		HH-OU1C-MW22R		NA	
	Lab ID		1110413A-10A		NA	
	Date Collected		10/18/2011		NA	
	Date Received		10/20/2011		NA	
	Date Analyzed		10/25/2011		NA	
	Pre-Sample Vacuum (field)		30 in. Hg		NA	in. Hg
	Post-Sample Vacuum (field)		5 in. Hg		NA	in. Hg
	Lab Receipt Vacuum		5.4 in. Hg		NA	in. Hg
	Dilution Factor		8150		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	16000	7300	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	16000	4500	ND	ND	NA	NA
Benzene	16000	5100	ND	ND	NA	NA
Toluene	16000	4300	ND	ND	NA	NA
Ethylbenzene	16000	3700	ND	ND	NA	NA
m- & p- Xylenes	16000	3700	ND	ND	NA	NA
o-Xylene	16000	3700	ND	ND	NA	NA
Naphthalene	85000	16000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	98000	N/A	63000000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	98000	N/A	2300000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	82000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 11% 1, 4-Difluorobenzene: %D from CCV: 11% Chlorobenzene-d5: %D from CCV: 14% MS Tuning Standard: Bromofluorobenzene	Client ID	HH-OU1C-OTNS1	NA			
	Lab ID	1110413A-11A	NA			
	Date Collected	10/18/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/21/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA in. Hg			
	Post-Sample Vacuum (field)	5 in. Hg	NA in. Hg			
	Lab Receipt Vacuum	4.2 in. Hg	NA in. Hg			
	Dilution Factor	1.56	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	3.1	1.4	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	3.1	0.86	ND	ND	NA	NA
Benzene	3.1	0.98	ND	ND	NA	NA
Toluene	3.1	0.83	ND	ND	NA	NA
Ethylbenzene	3.1	0.72	ND	ND	NA	NA
m- & p- Xylenes	3.1	0.72	ND	ND	NA	NA
o-Xylene	3.1	0.72	ND	ND	NA	NA
Naphthalene	16	3.1	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	19	N/A	620	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	19	N/A	71	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	16	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 4.8% 1, 4-Difluorobenzene: %D from CCV: 0.22% Chlorobenzene-d5: %D from CCV: 2.9% MS Tuning Standard: Bromofluorobenzene	Client ID	GASOLINE#2	NA			
	Lab ID	1110413A-12A	NA			
	Date Collected	10/18/2011	NA			
	Date Received	10/20/2011	NA			
	Date Analyzed	10/25/2011	NA			
	Pre-Sample Vacuum (field)	30 in. Hg	NA	in. Hg		
	Post-Sample Vacuum (field)	5 in. Hg	NA	in. Hg		
	Lab Receipt Vacuum	2.6 in. Hg	NA	in. Hg		
	Dilution Factor	2450	NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	4900	2200	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	4800	1300	ND	ND	NA	NA
Benzene	4900	1500	29000	9200	NA	NA
Toluene	4900	1300	130000	34000	NA	NA
Ethylbenzene	4900	1100	11000	2500	NA	NA
m- & p- Xylenes	4900	1100	38000	8700	NA	NA
o-Xylene	4900	1100	11000	2600	NA	NA
Naphthalene	26000	4900	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	29000	N/A	8200000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	29000	N/A	130000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	24000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 6.5% 1, 4-Difluorobenzene: %D from CCV: 3.6% Chlorobenzene-d5: %D from CCV: 1.3% MS Tuning Standard: Bromofluorobenzene	Client ID	GASOLINE#2 Lab Duplicate		NA		
	Lab ID	1110413A-12AA		NA		
	Date Collected	10/18/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/25/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	2.6	in. Hg	NA	in. Hg	
	Dilution Factor	7350		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	15000	6600	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	14000	4000	ND	ND	NA	NA
Benzene	15000	4600	34000	11000	NA	NA
Toluene	15000	3900	150000	40000	NA	NA
Ethylbenzene	15000	3400	ND	ND	NA	NA
m- & p- Xylenes	15000	3400	40000	9200	NA	NA
o-Xylene	15000	3400	ND	ND	NA	NA
Naphthalene	77000	15000	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	88000	N/A	9500000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	88000	N/A	130000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	74000	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 9.8% 1, 4-Difluorobenzene: %D from CCV: 3.5% Chlorobenzene-d5: %D from CCV: 7.4% MS Tuning Standard: Bromofluorobenzene	Client ID	DIESEL#3		NA		
	Lab ID	1110413A-13A		NA		
	Date Collected	10/18/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/24/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.2	in. Hg	NA	in. Hg	
	Dilution Factor	10		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	20	9.0	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	20	5.5	ND	ND	NA	NA
Benzene	20	6.3	1000	330	NA	NA
Toluene	20	5.3	4000	1100	NA	NA
Ethylbenzene	20	4.6	850	200	NA	NA
m- & p- Xylenes	20	4.6	2700	630	NA	NA
o-Xylene	20	4.6	1100	250	NA	NA
Naphthalene	100	20	120	24	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	120	N/A	160000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	120	N/A	43000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	100	N/A	5200	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 3.3% 1, 4-Difluorobenzene: %D from CCV: 4.1% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene	Client ID	DIESEL#3 Lab Duplicate		NA		
	Lab ID	1110413A-13AA		NA		
	Date Collected	10/18/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/24/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.2	in. Hg	NA	in. Hg	
Dilution Factor	10		NA			
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	20	9.0	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	20	5.5	ND	ND	NA	NA
Benzene	20	6.3	1000	310	NA	NA
Toluene	20	5.3	3700	990	NA	NA
Ethylbenzene	20	4.6	810	190	NA	NA
m- & p- Xylenes	20	4.6	2600	590	NA	NA
o-Xylene	20	4.6	1000	240	NA	NA
Naphthalene	100	20	120	22	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	120	N/A	150000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	120	N/A	40000	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	100	N/A	4800	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 8.4% 1, 4-Difluorobenzene: %D from CCV: 7.2% Chlorobenzene-d5: %D from CCV: 6.4% MS Tuning Standard: Bromofluorobenzene	Client ID	GASOLINE-EXHAUST		NA		
	Lab ID	1110413A-14A		NA		
	Date Collected	10/18/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/24/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.2	in. Hg	NA	in. Hg	
	Dilution Factor	15		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	30	14	180	83	NA	NA
Methyl tertiary butyl ether (MTBE)	30	8.2	ND	ND	NA	NA
Benzene	30	9.4	4700	1500	NA	NA
Toluene	30	8.0	6400	1700	NA	NA
Ethylbenzene	30	6.9	1000	240	NA	NA
m- & p- Xylenes	30	6.9	3800	880	NA	NA
o-Xylene	30	6.9	1400	320	NA	NA
Naphthalene	160	30	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	180	N/A	25000	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	180	N/A	340	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	150	N/A	2200	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input type="checkbox"/> Grab	<input checked="" type="checkbox"/> Time-integrated:	<input type="checkbox"/> 2 hour	<input type="checkbox"/> 4 hour	<input type="checkbox"/> 8 hour	<input type="checkbox"/> 24 hour	<input checked="" type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s):	<input type="checkbox"/> 6-L	<input type="checkbox"/> 15-L	<input checked="" type="checkbox"/> Other	0	0	0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Fixed-Orifice	<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Other			
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s):			<input checked="" type="checkbox"/> <=20%	<input type="checkbox"/> >20%		

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 5.3% 1, 4-Difluorobenzene: %D from CCV: 0.35% Chlorobenzene-d5: %D from CCV: 3.9% MS Tuning Standard: Bromofluorobenzene	Client ID	DIESEL-EXHAUST		NA		
	Lab ID	1110413A-15A		NA		
	Date Collected	10/18/2011		NA		
	Date Received	10/20/2011		NA		
	Date Analyzed	10/21/2011		NA		
	Pre-Sample Vacuum (field)	30	in. Hg	NA	in. Hg	
	Post-Sample Vacuum (field)	5	in. Hg	NA	in. Hg	
	Lab Receipt Vacuum	3.0	in. Hg	NA	in. Hg	
	Dilution Factor	1.49		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	3.0	1.3	5.8	2.6	NA	NA
Methyl tertiary butyl ether (MTBE)	3.0	0.82	ND	ND	NA	NA
Benzene	3.0	0.94	14	4.5	NA	NA
Toluene	3.0	0.79	4.6	1.2	NA	NA
Ethylbenzene	3.0	0.68	ND	ND	NA	NA
m- & p- Xylenes	3.0	0.68	ND	ND	NA	NA
o-Xylene	3.0	0.68	ND	ND	NA	NA
Naphthalene	16	3.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	18	N/A	45	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	18	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	15	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other	0 0 0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other	
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%	

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 0.36% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 8.5% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1110413A-16A		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		10/21/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other	0 0 0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other	
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%	

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 0.36% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 8.5% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1110413A-16B		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		10/24/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
	Dilution Factor		1		NA	
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

Sample Type(s)	<input checked="" type="checkbox"/> Grab	<input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other
Sample Container(s)	<input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other	0 0 0
Sampling Flow Controller(s)	<input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other	
Sampling Flow Meter(s)	RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20%	

APH ANALYTICAL RESULTS

Internal Standards: Bromochloroethane: %D from CCV: 13% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene	Client ID		Lab Blank		NA	
	Lab ID		1110413A-16C		NA	
	Date Collected		NA		NA	
	Date Received		NA		NA	
	Date Analyzed		10/25/2011		NA	
	Pre-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Post-Sample Vacuum (field)		NA	in. Hg	NA	in. Hg
	Lab Receipt Vacuum		NA	in. Hg	NA	in. Hg
Dilution Factor		1		NA		
Target APH Analytes & Hydrocarbon Ranges	Reporting Limit		Sample Results		Sample Results	
	µg/m3	ppb v/v	µg/m3	ppb v/v	µg/m3	ppb v/v
1,3-Butadiene	2.0	0.90	ND	ND	NA	NA
Methyl tertiary butyl ether (MTBE)	2.0	0.55	ND	ND	NA	NA
Benzene	2.0	0.63	ND	ND	NA	NA
Toluene	2.0	0.53	ND	ND	NA	NA
Ethylbenzene	2.0	0.46	ND	ND	NA	NA
m- & p- Xylenes	2.0	0.46	ND	ND	NA	NA
o-Xylene	2.0	0.46	ND	ND	NA	NA
Naphthalene	10	2.0	ND	ND	NA	NA
C5-C8 Aliphatic Hydrocarbons ^{1 2}	12	N/A	ND	N/A	NA	N/A
C9-C12 Aliphatic Hydrocarbons ^{1 3}	12	N/A	ND	N/A	NA	N/A
C9-C10 Aromatic Hydrocarbons	10	N/A	ND	N/A	NA	N/A

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

2/1/2012

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110157R1

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110157R1

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/08/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/16/2011		
DATE REISSUED:	02/01/2012		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	HAFB-SP43-VMP10(TO17A)	Modified TO-17 VI
02A	HAFB-SP43-VMP10(TO17B)	Modified TO-17 VI
03A	HAFB-SP43-VMP11(TO17A)	Modified TO-17 VI
04A	HAFB-SP43-VMP11(TO17B)	Modified TO-17 VI
05A	HAFB-SP43-VMP12(TO17A)	Modified TO-17 VI
06A	HAFB-SP43-VMP12(TO17B)	Modified TO-17 VI
07A	HAFB-SP43-VMP16(TO17A)	Modified TO-17 VI
08A	HAFB-SP43-VMP16(TO17B)	Modified TO-17 VI
09A	HAFB-SP43-VMP17(TO17A)	Modified TO-17 VI
10A	HAFB-SP43-VMP17(TO17B)	Modified TO-17 VI
11A	FV-GP01-HDOH#2(TO17A)	Modified TO-17 VI
12A	FV-GP01-HDOH#2(TO17B)	Modified TO-17 VI
13A	FV-GP08-HDOH#2(TO17A)	Modified TO-17 VI
14A	FV-GP08-HDOH#2(TO17B)	Modified TO-17 VI
15A	FV-GP16R-HDOH#2(TO17A)	Modified TO-17 VI
16A	FV-GP16R-HDOH#2(TO17B)	Modified TO-17 VI
17A	JP8#1(TO17A)	Modified TO-17 VI

Continued on next page

WORK ORDER #: 1110157R1

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/08/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/16/2011		
DATE REISSUED:	02/01/2012		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
18A	JP8#1(TO17B)	Modified TO-17 VI
19A	TRIP BLANK	Modified TO-17 VI
20A	Lab Blank	Modified TO-17 VI
20B	Lab Blank	Modified TO-17 VI
20C	Lab Blank	Modified TO-17 VI
21A	CCV	Modified TO-17 VI
21B	CCV	Modified TO-17 VI
21C	CCV	Modified TO-17 VI
22A	LCS	Modified TO-17 VI
22B	LCS	Modified TO-17 VI
22C	LCS	Modified TO-17 VI

CERTIFIED BY:



Laboratory Director

DATE: 02/01/12

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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
EPA Method TO-17
Tetra Tech EM, Inc.
Workorder# 1110157R1**

Eighteen TO-17 VI Tube samples plus one Trip Blank were received on October 08, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The samples were analyzed following MA DEP APH methodology with several modifications to accommodate the project requirements. Sorbent tubes were used for sample collection instead of canisters as specified by the method. Additionally, the GC column used for this extended MA APH range had a smaller film thickness than what was required by the MA APH method. This modification allowed for higher GC temperatures which were necessary to effectively extend the target compound range to C24. However, the column was unable to resolve several aliphatic calibration compounds from internal standard and target compounds. This required a slight modification in the specific hydrocarbons utilized to generate calibration factors for the C5-C8 aliphatic and C9-C12 aliphatic ranges. No significant impact on data quality is expected.

The aliphatic range C13-C18 recovered below the laboratory acceptance limits of 60-140% in the daily CCV analyzed on 10/26/11 and 10/31/11. Associated detections and non-detections were flagged to indicate a potential low bias. Several components recovered above laboratory acceptance criterion for the CCV. Associated detections were flagged as estimated values.

The field surrogate Naphthalene-d8 exceeded laboratory limits of 50-150% due to high level matrix interference in samples HAFB-SP43-VMP10(TO-17A), HAFB-SP43-VMP11(TO17A), and HAFB-SP43-VMP16(TO17A).

TPH referenced to gasoline was calculated using a single point calibration.

Each sample was collected with 2 tubes in series with the TO17A designation indicating the front, or sample side, of the train. The TO17B designation indicated the back side of the train to measure potential breakthrough of unretained compounds. Several back tubes had detections above the reporting limit; however, the detections were not indicative of breakthrough based on the chromatographic pattern.

Samples HAFB-SP43-VMP10(TO-17A), HAFB-SP43-VMP11(TO17A), HAFB-SP43-VMP16(TO17A), and FV-GP16R-HDOH#2(TO17A) were analyzed at a higher split than the calibration due to high concentrations. The split used resulted in a 4-fold dilution and the reporting limit and calibration range were raised accordingly.

