

US EPA ARCHIVE DOCUMENT



AN ENVIRONMENTAL ANALYTICAL LABORATORY

3/23/2009

Mr. Doug Lam
Trihydro Corporation
5000 State Route 128

Cleves OH 45002

Project Name: Hooven VI 2008-2009
Project #: 500-016-012
Workorder #: 0903253C

Dear Mr. Doug Lam

The following report includes the data for the above referenced project for sample(s) received on 3/10/2009 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: Brandon Dunmore at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

A handwritten signature in black ink that reads 'Brandon M. Dunmore'.

Brandon Dunmore
Project Manager

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 .FAX (916) 985-1020
Hours 8:00 A.M to 6:00 P.M. Pacific



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0903253C

Work Order Summary

CLIENT: Mr. Doug Lam
Trihydro Corporation
5000 State Route 128
Cleves, OH 45002

BILL TO: Mr. Tim Gunn
Trihydro Corporation
5000 State Route 128
Cleves, OH 45002

PHONE:

P.O. # 08-050WO-L

FAX:

PROJECT # 500-016-012 Hooven VI 2008-2009

DATE RECEIVED: 03/10/2009

CONTACT: Brandon Dunmore

DATE COMPLETED: 03/23/2009

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
13A	FLOAT,030409	Modified TO-15	4.5 "Hg	5 psi
14A	Lab Blank	Modified TO-15	NA	NA
15A	CCV	Modified TO-15	NA	NA
16A	LCS	Modified TO-15	NA	NA

CERTIFIED BY:

DATE: 03/23/09

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
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: 07/01/08, Expiration date: 06/30/09

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
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LABORATORY NARRATIVE**Modified TO-15
Trihydro Corporation
Workorder# 0903253C**

One 6 Liter Summa Canister (100% Certified) sample was received on March 10, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 1.0 liter 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 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.

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

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	+/- 30% RSD with 2 compounds allowed out to < 40% RSD	30% RSD with 4 compounds allowed out to < 40% RSD
Daily Calibration	+/- 30% Difference	<= 30% Difference with four allowed out up to <=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

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.

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

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

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

Client Sample ID: FLOAT,030409

Lab ID#: 0903253C-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.16	0.41	0.78	2.0
Chloromethane	0.16	0.44	0.33	0.90
Freon 11	0.16	0.21	0.89	1.2
Ethanol	0.79	1.4	1.5	2.7
Acetone	0.79	3.5	1.9	8.4
2-Propanol	0.79	3.4	1.9	8.3
2-Butanone (Methyl Ethyl Ketone)	0.16	0.37	0.46	1.1
Benzene	0.16	0.21	0.50	0.67
Toluene	0.16	0.20	0.60	0.76
Butane	0.79	1.1	1.9	2.7

US EPA ARCHIVE DOCUMENT



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: FLOAT,030409

Lab ID#: 0903253C-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032109	Date of Collection:	3/5/09 1:00:00 PM
Dil. Factor:	1.58	Date of Analysis:	3/21/09 06:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.16	0.41	0.78	2.0
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.16	0.44	0.33	0.90
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.16	Not Detected	0.61	Not Detected
Chloroethane	0.16	Not Detected	0.42	Not Detected
Freon 11	0.16	0.21	0.89	1.2
Ethanol	0.79	1.4	1.5	2.7
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.79	3.5	1.9	8.4
2-Propanol	0.79	3.4	1.9	8.3
Carbon Disulfide	0.79	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Hexane	0.16	Not Detected	0.56	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.16	0.37	0.46	1.1
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Tetrahydrofuran	0.79	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.77	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Cyclohexane	0.16	Not Detected	0.54	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.99	Not Detected
Benzene	0.16	0.21	0.50	0.67
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Heptane	0.16	Not Detected	0.65	Not Detected
Trichloroethene	0.16	Not Detected	0.85	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.73	Not Detected
1,4-Dioxane	0.16	Not Detected	0.57	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.72	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.65	Not Detected
Toluene	0.16	0.20	0.60	0.76
trans-1,3-Dichloropropene	0.16	Not Detected	0.72	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: FLOAT,030409