THE WORKORDER WAS REISSUED ON FEBRUARY 1, 2012 TO ADD TPH (DIESEL RANGE) PER CLIENT REQUEST. THE DIESEL RANGE WAS BRACKETED BY THE RETENTION TIME MARKERS C9 AND C24.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-SP43-VMP10(TO17A)

Lab ID#: 1110157R1-01A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	84	1700
Ethyl Benzene	17	340	500	10000
m,p-Xylene	17	340	32	640
Naphthalene	8.0	160	100	2000
C5-C8 Aliphatic Hydrocarbons	92	1800	660000	13000000
C9-C12 Aliphatic Hydrocarbons	140	2800	320000	6500000
C13-C18 Aliphatic Hydrocarbons	400	8000	3300 J	66000 J
C9-C10 Aromatic Hydrocarbons	100	2000	9100	180000
Total TPH (C5-C24) ref to Gasoline	4000	80000	910000	18000000
TPH (Diesel Range)	4000	80000	36000	730000

Client Sample ID: HAFB-SP43-VMP10(TO17B)

Lab ID#: 1110157R1-02A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP11(TO17A)

Lab ID#: 1110157R1-03A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	38	750
Ethyl Benzene	17	340	2000 E	39000 E
m,p-Xylene	17	340	50	1000
o-Xylene	17	340	34	680
Naphthalene	8.0	160	58	1200
C5-C8 Aliphatic Hydrocarbons	92	1800	850000	17000000
C9-C12 Aliphatic Hydrocarbons	140	2800	310000	6200000
C13-C18 Aliphatic Hydrocarbons	400	8000	5100 J	100000 J
C9-C10 Aromatic Hydrocarbons	100	2000	7000	140000
Total TPH (C5-C24) ref to Gasoline	4000	80000	230000	4600000
TPH (Diesel Range)	4000	80000	35000	710000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-SP43-VMP11(TO17B)

Lab ID#: 1110157R1-04A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C5-C8 Aliphatic Hydrocarbons	23	460	24	480

Client Sample ID: HAFB-SP43-VMP12(TO17A)

Lab ID#: 1110157R1-05A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.0	80

Client Sample ID: HAFB-SP43-VMP12(TO17B)

Lab ID#: 1110157R1-06A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP16(TO17A)

Lab ID#: 1110157R1-07A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	60	1200
Toluene	3.8	76	16	330
Ethyl Benzene	4.3	86	86	1700
m,p-Xylene	4.3	86	56	1100
o-Xylene	4.3	86	19	390
Naphthalene	2.0	40	9.8	200
C5-C8 Aliphatic Hydrocarbons	23	460	1300000	26000000
C9-C12 Aliphatic Hydrocarbons	35	700	230000	4600000
C13-C18 Aliphatic Hydrocarbons	100	2000	620 J	12000 J
C9-C10 Aromatic Hydrocarbons	25	500	6600	130000
Total TPH (C5-C24) ref to Gasoline	1000	20000	1300000	26000000
TPH (Diesel Range)	1000	20000	16000	320000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-SP43-VMP16(TO17B)

Lab ID#: 1110157R1-08A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP17(TO17A)

Lab ID#: 1110157R1-09A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	2.0	33	12	200
C5-C8 Aliphatic Hydrocarbons	23	380	450	7500
C9-C12 Aliphatic Hydrocarbons	35	580	170 J	2800 J
Total TPH (C5-C24) ref to Gasoline	1000	17000	1200	20000

Client Sample ID: HAFB-SP43-VMP17(TO17B)

Lab ID#: 1110157R1-10A

No Detections Were Found.

Client Sample ID: FV-GP01-HDOH#2(TO17A)

Lab ID#: 1110157R1-11A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	6.3	100
m,p-Xylene	4.3	72	5.5	92
Hexane	3.5	58	3.5	59
C5-C8 Aliphatic Hydrocarbons	23	380	660	11000
C9-C12 Aliphatic Hydrocarbons	35	580	780 J	13000 J
Total TPH (C5-C24) ref to Gasoline	1000	17000	1600	27000

Client Sample ID: FV-GP01-HDOH#2(TO17B)

Lab ID#: 1110157R1-12A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Toluene	3.8	63	4.9	82
m,p-Xylene	4.3	72	5.0	84

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: FV-GP01-HDOH#2(TO17B)

Lab ID#: 1110157R1-12A

Naphthalene	2.0	33	64	1100
C9-C12 Aliphatic Hydrocarbons	35	580	71 J	1200 J
Total TPH (C5-C24) ref to Gasoline	1000	17000	1200	19000

Client Sample ID: FV-GP08-HDOH#2(TO17A)

Lab ID#: 1110157R1-13A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	16	320
Ethyl Benzene	4.3	86	4.5	90
m,p-Xylene	4.3	86	5.0	99
C5-C8 Aliphatic Hydrocarbons	23	460	45000	900000
C9-C12 Aliphatic Hydrocarbons	35	700	32000 J	640000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	300 J	6000 J
C9-C10 Aromatic Hydrocarbons	25	500	540	11000
Total TPH (C5-C24) ref to Gasoline	1000	20000	43000	860000
TPH (Diesel Range)	1000	20000	6500	130000

Client Sample ID: FV-GP08-HDOH#2(TO17B)

Lab ID#: 1110157R1-14A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C5-C8 Aliphatic Hydrocarbons	23	460	42	830
C9-C12 Aliphatic Hydrocarbons	35	700	37 J	750 J

Client Sample ID: FV-GP16R-HDOH#2(TO17A)

Lab ID#: 1110157R1-15A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C5-C8 Aliphatic Hydrocarbons	92	1800	160000	3200000
C9-C12 Aliphatic Hydrocarbons	140	2800	270000	5500000
C13-C18 Aliphatic Hydrocarbons	400	8000	6300 J	130000 J
C9-C10 Aromatic Hydrocarbons	100	2000	1600	32000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: FV-GP16R-HDOH#2(TO17A)

Lab ID#: 1110157R1-15A

Total TPH (C5-C24) ref to Gasoline	4000	80000	510000	10000000
TPH (Diesel Range)	4000	80000	44000	890000

Client Sample ID: FV-GP16R-HDOH#2(TO17B)

Lab ID#: 1110157R1-16A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C5-C8 Aliphatic Hydrocarbons	23	460	80	1600
C9-C12 Aliphatic Hydrocarbons	35	700	45 J	890 J

Client Sample ID: JP8#1(TO17A)

Lab ID#: 1110157R1-17A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	76	7600
Toluene	3.8	380	300	30000
Ethyl Benzene	4.3	430	110	11000
m,p-Xylene	4.3	430	360	36000
o-Xylene	4.3	430	170 J	17000 J
Hexane	3.5	350	280	28000
Naphthalene	2.0	200	28	2800
C5-C8 Aliphatic Hydrocarbons	23	2300	18000	1800000
C9-C12 Aliphatic Hydrocarbons	35	3500	13000 J	1300000 J
C13-C18 Aliphatic Hydrocarbons	100	10000	1500	150000
C9-C10 Aromatic Hydrocarbons	25	2500	1900 J	190000 J
C11-C16 Aromatic Hydrocarbons	100	10000	170	17000
Total TPH (C5-C24) ref to Gasoline	1000	100000	21000	2100000
TPH (Diesel Range)	1000	100000	3800	380000

Client Sample ID: JP8#1(TO17B)

Lab ID#: 1110157R1-18A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
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**Summary of Detected Compounds
EPA METHOD TO-17**

Client Sample ID: JP8#1(TO17B)

Lab ID#: 1110157R1-18A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Total TPH (C5-C24) ref to Gasoline	1000	100000	1200	120000

Client Sample ID: TRIP BLANK

Lab ID#: 1110157R1-19A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP10(TO17A)

Lab ID#: 1110157R1-01A

EPA METHOD TO-17

File Name:	j103135	Date of Extraction: NA	Date of Collection: 10/5/11 2:15:00 PM
Dil. Factor:	4.00	Date of Analysis: 11/1/11 06:12 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	84	1700
Toluene	15	300	Not Detected	Not Detected
Ethyl Benzene	17	340	500	10000
m,p-Xylene	17	340	32	640
o-Xylene	17	340	Not Detected	Not Detected
Hexane	14	280	Not Detected	Not Detected
Naphthalene	8.0	160	100	2000
C5-C8 Aliphatic Hydrocarbons	92	1800	660000	13000000
C9-C12 Aliphatic Hydrocarbons	140	2800	320000	6500000
C13-C18 Aliphatic Hydrocarbons	400	8000	3300 J	66000 J
C9-C10 Aromatic Hydrocarbons	100	2000	9100	180000
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	910000	18000000
TPH (Diesel Range)	4000	80000	36000	730000

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	122	50-150
Naphthalene-d8	206 Q	50-150

Client Sample ID: HAFB-SP43-VMP10(TO17B)

Lab ID#: 1110157R1-02A

EPA METHOD TO-17

File Name:	j102720	Date of Extraction: NA	Date of Collection: 10/5/11 2:15:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 09:19 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	70	50-150
Naphthalene-d8	65	50-150

Client Sample ID: HAFB-SP43-VMP11(TO17A)

Lab ID#: 1110157R1-03A

EPA METHOD TO-17

File Name:	j103126	Date of Extraction: NA	Date of Collection: 10/5/11 1:18:00 PM
Dil. Factor:	4.00	Date of Analysis: 11/1/11 01:01 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	38	750
Toluene	15	300	Not Detected	Not Detected
Ethyl Benzene	17	340	2000 E	39000 E
m,p-Xylene	17	340	50	1000
o-Xylene	17	340	34	680
Hexane	14	280	Not Detected	Not Detected
Naphthalene	8.0	160	58	1200
C5-C8 Aliphatic Hydrocarbons	92	1800	850000	17000000
C9-C12 Aliphatic Hydrocarbons	140	2800	310000	6200000
C13-C18 Aliphatic Hydrocarbons	400	8000	5100 J	100000 J
C9-C10 Aromatic Hydrocarbons	100	2000	7000	140000
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	230000	4600000
TPH (Diesel Range)	4000	80000	35000	710000

E = Exceeds instrument calibration range.

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	125	50-150
Naphthalene-d8	193 Q	50-150

Client Sample ID: HAFB-SP43-VMP11(TO17B)

Lab ID#: 1110157R1-04A

EPA METHOD TO-17

File Name:	j102723	Date of Extraction: NA	Date of Collection: 10/5/11 1:18:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 11:07 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	24	480
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	67	50-150
Naphthalene-d8	70	50-150

Client Sample ID: HAFB-SP43-VMP12(TO17A)

Lab ID#: 1110157R1-05A

EPA METHOD TO-17

File Name:	j102628	Date of Extraction: NA	Date of Collection: 10/5/11 12:45:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 02:53 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.0	80
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	114	50-150
Naphthalene-d8	116	50-150

Client Sample ID: HAFB-SP43-VMP12(TO17B)

Lab ID#: 1110157R1-06A

EPA METHOD TO-17

File Name:	j102717	Date of Extraction: NA	Date of Collection: 10/5/11 12:45:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 07:31 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	75	50-150
Naphthalene-d8	63	50-150

Client Sample ID: HAFB-SP43-VMP16(TO17A)

Lab ID#: 1110157R1-07A

EPA METHOD TO-17

File Name:	j103123	Date of Extraction: NA	Date of Collection: 10/5/11 1:45:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/31/11 11:20 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	60	1200
Toluene	3.8	76	16	330
Ethyl Benzene	4.3	86	86	1700
m,p-Xylene	4.3	86	56	1100
o-Xylene	4.3	86	19	390
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	9.8	200
C5-C8 Aliphatic Hydrocarbons	23	460	1300000	26000000
C9-C12 Aliphatic Hydrocarbons	35	700	230000	4600000
C13-C18 Aliphatic Hydrocarbons	100	2000	620 J	12000 J
C9-C10 Aromatic Hydrocarbons	25	500	6600	130000
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	1300000	26000000
TPH (Diesel Range)	1000	20000	16000	320000

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	123	50-150
Naphthalene-d8	172 Q	50-150

Client Sample ID: HAFB-SP43-VMP16(TO17B)

Lab ID#: 1110157R1-08A

EPA METHOD TO-17

File Name:	j102721	Date of Extraction: NA	Date of Collection: 10/5/11 1:45:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 09:55 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	75	50-150
Naphthalene-d8	68	50-150

Client Sample ID: HAFB-SP43-VMP17(TO17A)

Lab ID#: 1110157R1-09A

EPA METHOD TO-17

File Name:	j102710	Date of Extraction: NA	Date of Collection: 10/5/11 11:55:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 03:11 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	Not Detected	Not Detected
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	12	200
C5-C8 Aliphatic Hydrocarbons	23	380	450	7500
C9-C12 Aliphatic Hydrocarbons	35	580	170 J	2800 J
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	1200	20000
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	96	50-150
Naphthalene-d8	85	50-150

Client Sample ID: HAFB-SP43-VMP17(TO17B)

Lab ID#: 1110157R1-10A

EPA METHOD TO-17

File Name:	j102724	Date of Extraction: NA	Date of Collection: 10/5/11 11:55:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 11:43 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	Not Detected	Not Detected
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	380	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	580	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	Not Detected	Not Detected
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	79	50-150
Naphthalene-d8	78	50-150

Client Sample ID: FV-GP01-HDOH#2(TO17A)

Lab ID#: 1110157R1-11A

EPA METHOD TO-17

File Name:	j102629	Date of Extraction: NA	Date of Collection: 10/6/11 1:48:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 03:29 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	6.3	100
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	5.5	92
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	3.5	59
Naphthalene	2.0	33	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	380	660	11000
C9-C12 Aliphatic Hydrocarbons	35	580	780 J	13000 J
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	1600	27000
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

J = Estimated value due to bias in the CCV.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	117	50-150
Naphthalene-d8	123	50-150

Client Sample ID: FV-GP01-HDOH#2(TO17B)

Lab ID#: 1110157R1-12A

EPA METHOD TO-17

File Name:	j102722	Date of Extraction: NA	Date of Collection: 10/6/11 1:48:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 10:31 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	4.9	82
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	5.0	84
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	64	1100
C5-C8 Aliphatic Hydrocarbons	23	380	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	580	71 J	1200 J
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	1200	19000
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	72	50-150
Naphthalene-d8	71	50-150

Client Sample ID: FV-GP08-HDOH#2(TO17A)

Lab ID#: 1110157R1-13A

EPA METHOD TO-17

File Name:	j102630	Date of Extraction: NA	Date of Collection: 10/6/11 1:10:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 04:06 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	16	320
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	4.5	90
m,p-Xylene	4.3	86	5.0	99
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	45000	900000
C9-C12 Aliphatic Hydrocarbons	35	700	32000 J	640000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	300 J	6000 J
C9-C10 Aromatic Hydrocarbons	25	500	540	11000
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	43000	860000
TPH (Diesel Range)	1000	20000	6500	130000

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	92	50-150
Naphthalene-d8	123	50-150

Client Sample ID: FV-GP08-HDOH#2(TO17B)

Lab ID#: 1110157R1-14A

EPA METHOD TO-17

File Name:	j102718	Date of Extraction: NA	Date of Collection: 10/6/11 1:10:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 08:07 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	42	830
C9-C12 Aliphatic Hydrocarbons	35	700	37 J	750 J
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	79	50-150
Naphthalene-d8	77	50-150

Client Sample ID: FV-GP16R-HDOH#2(TO17A)

Lab ID#: 1110157R1-15A

EPA METHOD TO-17

File Name:	j103125	Date of Extraction: NA	Date of Collection: 10/6/11 12:19:00 PM
Dil. Factor:	4.00	Date of Analysis: 11/1/11 12:27 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	Not Detected	Not Detected
Toluene	15	300	Not Detected	Not Detected
Ethyl Benzene	17	340	Not Detected	Not Detected
m,p-Xylene	17	340	Not Detected	Not Detected
o-Xylene	17	340	Not Detected	Not Detected
Hexane	14	280	Not Detected	Not Detected
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	160000	3200000
C9-C12 Aliphatic Hydrocarbons	140	2800	270000	5500000
C13-C18 Aliphatic Hydrocarbons	400	8000	6300 J	130000 J
C9-C10 Aromatic Hydrocarbons	100	2000	1600	32000
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	510000	10000000
TPH (Diesel Range)	4000	80000	44000	890000

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	98	50-150
Naphthalene-d8	144	50-150

Client Sample ID: FV-GP16R-HDOH#2(TO17B)

Lab ID#: 1110157R1-16A

EPA METHOD TO-17

File Name:	j102719	Date of Extraction: NA	Date of Collection: 10/6/11 12:19:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 08:43 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	80	1600
C9-C12 Aliphatic Hydrocarbons	35	700	45 J	890 J
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	76	50-150
Naphthalene-d8	70	50-150

Client Sample ID: JP8#1(TO17A)

Lab ID#: 1110157R1-17A

EPA METHOD TO-17

File Name:	j102713	Date of Extraction: NA	Date of Collection: 10/6/11 3:30:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/27/11 05:09 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	76	7600
Toluene	3.8	380	300	30000
Ethyl Benzene	4.3	430	110	11000
m,p-Xylene	4.3	430	360	36000
o-Xylene	4.3	430	170 J	17000 J
Hexane	3.5	350	280	28000
Naphthalene	2.0	200	28	2800
C5-C8 Aliphatic Hydrocarbons	23	2300	18000	1800000
C9-C12 Aliphatic Hydrocarbons	35	3500	13000 J	1300000 J
C13-C18 Aliphatic Hydrocarbons	100	10000	1500	150000
C9-C10 Aromatic Hydrocarbons	25	2500	1900 J	190000 J
C11-C16 Aromatic Hydrocarbons	100	10000	170	17000
Total TPH (C5-C24) ref to Gasoline	1000	100000	21000	2100000
TPH (Diesel Range)	1000	100000	3800	380000

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	98	50-150
Naphthalene-d8	114	50-150

Client Sample ID: JP8#1(TO17B)

Lab ID#: 1110157R1-18A

EPA METHOD TO-17

File Name:	j102725	Date of Extraction: NA	Date of Collection: 10/6/11 3:30:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 12:19 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	Not Detected	Not Detected
Toluene	3.8	380	Not Detected	Not Detected
Ethyl Benzene	4.3	430	Not Detected	Not Detected
m,p-Xylene	4.3	430	Not Detected	Not Detected
o-Xylene	4.3	430	Not Detected	Not Detected
Hexane	3.5	350	Not Detected	Not Detected
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	3500	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	1200	120000
TPH (Diesel Range)	1000	100000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	68	50-150
Naphthalene-d8	65	50-150

Client Sample ID: TRIP BLANK

Lab ID#: 1110157R1-19A

EPA METHOD TO-17

File Name:	j102716	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 06:55 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	Not Detected	Not Detected
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	380	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	580	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	Not Detected	Not Detected
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	76	50-150
Naphthalene-d8	61	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110157R1-20A

EPA METHOD TO-17

File Name:	j102627	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 02:16 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	Not Detected	Not Detected
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	380	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	580	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	Not Detected	Not Detected
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	50-150
Naphthalene-d8	100	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110157R1-20B

EPA METHOD TO-17

File Name:	j102709	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 02:32 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	Not Detected	Not Detected
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	380	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	580	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	Not Detected	Not Detected
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	50-150
Naphthalene-d8	100	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110157R1-20C

EPA METHOD TO-17

File Name:	j103112	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 03:52 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	53	Not Detected	Not Detected
Toluene	3.8	63	Not Detected	Not Detected
Ethyl Benzene	4.3	72	Not Detected	Not Detected
m,p-Xylene	4.3	72	Not Detected	Not Detected
o-Xylene	4.3	72	Not Detected	Not Detected
Hexane	3.5	58	Not Detected	Not Detected
Naphthalene	2.0	33	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	380	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	580	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	1700	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	420	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	1700	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	17000	Not Detected	Not Detected
TPH (Diesel Range)	1000	17000	Not Detected	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	50-150
Naphthalene-d8	118	50-150

Client Sample ID: CCV
Lab ID#: 1110157R1-21A
EPA METHOD TO-17

File Name:	j102606	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 01:19 PM	

Compound	%Recovery
Benzene	106
Toluene	108
Ethyl Benzene	120
m,p-Xylene	117
o-Xylene	122
Hexane	102
Naphthalene	111
C5-C8 Aliphatic Hydrocarbons	82
C9-C12 Aliphatic Hydrocarbons	135 Q
C13-C18 Aliphatic Hydrocarbons	57 Q
C9-C10 Aromatic Hydrocarbons	129
C11-C16 Aromatic Hydrocarbons	118
Total TPH (C5-C24) ref to Gasoline	100
TPH (Diesel Range)	100

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	116	50-150
Naphthalene-d8	133	50-150

Client Sample ID: CCV
Lab ID#: 1110157R1-21B
EPA METHOD TO-17

File Name:	j102706	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 12:30 PM	

Compound	%Recovery
Benzene	92
Toluene	119
Ethyl Benzene	128
m,p-Xylene	125
o-Xylene	131 Q
Hexane	92
Naphthalene	78
C5-C8 Aliphatic Hydrocarbons	94
C9-C12 Aliphatic Hydrocarbons	138 Q
C13-C18 Aliphatic Hydrocarbons	65
C9-C10 Aromatic Hydrocarbons	143 Q
C11-C16 Aromatic Hydrocarbons	82
Total TPH (C5-C24) ref to Gasoline	107
TPH (Diesel Range)	100

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	71	50-150
Naphthalene-d8	112	50-150

Client Sample ID: CCV
Lab ID#: 1110157R1-21C
EPA METHOD TO-17

File Name:	j103102	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 08:21 AM	

Compound	%Recovery
Benzene	77
Toluene	90
Ethyl Benzene	95
m,p-Xylene	95
o-Xylene	96
Hexane	90
Naphthalene	137
C5-C8 Aliphatic Hydrocarbons	82
C9-C12 Aliphatic Hydrocarbons	121
C13-C18 Aliphatic Hydrocarbons	57 Q
C9-C10 Aromatic Hydrocarbons	106
C11-C16 Aromatic Hydrocarbons	95
Total TPH (C5-C24) ref to Gasoline	128
TPH (Diesel Range)	100

Container Type: NA - Not Applicable

Client Sample ID: LCS
Lab ID#: 1110157R1-22A
EPA METHOD TO-17

File Name:	j102605	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/26/11 12:35 PM	

Compound	%Recovery
Benzene	91
Toluene	112
Ethyl Benzene	125
m,p-Xylene	127
o-Xylene	127
Hexane	91
Naphthalene	124
C5-C8 Aliphatic Hydrocarbons	111
C9-C12 Aliphatic Hydrocarbons	124
C13-C18 Aliphatic Hydrocarbons	54
C9-C10 Aromatic Hydrocarbons	141 Q
C11-C16 Aromatic Hydrocarbons	134
Total TPH (C5-C24) ref to Gasoline	Not Spiked
TPH (Diesel Range)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	117	50-150
Naphthalene-d8	122	50-150

Client Sample ID: LCS
Lab ID#: 1110157R1-22B
EPA METHOD TO-17

File Name:	j102707	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 01:05 PM	

Compound	%Recovery
Benzene	82
Toluene	122
Ethyl Benzene	134
m,p-Xylene	140
o-Xylene	140
Hexane	88
Naphthalene	123
C5-C8 Aliphatic Hydrocarbons	112
C9-C12 Aliphatic Hydrocarbons	138
C13-C18 Aliphatic Hydrocarbons	56
C9-C10 Aromatic Hydrocarbons	154 Q
C11-C16 Aromatic Hydrocarbons	153 Q
Total TPH (C5-C24) ref to Gasoline	Not Spiked
TPH (Diesel Range)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	82	50-150
Naphthalene-d8	125	50-150

Client Sample ID: LCS
Lab ID#: 1110157R1-22C
EPA METHOD TO-17

File Name:	j103105	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 11:35 AM	

Compound	%Recovery
Benzene	75
Toluene	120
Ethyl Benzene	127
m,p-Xylene	134
o-Xylene	132
Hexane	86
Naphthalene	137
C5-C8 Aliphatic Hydrocarbons	94
C9-C12 Aliphatic Hydrocarbons	134
C13-C18 Aliphatic Hydrocarbons	59
C9-C10 Aromatic Hydrocarbons	146
C11-C16 Aromatic Hydrocarbons	197 Q
Total TPH (C5-C24) ref to Gasoline	Not Spiked
TPH (Diesel Range)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	50-150
Naphthalene-d8	119	50-150

11/30/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110412

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110412

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/21/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	HAFB-ST03-B58(422)(TO17A)	Modified TO-17 VI
02A	HAFB-ST03-B58(422)(TO17B)	Modified TO-17 VI
03A	HAFB-ST03-B58(492)(TO17A)	Modified TO-17 VI
04A	HAFB-ST03-B58(492)(TO17B)	Modified TO-17 VI
05A	HAFB-ST03-B59(388)(TO17A)	Modified TO-17 VI
06A	HAFB-ST03-B59(388)(TO17B)	Modified TO-17 VI
07A	GASOLINE#2(TO17A)	Modified TO-17 VI
08A	GASOLINE#2(TO17B)	Modified TO-17 VI
09A	DIESEL#3(TO17A)	Modified TO-17 VI
10A	DIESEL#3(TO17B)	Modified TO-17 VI
11A	HH-OU1C-MW10SG(TO17A)	Modified TO-17 VI
12A	HH-OU1C-MW10SG(TO17B)	Modified TO-17 VI
13A	HH-OU1C-OTNS1(TO17A)	Modified TO-17 VI
14A	HH-OU1C-OTNS1(TO17B)	Modified TO-17 VI
15A	HH-OU1C-MW22R(TO17A)	Modified TO-17 VI
16A	HH-OU1C-MW22R(TO17B)	Modified TO-17 VI
17A	GASOLINE-EXHAUST (TO17A)	Modified TO-17 VI

Continued on next page

WORK ORDER #: 1110412

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/21/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
18A	GASOLINE-EXHAUST (TO17B)	Modified TO-17 VI
19A	DIESEL-EXHAUST (TO17A)	Modified TO-17 VI
20A	DIESEL-EXHAUST (TO17B)	Modified TO-17 VI
21A	TRIP BLANK	Modified TO-17 VI
22A	Lab Blank	Modified TO-17 VI
22B	Lab Blank	Modified TO-17 VI
22C	Lab Blank	Modified TO-17 VI
23A	CCV	Modified TO-17 VI
23B	CCV	Modified TO-17 VI
23C	CCV	Modified TO-17 VI
24A	LCS	Modified TO-17 VI
24B	LCS	Modified TO-17 VI
24C	LCS	Modified TO-17 VI

CERTIFIED BY:



Laboratory Director

DATE: 11/30/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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

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

**LABORATORY NARRATIVE
EPA Method TO-17
Tetra Tech EM, Inc.
Workorder# 1110412**

Twenty TO-17 VI Tube samples plus one Trip Blank were received on October 20, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

The Chain of Custody (COC) information for the tube numbers associated with samples HH-OU1C-MW22R(TO17A), HH-OU1C-MW22R(TO17B), HH-OU1C-OTNS1(TO17A) and HH-OU1C-OTNS1(TO17B) did not match the information on the "Field Chart" provided by the client. Per client request, the information on the field chart was used to process and report the samples.

Analytical Notes

The samples were analyzed following MA DEP APH methodology with several modifications to accommodate the project requirements. Sorbent tubes were used for sample collection instead of canisters as specified by the method. Additionally, the GC column used for this extended MA APH range had a smaller film thickness than what was required by the MA APH method. This modification allowed for higher GC temperatures which were necessary to effectively extend the target compound range to C24. However, the column was unable to resolve several aliphatic calibration compounds from internal standard and target compounds. This required a slight modification in the specific hydrocarbons utilized to generate calibration factors for the C5-C8 aliphatic and C9-C12 aliphatic ranges. No significant impact on data quality is expected.

The aliphatic range C13-C18 recovered below the laboratory acceptance limits of 60-140% in the daily CCV analyzed on 10/31/11. Associated detections and non-detections were flagged to indicate a potential low bias. Several components recovered above laboratory acceptance criterion for the CCV. Associated detections were flagged as estimated values.

The field surrogate Toluene-d8 exceeded laboratory limits of 50-150% due to high level matrix interference in samples HAFB-ST03-B58(492)(TO-17A) and HAFB-ST03-B59(388)(TO17A).

TPH referenced to gasoline and diesel were calculated using a single point calibration.

Each sample was collected with 2 tubes in series with the TO17A designation indicating the front, or sample side, of the train. The TO17B designation indicated the back side of the train to measure potential breakthrough of unretained compounds. Several back tubes had detections above the reporting limit; however, the detections were not indicative of breakthrough based on the chromatographic pattern.

Samples GASOLINE#2(TO17A), HH-OU1C-MW10SG(TO17A) and HH-OU1C-MW22R(TO17A) were analyzed at a higher split than the calibration due to high concentrations. The split used resulted in a

4-fold dilution and the reporting limit and calibration range were raised accordingly.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-ST03-B58(422)(TO17A)

Lab ID#: 1110412-01A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.6	91
Toluene	3.8	76	14	290
Ethyl Benzene	4.3	86	56	1100
m,p-Xylene	4.3	86	960	19000
o-Xylene	4.3	86	130	2700
Hexane	3.5	70	28	550
Naphthalene	2.0	40	6.0	120
C5-C8 Aliphatic Hydrocarbons	23	460	43000	850000
C9-C12 Aliphatic Hydrocarbons	35	700	30000 J	590000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	180	3600
C9-C10 Aromatic Hydrocarbons	25	500	4600	92000
Total TPH (C5-C24) ref to Gasoline	1000	20000	79000	1600000
TPH (Diesel Range)	1000	20000	55000	1100000

Client Sample ID: HAFB-ST03-B58(422)(TO17B)

Lab ID#: 1110412-02A

No Detections Were Found.

Client Sample ID: HAFB-ST03-B58(492)(TO17A)

Lab ID#: 1110412-03A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	6.5	130
Toluene	3.8	76	15	300
Ethyl Benzene	4.3	86	60	1200
m,p-Xylene	4.3	86	1000	20000
o-Xylene	4.3	86	150	3000
Hexane	3.5	70	25	500
C5-C8 Aliphatic Hydrocarbons	23	460	44000	870000
C9-C12 Aliphatic Hydrocarbons	35	700	32000 J	640000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	350	7000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-ST03-B58(492)(TO17A)

Lab ID#: 1110412-03A

C9-C10 Aromatic Hydrocarbons	25	500	5200	100000
Total TPH (C5-C24) ref to Gasoline	1000	20000	80000	1600000
TPH (Diesel Range)	1000	20000	58000	1200000

Client Sample ID: HAFB-ST03-B58(492)(TO17B)

Lab ID#: 1110412-04A

No Detections Were Found.