Lab ID#: 0903253C-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032109	Date of Collection:	3/5/09 1:00:00 PM
Dil. Factor:	1.58	Date of Analysis:	3/21/09 06:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
2-Hexanone	0.79	Not Detected	3.2	Not Detected
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.73	Not Detected
Ethyl Benzene	0.16	Not Detected	0.69	Not Detected
m,p-Xylene	0.16	Not Detected	0.69	Not Detected
o-Xylene	0.16	Not Detected	0.69	Not Detected
Styrene	0.16	Not Detected	0.67	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.78	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.78	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.78	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.82	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
1,2,4-Trichlorobenzene	0.79	Not Detected	5.9	Not Detected
Hexachlorobutadiene	0.79	Not Detected	8.4	Not Detected
Naphthalene	0.79	Not Detected	4.1	Not Detected
Butylbenzene	0.79	Not Detected	4.3	Not Detected
sec-Butylbenzene	0.79	Not Detected	4.3	Not Detected
Isopentane	0.79	Not Detected	2.3	Not Detected
Butane	0.79	1.1	1.9	2.7
Methylcyclohexane	0.79	Not Detected	3.2	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	102	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0903253C-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032107a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/21/09 05:06 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.10	Not Detected	0.21	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.10	Not Detected	0.39	Not Detected
Chloroethane	0.10	Not Detected	0.26	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	Not Detected	0.29	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0903253C-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032107a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/21/09 05:06 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
2-Hexanone	0.50	Not Detected	2.0	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
Naphthalene	0.50	Not Detected	2.6	Not Detected
Butylbenzene	0.50	Not Detected	2.7	Not Detected
sec-Butylbenzene	0.50	Not Detected	2.7	Not Detected
Isopentane	0.50	Not Detected	1.5	Not Detected
Butane	0.50	Not Detected	1.2	Not Detected
Methylcyclohexane	0.50	Not Detected	2.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0903253C-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/21/09 01:12 AM

Compound	%Recovery
Freon 12	87
Freon 114	90
Chloromethane	97
Vinyl Chloride	89
1,3-Butadiene	90
Bromomethane	92
Chloroethane	91
Freon 11	85
Ethanol	85
Freon 113	82
1,1-Dichloroethene	95
Acetone	106
2-Propanol	91
Carbon Disulfide	89
Methylene Chloride	86
Methyl tert-butyl ether	98
trans-1,2-Dichloroethene	93
Hexane	99
1,1-Dichloroethane	92
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	98
Tetrahydrofuran	95
Chloroform	87
1,1,1-Trichloroethane	90
Cyclohexane	90
Carbon Tetrachloride	75
Benzene	93
1,2-Dichloroethane	97
Heptane	100
Trichloroethene	95
1,2-Dichloropropane	95
1,4-Dioxane	102
Bromodichloromethane	98
cis-1,3-Dichloropropene	104
4-Methyl-2-pentanone	108
Toluene	94
trans-1,3-Dichloropropene	96
1,1,2-Trichloroethane	93
Tetrachloroethene	90



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0903253C-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/21/09 01:12 AM

Compound	%Recovery
2-Hexanone	99
Dibromochloromethane	101
1,2-Dibromoethane (EDB)	96
Chlorobenzene	90
Ethyl Benzene	96
m,p-Xylene	98
o-Xylene	100
Styrene	100
Bromoform	110
Cumene	102
1,1,2,2-Tetrachloroethane	91
Propylbenzene	104
4-Ethyltoluene	103
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	99
1,3-Dichlorobenzene	96
1,4-Dichlorobenzene	97
alpha-Chlorotoluene	113
1,2-Dichlorobenzene	95
1,2,4-Trichlorobenzene	92
Hexachlorobutadiene	94
Naphthalene	89
Butylbenzene	102
sec-Butylbenzene	117
Isopentane	91
Butane	92
Methylcyclohexane	94

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	102	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0903253C-16A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/21/09 02:22 AM

Compound	%Recovery
Freon 12	80
Freon 114	84
Chloromethane	94
Vinyl Chloride	88
1,3-Butadiene	82
Bromomethane	85
Chloroethane	86
Freon 11	77
Ethanol	57 Q
Freon 113	88
1,1-Dichloroethene	101
Acetone	82
2-Propanol	94
Carbon Disulfide	84
Methylene Chloride	89
Methyl tert-butyl ether	97
trans-1,2-Dichloroethene	90
Hexane	100
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	104
cis-1,2-Dichloroethene	96
Tetrahydrofuran	92
Chloroform	87
1,1,1-Trichloroethane	86
Cyclohexane	92
Carbon Tetrachloride	92
Benzene	88
1,2-Dichloroethane	87
Heptane	92
Trichloroethene	90
1,2-Dichloropropane	90
1,4-Dioxane	90
Bromodichloromethane	89
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	98
Toluene	91
trans-1,3-Dichloropropene	91
1,1,2-Trichloroethane	88
Tetrachloroethene	86



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0903253C-16A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	z032104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/21/09 02:22 AM

Compound	%Recovery
2-Hexanone	95
Dibromochloromethane	93
1,2-Dibromoethane (EDB)	87
Chlorobenzene	84
Ethyl Benzene	89
m,p-Xylene	89
o-Xylene	93
Styrene	94
Bromoform	100
Cumene	96
1,1,2,2-Tetrachloroethane	81
Propylbenzene	95
4-Ethyltoluene	94
1,3,5-Trimethylbenzene	86
1,2,4-Trimethylbenzene	89
1,3-Dichlorobenzene	83
1,4-Dichlorobenzene	82
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	82
1,2,4-Trichlorobenzene	74
Hexachlorobutadiene	77
Naphthalene	90
Butylbenzene	Not Spiked
sec-Butylbenzene	Not Spiked
Isopentane	87
Butane	86
Methylcyclohexane	92

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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