Client Sample ID: HAFB-ST03-B59(388)(TO17A)

Lab ID#: 1110412-05A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	3.5	70
Toluene	3.8	76	7.8	160
Ethyl Benzene	4.3	86	4.6	91
m,p-Xylene	4.3	86	71	1400
o-Xylene	4.3	86	15	300
Hexane	3.5	70	5.8	120
C5-C8 Aliphatic Hydrocarbons	23	460	6100	120000
C9-C12 Aliphatic Hydrocarbons	35	700	1900 J	38000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	120	2400
C9-C10 Aromatic Hydrocarbons	25	500	380	7600
Total TPH (C5-C24) ref to Gasoline	1000	20000	9200	180000
TPH (Diesel Range)	1000	20000	8700	170000

Client Sample ID: HAFB-ST03-B59(388)(TO17B)

Lab ID#: 1110412-06A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.8	97
Ethyl Benzene	4.3	86	9.0	180
C5-C8 Aliphatic Hydrocarbons	23	460	140	2800
C9-C12 Aliphatic Hydrocarbons	35	700	71 J	1400 J

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: GASOLINE#2(TO17A)

Lab ID#: 1110412-07A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	1300	3400	340000
Toluene	15	1500	>8000 S	>800000 S
Ethyl Benzene	17	1700	1900	190000
m,p-Xylene	17	1700	5700 E	570000 E
o-Xylene	17	1700	2200	220000
Hexane	14	1400	13000 E	1300000 E
C5-C8 Aliphatic Hydrocarbons	92	9200	160000	16000000
C9-C10 Aromatic Hydrocarbons	100	10000	3400	340000
Total TPH (C5-C24) ref to Gasoline	4000	400000	200000	20000000

Client Sample ID: GASOLINE#2(TO17B)

Lab ID#: 1110412-08A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	4.8	480

Client Sample ID: DIESEL#3(TO17A)

Lab ID#: 1110412-09A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	28	2800
Toluene	3.8	380	140	14000
Ethyl Benzene	4.3	430	31	3100
m,p-Xylene	4.3	430	87	8700
o-Xylene	4.3	430	35	3500
Hexane	3.5	350	140	14000
C5-C8 Aliphatic Hydrocarbons	23	2300	4700	470000
C9-C12 Aliphatic Hydrocarbons	35	3500	1900 J	190000 J
C13-C18 Aliphatic Hydrocarbons	100	10000	780	78000
C9-C10 Aromatic Hydrocarbons	25	2500	230	23000
Total TPH (C5-C24) ref to Gasoline	1000	100000	11000	1100000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: DIESEL#3(TO17A)

Lab ID#: 1110412-09A

TPH (Diesel Range)	1000	100000	20000	2000000
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Client Sample ID: DIESEL#3(TO17B)

Lab ID#: 1110412-10A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C5-C8 Aliphatic Hydrocarbons	23	2300	110	11000

Client Sample ID: HH-OU1C-MW10SG(TO17A)

Lab ID#: 1110412-11A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	510	10000
Toluene	15	300	400	8000
Ethyl Benzene	17	340	400	8000
m,p-Xylene	17	340	290	5800
o-Xylene	17	340	85	1700
Hexane	14	280	26000 E	520000 E
C5-C8 Aliphatic Hydrocarbons	92	1800	1800000	35000000
C9-C12 Aliphatic Hydrocarbons	140	2800	95000	1900000
C13-C18 Aliphatic Hydrocarbons	400	8000	640 J	13000 J
C9-C10 Aromatic Hydrocarbons	100	2000	1600	31000
Total TPH (C5-C24) ref to Gasoline	4000	80000	1500000	30000000
TPH (Diesel Range)	4000	80000	8300	170000

Client Sample ID: HH-OU1C-MW10SG(TO17B)

Lab ID#: 1110412-12A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	5.6	110

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HH-OU1C-OTNS1(TO17A)

Lab ID#: 1110412-13A

No Detections Were Found.

Client Sample ID: HH-OU1C-OTNS1(TO17B)

Lab ID#: 1110412-14A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.2	85

Client Sample ID: HH-OU1C-MW22R(TO17A)

Lab ID#: 1110412-15A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	180	3600
Toluene	15	300	150	3000
Ethyl Benzene	17	340	190	3800
m,p-Xylene	17	340	220	4400
o-Xylene	17	340	79	1600
Hexane	14	280	14000 E	280000 E
C5-C8 Aliphatic Hydrocarbons	92	1800	980000	20000000
C9-C12 Aliphatic Hydrocarbons	140	2800	140000	2800000
C13-C18 Aliphatic Hydrocarbons	400	8000	5900 J	120000 J
C9-C10 Aromatic Hydrocarbons	100	2000	5400	110000
Total TPH (C5-C24) ref to Gasoline	4000	80000	1400000	29000000
TPH (Diesel Range)	4000	80000	36000	710000

Client Sample ID: HH-OU1C-MW22R(TO17B)

Lab ID#: 1110412-16A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	3.8	76
C5-C8 Aliphatic Hydrocarbons	23	460	46	930
Total TPH (C5-C24) ref to Gasoline	1000	20000	2000	39000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: GASOLINE-EXHAUST (TO17A)

Lab ID#: 1110412-17A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	39	3900
Toluene	3.8	380	27	2700
Ethyl Benzene	4.3	430	14	1400
m,p-Xylene	4.3	430	11	1100
o-Xylene	4.3	430	4.6	460
Hexane	3.5	350	11	1100
C5-C8 Aliphatic Hydrocarbons	23	2300	340	34000
C9-C12 Aliphatic Hydrocarbons	35	3500	340 J	34000 J
Total TPH (C5-C24) ref to Gasoline	1000	100000	1600	160000
TPH (Diesel Range)	1000	100000	3100	310000

Client Sample ID: GASOLINE-EXHAUST (TO17B)

Lab ID#: 1110412-18A

No Detections Were Found.

Client Sample ID: DIESEL-EXHAUST (TO17A)

Lab ID#: 1110412-19A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	4.3	430
TPH (Diesel Range)	1000	100000	1600	160000

Client Sample ID: DIESEL-EXHAUST (TO17B)

Lab ID#: 1110412-20A

No Detections Were Found.

Client Sample ID: TRIP BLANK

Lab ID#: 1110412-21A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
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**Summary of Detected Compounds
EPA METHOD TO-17**

Client Sample ID: TRIP BLANK

Lab ID#: 1110412-21A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C9-C12 Aliphatic Hydrocarbons	35	700	64	1300

Client Sample ID: HAFB-ST03-B58(422)(TO17A)

Lab ID#: 1110412-01A

EPA METHOD TO-17

File Name:	j102821	Date of Extraction: NA	Date of Collection: 10/14/11 10:31:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 09:02 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.6	91
Toluene	3.8	76	14	290
Ethyl Benzene	4.3	86	56	1100
m,p-Xylene	4.3	86	960	19000
o-Xylene	4.3	86	130	2700
Hexane	3.5	70	28	550
Naphthalene	2.0	40	6.0	120
C5-C8 Aliphatic Hydrocarbons	23	460	43000	850000
C9-C12 Aliphatic Hydrocarbons	35	700	30000 J	590000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	180	3600
C9-C10 Aromatic Hydrocarbons	25	500	4600	92000
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	79000	1600000
TPH (Diesel Range)	1000	20000	55000	1100000

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	149	50-150
Naphthalene-d8	136	50-150

Client Sample ID: HAFB-ST03-B58(422)(TO17B)

Lab ID#: 1110412-02A

EPA METHOD TO-17

File Name:	j102730	Date of Extraction: NA	Date of Collection: 10/14/11 10:31:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 03:23 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	119	50-150
Naphthalene-d8	119	50-150

Client Sample ID: HAFB-ST03-B58(492)(TO17A)

Lab ID#: 1110412-03A

EPA METHOD TO-17

File Name:	j102820	Date of Extraction: NA	Date of Collection: 10/14/11 10:50:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 08:26 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	6.5	130
Toluene	3.8	76	15	300
Ethyl Benzene	4.3	86	60	1200
m,p-Xylene	4.3	86	1000	20000
o-Xylene	4.3	86	150	3000
Hexane	3.5	70	25	500
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	44000	870000
C9-C12 Aliphatic Hydrocarbons	35	700	32000 J	640000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	350	7000
C9-C10 Aromatic Hydrocarbons	25	500	5200	100000
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	80000	1600000
TPH (Diesel Range)	1000	20000	58000	1200000

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	154 Q	50-150
Naphthalene-d8	140	50-150

Client Sample ID: HAFB-ST03-B58(492)(TO17B)

Lab ID#: 1110412-04A

EPA METHOD TO-17

File Name:	j102731	Date of Extraction: NA	Date of Collection: 10/14/11 10:50:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 03:59 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	119	50-150
Naphthalene-d8	128	50-150

Client Sample ID: HAFB-ST03-B59(388)(TO17A)

Lab ID#: 1110412-05A

EPA METHOD TO-17

File Name:	j102819	Date of Extraction: NA	Date of Collection: 10/14/11 11:16:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 07:49 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	3.5	70
Toluene	3.8	76	7.8	160
Ethyl Benzene	4.3	86	4.6	91
m,p-Xylene	4.3	86	71	1400
o-Xylene	4.3	86	15	300
Hexane	3.5	70	5.8	120
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	6100	120000
C9-C12 Aliphatic Hydrocarbons	35	700	1900 J	38000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	120	2400
C9-C10 Aromatic Hydrocarbons	25	500	380	7600
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	9200	180000
TPH (Diesel Range)	1000	20000	8700	170000

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	164 Q	50-150
Naphthalene-d8	126	50-150

Client Sample ID: HAFB-ST03-B59(388)(TO17B)

Lab ID#: 1110412-06A

EPA METHOD TO-17

File Name:	j102729	Date of Extraction: NA	Date of Collection: 10/14/11 11:16:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 02:46 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.8	97
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	9.0	180
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	140	2800
C9-C12 Aliphatic Hydrocarbons	35	700	71 J	1400 J
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	113	50-150
Naphthalene-d8	126	50-150

Client Sample ID: GASOLINE#2(TO17A)

Lab ID#: 1110412-07A

EPA METHOD TO-17

File Name:	j103129	Date of Extraction: NA	Date of Collection: 10/18/11 8:45:00 AM
Dil. Factor:	4.00	Date of Analysis: 11/1/11 02:43 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	1300	3400	340000
Toluene	15	1500	>8000 S	>800000 S
Ethyl Benzene	17	1700	1900	190000
m,p-Xylene	17	1700	5700 E	570000 E
o-Xylene	17	1700	2200	220000
Hexane	14	1400	13000 E	1300000 E
Naphthalene	8.0	800	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	9200	160000	16000000
C9-C12 Aliphatic Hydrocarbons	140	14000	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	400	40000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	100	10000	3400	340000
C11-C16 Aromatic Hydrocarbons	400	40000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	400000	200000	20000000
TPH (Diesel Range)	4000	400000	Not Detected	Not Detected

Air Sample Volume(L): 0.0100

S = Saturated peak; data reported as estimated.

E = Exceeds instrument calibration range.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	102	50-150
Naphthalene-d8	101	50-150

Client Sample ID: GASOLINE#2(TO17B)

Lab ID#: 1110412-08A

EPA METHOD TO-17

File Name:	j102732	Date of Extraction: NA	Date of Collection: 10/18/11 8:45:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 04:36 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	4.8	480
Toluene	3.8	380	Not Detected	Not Detected
Ethyl Benzene	4.3	430	Not Detected	Not Detected
m,p-Xylene	4.3	430	Not Detected	Not Detected
o-Xylene	4.3	430	Not Detected	Not Detected
Hexane	3.5	350	Not Detected	Not Detected
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	3500	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	Not Detected	Not Detected
TPH (Diesel Range)	1000	100000	Not Detected	Not Detected

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	106	50-150
Naphthalene-d8	102	50-150

Client Sample ID: DIESEL#3(TO17A)

Lab ID#: 1110412-09A

EPA METHOD TO-17

File Name:	j102824	Date of Extraction: NA	Date of Collection: 10/18/11 8:46:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 10:52 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	28	2800
Toluene	3.8	380	140	14000
Ethyl Benzene	4.3	430	31	3100
m,p-Xylene	4.3	430	87	8700
o-Xylene	4.3	430	35	3500
Hexane	3.5	350	140	14000
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	4700	470000
C9-C12 Aliphatic Hydrocarbons	35	3500	1900 J	190000 J
C13-C18 Aliphatic Hydrocarbons	100	10000	780	78000
C9-C10 Aromatic Hydrocarbons	25	2500	230	23000
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	11000	1100000
TPH (Diesel Range)	1000	100000	20000	2000000

Air Sample Volume(L): 0.0100

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	122	50-150
Naphthalene-d8	101	50-150

Client Sample ID: DIESEL#3(TO17B)

Lab ID#: 1110412-10A

EPA METHOD TO-17

File Name:	j102733	Date of Extraction: NA	Date of Collection: 10/18/11 8:46:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 05:13 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	Not Detected	Not Detected
Toluene	3.8	380	Not Detected	Not Detected
Ethyl Benzene	4.3	430	Not Detected	Not Detected
m,p-Xylene	4.3	430	Not Detected	Not Detected
o-Xylene	4.3	430	Not Detected	Not Detected
Hexane	3.5	350	Not Detected	Not Detected
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	110	11000
C9-C12 Aliphatic Hydrocarbons	35	3500	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	Not Detected	Not Detected
TPH (Diesel Range)	1000	100000	Not Detected	Not Detected

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	107	50-150
Naphthalene-d8	106	50-150

Client Sample ID: HH-OU1C-MW10SG(TO17A)

Lab ID#: 1110412-11A

EPA METHOD TO-17

File Name:	j103127	Date of Extraction: NA	Date of Collection: 10/18/11 11:52:00 A
Dil. Factor:	4.00	Date of Analysis: 11/1/11 01:35 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	510	10000
Toluene	15	300	400	8000
Ethyl Benzene	17	340	400	8000
m,p-Xylene	17	340	290	5800
o-Xylene	17	340	85	1700
Hexane	14	280	26000 E	520000 E
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	1800000	35000000
C9-C12 Aliphatic Hydrocarbons	140	2800	95000	1900000
C13-C18 Aliphatic Hydrocarbons	400	8000	640 J	13000 J
C9-C10 Aromatic Hydrocarbons	100	2000	1600	31000
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	1500000	30000000
TPH (Diesel Range)	4000	80000	8300	170000

Air Sample Volume(L): 0.0500

E = Exceeds instrument calibration range.

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	116	50-150
Naphthalene-d8	140	50-150

Client Sample ID: HH-OU1C-MW10SG(TO17B)

Lab ID#: 1110412-12A

EPA METHOD TO-17

File Name:	j102817	Date of Extraction: NA	Date of Collection: 10/18/11 11:52:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 06:36 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	5.6	110
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	126	50-150
Naphthalene-d8	84	50-150

Client Sample ID: HH-OU1C-OTNS1(TO17A)

Lab ID#: 1110412-13A

EPA METHOD TO-17

File Name:	j102816	Date of Extraction: NA	Date of Collection: 10/18/11 11:10:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 05:59 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	116	50-150
Naphthalene-d8	75	50-150

Client Sample ID: HH-OU1C-OTNS1(TO17B)

Lab ID#: 1110412-14A

EPA METHOD TO-17

File Name:	j102727	Date of Extraction: NA	Date of Collection: 10/18/11 11:10:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 01:32 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.2	85
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	83	50-150
Naphthalene-d8	82	50-150

Client Sample ID: HH-OU1C-MW22R(TO17A)

Lab ID#: 1110412-15A

EPA METHOD TO-17

File Name:	j103128	Date of Extraction: NA	Date of Collection: 10/18/11 11:32:00 A
Dil. Factor:	4.00	Date of Analysis: 11/1/11 02:09 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	180	3600
Toluene	15	300	150	3000
Ethyl Benzene	17	340	190	3800
m,p-Xylene	17	340	220	4400
o-Xylene	17	340	79	1600
Hexane	14	280	14000 E	280000 E
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	980000	20000000
C9-C12 Aliphatic Hydrocarbons	140	2800	140000	2800000
C13-C18 Aliphatic Hydrocarbons	400	8000	5900 J	120000 J
C9-C10 Aromatic Hydrocarbons	100	2000	5400	110000
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	1400000	29000000
TPH (Diesel Range)	4000	80000	36000	710000

Air Sample Volume(L): 0.0500

E = Exceeds instrument calibration range.

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	53	50-150
Naphthalene-d8	119	50-150

Client Sample ID: HH-OU1C-MW22R(TO17B)

Lab ID#: 1110412-16A

EPA METHOD TO-17

File Name:	j102822	Date of Extraction: NA	Date of Collection: 10/18/11 11:32:00 A
Dil. Factor:	1.00	Date of Analysis: 10/28/11 09:39 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	3.8	76
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	46	930
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	2000	39000
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	121	50-150
Naphthalene-d8	98	50-150

Client Sample ID: GASOLINE-EXHAUST (TO17A)

Lab ID#: 1110412-17A

EPA METHOD TO-17

File Name:	j102828	Date of Extraction: NA	Date of Collection: 10/18/11 8:53:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/29/11 01:18 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	39	3900
Toluene	3.8	380	27	2700
Ethyl Benzene	4.3	430	14	1400
m,p-Xylene	4.3	430	11	1100
o-Xylene	4.3	430	4.6	460
Hexane	3.5	350	11	1100
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	340	34000
C9-C12 Aliphatic Hydrocarbons	35	3500	340 J	34000 J
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	1600	160000
TPH (Diesel Range)	1000	100000	3100	310000

Air Sample Volume(L): 0.0100

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	140	50-150
Naphthalene-d8	118	50-150

Client Sample ID: GASOLINE-EXHAUST (TO17B)

Lab ID#: 1110412-18A

EPA METHOD TO-17

File Name:	j102734	Date of Extraction: NA	Date of Collection: 10/18/11 8:53:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 05:50 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	Not Detected	Not Detected
Toluene	3.8	380	Not Detected	Not Detected
Ethyl Benzene	4.3	430	Not Detected	Not Detected
m,p-Xylene	4.3	430	Not Detected	Not Detected
o-Xylene	4.3	430	Not Detected	Not Detected
Hexane	3.5	350	Not Detected	Not Detected
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	3500	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	Not Detected	Not Detected
TPH (Diesel Range)	1000	100000	Not Detected	Not Detected

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	109	50-150
Naphthalene-d8	102	50-150

Client Sample ID: DIESEL-EXHAUST (TO17A)

Lab ID#: 1110412-19A

EPA METHOD TO-17

File Name:	j102825	Date of Extraction: NA	Date of Collection: 10/18/11 8:59:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 11:29 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	4.3	430
Toluene	3.8	380	Not Detected	Not Detected
Ethyl Benzene	4.3	430	Not Detected	Not Detected
m,p-Xylene	4.3	430	Not Detected	Not Detected
o-Xylene	4.3	430	Not Detected	Not Detected
Hexane	3.5	350	Not Detected	Not Detected
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	3500	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	Not Detected	Not Detected
TPH (Diesel Range)	1000	100000	1600	160000

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	131	50-150
Naphthalene-d8	111	50-150

Client Sample ID: DIESEL-EXHAUST (TO17B)

Lab ID#: 1110412-20A

EPA METHOD TO-17

File Name:	j102728	Date of Extraction: NA	Date of Collection: 10/18/11 8:59:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/28/11 02:08 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	320	Not Detected	Not Detected
Toluene	3.8	380	Not Detected	Not Detected
Ethyl Benzene	4.3	430	Not Detected	Not Detected
m,p-Xylene	4.3	430	Not Detected	Not Detected
o-Xylene	4.3	430	Not Detected	Not Detected
Hexane	3.5	350	Not Detected	Not Detected
Naphthalene	2.0	200	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	2300	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	3500	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	10000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	2500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	10000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	100000	Not Detected	Not Detected
TPH (Diesel Range)	1000	100000	Not Detected	Not Detected

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	120	50-150
Naphthalene-d8	120	50-150

Client Sample ID: TRIP BLANK

Lab ID#: 1110412-21A

EPA METHOD TO-17

File Name:	j103113	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 04:30 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	64	1300
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	89	50-150
Naphthalene-d8	109	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110412-22A

EPA METHOD TO-17

File Name:	j102709A	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 02:32 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	50-150
Naphthalene-d8	100	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110412-22B

EPA METHOD TO-17

File Name:	j102813A	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/28/11 04:18 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	50-150
Naphthalene-d8	91	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110412-22C

EPA METHOD TO-17

File Name:	j103112A	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 03:52 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	50-150
Naphthalene-d8	118	50-150

Client Sample ID: CCV

Lab ID#: 1110412-23A

EPA METHOD TO-17

File Name:	j102706	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 12:30 PM	

Compound	%Recovery
Benzene	92
Toluene	112
Ethyl Benzene	128
m,p-Xylene	125
o-Xylene	131 Q
Hexane	92
Naphthalene	78
C5-C8 Aliphatic Hydrocarbons	94
C9-C12 Aliphatic Hydrocarbons	138 Q
C13-C18 Aliphatic Hydrocarbons	65
C9-C10 Aromatic Hydrocarbons	143 Q
C11-C16 Aromatic Hydrocarbons	118
Total TPH (C5-C24) ref to Gasoline	93
TPH (Diesel Range)	100

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	71	50-150
Naphthalene-d8	112	50-150

Client Sample ID: CCV

Lab ID#: 1110412-23B

EPA METHOD TO-17

File Name:	j102806	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/28/11 11:05 AM	

Compound	%Recovery
Benzene	84
Toluene	98
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	111
Hexane	108
Naphthalene	117
C5-C8 Aliphatic Hydrocarbons	108
C9-C12 Aliphatic Hydrocarbons	171 Q
C13-C18 Aliphatic Hydrocarbons	83
C9-C10 Aromatic Hydrocarbons	125
C11-C16 Aromatic Hydrocarbons	64
Total TPH (C5-C24) ref to Gasoline	100
TPH (Diesel Range)	109

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	110	50-150
Naphthalene-d8	132	50-150

Client Sample ID: CCV

Lab ID#: 1110412-23C

EPA METHOD TO-17

File Name:	j103102	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 08:21 AM	

Compound	%Recovery
Benzene	77
Toluene	90
Ethyl Benzene	95
m,p-Xylene	95
o-Xylene	96
Hexane	90
Naphthalene	137 Q
C5-C8 Aliphatic Hydrocarbons	82
C9-C12 Aliphatic Hydrocarbons	121
C13-C18 Aliphatic Hydrocarbons	57 Q
C9-C10 Aromatic Hydrocarbons	106
C11-C16 Aromatic Hydrocarbons	95
Total TPH (C5-C24) ref to Gasoline	128
TPH (Diesel Range)	100

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110412-24A

EPA METHOD TO-17

File Name:	j102707	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/27/11 01:05 PM	

Compound	%Recovery
Benzene	82
Toluene	122
Ethyl Benzene	134
m,p-Xylene	140
o-Xylene	140
Hexane	88
Naphthalene	123
C5-C8 Aliphatic Hydrocarbons	112
C9-C12 Aliphatic Hydrocarbons	138
C13-C18 Aliphatic Hydrocarbons	56
C9-C10 Aromatic Hydrocarbons	154 Q
C11-C16 Aromatic Hydrocarbons	153 Q

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	82	50-150
Naphthalene-d8	125	50-150

Client Sample ID: LCS

Lab ID#: 1110412-24B

EPA METHOD TO-17

File Name:	j102807	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/28/11 11:52 AM	

Compound	%Recovery
Benzene	89
Toluene	126
Ethyl Benzene	130
m,p-Xylene	135
o-Xylene	128
Hexane	131
Naphthalene	112
C5-C8 Aliphatic Hydrocarbons	122
C9-C12 Aliphatic Hydrocarbons	146
C13-C18 Aliphatic Hydrocarbons	59
C9-C10 Aromatic Hydrocarbons	141
C11-C16 Aromatic Hydrocarbons	116

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	115	50-150
Naphthalene-d8	131	50-150

Client Sample ID: LCS

Lab ID#: 1110412-24C

EPA METHOD TO-17

File Name:	j103105	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 11:35 AM	

Compound	%Recovery
Benzene	75
Toluene	120
Ethyl Benzene	127
m,p-Xylene	134
o-Xylene	132
Hexane	86
Naphthalene	137
C5-C8 Aliphatic Hydrocarbons	94
C9-C12 Aliphatic Hydrocarbons	134
C13-C18 Aliphatic Hydrocarbons	59
C9-C10 Aromatic Hydrocarbons	146
C11-C16 Aromatic Hydrocarbons	198 Q

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	50-150
Naphthalene-d8	119	50-150

12/1/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name: HI DOH Vapor

Project #:

Workorder #: 1110433

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110433

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	HI DOH Vapor
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/23/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	HAFB-VP26-B05(18)(TO17A)	Modified TO-17 VI
02A	HAFB-VP26-B05(18)(TO17B)	Modified TO-17 VI
03A	HAFB-VP26-B05(24)(TO17A)	Modified TO-17 VI
04A	HAFB-VP26-B05(24)(TO17B)	Modified TO-17 VI
05A	HAFB-VP26-B07(20)(TO17A)	Modified TO-17 VI
06A	HAFB-VP26-B07(20)(TO17B)	Modified TO-17 VI
07A	HAFB-VP26-B07(25)(TO17A)	Modified TO-17 VI
08A	HAFB-VP26-B07(25)(TO17B)	Modified TO-17 VI
09A	HAFB-ST03-B58(347)(TO17A)	Modified TO-17 VI
10A	HAFB-ST03-B58(347)(TO17B)	Modified TO-17 VI
11A	TRIP BLANK	Modified TO-17 VI
12A	Lab Blank	Modified TO-17 VI
12B	Lab Blank	Modified TO-17 VI
13A	CCV	Modified TO-17 VI
13B	CCV	Modified TO-17 VI
14A	LCS	Modified TO-17 VI
14B	LCS	Modified TO-17 VI

CERTIFIED BY:



Laboratory Director

DATE: 12/01/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

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
EPA Method TO-17
Tetra Tech EM, Inc.
Workorder# 1110433**

Ten TO-17 VI Tube samples were received on October 20, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

The samples arrived at the laboratory without a Chain of Custody (COC). The client subsequently provided the COC by e-mail on 10/21/11.

Analytical Notes

The samples were analyzed following MA DEP APH methodology with several modifications to accommodate the project requirements. Sorbent tubes were used for sample collection instead of canisters as specified by the method. Additionally, the GC column used for this extended MA APH range had a smaller film thickness than what was required by the MA APH method. This modification allowed for higher GC temperatures which were necessary to effectively extend the target compound range to C24. However, the column was unable to resolve several aliphatic calibration compounds from internal standard and target compounds. This required a slight modification in the specific hydrocarbons utilized to generate calibration factors for the C5-C8 aliphatic and C9-C12 aliphatic ranges. No significant impact on data quality is expected.

The aliphatic range C13-C18 recovered below the laboratory acceptance limits of 60-140% in the daily CCV analyzed on 10/31/11. Associated detections and non-detections were flagged to indicate a potential low bias. The C9-C12 Aliphatic range recovered above laboratory acceptance criterion for the CCV on 10/28/11. Associated detections were flagged as estimated values.

Due to severe hydrocarbon interference, the field surrogate Toluene-d8 could not be reliably quantified for samples HAFB-VP26-B05(18)(TO-17A), HAFB-VP26-B05(24)(TO-17A), HAFB-VP26-B07(20)(TO-17A), and HAFB-VP26-B07(25)(TO-17A). Recovery was reported as 0% and was flagged as outside laboratory criterion of 50-150%.

Additionally, the significant interference in sample HAFB-VP26-B05(24)(TO17A) resulted in poor recovery of the internal standard 1,4-Difluorobenzene. Recovery was below the method acceptance criterion of 50% with a recovery of 22%. Benzene is quantified using this internal standard and is J-flagged to indicate bias. Additionally Benzene and Hexane are saturated and significant matrix is interfering with accurate quantification. The S-flag indicates saturation and the M-flag indicates matrix. The TPH-gasoline is saturated as well.

TPH referenced to gasoline and Diesel were calculated using a single point calibration.

Each sample was collected with 2 tubes in series with the TO17A designation indicating the front, or sample side, of the train. The TO17B designation indicated the back side of the train to measure potential breakthrough of unretained compounds. Several back tubes had detections above the reporting limit; however, the detections were not indicative of breakthrough based on the chromatographic pattern.

Samples HAFB-VP26-B05(18)(TO-17A), HAFB-VP26-B05(24)(TO-17A), HAFB-VP26-B07(20)(TO-17A), and HAFB-VP26-B07(25)(TO-17A) were analyzed at a higher split than the calibration due to high concentrations. The split used resulted in a 4-fold dilution and the reporting limit and calibration range were raised accordingly.

Definition of Data Qualifying Flags

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

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

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

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

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

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

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-VP26-B05(18)(TO17A)

Lab ID#: 1110433-01A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	780	16000
Ethyl Benzene	17	340	490	9800
m,p-Xylene	17	340	58	1200
o-Xylene	17	340	18	360
Hexane	14	280	31000 E	630000 E
C5-C8 Aliphatic Hydrocarbons	92	1800	610000	12000000
C9-C12 Aliphatic Hydrocarbons	140	2800	38000	750000
C9-C10 Aromatic Hydrocarbons	100	2000	460	9300
Total TPH (C5-C24) ref to Gasoline	4000	80000	940000	19000000

Client Sample ID: HAFB-VP26-B05(18)(TO17B)

Lab ID#: 1110433-02A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	6.1	120
m,p-Xylene	4.3	86	5.1	100
Total TPH (C5-C24) ref to Gasoline	1000	20000	1600	33000

Client Sample ID: HAFB-VP26-B05(24)(TO17A)

Lab ID#: 1110433-03A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	>31000 SMJ	>620000 SMJ
Toluene	15	300	1000	21000
Ethyl Benzene	17	340	260	5300
m,p-Xylene	17	340	210	4200
o-Xylene	17	340	28	560
Hexane	14	280	>56000 SM	>1100000 SM
C5-C8 Aliphatic Hydrocarbons	92	1800	3200000	64000000
C9-C12 Aliphatic Hydrocarbons	140	2800	22000	430000
C9-C10 Aromatic Hydrocarbons	100	2000	870	17000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-VP26-B05(24)(TO17A)

Lab ID#: 1110433-03A

Total TPH (C5-C24) ref to Gasoline	4000	80000	>1800000 S	>37000000 S
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Client Sample ID: HAFB-VP26-B05(24)(TO17B)

Lab ID#: 1110433-04A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	5.7	110
m,p-Xylene	4.3	86	7.4	150
C5-C8 Aliphatic Hydrocarbons	23	460	160	3200
C9-C12 Aliphatic Hydrocarbons	35	700	310	6100
C9-C10 Aromatic Hydrocarbons	25	500	70	1400

Client Sample ID: HAFB-VP26-B07(20)(TO17A)

Lab ID#: 1110433-05A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	1700	35000
Ethyl Benzene	17	340	1400	27000
m,p-Xylene	17	340	50	990
Hexane	14	280	2900	59000
C5-C8 Aliphatic Hydrocarbons	92	1800	670000	13000000
C9-C12 Aliphatic Hydrocarbons	140	2800	8900	180000
C9-C10 Aromatic Hydrocarbons	100	2000	270	5400
Total TPH (C5-C24) ref to Gasoline	4000	80000	690000	14000000

Client Sample ID: HAFB-VP26-B07(20)(TO17B)

Lab ID#: 1110433-06A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
C5-C8 Aliphatic Hydrocarbons	23	460	62	1200

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-VP26-B07(25)(TO17A)

Lab ID#: 1110433-07A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	1100	22000
Toluene	15	300	640	13000
Ethyl Benzene	17	340	490	9800
m,p-Xylene	17	340	120	2500
o-Xylene	17	340	36	720
C5-C8 Aliphatic Hydrocarbons	92	1800	1500000	29000000
C9-C12 Aliphatic Hydrocarbons	140	2800	11000	220000
C9-C10 Aromatic Hydrocarbons	100	2000	260	5200
Total TPH (C5-C24) ref to Gasoline	4000	80000	1500000	29000000

Client Sample ID: HAFB-VP26-B07(25)(TO17B)

Lab ID#: 1110433-08A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	5.1	100

Client Sample ID: HAFB-ST03-B58(347)(TO17A)

Lab ID#: 1110433-09A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.0	81
Toluene	3.8	76	13	260
Ethyl Benzene	4.3	86	58	1200
m,p-Xylene	4.3	86	940	19000
o-Xylene	4.3	86	150	3000
Hexane	3.5	70	20	390
C5-C8 Aliphatic Hydrocarbons	23	460	42000	830000
C9-C12 Aliphatic Hydrocarbons	35	700	29000 J	580000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	240	4800
C9-C10 Aromatic Hydrocarbons	25	500	5400	110000
Total TPH (C5-C24) ref to Gasoline	1000	20000	79000	1600000

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-ST03-B58(347)(TO17A)

Lab ID#: 1110433-09A

TPH (Diesel Range)	1000	20000	62000	1200000
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Client Sample ID: HAFB-ST03-B58(347)(TO17B)

Lab ID#: 1110433-10A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	13	250
m,p-Xylene	4.3	86	8.8	180
Total TPH (C5-C24) ref to Gasoline	1000	20000	1300	26000

Client Sample ID: TRIP BLANK

Lab ID#: 1110433-11A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	6.8	140
Total TPH (C5-C24) ref to Gasoline	1000	20000	1400	28000

Client Sample ID: HAFB-VP26-B05(18)(TO17A)

Lab ID#: 1110433-01A

EPA METHOD TO-17

File Name:	j103132	Date of Extraction: NA	Date of Collection: 10/13/11 10:15:00 A
Dil. Factor:	4.00	Date of Analysis: 11/1/11 04:25 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	780	16000
Toluene	15	300	Not Detected	Not Detected
Ethyl Benzene	17	340	490	9800
m,p-Xylene	17	340	58	1200
o-Xylene	17	340	18	360
Hexane	14	280	31000 E	630000 E
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	610000	12000000
C9-C12 Aliphatic Hydrocarbons	140	2800	38000	750000
C13-C18 Aliphatic Hydrocarbons	400	8000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	100	2000	460	9300
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	940000	19000000
TPH (Diesel Range)	4000	80000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

E = Exceeds instrument calibration range.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	0 U Q	50-150
Naphthalene-d8	101	50-150

Client Sample ID: HAFB-VP26-B05(18)(TO17B)

Lab ID#: 1110433-02A

EPA METHOD TO-17

File Name:	j103120	Date of Extraction: NA	Date of Collection: 10/13/11 10:15:00 A
Dil. Factor:	1.00	Date of Analysis: 10/31/11 09:34 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	6.1	120
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	5.1	100
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	1600	33000
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	90	50-150
Naphthalene-d8	114	50-150

Client Sample ID: HAFB-VP26-B05(24)(TO17A)

Lab ID#: 1110433-03A

EPA METHOD TO-17

File Name:	j103131	Date of Extraction: NA	Date of Collection: 10/13/11 10:48:00 A
Dil. Factor:	4.00	Date of Analysis: 11/1/11 03:51 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	>31000 SMJ	>620000 SMJ
Toluene	15	300	1000	21000
Ethyl Benzene	17	340	260	5300
m,p-Xylene	17	340	210	4200
o-Xylene	17	340	28	560
Hexane	14	280	>56000 SM	>1100000 SM
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	3200000	64000000
C9-C12 Aliphatic Hydrocarbons	140	2800	22000	430000
C13-C18 Aliphatic Hydrocarbons	400	8000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	100	2000	870	17000
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	>1800000 S	>37000000 S
TPH (Diesel Range)	4000	80000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

S = Saturated peak; data reported as estimated.

M = Reported value may be biased due to apparent matrix interferences.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	0 U Q	50-150
Naphthalene-d8	106	50-150

Client Sample ID: HAFB-VP26-B05(24)(TO17B)

Lab ID#: 1110433-04A

EPA METHOD TO-17

File Name:	j103116	Date of Extraction: NA	Date of Collection: 10/13/11 10:48:00 A
Dil. Factor:	1.00	Date of Analysis: 10/31/11 06:59 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	5.7	110
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	7.4	150
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	160	3200
C9-C12 Aliphatic Hydrocarbons	35	700	310	6100
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	70	1400
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	100	50-150
Naphthalene-d8	109	50-150

Client Sample ID: HAFB-VP26-B07(20)(TO17A)

Lab ID#: 1110433-05A

EPA METHOD TO-17

File Name:	j103133	Date of Extraction: NA	Date of Collection: 10/13/11 11:30:00 A
Dil. Factor:	4.00	Date of Analysis: 11/1/11 04:59 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	1700	35000
Toluene	15	300	Not Detected	Not Detected
Ethyl Benzene	17	340	1400	27000
m,p-Xylene	17	340	50	990
o-Xylene	17	340	Not Detected	Not Detected
Hexane	14	280	2900	59000
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	670000	13000000
C9-C12 Aliphatic Hydrocarbons	140	2800	8900	180000
C13-C18 Aliphatic Hydrocarbons	400	8000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	100	2000	270	5400
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	690000	14000000
TPH (Diesel Range)	4000	80000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	0 U Q	50-150
Naphthalene-d8	124	50-150

Client Sample ID: HAFB-VP26-B07(20)(TO17B)

Lab ID#: 1110433-06A

EPA METHOD TO-17

File Name:	j102831	Date of Extraction: NA	Date of Collection: 10/13/11 11:30:00 A
Dil. Factor:	1.00	Date of Analysis: 10/29/11 03:07 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	62	1200
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	114	50-150
Naphthalene-d8	101	50-150

Client Sample ID: HAFB-VP26-B07(25)(TO17A)

Lab ID#: 1110433-07A

EPA METHOD TO-17

File Name:	j103130	Date of Extraction: NA	Date of Collection: 10/13/11 11:52:00 A
Dil. Factor:	4.00	Date of Analysis: 11/1/11 03:17 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	13	260	1100	22000
Toluene	15	300	640	13000
Ethyl Benzene	17	340	490	9800
m,p-Xylene	17	340	120	2500
o-Xylene	17	340	36	720
Hexane	14	280	Not Detected	Not Detected
Naphthalene	8.0	160	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	92	1800	1500000	29000000
C9-C12 Aliphatic Hydrocarbons	140	2800	11000	220000
C13-C18 Aliphatic Hydrocarbons	400	8000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	100	2000	260	5200
C11-C16 Aromatic Hydrocarbons	400	8000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	4000	80000	1500000	29000000
TPH (Diesel Range)	4000	80000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	0 U Q	50-150
Naphthalene-d8	107	50-150

Client Sample ID: HAFB-VP26-B07(25)(TO17B)

Lab ID#: 1110433-08A

EPA METHOD TO-17

File Name:	j103121	Date of Extraction: NA	Date of Collection: 10/13/11 11:52:00 A
Dil. Factor:	1.00	Date of Analysis: 10/31/11 10:10 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	5.1	100
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	97	50-150
Naphthalene-d8	106	50-150

Client Sample ID: HAFB-ST03-B58(347)(TO17A)

Lab ID#: 1110433-09A

EPA METHOD TO-17

File Name:	j102830	Date of Extraction: NA	Date of Collection: 10/14/11 9:47:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/29/11 02:31 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	4.0	81
Toluene	3.8	76	13	260
Ethyl Benzene	4.3	86	58	1200
m,p-Xylene	4.3	86	940	19000
o-Xylene	4.3	86	150	3000
Hexane	3.5	70	20	390
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	42000	830000
C9-C12 Aliphatic Hydrocarbons	35	700	29000 J	580000 J
C13-C18 Aliphatic Hydrocarbons	100	2000	240	4800
C9-C10 Aromatic Hydrocarbons	25	500	5400	110000
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	79000	1600000
TPH (Diesel Range)	1000	20000	62000	1200000

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	146	50-150
Naphthalene-d8	142	50-150

Client Sample ID: HAFB-ST03-B58(347)(TO17B)

Lab ID#: 1110433-10A

EPA METHOD TO-17

File Name:	j103122	Date of Extraction: NA	Date of Collection: 10/14/11 9:47:00 AM
Dil. Factor:	1.00	Date of Analysis: 10/31/11 10:47 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	13	250
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	8.8	180
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	1300	26000
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	90	50-150
Naphthalene-d8	109	50-150

Client Sample ID: TRIP BLANK

Lab ID#: 1110433-11A

EPA METHOD TO-17

File Name:	j103114	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 05:07 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	6.8	140
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	1400	28000
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Toluene-d8	112	50-150
Naphthalene-d8	147	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110433-12A

EPA METHOD TO-17

File Name:	j102813	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/28/11 04:18 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected	Not Detected
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	50-150
Naphthalene-d8	91	50-150

Client Sample ID: Lab Blank

Lab ID#: 1110433-12B

EPA METHOD TO-17

File Name:	j103112	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 03:52 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Benzene	3.2	64	Not Detected	Not Detected
Toluene	3.8	76	Not Detected	Not Detected
Ethyl Benzene	4.3	86	Not Detected	Not Detected
m,p-Xylene	4.3	86	Not Detected	Not Detected
o-Xylene	4.3	86	Not Detected	Not Detected
Hexane	3.5	70	Not Detected	Not Detected
Naphthalene	2.0	40	Not Detected	Not Detected
C5-C8 Aliphatic Hydrocarbons	23	460	Not Detected	Not Detected
C9-C12 Aliphatic Hydrocarbons	35	700	Not Detected	Not Detected
C13-C18 Aliphatic Hydrocarbons	100	2000	Not Detected UJ	Not Detected UJ
C9-C10 Aromatic Hydrocarbons	25	500	Not Detected	Not Detected
C11-C16 Aromatic Hydrocarbons	100	2000	Not Detected	Not Detected
Total TPH (C5-C24) ref to Gasoline	1000	20000	Not Detected	Not Detected
TPH (Diesel Range)	1000	20000	Not Detected	Not Detected

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	50-150
Naphthalene-d8	118	50-150

Client Sample ID: CCV

Lab ID#: 1110433-13A

EPA METHOD TO-17

File Name:	j102806	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/28/11 11:05 AM	

Compound	%Recovery
Benzene	84
Toluene	98
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	111
Hexane	108
Naphthalene	117
C5-C8 Aliphatic Hydrocarbons	108
C9-C12 Aliphatic Hydrocarbons	171 Q
C13-C18 Aliphatic Hydrocarbons	83
C9-C10 Aromatic Hydrocarbons	125
C11-C16 Aromatic Hydrocarbons	65
Total TPH (C5-C24) ref to Gasoline	100
TPH (Diesel Range)	109

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	110	50-150
Naphthalene-d8	132	50-150

Client Sample ID: CCV

Lab ID#: 1110433-13B

EPA METHOD TO-17

File Name:	j103102	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 08:21 AM	

Compound	%Recovery
Benzene	77
Toluene	90
Ethyl Benzene	95
m,p-Xylene	95
o-Xylene	96
Hexane	90
Naphthalene	136
C5-C8 Aliphatic Hydrocarbons	82
C9-C12 Aliphatic Hydrocarbons	121
C13-C18 Aliphatic Hydrocarbons	57 Q
C9-C10 Aromatic Hydrocarbons	106
C11-C16 Aromatic Hydrocarbons	95
Total TPH (C5-C24) ref to Gasoline	128
TPH (Diesel Range)	100

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110433-14A

EPA METHOD TO-17

File Name:	j102807	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/28/11 11:52 AM	

Compound	%Recovery
Benzene	89
Toluene	126
Ethyl Benzene	130
m,p-Xylene	135 Q
o-Xylene	128
Hexane	131 Q
Naphthalene	112
C5-C8 Aliphatic Hydrocarbons	122
C9-C12 Aliphatic Hydrocarbons	146
C13-C18 Aliphatic Hydrocarbons	59
C9-C10 Aromatic Hydrocarbons	141
C11-C16 Aromatic Hydrocarbons	116

Air Sample Volume(L): 1.00

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	115	50-150
Naphthalene-d8	131	50-150

Client Sample ID: LCS

Lab ID#: 1110433-14B

EPA METHOD TO-17

File Name:	j103105	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/11 11:35 AM	

Compound	%Recovery
Benzene	75
Toluene	120
Ethyl Benzene	127
m,p-Xylene	134 Q
o-Xylene	132 Q
Hexane	86
Naphthalene	137
C5-C8 Aliphatic Hydrocarbons	94
C9-C12 Aliphatic Hydrocarbons	134
C13-C18 Aliphatic Hydrocarbons	59
C9-C10 Aromatic Hydrocarbons	146
C11-C16 Aromatic Hydrocarbons	198 Q

Air Sample Volume(L): 1.00

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	50-150
Naphthalene-d8	119	50-150

6/3/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Fishing Village
Project #:
Workorder #: 1105519C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 5/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1105519C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Fishing Village

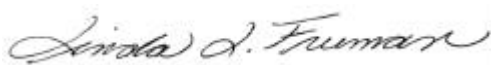
DATE RECEIVED: 05/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/03/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	FV-GP-01-HDOH	Modified ASTM D-1945	5.5 "Hg	15 psi
02A	FV-GP-06R-HDOH	Modified ASTM D-1945	4.5 "Hg	15 psi
03A	FV-GP-08-HDOH	Modified ASTM D-1945	2.0 "Hg	15 psi
04A	FV-GP-16R-HDOH	Modified ASTM D-1945	5.5 "Hg	15 psi
05A	FV-GP-17-HDOH	Modified ASTM D-1945	5.5 "Hg	15 psi
06A	G-IPB20-HDOH	Modified ASTM D-1945	6.5 "Hg	15 psi
07A	G-IPH11-HDOH	Modified ASTM D-1945	4.0 "Hg	15 psi
08A	G-IPL19-HDOH	Modified ASTM D-1945	5.0 "Hg	15 psi
09A	G-IP28-HDOH	Modified ASTM D-1945	9.5 "Hg	15 psi
10A	G-SG12-HDOH	Modified ASTM D-1945	4.0 "Hg	15 psi
11A	Lab Blank	Modified ASTM D-1945	NA	NA
11B	Lab Blank	Modified ASTM D-1945	NA	NA
12A	LCS	Modified ASTM D-1945	NA	NA
12AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



DATE: 06/03/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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-1945
Tetra Tech EM, Inc.
Workorder# 1105519C

Ten 1 Liter Summa Canister (MA APH Certified) samples were received on May 26, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

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

- 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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: FV-GP-01-HDOH

Lab ID#: 1105519C-01A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	4.1
Methane	0.00025	0.20

Client Sample ID: FV-GP-06R-HDOH

Lab ID#: 1105519C-02A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	2.6

Client Sample ID: FV-GP-08-HDOH

Lab ID#: 1105519C-03A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.022	3.6
Methane	0.00022	1.0

Client Sample ID: FV-GP-16R-HDOH

Lab ID#: 1105519C-04A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	1.5
Methane	0.00025	28

Client Sample ID: FV-GP-17-HDOH

Lab ID#: 1105519C-05A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	7.5
Methane	0.00025	8.4

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519C-06A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.026	0.056

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519C-07A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	28
Methane	0.00023	0.46

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519C-08A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	0.092
Methane	0.00024	0.00027

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519C-09A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.030	3.8
Methane	0.00030	0.26

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519C-10A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	20

Client Sample ID: FV-GP-01-HDOH

Lab ID#: 1105519C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060129	Date of Collection: 5/19/11 10:55:00 AM
Dil. Factor:	2.47	Date of Analysis: 6/1/11 05:07 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.025	4.1
Methane	0.00025	0.20

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-06R-HDOH

Lab ID#: 1105519C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060130	Date of Collection: 5/19/11 11:43:00 AM
Dil. Factor:	2.38	Date of Analysis: 6/1/11 05:29 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	2.6
Methane	0.00024	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-08-HDOH

Lab ID#: 1105519C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060131	Date of Collection: 5/19/11 10:27:00 AM
Dil. Factor:	2.16	Date of Analysis: 6/1/11 05:52 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.022	Not Detected
Helium	0.11	Not Detected
Carbon Dioxide	0.022	3.6
Methane	0.00022	1.0

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-16R-HDOH

Lab ID#: 1105519C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060132	Date of Collection: 5/19/11 9:41:00 AM
Dil. Factor:	2.47	Date of Analysis: 6/1/11 06:15 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.025	1.5
Methane	0.00025	28

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-17-HDOH

Lab ID#: 1105519C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060133	Date of Collection: 5/19/11 11:24:00 AM
Dil. Factor:	2.47	Date of Analysis: 6/1/11 06:37 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.025	7.5
Methane	0.00025	8.4

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060134	Date of Collection: 5/20/11 7:52:00 AM
Dil. Factor:	2.58	Date of Analysis: 6/1/11 07:01 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.026	Not Detected
Helium	0.13	Not Detected
Carbon Dioxide	0.026	0.056
Methane	0.00026	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060135	Date of Collection: 5/20/11 7:37:00 AM
Dil. Factor:	2.33	Date of Analysis: 6/1/11 07:28 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.023	28
Methane	0.00023	0.46

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060136	Date of Collection: 5/20/01 8:38:00 AM
Dil. Factor:	2.42	Date of Analysis: 6/1/11 08:20 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	0.092
Methane	0.00024	0.00027

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060138	Date of Collection: 5/20/11 8:35:00 AM
Dil. Factor:	2.96	Date of Analysis: 6/1/11 09:03 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.030	Not Detected
Helium	0.15	Not Detected
Carbon Dioxide	0.030	3.8
Methane	0.00030	0.26

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060139	Date of Collection: 5/20/11 9:21:00 AM
Dil. Factor:	2.33	Date of Analysis: 6/1/11 09:37 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.023	20
Methane	0.00023	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1105519C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060128	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/1/11 04:29 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1105519C-11B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9060127b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/1/11 04:06 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1105519C-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9060151
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/2/11 12:15 PM

Compound	%Recovery
Helium	94
Carbon Dioxide	103
Methane	98
Ethane	101
Ethene	99
Butane	101
Acetylene	95
Propane	95
Isobutane	101

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1105519C-12AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9060152	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/2/11 12:37 PM

Compound	%Recovery
Helium	95
Carbon Dioxide	102
Methane	97
Ethane	100
Ethene	98
Acetylene	93
Propane	94
Butane	99
Isobutane	99

Container Type: NA - Not Applicable

6/16/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street


DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/16/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	A-SV04-HDOH	Modified ASTM D-1945	3.0 "Hg	15 psi
02A	A-SV013-HDOH	Modified ASTM D-1945	3.5 "Hg	15 psi
03A	A-AS4-HDOH	Modified ASTM D-1945	1.5 "Hg	15 psi
04A	Diesel#1-HDOH	Modified ASTM D-1945	5.0 "Hg	15 psi
05A	Ambient#1-HDOH	Modified ASTM D-1945	4.5 "Hg	15 psi
06A	Lab Blank	Modified ASTM D-1945	NA	NA
06B	Lab Blank	Modified ASTM D-1945	NA	NA
07A	LCS	Modified ASTM D-1945	NA	NA
07AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



DATE: 06/16/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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-1945
Tetra Tech EM, Inc.
Workorder# 1106214C

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas 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 are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	0.18
Carbon Dioxide	0.022	5.0

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	2.6

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	2.0
Carbon Dioxide	0.021	1.1
Methane	0.00021	0.0012

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	0.10

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	0.040

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061022	Date of Collection: 6/3/11 8:15:00 AM
Dil. Factor:	2.24	Date of Analysis: 6/10/11 04:59 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.022	Not Detected
Helium	0.11	0.18
Carbon Dioxide	0.022	5.0
Methane	0.00022	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061023	Date of Collection: 6/3/11 8:58:00 AM
Dil. Factor:	2.29	Date of Analysis: 6/10/11 05:24 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.11	Not Detected
Carbon Dioxide	0.023	2.6
Methane	0.00023	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061024	Date of Collection: 6/3/11 8:44:00 AM
Dil. Factor:	2.13	Date of Analysis: 6/10/11 05:45 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.021	Not Detected
Helium	0.11	2.0
Carbon Dioxide	0.021	1.1
Methane	0.00021	0.0012

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061025	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	2.42	Date of Analysis: 6/10/11 06:06 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	0.10
Methane	0.00024	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061026	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	2.38	Date of Analysis: 6/10/11 07:36 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	0.040
Methane	0.00024	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061006	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/10/11 08:29 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061005b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:06 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1106214C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061002
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 06:43 AM

Compound	%Recovery
Helium	94
Carbon Dioxide	102
Methane	97
Ethane	99
Ethene	98
Butane	100
Acetylene	94
Propane	94
Isobutane	100

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1106214C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061027
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:00 PM

Compound	%Recovery
Helium	94
Carbon Dioxide	102
Methane	98
Ethane	100
Ethene	99
Acetylene	95
Propane	95
Butane	101
Isobutane	101

Container Type: NA - Not Applicable

6/28/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1106457C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/21/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106457C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

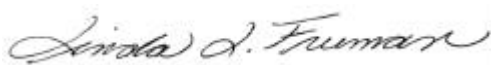
DATE RECEIVED: 06/21/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/28/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)-HDOH	Modified ASTM D-1945	5.0 "Hg	15 psi
02A	HAFB-VP26-B05(24)-HDOH	Modified ASTM D-1945	5.0 "Hg	15 psi
03A	HAFB-VP26-B07(20)-HDOH	Modified ASTM D-1945	3.5 "Hg	15 psi
04A	HAFB-VP26-B07(25)-HDOH	Modified ASTM D-1945	3.5 "Hg	15 psi
05A	HAFB-VP26-B08(21)-HDOH	Modified ASTM D-1945	4.0 "Hg	15 psi
06A	Lab Blank	Modified ASTM D-1945	NA	NA
06B	Lab Blank	Modified ASTM D-1945	NA	NA
07A	LCS	Modified ASTM D-1945	NA	NA
07AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 06/28/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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-1945
Tetra Tech EM, Inc.
Workorder# 1106457C

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 21, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

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

- 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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457C-01A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	0.16
Carbon Dioxide	0.024	11
Methane	0.00024	7.5

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457C-02A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	4.0
Carbon Dioxide	0.024	3.0
Methane	0.00024	50

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457C-03A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	19
Methane	0.00023	11

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457C-04A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	0.24
Carbon Dioxide	0.023	11
Methane	0.00023	43

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457C-05A

Compound	Rpt. Limit (%)	Amount (%)
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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457C-05A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	12
Methane	0.00023	0.086

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9062410	Date of Collection: 6/16/11 11:44:00 AM
Dil. Factor:	2.42	Date of Analysis: 6/24/11 11:06 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	0.16
Carbon Dioxide	0.024	11
Methane	0.00024	7.5

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9062411	Date of Collection: 6/16/11 12:32:00 PM
Dil. Factor:	2.42	Date of Analysis: 6/24/11 11:36 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	4.0
Helium	0.12	Not Detected
Carbon Dioxide	0.024	3.0
Methane	0.00024	50

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9062412	Date of Collection: 6/16/11 12:42:00 PM
Dil. Factor:	2.29	Date of Analysis: 6/24/11 12:04 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.11	Not Detected
Carbon Dioxide	0.023	19
Methane	0.00023	11

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9062413	Date of Collection: 6/16/11 1:25:00 PM
Dil. Factor:	2.29	Date of Analysis: 6/24/11 12:35 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	0.24
Helium	0.11	Not Detected
Carbon Dioxide	0.023	11
Methane	0.00023	43

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9062414	Date of Collection: 6/16/11 11:18:00 AM
Dil. Factor:	2.33	Date of Analysis: 6/24/11 01:01 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.023	12
Methane	0.00023	0.086

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1106457C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9062405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/24/11 07:55 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1106457C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9062404b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/24/11 07:18 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1106457C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9062402
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/24/11 06:30 AM

Compound	%Recovery
Helium	96
Carbon Dioxide	99
Methane	98
Ethane	100
Ethene	99
Butane	100
Acetylene	95
Propane	94
Isobutane	101

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1106457C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9062434
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/24/11 09:48 PM

Compound	%Recovery
Helium	96
Carbon Dioxide	100
Methane	98
Ethane	101
Ethene	99
Propane	95
Butane	101
Acetylene	95
Isobutane	101

Container Type: NA - Not Applicable

6/16/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

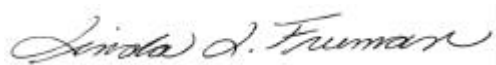
DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/16/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	A-SV04-HDOH	Modified ASTM D-1945	3.0 "Hg	15 psi
02A	A-SV013-HDOH	Modified ASTM D-1945	3.5 "Hg	15 psi
03A	A-AS4-HDOH	Modified ASTM D-1945	1.5 "Hg	15 psi
04A	Diesel#1-HDOH	Modified ASTM D-1945	5.0 "Hg	15 psi
05A	Ambient#1-HDOH	Modified ASTM D-1945	4.5 "Hg	15 psi
06A	Lab Blank	Modified ASTM D-1945	NA	NA
06B	Lab Blank	Modified ASTM D-1945	NA	NA
07A	LCS	Modified ASTM D-1945	NA	NA
07AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



DATE: 06/16/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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-1945
Tetra Tech EM, Inc.
Workorder# 1106214C

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas 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 are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD \leq 15%. All target analytes must be within the linear range of calibration (with the exception of O ₂ , N ₂ , and C ₆ + Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C₂-C₄ was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	0.18
Carbon Dioxide	0.022	5.0

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	2.6

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	2.0
Carbon Dioxide	0.021	1.1
Methane	0.00021	0.0012

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	0.10

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	0.040

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061022	Date of Collection: 6/3/11 8:15:00 AM
Dil. Factor:	2.24	Date of Analysis: 6/10/11 04:59 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.022	Not Detected
Helium	0.11	0.18
Carbon Dioxide	0.022	5.0
Methane	0.00022	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061023	Date of Collection: 6/3/11 8:58:00 AM
Dil. Factor:	2.29	Date of Analysis: 6/10/11 05:24 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.11	Not Detected
Carbon Dioxide	0.023	2.6
Methane	0.00023	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061024	Date of Collection: 6/3/11 8:44:00 AM
Dil. Factor:	2.13	Date of Analysis: 6/10/11 05:45 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.021	Not Detected
Helium	0.11	2.0
Carbon Dioxide	0.021	1.1
Methane	0.00021	0.0012

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061025	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	2.42	Date of Analysis: 6/10/11 06:06 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	0.10
Methane	0.00024	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061026	Date of Collection: 6/3/11 2:09:00 PM
Dil. Factor:	2.38	Date of Analysis: 6/10/11 07:36 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	0.040
Methane	0.00024	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9061006	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/10/11 08:29 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061005b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:06 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1106214C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061002
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 06:43 AM

Compound	%Recovery
Helium	94
Carbon Dioxide	102
Methane	97
Ethane	99
Ethene	98
Butane	100
Acetylene	94
Propane	94
Isobutane	100

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1106214C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061027
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:00 PM

Compound	%Recovery
Helium	94
Carbon Dioxide	102
Methane	98
Ethane	100
Ethene	99
Acetylene	95
Propane	95
Butane	101
Isobutane	101

Container Type: NA - Not Applicable

8/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1107310C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 7/19/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1107310C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

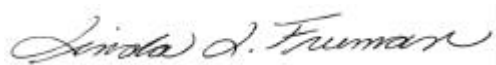
DATE RECEIVED: 07/19/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/02/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-ST03-B58 (347)	Modified ASTM D-1945	5.5"Hg	15 psi
02A	HAFB-ST03-B58 (422)	Modified ASTM D-1945	4.0"Hg	15 psi
03A	HAFB-ST03-B58 (492)	Modified ASTM D-1945	5.0"Hg	15 psi
04A	HAFB-ST03-B58 (388)	Modified ASTM D-1945	4.5"Hg	15 psi
05A	Lab Blank	Modified ASTM D-1945	NA	NA
05B	Lab Blank	Modified ASTM D-1945	NA	NA
06A	LCS	Modified ASTM D-1945	NA	NA
06AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 08/02/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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-1945
Tetra Tech EM, Inc.
Workorder# 1107310C

Four 1 Liter Summa Canister (MA APH Certified) samples were received on July 19, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD \leq 15%. All target analytes must be within the linear range of calibration (with the exception of O ₂ , N ₂ , and C ₆ + Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

The Chain of Custody (COC) information for samples HAFB-ST03-B58 (347) and HAFB-ST03-B58 (492) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

Analytical Notes

Per client's request, the carbon range of C₂-C₄ was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310C-01A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	5.5
Methane	0.00025	0.0011

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310C-02A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	19
Carbon Dioxide	0.023	4.0
Methane	0.00023	0.00065

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310C-03A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	9.5
Methane	0.00024	0.042

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310C-04A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	6.7
Methane	0.00024	0.0075

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9072219	Date of Collection: 7/14/11 10:47:00 AM
Dil. Factor:	2.47	Date of Analysis: 7/22/11 04:15 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.025	5.5
Methane	0.00025	0.0011

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9072222	Date of Collection: 7/14/11 11:00:00 AM
Dil. Factor:	2.33	Date of Analysis: 7/22/11 05:31 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.12	19
Carbon Dioxide	0.023	4.0
Methane	0.00023	0.00065

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9072223	Date of Collection: 7/14/11 11:55:00 AM
Dil. Factor:	2.42	Date of Analysis: 7/22/11 05:53 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	9.5
Methane	0.00024	0.042

Container Type: 1 Liter Summa Canister (MA APH Certified)



Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9072224	Date of Collection: 7/14/11 12:08:00 PM
Dil. Factor:	2.38	Date of Analysis: 7/22/11 06:31 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	6.7
Methane	0.00024	0.0075

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1107310C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072206
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 10:35 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1107310C-05B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072205b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 10:13 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1107310C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072202
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 08:51 AM

Compound	%Recovery
Helium	94
Carbon Dioxide	100
Methane	100
Ethane	103
Ethene	102
Butane	104
Acetylene	98
Propane	98
Isobutane	104

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1107310C-06AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072227
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 07:59 PM

Compound	%Recovery
Helium	95
Carbon Dioxide	100
Methane	101
Ethane	104
Ethene	102
Acetylene	98
Propane	98
Butane	104
Isobutane	104

Container Type: NA - Not Applicable

9/9/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108544C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108544C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

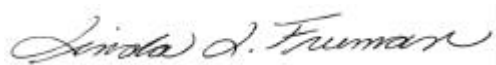
DATE RECEIVED: 08/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 09/09/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HDOH-GASOLINE#1	Modified ASTM D-1945	4.5 "Hg	15 psi
02A	HDOH-DIESEL#2	Modified ASTM D-1945	4.0 "Hg	15 psi
03A	Lab Blank	Modified ASTM D-1945	NA	NA
03B	Lab Blank	Modified ASTM D-1945	NA	NA
04A	LCS	Modified ASTM D-1945	NA	NA
04AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



DATE: 09/09/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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-1945
Tetra Tech EM, Inc.
Workorder# 1108544C

Two 1 Liter Summa Canister (MA APH Certified) samples were received on August 26, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas 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 are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544C-01A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	44
Carbon Dioxide	0.024	0.080
Methane	0.00024	0.015

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544C-02A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.049	0.053

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9090217	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	2.38	Date of Analysis: 9/2/11 06:13 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	44
Helium	0.12	Not Detected
Carbon Dioxide	0.024	0.080
Methane	0.00024	0.015

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9090216	Date of Collection: 8/25/11 10:30:00 AM
Dil. Factor:	4.87	Date of Analysis: 9/2/11 05:45 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.049	Not Detected
Helium	0.24	Not Detected
Carbon Dioxide	0.049	0.053
Methane	0.00049	Not Detected

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1108544C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090206
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 09:04 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1108544C-03B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090205b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 08:42 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1108544C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090202
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 06:54 AM

Compound	%Recovery
Helium	93
Carbon Dioxide	101
Methane	99

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1108544C-04AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090225
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 10:36 PM

Compound	%Recovery
Helium	93
Carbon Dioxide	101
Methane	102

Container Type: NA - Not Applicable

8/26/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108300C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108300C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

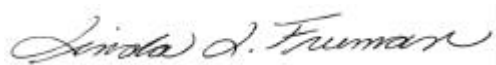
DATE RECEIVED: 08/15/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/26/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HH-OUIC-MW10SG	Modified ASTM D-1945	4.0 "Hg	15 psi
02A	HH-OUIC-MW22R	Modified ASTM D-1945	5.0 "Hg	15 psi
03A	HH-OUIC-OTNS1	Modified ASTM D-1945	3.2 "Hg	15 psi
04A	Lab Blank	Modified ASTM D-1945	NA	NA
04B	Lab Blank	Modified ASTM D-1945	NA	NA
05A	LCS	Modified ASTM D-1945	NA	NA
05AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 08/26/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

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

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

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

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1108300C

Three 1 Liter Summa Canister (MA APH Certified) samples were received on August 15, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300C-01A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	0.027
Carbon Dioxide	0.023	10
Methane	0.00023	16

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300C-02A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	0.028
Carbon Dioxide	0.024	16
Methane	0.00024	42

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300C-03A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	0.31
Carbon Dioxide	0.023	2.4
Methane	0.00023	0.0019

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9081807	Date of Collection: 8/11/11 2:03:00 PM
Dil. Factor:	2.33	Date of Analysis: 8/18/11 08:58 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	0.027
Helium	0.12	Not Detected
Carbon Dioxide	0.023	10
Methane	0.00023	16

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9081808	Date of Collection: 8/11/11 1:38:00 PM
Dil. Factor:	2.42	Date of Analysis: 8/18/11 09:25 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	0.028
Helium	0.12	Not Detected
Carbon Dioxide	0.024	16
Methane	0.00024	42

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9081810	Date of Collection: 8/11/11 2:38:00 PM
Dil. Factor:	2.26	Date of Analysis: 8/18/11 10:24 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.11	0.31
Carbon Dioxide	0.023	2.4
Methane	0.00023	0.0019

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1108300C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9081805	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/17/11 09:43 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1108300C-04B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081804b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/17/11 09:20 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1108300C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081802
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/17/11 08:36 PM

Compound	%Recovery
Helium	94
Carbon Dioxide	100
Methane	101
Ethane	104
Ethene	102
Butane	104
Acetylene	98
Propane	98
Isobutane	104

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1108300C-05AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081829
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/18/11 07:09 PM

Compound	%Recovery
Helium	95
Carbon Dioxide	102
Methane	101
Ethane	104
Ethene	102
Acetylene	98
Propane	98
Butane	104
Isobutane	104

Container Type: NA - Not Applicable

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

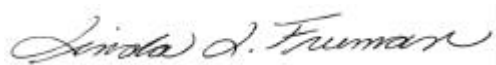
DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2011

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-SP43-VMP10	Modified ASTM D-1945	5.2 "Hg	15psi
02A	HAFB-SP43-VMP11	Modified ASTM D-1945	5.0 "Hg	15psi
03A	HAFB-SP43-VMP12	Modified ASTM D-1945	4.5 "Hg	15psi
04A	HAFB-SP43-VMP16	Modified ASTM D-1945	6.0 "Hg	15psi
05A	HAFB-SP43-VMP17	Modified ASTM D-1945	5.5 "Hg	15psi
06A	FV-GP01-HDOH#2	Modified ASTM D-1945	4.0 "Hg	15psi
07A	FV-GP08-HDOH#2	Modified ASTM D-1945	5.0 "Hg	15psi
08A	FV-GP16R-HDOH#2	Modified ASTM D-1945	5.5 "Hg	15psi
09A	JP8#1	Modified ASTM D-1945	4.0 "Hg	15psi
10A	Lab Blank	Modified ASTM D-1945	NA	NA
10B	Lab Blank	Modified ASTM D-1945	NA	NA
11A	LCS	Modified ASTM D-1945	NA	NA
11AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 10/21/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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

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

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1110160C

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas 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 are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160C-01A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	14
Methane	0.00024	57

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160C-02A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	15
Methane	0.00024	5.0

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160C-03A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	12
Methane	0.00024	0.0072

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160C-04A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	12
Methane	0.00025	34

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160C-05A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	15
Methane	0.00025	1.0

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160C-06A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	7.0
Methane	0.00023	0.17

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160C-07A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.024	4.1
Methane	0.00024	1.0

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160C-08A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.025	2.4
Methane	0.00025	43

Client Sample ID: JP8#1

Lab ID#: 1110160C-09A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.023	0.039
Methane	0.00023	0.00056

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101108	Date of Collection: 10/5/11 2:05:00 PM
Dil. Factor:	2.44	Date of Analysis: 10/11/11 10:29 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	14
Methane	0.00024	57

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101113	Date of Collection: 10/5/11 1:15:00 PM
Dil. Factor:	2.42	Date of Analysis: 10/11/11 01:20 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	15
Methane	0.00024	5.0

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101106	Date of Collection: 10/5/11 12:44:00 PM
Dil. Factor:	2.38	Date of Analysis: 10/11/11 09:28 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	12
Methane	0.00024	0.0072

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101109	Date of Collection: 10/5/11 1:42:00 PM
Dil. Factor:	2.52	Date of Analysis: 10/11/11 10:58 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.13	Not Detected
Carbon Dioxide	0.025	12
Methane	0.00025	34

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101114	Date of Collection: 10/5/11 11:52:00 AM
Dil. Factor:	2.47	Date of Analysis: 10/11/11 01:46 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.025	15
Methane	0.00025	1.0

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101107	Date of Collection: 10/6/11 1:45:00 PM
Dil. Factor:	2.33	Date of Analysis: 10/11/11 10:02 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.023	7.0
Methane	0.00023	0.17

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101115	Date of Collection: 10/6/11 1:06:00 PM
Dil. Factor:	2.42	Date of Analysis: 10/11/11 02:13 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.024	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.024	4.1
Methane	0.00024	1.0

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101110	Date of Collection: 10/6/11 12:19:00 PM
Dil. Factor:	2.47	Date of Analysis: 10/11/11 11:33 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.025	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.025	2.4
Methane	0.00025	43

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: JP8#1

Lab ID#: 1110160C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101112	Date of Collection: 10/6/11 3:15:00 PM
Dil. Factor:	2.33	Date of Analysis: 10/11/11 12:32 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.023	Not Detected
Helium	0.12	Not Detected
Carbon Dioxide	0.023	0.039
Methane	0.00023	0.00056

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1110160C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9101105	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/11/11 08:45 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1110160C-10B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9101104b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/11/11 08:02 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110160C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9101102
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/11/11 07:08 AM

Compound	%Recovery
Helium	94
Carbon Dioxide	101
Methane	99
Ethane	101
Ethene	100
Propane	96
Butane	102
Acetylene	96
Isobutane	102

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1110160C-11AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9101124
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/11/11 06:40 PM

Compound	%Recovery
Helium	95
Carbon Dioxide	101
Methane	100
Ethane	102
Ethene	101
Acetylene	97
Propane	96
Isobutane	102
Butane	102

Container Type: NA - Not Applicable

11/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413D

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413D

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/02/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	HAFB-VP26-B05(18)	Modified ASTM D-1945	4.0 "Hg	5 psi
02A	HAFB-VP26-B05(24)	Modified ASTM D-1945	3.5 "Hg	5 psi
03A	HAFB-VP26-B07(20)	Modified ASTM D-1945	2.5 "Hg	5 psi
04A	HAFB-VP26-B07(25)	Modified ASTM D-1945	4.5 "Hg	5 psi
05A	HAFB-ST03-B58(347)	Modified ASTM D-1945	4.4 "Hg	5 psi
06A	HAFB-ST03-B58(422)	Modified ASTM D-1945	5.0 "Hg	5 psi
07A	HAFB-ST03-B58(492)	Modified ASTM D-1945	4.6 "Hg	5 psi
08A	HAFB-ST03-B59(388)	Modified ASTM D-1945	5.0 "Hg	5 psi
09A	HH-OU1C-MW10SG	Modified ASTM D-1945	6.0 "Hg	5 psi
10A	HH-OU1C-MW22R	Modified ASTM D-1945	5.4 "Hg	5 psi
11A	HH-OU1C-OTNS1	Modified ASTM D-1945	4.2 "Hg	5 psi
12A	GASOLINE#2	Modified ASTM D-1945	2.6 "Hg	5 psi
13A	DIESEL#3	Modified ASTM D-1945	3.2 "Hg	5 psi
14A	GASOLINE-EXHAUST	Modified ASTM D-1945	3.2 "Hg	5 psi
15A	DIESEL-EXHAUST	Modified ASTM D-1945	3.0 "Hg	5 psi
16A	Lab Blank	Modified ASTM D-1945	NA	NA
16B	Lab Blank	Modified ASTM D-1945	NA	NA

Continued on next page

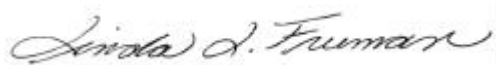
WORK ORDER #: 1110413D

Work Order Summary

CLIENT:	Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814	BILL TO:	Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813
PHONE:	808-586-4328	P.O. #	1077200
FAX:	808-586-7537	PROJECT #	
DATE RECEIVED:	10/20/2011	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/02/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
17A	LCS	Modified ASTM D-1945	NA	NA
17AA	LCSD	Modified ASTM D-1945	NA	NA

CERTIFIED BY:



Laboratory Director

DATE: 11/02/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

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

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

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1110413D

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1945</i>	<i>ATL Modifications</i>
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 85-115%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413D-01A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.016	15
Methane	0.00016	5.2

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413D-02A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	3.6
Carbon Dioxide	0.015	3.7
Methane	0.00015	16

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413D-03A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	0.034
Helium	0.073	0.22
Carbon Dioxide	0.015	17
Methane	0.00015	8.7

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413D-04A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	0.36
Carbon Dioxide	0.016	11
Methane	0.00016	27

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413D-05A

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413D-05A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.016	6.5
Methane	0.00016	0.00086

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413D-06A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.016	9.9
Methane	0.00016	0.0014

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413D-07A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.016	11
Methane	0.00016	0.0018

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413D-08A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.021	6.0
Methane	0.00021	0.00031

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413D-09A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.017	10
Methane	0.00017	11

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413D-10A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	0.025
Carbon Dioxide	0.016	16
Methane	0.00016	38

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413D-11A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	1.1
Carbon Dioxide	0.021	3.2
Methane	0.00021	0.00093

Client Sample ID: GASOLINE#2

Lab ID#: 1110413D-12A

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	0.18
Carbon Dioxide	0.015	0.043
Methane	0.00015	0.00067

Client Sample ID: DIESEL#3

Lab ID#: 1110413D-13A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.015	0.042
Methane	0.00015	0.00021

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413D-14A

Compound	Rpt. Limit (%)	Amount (%)
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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413D-14A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.015	4.6
Methane	0.00015	0.0022

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413D-15A

Compound	Rpt. Limit (%)	Amount (%)
Carbon Dioxide	0.015	0.27
Methane	0.00015	0.00021

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413D-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102417	Date of Collection: 10/13/11 10:12:00 A
Dil. Factor:	1.55	Date of Analysis: 10/24/11 01:40 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	Not Detected
Helium	0.078	Not Detected
Carbon Dioxide	0.016	15
Methane	0.00016	5.2

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413D-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102410	Date of Collection: 10/13/11 10:46:00 A
Dil. Factor:	1.52	Date of Analysis: 10/24/11 10:57 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	3.6
Helium	0.076	Not Detected
Carbon Dioxide	0.015	3.7
Methane	0.00015	16

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413D-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102411	Date of Collection: 10/13/11 11:23:00 A
Dil. Factor:	1.46	Date of Analysis: 10/24/11 11:18 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	0.034
Helium	0.073	0.22
Carbon Dioxide	0.015	17
Methane	0.00015	8.7

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413D-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102412	Date of Collection: 10/13/11 11:49:00 A
Dil. Factor:	1.58	Date of Analysis: 10/24/11 11:43 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	0.36
Helium	0.079	Not Detected
Carbon Dioxide	0.016	11
Methane	0.00016	27

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413D-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102419	Date of Collection: 10/14/11 9:35:00 AM
Dil. Factor:	1.57	Date of Analysis: 10/24/11 02:30 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	Not Detected
Helium	0.078	Not Detected
Carbon Dioxide	0.016	6.5
Methane	0.00016	0.00086

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413D-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102418	Date of Collection: 10/14/11 10:19:00 A
Dil. Factor:	1.61	Date of Analysis: 10/24/11 02:05 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	Not Detected
Helium	0.080	Not Detected
Carbon Dioxide	0.016	9.9
Methane	0.00016	0.0014

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413D-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102420	Date of Collection: 10/14/11 10:36:00 A
Dil. Factor:	1.58	Date of Analysis: 10/24/11 02:54 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	Not Detected
Helium	0.079	Not Detected
Carbon Dioxide	0.016	11
Methane	0.00016	0.0018

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413D-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102409	Date of Collection: 10/14/11 11:03:00 A
Dil. Factor:	2.08	Date of Analysis: 10/24/11 10:25 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.021	Not Detected
Helium	0.10	Not Detected
Carbon Dioxide	0.021	6.0
Methane	0.00021	0.00031

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413D-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102413	Date of Collection: 10/18/11 11:43:00 A
Dil. Factor:	1.68	Date of Analysis: 10/24/11 12:06 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.017	Not Detected
Helium	0.084	Not Detected
Carbon Dioxide	0.017	10
Methane	0.00017	11

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413D-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102414	Date of Collection: 10/18/11 11:09:00 A
Dil. Factor:	1.63	Date of Analysis: 10/24/11 12:30 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.016	0.025
Helium	0.082	Not Detected
Carbon Dioxide	0.016	16
Methane	0.00016	38

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413D-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102421	Date of Collection: 10/18/11 10:31:00 A
Dil. Factor:	2.09	Date of Analysis: 10/24/11 03:19 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.021	Not Detected
Helium	0.10	1.1
Carbon Dioxide	0.021	3.2
Methane	0.00021	0.00093

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: GASOLINE#2

Lab ID#: 1110413D-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102416	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	1.47	Date of Analysis: 10/24/11 01:15 PM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	0.18
Helium	0.074	Not Detected
Carbon Dioxide	0.015	0.043
Methane	0.00015	0.00067

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: DIESEL#3

Lab ID#: 1110413D-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102405	Date of Collection: 10/18/11 8:35:00 AM
Dil. Factor:	1.50	Date of Analysis: 10/24/11 08:31 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	Not Detected
Helium	0.075	Not Detected
Carbon Dioxide	0.015	0.042
Methane	0.00015	0.00021

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413D-14A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102407	Date of Collection: 10/18/11 8:50:00 AM
Dil. Factor:	1.50	Date of Analysis: 10/24/11 09:36 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	Not Detected
Helium	0.075	Not Detected
Carbon Dioxide	0.015	4.6
Methane	0.00015	0.0022

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413D-15A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9102408	Date of Collection: 10/18/11 8:45:00 AM
Dil. Factor:	1.49	Date of Analysis: 10/24/11 10:00 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.015	Not Detected
Helium	0.074	Not Detected
Carbon Dioxide	0.015	0.27
Methane	0.00015	0.00021

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1110413D-16A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102404
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 08:07 AM

Compound	Rpt. Limit (%)	Amount (%)
C2-C4 Hydrocarbons ref. to Methane	0.010	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1110413D-16B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102403b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 07:35 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110413D-17A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102402
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 07:03 AM

Compound	%Recovery
Helium	94
Carbon Dioxide	101
Methane	98
Ethane	101
Ethene	99
Propane	96
Butane	102
Acetylene	96
Isobutane	102

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1110413D-17AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102429
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 06:27 PM

Compound	%Recovery
Helium	94
Carbon Dioxide	103
Methane	99
Ethane	102
Ethene	100
Acetylene	97
Propane	96
Isobutane	103
Butane	103

Container Type: NA - Not Applicable